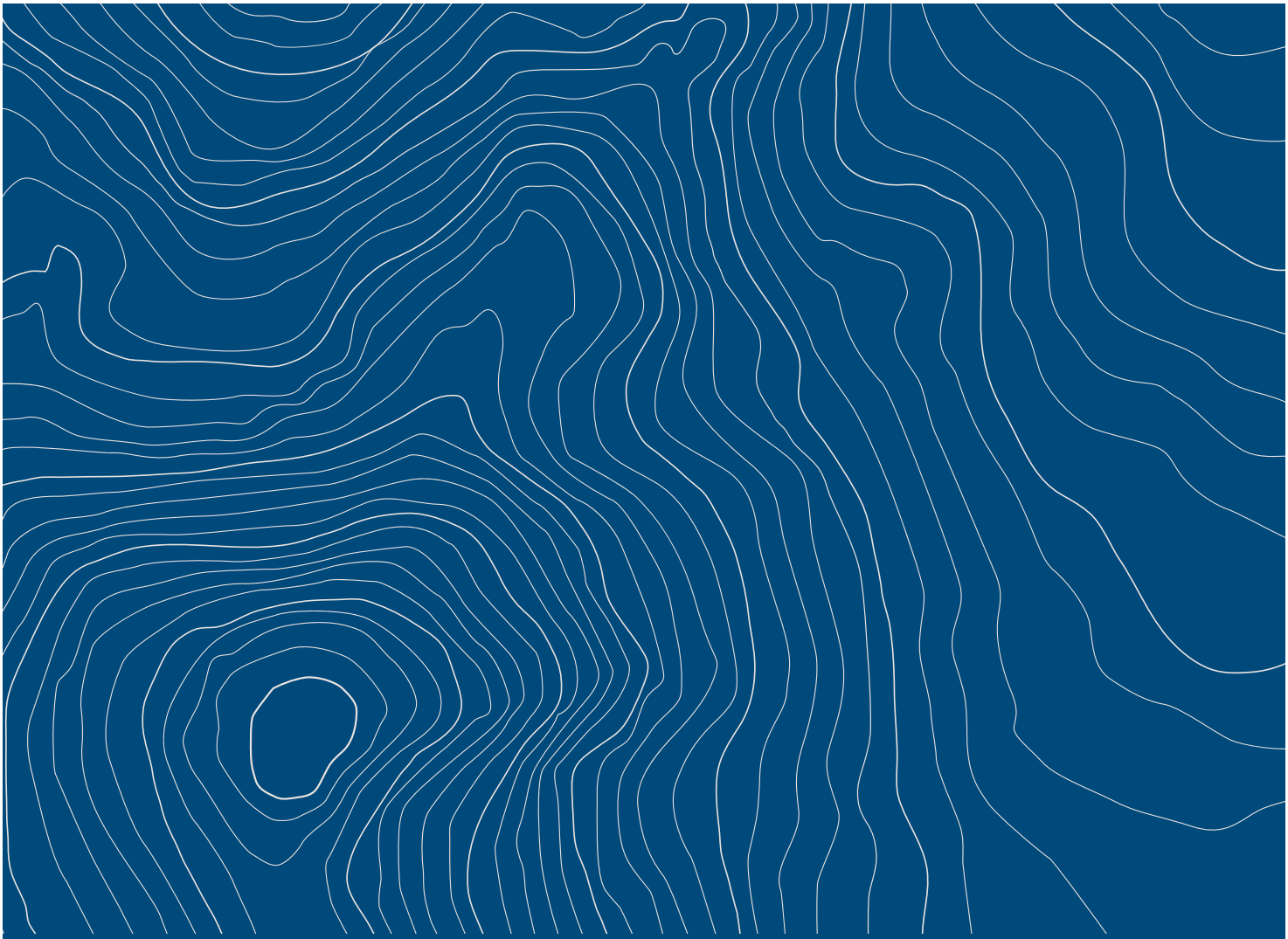

DublinArray
Generation for generations

EIAR Volume 5: Introductory Chapters
Chapter 11: Material Assets

Kish Offshore Wind Ltd

RWE SLR GoBe APEM Group

www.dublinarray-marineplanning.ie

Dublin Array Offshore Wind Farm

Environmental Impact Assessment Report

Volume 5, Chapter 11: Material Assets

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Glossary

Term	Definition
European Commission (EC)	The executive branch of the European Union (EU). It is responsible for proposing legislation, implementing decisions, upholding the EU treaties, and managing the day-to-day business of the EU.
Flood alleviation detention basin	Excavated area designed to temporarily store floodwaters during rain or flood events.
Material Assets	Material Assets are defined in the Environmental Protection Agency Guidelines on the Information to be Contained in Environmental Impact Assessment Reports as built services and infrastructure, including components of cultural heritage (see Section 11.2 for full description). Note, impacts on Cultural Heritage assets are dealt with in Volume 5, Chapter 8 Archaeology Cultural Heritage.
Onshore Electrical System (OES)	Collective term for all onshore infrastructure from the landfall/TJB to the grid connection point which is likely to be necessary to connect the project to the national grid.
Transport Infrastructure Ireland (TII)	State agency in Ireland responsible for managing road and public transport infrastructure.
Utilities	Utilities refer to the network of pipes, cables, and equipment installed beneath the ground to provide essential services to communities. These utilities include: -Electric cables: cables that deliver electricity to homes and businesses. -Telecommunication lines: underground and overground cables that provide telephone, internet, and other communication services -Gas pipelines: pipes that transport natural gas for heating, cooking, and other uses. -Water mains: pipes that supply drinking water to households and businesses. -Sewers and drainage systems: infrastructure for the removal and treatment of wastewater and stormwater.
Wastewater Treatment Plant (WWTP)	Facility designed to treat wastewater.

Acronyms

Term	Definition
CAT	Cable Avoidance Tool
CDP	County Development Plan
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
DLRCC	Dún Laoghaire-Rathdown County Council
ECR	Export Cable Route
EFILWC	European Foundation for the Improvement of Living and Working Conditions
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
GCP	Grid Connection Point
GNI	Gas Networks Ireland
GPR	Ground Penetration Radar
HDD	Horizontal Directional Drilling
HP	High Pressure
HWM	High-Water Mark
kV	kilovolt
LP	Low Pressure
MDS	Maximum Design Scenario
MP	Medium Pressure
MRE	Metro and Rail Economic Corridor
O&M	Operations and Maintenance
OCS	Overhead Contact System
OES	Onshore Electrical System
OHL	Overhead Line
OSS	Onshore Substation
SDZ	Strategic Development Zone
TCC	Temporary Construction Compound
TII	Transport Infrastructure Ireland

Term	Definition
TJB	Transition Joint Bay
UÉ	Uisce Éireann
WWTP	Waste Water Treatment Plant
ZoI	Zones of Influence

11 Material Assets

11.1 Introduction

11.1.1 This chapter of the Applicant's Environmental Impact Assessment Report (EIAR) presents the results of the Environmental Impact Assessment (EIA) for the potential impacts of the construction, operation and maintenance, and decommissioning phases associated with the onshore infrastructure of the proposed Dublin Array Offshore Wind Farm (Dublin Array) upon material assets receptors[1]. The onshore infrastructure includes the proposed Operations and Maintenance Base at Dún Laoghaire Harbour and is described in full in Volume 2, Chapter 2.6 Project Description.

11.1.2 The assessment of potential impacts associated with the offshore infrastructure upon material assets receptors is contained within Volume 3, Chapter 11 Infrastructure and Other Users.

11.1.3 This chapter describes the scope, relevant legislation, assessment methodology, and the baseline conditions existing at the site and its surroundings. It considers any potential significant environmental effects the proposed development will have on this baseline environment; the mitigation measures required to prevent, reduce any significant adverse effects; and the likely residual effects after these measures have been employed. Cumulative material assets effects with other proposed developments that may also have an impact on these sensitive receptors are also considered.

11.1.4 This EIAR chapter should be read in conjunction with the following documents included within the EIAR, due to interactions between the technical aspects:

- Volume 2, Chapter 6: Project Description (hereafter referred to as the Project Description Chapter);
- Volume 5, Chapter 3: Land, Soils and Geology (hereafter referred to as the Land, Soils and Geology chapter);
- Volume 5, Chapter 4: Water (Hydrology, Hydrogeology and Flood Risk) (hereafter referred to as the Water Chapter);
- Volume 5, Chapter 6: Traffic and Transport (hereafter referred to as the Traffic and Transport Chapter); and
- Volume 5, Chapter 8 Archaeology and Cultural Heritage (hereafter referred to as the Archaeology and Cultural Heritage Chapter).

[1] Material Assets are defined in the Environmental Protection Agency Guidelines on the Information to be Contained in Environmental Impact Assessment Reports as built services and infrastructure, including components of cultural heritage (see Section 11.2 for full description). Note, impacts on Cultural Heritage assets are dealt with in Volume 5, Chapter 8 Archaeology Cultural Heritage.

11.2 Regulatory background

11.2.1 In addition to legislation, policy and guidance relevant offshore renewables captured within Volume 2, Chapter 2 Consents, Legislation, policy and Guidance (hereafter referred to as the Policy Chapter), this section outlines legislation, policy and guidance specific to material assets, including best practice guidelines.

11.2.2 This assessment of the potential impacts upon material assets has been made with specific reference to the following legislation and policy.

Table 1 Legislation and policy context

Policy/Legislation /Publisher	Name/Reference/Key provisions	What is covered/Section where provision is addressed
Statutory		
Legislation		
Directive 2014/52/EU	Directive 2014/52/EU	Directive 2014/52/EU, which amended Directive 2011/92/EU, concerns the assessment of the effects of certain public and private projects on the environment. The Directive sets out that Material Assets, comprises both human-made and natural resources that are valuable and intrinsic to specific places. The Directive sets out that these assets can have economic or cultural significance. Material Assets are covered in this Chapter of the EIAR.
S.I. No. 296 of 2018	European Communities (Planning and Development) (Environmental Impact Assessment) Regulations,	The Regulations require the assessment of significant impacts on material assets, including both human-made and natural resources in order to ensure the sustainable use and protection of infrastructure, buildings and natural resources during project planning and development. The assessment of impacts on Material Assets required by the Regulations is reflected in Section 11.4 Methodology.
Non-Statutory		
Guidelines and technical standards		
EPA, 2022	The Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the 'EPA Guidelines')	These Guidelines apply to the preparation of all Environmental Impact Assessment Reports undertaken in the State. The Guidelines set out: 'In Directive 2011/92/EU this factor included architectural and archaeological heritage. Directive 2014/52/EU includes those heritage aspects as components of cultural heritage and that material

Policy/Legislation /Publisher	Name/Reference/Key provisions	What is covered/Section where provision is addressed
		assets can now be taken to mean built services and infrastructure. The guidelines set out that the sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils. The approach is reflected in Section 11.4 Methodology. Note, impacts on Cultural Heritage assets are dealt with in the Archaeology and Cultural Heritage Chapter and impacts on land, soils and geology are dealt with in the Land, Soils and Geology chapter.
EC, 2017	European Commission (EC) Guidance on the Preparation of the Environmental Impact Assessment Report https://op.europa.eu/en/publication-detail/-/publication/2b399830-cb4b-11e7-a5d5-01aa75ed71a1	References buildings, other structures, mineral resources and water resources as material assets. The approach is reflected in Section 11.4 Methodology.

11.3 Consultation

11.3.1 As part of the EIA for Dublin Array, non-statutory consultation has been undertaken with various statutory and non-statutory bodies. A Scoping report (RWE, 2020) was made publicly available and issued to statutory consultees on 9th October 2020[2]. Table 2 sets out the key consultation responses received that is relevant to this topic.

Table 2 Summary of consultation relating to material assets

Date	Consultation type	Consultation and key issues raised	Section where provision is addressed
Scoping Responses			
9th November 2020	Transport Infrastructure Ireland (TII) – Scoping Response (issues raised relevant to Material Assets chapter.	TII commented that in regards to the onshore cable route, the scoping report indicates: ▪ The cables and the entire electrical transmission system will be built to EirGrid specifications. ▪ The route options potentially interact with TII	Please refer to Volume 5, Chapter 6 Traffic and Transport (hereafter referred to as Traffic and Transport Chapter) for full description of all issues raised in TII consultation and how these are addressed in the EIAR.

[2] https://dublinarray.com/wp-content/uploads/2020/10/Dublin-Array-EIAR-Scoping-Report-Part-1-of-2.pdf

Date	Consultation type	Consultation and key issues raised	Section where provision is addressed
		existing networks at the N11, and M50. ▪ Trenchless installation methodologies will be required for national roads (N/M11 and M50). ▪ That the scheme will interact with the Luas Green Line. TII advised that there will be a requirement for a special installation methodology in certain locations.	In terms of Material Assets impacts, as set out in the Project Description Chapter, the Applicant is proposing horizontal directional drilling (HDD) or similar techniques under the N11 and M50 which will avoid any direct impacts on these roads. The only Luas crossing will be along a stretch of the R118 in Cherrywood where the road crosses under the Luas which is running on a flyover at this location. There will be no direct impact on the Luas line.
		TII suggested that in relation to cabling and potential connection routing in general, Dublin Array should note locations of existing and future national road schemes, Luas lines and develop proposals to safeguard proposed road schemes impacted.	All road schemes are referenced in the Traffic and Transport Chapter.
		TII commented that the cable routing should also avoid all impacts to existing TII infrastructure such as traffic counters, Overhead Contact System (OCS) signals, weather stations etc, and works required to such infrastructure will only be undertaken in consultation with and subject to the agreement of TII, any costs attributable will be borne by the applicant/ developer.	The proposed onshore infrastructure will not directly impact existing TII infrastructure
		TII commented that consultations should be had with the relevant local authorities with regard to locations of existing and future national road schemes. This	Dublin Array onshore infrastructure will not directly impact the N11 road scheme.

Date	Consultation type	Consultation and key issues raised	Section where provision is addressed
		included The N11/M11 Junction 4 to Junction 14 Improvement Scheme which is progressing as a scheme in the Project Ireland 2040 National Development Plan, 2018 – 2027.	Consideration of construction traffic access routes is set out in the Traffic and Transport chapter.
		TII commented that they are specifically concerned about potential significant impacts the development would have on the national road network (and junctions with national roads) in the proximity of the proposed development.,	A Traffic and Transportation Assessment has been undertaken and is included in the Traffic and Transport chapter. Where relevant this chapter cross references the Traffic and Transport chapter.
		TII requested that the applicant should clearly identify haul routes proposed and fully assess the network to be traversed.	Refer to the Traffic and Transport Chapter where these details are presented. Development details, including construction phase activities are presented in Project Description chapter.

11.3.2 In relation to landowner and land use data, engagement with landowners has been ongoing by the Applicant for a number of years.

11.3.3 Existing infrastructure and utility information was requested from utility companies and service providers. The following service providers provided utility information of relevance to the study area.

- Dún Laoghaire-Rathdown County Council (DLRCC);
- Electricity Supply Board (ESB) Networks;
- EirGrid;
- Gas Networks Ireland (GNI);
- Irish Rail;
- Uisce Éireann (formerly Irish Water); and
- Telecommunications providers such as Eir and Virgin.

11.3.4 A full utility survey will be carried out prior to construction and all required diversions of existing utilities, or temporary works will be confirmed ahead of construction commencing.

11.4 Methodology

11.4.1 For a full description of the methodology as to how this EIAR was prepared, see Volume 2 Chapter 3, Methodology Chapter. The methodology that follows below is specific to this chapter

Study area

Onshore Electrical System (OES)

11.4.2 The Dublin Array onshore transmission infrastructure is cumulatively referred to as the OES, which comprises all of the onshore electrical transmission infrastructure above the High Water mark (HWM) associated with Dublin Array. This includes the TJBs at the Landfall Site, the onshore export cables and associated infrastructure, the OSS in Jamestown and the grid connection between the OSS and the existing 220 kV substation in Carrickmines, referred to as the Carrickmines Grid Connection Point (GCP). Further detail is included in the Project Description chapter.

11.4.3 A 100 m study area has been established either side of the Onshore Export Cable Route (onshore ECR) to inform our understanding of the material assets context of the surrounding area. The onshore ECR between the TJBs and the OSS has been subdivided into seven sectors.

11.4.4 Whilst potential physical effects will be restricted to receptors falling within the ECR only and within the site of the proposed Onshore Substation (OSS), the application of a wider 100 m study area allowed the assessment to consider baseline data to appraise whether any aspects of the proposed OES construction, operation or decommissioning works had the potential to lead to indirect non-physical effects. The OES study area also includes three TCC locations at the Landfall Site at Shanganagh, at Clifton Park and at Leopardstown.

Operations and Maintenance (O&M) Base

11.4.5 Similarly, a 100 m study area has also been applied around the O&M Base in Dún Laoghaire Harbour, for the purposes of the assessment of potential physical effects. This is considered to be a proportionate study area for the proposed O&M Base taking into account the scale of the proposed building and associated infrastructure and the commercial character of the harbour. No material physical effects on material assets receptors were anticipated in excess of 100 m from the O&M Base.

Assessment methodology

11.4.6 The assessment of likely significant effects of the proposed development on material assets has been undertaken having regard to the EPA Guidelines (2022), scoping in those which are relevant to Dublin Array. The assessment comprises of the following which are of relevance to Dublin Array:

- Potential for temporary or permanent changes in current land use or from zoning designations;
- Potential for likely significant effects on public utilities and the need to adequately protect them during the construction phase; and
- Requirement for connections to public utilities by the proposed development during both the construction and operational phases.

11.4.7 The assessment methodology commenced with a comprehensive receiving of baseline information in relation to material assets. This comprised a desktop review establishing the baseline information available for, and relevant to, the material assets within the defined study area (described above).

11.4.8 The assessment then progressed with an assessment of the likely significant effects of the proposed development on existing onshore built services and infrastructure, including:

- Land use impacts such as severance, loss of rights of way or amenities, conflicts, or other changes likely to ultimately alter the character and use of the surroundings and properties or changes to land use zoning; and
- Onshore utilities (such as electricity; telecommunications; gas; water supply, wastewater and surface water drainage).

11.5 Assessment criteria

11.5.1 There are no specific criteria for assessing the likely significance of effects on land use. As such, the assessment of effects on land use considers significant existing trends evident in the overall growth or decline of various land uses, or any changes in the proportion of one type of activity relative to any other. The sensitivity of all receptors has been considered.

11.5.2 There are no specific criteria used for assessing the significance of effect of the proposed development on existing utilities. As such, professional judgement and consultation with utility providers has determined the significance criteria used in this assessment. The likely significance of impacts on existing utilities is determined based on consideration of the assumed functionality of the specific utility and the corresponding impact of its disruption.

Sensitivity of receptor criteria

11.5.3 The sensitivity/importance of the environment has been defined in Table 3, and follows the EPA Guidelines published by the EPA, using the following definitions:

- Context – The degree to which the receptor will conform or contrast with the established (baseline) conditions. To define the context the following sub-factors will be considered:
  - Adaptability – The degree to which a receptor can avoid or adapt to an impact;
  - Tolerance – The ability of a receptor to accommodate temporary or permanent change without a significant adverse impact; and
  - Recoverability – The temporal scale over and extent to which a receptor will recover following an impact.
- Value – A measure of the receptor's importance, rarity and worth.

11.5.4 The sensitivity of material asset receptors has been determined in accordance with the criteria set out in Table 3.

Table 3 Sensitivity/importance of material asset receptors

Receptor sensitivity	Definition
High	Land Use which is considered to be of national or international importance including material assets such international, national roads, railway lines and nationally important commercial ports. Utilities with high importance with limited potential for substitution: ▪ Gas transmission network/high pressure pipelines; ▪ Drinking water and wastewater/combined sewer trunk mains (greater than or equal to 600 mm diameter); ▪ Surface water sewers greater than 300 mm diameter; ▪ High voltage electrical distribution cables, both underground and overhead; ▪ Fibre telecommunications. Note, mobile telecommunications (television and mobile communications signals is Infrastructure and Other Users) due to its interaction with the offshore infrastructure.
Medium	Land Use which is considered to be of regional or county wide importance including material assets such as regional roads, regional bus routes, the Luas, regional cycle routes or land zoned for this purpose. Regionally important commercial ports. Utilities with medium importance with limited potential for substitution: ▪ Arterial drinking water mains and wastewater/combined sewer mains (less than 600 mm diameter); ▪ Medium pressure gas pipeline; ▪ Surface water sewers less than 300 mm diameter; and ▪ Medium and low voltage electrical transmission cables, both underground and overhead.
Low	Land Use which is considered to be of local importance including material assets such as local recreational land, beaches, local roads, local harbours,

Receptor sensitivity	Definition
	local bus routes, local footpaths/cycle routes or land zoned for this purpose. Locally important commercial ports. Utilities of low importance, potential for substitution: ▪ Local water and wastewater connections.
Negligible	Utilities of negligible importance, potential for substitution: ▪ private connections to domestic or commercial properties all with potential for substitution.

Magnitude of impact criteria

11.5.5 For land use, the magnitude of impact is assessed based on the predicted change of affected land parcel. The magnitude of impact for utilities has been considered in terms of the duration of service interruption that will likely occur, service provider notification and level of service reinstatement.

11.5.6 The overall magnitude of impact (Table 4) has then been defined following the EPA guidelines using the following definitions:

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

Table 4 Magnitude of the impact

Magnitude	Definition
High	For land use: land permanently changed where the proposed land use differs from the existing land use or zoning objectives. For utilities: disruption of utility service for more than two days and the level of utility service provided by the impacted utilities is subsequently reinstated.
Medium	For land use: land use temporarily affected during the construction phase where the proposed land use differs from the existing land use or zoning objectives and/or it is not possible ensure continued functioning of the material asset whilst works are taking place. For utilities: disruption of utility service for 0.5 days to 2 days the level of utility service provided by the impacted utilities is reinstated or improved.

Magnitude	Definition
Low	For land use: land use temporarily affected during the construction phase. However, project design features or avoidance and preventative measures proposed will be used to ensure continued functioning of the material asset whilst construction works are ongoing. For utilities: disruption of service for up to 0.5 days and the level of service provided by the impacted utilities is reinstated or improved.
Negligible	No change occurring to land use. Negligible disruption to utilities service. Crossings will be undertaken in accordance with the requirements of the utility owner (e.g. Uisce Éireann).

Defining the significance of effect

11.5.7 Table 5 provides the significance criteria used to identify likely significant effects on material assets. The ranges in significance are defined using the categories defined in the EPA Guidelines. For the purposes of assessing the effects on material assets in this EIAR, an effect is deemed to not be significant from a rating of imperceptible to moderate, and significant to profound.

Table 5 Significance of potential effects

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

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

11.6 Receiving environment

11.6.1 This section describes the existing environment of the study area relevant material assets prior to the implementation of the proposed development.

Land-use, including road and rail infrastructure

11.6.2 The following section sets out the existing land use material asset receptors within the OES and O&M Base study areas. Reference is made to the existing land use zoning within the DLR County Development Plan (CDP) 2022 - 2028. These have been included to provide a detailed baseline description of the study areas.

Onshore Electrical System

The Landfall area

11.6.3 The Landfall area is located at Shanganagh Cliffs, immediately south of the Uisce Éireann (UÉ) Shanganagh Waste Water Treatment Plant (WWTP). Onshore, the Landfall Site is bounded to the east by the Shanganagh cliffs, Shanganagh Beach and the Irish Sea.

11.6.4 To the west, the onshore ECR crosses public amenity land, a residential road: Shanganagh Cliffs Road (which also services the Shanganagh WWTP) and the Shanganagh Community Garden. Further west the onshore ECR crosses the Dublin/Rosslare mainline railway. The railway is also used as the Dublin Area Rapid Transit (DART) railway, which is a major commuter route in this area between County Wicklow and the City of Dublin.

11.6.5 The effluent outfall servicing the Shanganagh WWTP runs roughly parallel to the proposed Landfall alignment, with the existing outfall pipeline running east from the WWTP, with the closest proximity onshore at the northern end of Shanganagh Cliffs.

11.6.6 The Landfall Site is bounded by a tree line to the south. A playground and sports pitches are located south of the tree line. The proposed construction access route to the Landfall Site will cross this area.

11.6.7 Land use zones within the study area of the onshore ECR are listed within the DLR CDP 2022-2028 . Land use within the Landfall Site comprises Land Use Zone A – 'to provide residential development and improve residential amenity while protecting the existing residential amenities' and Zone F – 'to preserve and provide for open space with ancillary active recreational amenities' (DLRCC, 2022).

Onshore ECR (Sectors 1 – 7)

11.6.8 Land use zones within the study area comprise zonings relating to: Residential; general employment; open space; rural; rural village; agricultural; high amenity; local centre; community infrastructure; and key urban villages. A large section of the proposed development within DLRCC jurisdiction are in lands currently zoned as the Cherrywood Strategic Development Zone (SDZ). These are set out below in the following section relating to the onshore ECR sectors.

Sector 1 (including the TCC at Clifton Park)

11.6.9 Land use within Sector 1 is predominantly Land Use Zone A – 'to provide residential development and improve residential amenity while protecting the existing residential amenities' and Zone F – 'to preserve and provide for open space with ancillary active recreational amenities' (DLRCC, 2022).

11.6.10 Uses shown as 'Open for Consideration' are uses which may be permitted where the Planning Authority is satisfied that a proposed development will be compatible with the overall policies and objectives for the zone, will not have undesirable effects, and will otherwise be consistent with the proper planning and sustainable development of the area.

11.6.11 Within this sector, the Shanganagh River is crossed and will thereafter run along several residential streets comprising Bayview Glen, Bayview Crescent and Achill Road. It will also cross Shanganagh Road, a regionally important road. The onshore ECR will run to the western side of the road following open space and a public footpath.

Sector 2

11.6.12 Land use within Sector 2 is predominantly Land Use Zone A – 'to provide residential development and improve residential amenity while protecting the existing residential amenities' and Zone F – 'to preserve and provide for open space with ancillary active recreational amenities'. (DLRCC, 2022).

11.6.13 The proposed Glenavon Park flood alleviation detention basin will be located within this sector on the alignment of the Kill o' the Grange Stream (also known as Deansgrange Stream). (refer to Volume 5, Chapter 4 Water (Hydrology, Hydrogeology and Flood Risk). The onshore ECR will run to the south of the proposed basin, crossing the Kill o' the Grange Stream a second time within Loughlinstown Linear Park.

11.6.14 The proposed onshore ECR will travel along three roads in this sector namely: Gleanntain, Loughlinstown Drive and Cherrywood.

11.6.15 The onshore ECR runs through the DLRCC Parks Department depot located on the residential street 'Cherrywood' west of Loughlinstown Drive.

11.6.16 The onshore ECR crosses the European Foundation for the Improvement of Living and Working Conditions (also known as 'Eurofound'). Eurofound is an agency of the European Union which focuses on managing research, gathering information, and communicating its findings. Consultation has been undertaken with the landowner to determine an acceptable position for the HDD launch pit and onshore ECR crossing under the N11 from the Eurofound grounds.

Sector 3

11.6.17 Sector 3 at its eastern end crosses the N11 road. In order to avoid any direct impact with the operation of this national route the onshore ECR will cross the N11 by HDD, with the launch pit being located in the aforementioned Eurofound. The exit pit for the HDD is located immediately to the south of Wyattville Road (the R118) in Cherrywood Park.

11.6.18 Further west of this Sector 3 (together with Sector 4 and 5) overlaps with the Cherrywood Adopted Planning Scheme. Cherrywood was designated as a Strategic Development Zone (SDZ)[3] by Government Order in 2010, and the Planning Scheme for the SDZ was approved by An Bord Pleanála in 2014. The SDZ area extends to c.360 hectares and represents the most significant and strategic development area in DLR. The overarching vision for the Planning Scheme is:

- To create a sustainable place with a rich urban diversity, which respects its historical and natural setting while also facilitating innovation and creativity;
- To spatially develop a cohesive and diverse community with a strong identity and environmental integrity;
- To contribute to the economic growth of the county through the development of a vibrant economic community anchored around the Town Centre; and
- To provide a safe and friendly environment where people can live, work and play within an envelope of sustainable, integrated transport with a primacy of soft modes of transport throughout.

11.6.19 Development of any site that falls within, or partly within, the Planning Scheme boundary is required to align with the provisions of the SDZ Planning Scheme. The implementation of the Planning Scheme is directly linked to the commensurate delivery of both physical and community infrastructure and provides a strong degree of certainty regarding the phasing and delivery of new development. This is in tandem with the provision of essential infrastructure to serve and facilitate development.

11.6.20 The onshore ECR in this sector will travel along the existing R118, between the N11 and Junction 16 of the M50.

[3] The Government may designate certain areas of land as Strategic Development Zones (SDZ) where the development is considered to be of strategic national economic and social importance. The SDZ designation enables the fast track delivery of new residential and non-residential development. Before development can be permitted in an SDZ, it is necessary to prepare a Planning Scheme for the area. Once approved, a planning scheme forms part of the relevant Development Plan and any contrary provisions in the Development Plan are superseded.

Sector 4

11.6.21 Sector 4 continues through the aforementioned Cherrywood SDZ but will follow the route of the proposed Beckett Road in this Sector. The Applicant has engaged with DLRCC who plan to deliver 1.4 km of the proposed road infrastructure project in 2025. Cable ducts for Dublin Array will be installed with the delivery of Beckett Road, through which the Dublin Array cables will be pulled during the onshore ECR construction phase at a later date. Within this section of the onshore ECR there is an existing ESB substation on Lehaunstown Lane approximately 5 m northeast from the onshore ECR. The proposed Beckett Road includes a 500 m extension to be delivered in the future. The onshore ECR will be located within the Beckett Road extension road corridor.

11.6.22 The onshore ECR will proceed to cross the M50 after its installation in the proposed Beckett Road. Like the N11 national route, the M50 crossing will be by HDD in order to avoid any direct impact with the operation of the motorway. Beyond this crossing point the onshore ECR will follow the route of the proposed Kilternan Link Road in the Cherrywood SDZ which connects further west with the existing Golf Lane in Carrickmines.

11.6.23 The majority of Sector 4 will be located within the Cherrywood SDZ. However, in addition there is a small amount of agricultural land falling outside the Cherrywood SDZ at the aforementioned Golf Lane. This land is zoned in the DLRCC development plan as Land Use Zone B – 'to protect and improve rural amenity and to provide for the development of agriculture'.

Sector 5

11.6.24 Sector 5 is a short sector which follows the alignment of the existing Golf Lane which was referenced in Sector 4 and subsequently joining Old Glenamuck Road. As referenced in Sector 4, there are proposed upgrades to Golf Lane as part of the proposed Kilternan Link Road providing access across the M50 to the Cherrywood SDZ. The design of the new road has not been finalised.

Sector 6

11.6.25 Sector 6 contains both Land Use Zone A and Land Use Zone E – 'to provide for economic development and employment'. The onshore ECR will follow the carriageway of the existing Glenamuck Road South (R842) in this sector before crossing the alignment of the proposed Glenamuck District Road Scheme. When finished the new road will connect the existing R117 Enniskerry Road with Glenamuck Road (R842). The onshore ECR will cross under the proposed road by HDD in this location. The proposed road is currently being constructed.

Sector 7

11.6.26 The onshore ECR in Sector 7 will cross the open agricultural ground immediately south of the Carrickmines (retail) Park. The land is zoned Land Use Zone E and further east Zone F after it enters the former Ballyogan Landfill and Recycling Facility in Jamestown.

Onshore Substation (OSS) and grid connection

11.6.27 The OSS is solely located within Land Use E 'to provide for economic development and employment'. The land was formerly a water storage pond associated with the former Ballyogan Landfill Facility (refer to Volume 2, Chapter 6 Project Description). The land is also located within the boundary of the Ballyogan and Environs Local Plan. (DLRCC, 2019)

11.6.28 To the northwest of the OSS will be the route of the proposed grid connection between the proposed OSS and the proposed grid connection point at the existing Carrickmines Substation. The onshore ECR in this sector will cross the former Ballyogan Landfill Facility on land which is currently used as an access track to the former landfill and car parking/access road to the DLR Operations Centre offices on Ballyogan Road (L6034).

11.6.29 The onshore ECR will also cross over land at the former Ballyogan Landfill Facility which is now zoned Land Use Zone G in the DLR CDP 'to protect and improve high amenity areas', with longer term plans to create public amenity ground. The land is associated with the Pale Ditch archaeological receptor, located to the north of the OSS, which is described in Volume 5, Chapter 8 Archaeology Cultural Heritage.

Temporary Construction Compound (TCC) Leopardstown

11.6.30 The site of the proposed TCC is currently vacant ground within the boundary of the racecourse. It is zoned as Land Use Zone A (residential) in the CDP. The land is also located within the boundary of the Ballyogan and Environs Local Plan (DLRCC, 2019).

The Operations and Maintenance Base

11.6.31 The proposed O&M Base is located within the operational area of Dún Laoghaire Harbour. The proposals will involve the demolition and removal of infrastructure associated with the former ferry terminal which previously operated from this area.

11.6.32 The land is zoned Land Use Zone W – 'to provide for waterfront development and/or harbour related uses'. An objective of this policy is to protect the harbour/marine entity of Dún Laoghaire Harbour by facilitating harbour-related uses, but not to confine permitted uses in the harbour to a degree that exclusively attracts those with an interest in active maritime recreation. Any development proposal should seek to ensure public accessibility to the harbour and shorefront.

11.6.33 DLRCC have appointed a consultant to develop a development Masterplan for the harbour[4] . The initial consultation phase has commenced, and the general public as well as stakeholders were invited to feedback proposals for the harbour by October 2024. A draft Masterplan will now be prepared and issued for consultation in the summer of 2025 with a final masterplan aimed to be launched later in 2025.

[4] https://dlrcoco.citizenspace.com/infrastructure-climate-change/harbour-masterplan

Utilities

11.6.34 The following utilities are of relevance to the onshore infrastructure of the proposed development:

- Electricity;
- Telecommunications;
- Gas;
- Water supply;
- Wastewater and Surface Water drainage infrastructure;
- Bridges; and
- Equipment associated with Ballyogan Landfill.

11.6.35 The most significant existing utilities (e.g. due to size, strategic importance, etc.) with which the Dublin Array Onshore infrastructure will interact are described below. As the onshore ECR is predominantly located within the existing road network, it runs parallel with and crosses under/over several existing utilities.

Electricity

11.6.36 The ESB maintains both underground and overhead lines within the OES study area and the O&M Base study area. There is a 110 kilovolt (kV) overhead line (OHL) that crosses the site of the proposed OSS and 110kV and 38kV underground cables to the north of the OSS. A pylon is located to the north of the OSS site. There is also a 110kV OHL that crosses the M50 in Sector 4.

11.6.37 In terms of the remainder of the OES study area the onshore ECR crosses or runs adjacent to a low voltage underground and overhead infrastructure in all sectors. A full utility survey will be carried out prior to construction and all existing utility diversions, or temporary works will be confirmed ahead of construction commencing should they be required.

Telecommunications

11.6.38 Indicative record drawings provided by Virgin Media as well as GPR survey information indicate that there no underground telecom cables within the Landfall Site.

11.6.39 There are no underground telecoms cables within the site of the proposed OSS. There are telecoms cables within the site of the proposed O&M Base.

11.6.40 The onshore ECR runs adjacent to, and crosses telecommunications networks, specifically Virgin, throughout the majority of the route. A full utility survey will be carried out prior to construction and all existing utility diversions, or temporary works will be confirmed ahead of construction commencing should they be required.

Gas

11.6.41 There is no gas infrastructure within the proposed development boundary at the Landfall Site and within the site of the OSS.

11.6.42 The onshore ECR runs adjacent to, or crosses, a number of Gas Networks Ireland (GNI) pipelines (low pressure (LP), medium pressure (MP) and high pressure (HP)) within all sectors. The vast majority of these are 4 bar MP gas pipelines which following the road carriageway. The only exception to this is a 40 bar HP gas pipeline in Sector 4 which runs adjacent to the M50.

11.6.43 The proposed O&M Base site is connected to mains gas infrastructure.

11.6.44 A full utility survey of gas infrastructure will be carried out prior to construction and all existing utility diversions, or temporary works will be confirmed ahead of construction commencing should they be required.

Water supply

11.6.45 There is no water supply infrastructure within the proposed development boundary at the Landfall Site and within the site of the OSS.

11.6.46 Indicative record drawings provided by Uisce Éireann indicate that the onshore ECR crosses and/or runs adjacent to significant water supply infrastructure over 600 mm in diameter at various locations throughout the onshore development area. There are the following crossings:

- Clifton Park (Sector 1) – 750 mm trunk water main;
- Achill Road (Sector 1) – 600 mm trunk water main;
- N11 crossings (TX-06) – 600 mm trunk water main;
- R118 (Sector 3) – 900 mm trunk water main;
- M50 crossing (TX-07) – 800 mm trunk water main; and
- OSS – 1,200 mm trunk water main crossing the former landfill site to the west of the OSS.

11.6.47 The proposed O&M Base is connected to mains water supply infrastructure.

Wastewater and surface drainage infrastructure

11.6.48 Record drawings indicate there is drainage infrastructure within the study area of the Landfall Site. At the Landfall site the ECR will cross, perpendicularly, beneath two 600 mm sewer pipes when passing under the access road to the WWTP. At Clifton Park in Sector 1 there is a 1,200 mm gravity sewer pipe and at Loughlinstown Linear Park in Sector 2 there is a 750 mm sewer pipe.

11.6.49 The onshore ECR crosses and/or runs adjacent to wastewater and surface water infrastructure including sewers above 600 mm in diameter at various locations.

11.6.50 The is no existing wastewater drainage infrastructure within the site of the OSS, although there is an old Irish Water sewer network that passes under the landfill at a depth of approximately 8 m, which will be crossed by the grid connection. Uisce Éireann have applied to the EPA to upgrade this network. The grid connection will cross over the Ballyogan stream culvert

11.6.51 The O&M Base site is connected to wastewater and surface supply infrastructure. A full utility survey will be carried out prior to construction and all existing utility diversions, or temporary works will be confirmed.

Bridges

11.6.52 Table 6 sets out the bridges that will be directly affected by the onshore infrastructure.

Table 6 Bridges affected by the onshore infrastructure

Bridge location	Bridge structure type	Onshore infrastructure	Crossing type
Luas bridge over the R118, (Sector 3)	Luas bridge. The onshore ECR will run within the road carriageway running along the R118 that in turn runs beneath the bridge.	Onshore ECR	Open Cut Trench in road underneath existing bridge.
Landfall Site, Shanganagh Cliffs	Bridge over Dublin/Rosslare railway.	Access to the Landfall Site	Operational access to landfall/TJBs. It will also be used during construction works
Dublin/Rosslare railway bridge, Harbour Road, Dún Laoghaire Harbour	Bridge over Dublin/Rosslare railway.	Access to the proposed O&M Base	Operational access to O&M Base. It will also be used during construction works

Equipment associated with Ballyogan Landfill

11.6.53 There is a significant network of utilities associated with leachate management within the former Ballyogan landfill, some of which will need to be re-located in order to accommodate the OSS. In addition, there is a gas combustion plant immediately west of the OSS and a methane stripping plant to the northwest of the OSS.

11.7 Defining the sensitivity of the baseline

11.7.1 The sensitivity of the baseline conditions was defined according to the sensitivity of material assets receptors which will potentially be affected by the proposed onshore infrastructure. The sensitivity has been assessed using the criteria outlined in Section 11.5, and the assessed sensitive receptors are presented in Section 11.12.

11.8 Uncertainties and technical difficulties encountered

11.8.1 The assessment is principally based on a desk-based study and has utilised secondary information derived from utility providers. The assumption is made that this data is accurate. A full utility survey will be carried out prior to construction and all existing utility diversions, or temporary works will be confirmed.

11.9 Scope of the assessment

Scoped in

11.9.1 The following impacts will be assessed:

11.9.2 Construction phase

- Impact 1: Potential construction effects of the onshore infrastructure on material assets. The impact assessment addresses the potential impacts on the different receptor types identified in Section 11.6 i.e:
  - Land use and Properties including impacts on Dún Laoghaire Harbour;
  - Road and rail infrastructure;
  - Utilities comprising: electricity; telecommunications (fibre); gas; water supply; and wastewater and water drainage infrastructure; and
  - Bridges.

11.9.3 Operational phase

- Impact 2: Potential operational phase effects on the operation of the Dún Laoghaire Port.

11.9.4 Decommissioning phase

- Potential decommissioning effects of the onshore infrastructure on material assets.

11.9.5 For Impact 1, in relation to impacts on roads and rail material assets it should be noted that the Traffic and Transport chapter (Volume 5, Chapter 6) assesses the impact of Dublin Array on traffic and transportation receptors. The assessment in that chapter assesses the following impacts in respect of Traffic and Transportation: road driver vehicle delay; severance of communities; pedestrian and non-motorised user delay; non-motorised user amenity; road safety; and abnormal indivisible loads/large loads. Where relevant the Material Assets chapter draws upon the findings of the Traffic and Transport chapter.

11.9.6 As noted earlier, mobile telecommunications (television and mobile communications signals) are dealt with in the Infrastructure and Other Users chapter due to its interaction with the offshore infrastructure. The Material Assets chapter is only concerned with fixed telecommunications such as fibre.

Scoped out from further evaluation in this EIAR

11.9.7 The following impacts will not be assessed:

- Operations and maintenance activities of the OES; and
- Decommissioning activities on material assets.

11.9.8 For the remainder of the onshore infrastructure, aside from the aforementioned O&M Base operations and maintenance activities have been scoped out due to the limited number of site inspections and visits anticipated.

11.9.9 Maintenance of the onshore ECR will comprise an inspection approximately once per year or on an ad-hoc basis to respond to a cable fault or issue. However, these will be undertaken via the 26 manhole inspection covers at the joint bays every 600 – 850 m along the ECR and will not affect any existing material assets unless a repair is needed.

11.9.10 Once built and operational, the proposed OSS will function with a limited workforce, the full extent of which is presented in the Project Description chapter. There will be no material assets impacted.

11.10 Key parameters for assessment

11.10.1 For each of the impacts 'Scoped-in' to the assessment and as described in the preceding, the relevant design parameter used in assessing the impact are set out in Table 7. For the purpose of environmental assessment, the design parameters that could give rise to the maximum potential adverse impacts, in respect of receptors, have been chosen as the design parameter to assess impact against.

Table 7 Key project design parameters considered for the Material Assets impact assessment

Potential impact	Design parameter assessed	Justification
Construction		
Impact 1: Potential construction effects of onshore infrastructure on material assets	**Landfall Site** Excavation of the temporary construction compound works area, using an excavator. A TCC of approximately 9,500 m² will be required throughout Landfall and onshore ECR construction phase.	The full extent of OES construction works which could affect Material Assets is presented.
	Onshore ECR The following design parameters have been used for the onshore ECR: ▪ The total length of onshore ECR: 7,400 meters (m). ▪ Circuits: Two circuits. Each one comprising of five ducts, three of which contain electricity cables, two of which contain communication cables. ▪ Number trenches: Two trenches (one per circuit) running parallel the entire length of the ECR. ▪ Typical Cable trench dimensions: 1425 x 700 mm Two TJBs will be located underground at the Landfall Site. Each TJB will have a link box chamber and a communications chamber with an inspection manhole cover above them (i.e. four covers above ground typically be less than 5 m^2). A number of underground cable joint bays (JBs) will be constructed along the proposed onshore ECR every 600 – 850 m. Similar to the TJBs, each JB will required a link box chamber and a communications chamber co-located underground, with an inspection manhole cover at surface level (i.e. two covers at each JB location that will typically be less than 5 m^2 in combined area), There will be up to 10 sets of JBs (20 in total). All cable trenches associated with the construction phase will be reinstated. For crossings of major roads (R119 Shanganagh Road, N11, M50, proposed Glenamuck District Distributor Road); and the Dublin/Rosslare	

Potential impact	Design parameter assessed	Justification
	mainline railway, trenchless techniques (HDD or similar) will be used. **TCCs** In addition to the Landfall Site TCC, two additional TCCs will be required to support the construction phase of the onshore ECR; at Clifton Park (sector 1) and at Leopardstown. These will be required throughout the onshore ECR construction works. As above, the Landfall TCC will also be used for the construction of the onshore ECR. **Bridges** Bridges will not be directly affected by the proposed construction works apart from construction traffic accessing the public road network. All construction traffic will be compliant with weight restrictions on public roads.	
	OSS The proposed OSS will be situated within a 2-hectare (ha) site, with 1.7 ha dedicated to the OSS itself and the remaining area used for enabling works, temporary storage, and laydown areas during construction. **Grid Connection** The conditioned electricity at the OSS will be connected to the Carrickmines GCP via two 220 kV transmission circuits. The route will run generally east – west along the existing internal access road to the DLRCC Operations Centre in Ballyogan. The route will be a total 750 m in length and installed by standard open-cut trenching with no JBs.	
	O&M Base A new O&M building will be constructed on St. Michaels Pier in Dún Laoghaire Harbour. The proposed construction phase works at the O&M Base will also involve the demolition of existing harbour infrastructure, comprising:	O&M Base proposals which could affect Material Assets are presented.

Potential impact	Design parameter assessed	Justification
	▪ The existing single storey Harbour Maintenance Building located on St. Michael's Pier. ▪ The existing mooring fender which is located adjacent to St. Michael's Pier and which was previously used during berthing operations for the ferry terminal will be partially removed. ▪ The existing Ro-Ro ramp located at Berth 5 will be partially demolished to facilitate the construction of a new concrete pavement slab and hardstanding area. All proposed construction works proposed at the O&M Base are described in full in the Project Description chapter.	
Impact 2: Potential operational phase effects on the operation of the Dún Laoghaire Port.	In order to service and maintain the offshore infrastructure, a storage and coordination facility is required (referred to in this document as the Operations and Maintenance Base). The Operations and Maintenance (O&M) Base will act as a storage and loading area for small and medium spare parts for the wind turbines and small ancillary equipment such as tools and consumables.	O&M Base proposals which could affect Material Assets are presented.

11.11 Project design features and avoidance and preventative measures

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

- Project design features: These are features of the Dublin Array project that were selected as part of the iterative design process, which are demonstrated to avoid and prevent significant adverse effects on the environment in relation to material assets. These are presented within Table 8.
- Other avoidance and preventative measures: These are measures that were identified throughout the early development phase of the Dublin Array project, also to avoid and prevent likely significant effects, which go beyond design features. These measures were incorporated in as constituent elements of the project, they are referenced in the project description chapter of this EIAR and they form part of the project for which development consent is being sought. These measures are distinct from design features and are found within our suite of management plans. These are also presented within Table 8.

- Additional mitigation: These are measures that were introduced to the Dublin Array project after a likely significant effect was identified during the EIA assessment process. These measures either mitigate against the identified significant adverse effect or reduce the significance of the residual effect on the environment. The assessment of impacts is presented in Sections 11.2 and 11.4 of this EIAR chapter.

11.11.2 All measures are secured within Volume 8, Chapter 4, Schedule of Measures.

11.11.3 Where additional mitigation is identified as being required to reduce the significance of any residual effect in EIA terms, this is presented in Sections 11.12 and 11.14.

Table 8 Project design feature/other avoidance and preventative measures relating to material assets

Project design feature/other avoidance and preventative measures	Where secured
Project design features	
Use of trenchless crossing techniques will ensure the following assets can remain operational during construction of the onshore elements of Dublin Array: ▪ Dublin/Wexford railway in Sector 1. ▪ R119 Shanganagh Road in Sector 1 (TX-03). ▪ N11 road in Sector 2-3 (TX-06). ▪ M50 in Sector 4 (TX-07). ▪ Glenamuck District Distributor Road in Sector 6-7 (TX-08).	Project Description Chapter
The onshore ECR will be installed on a rolling basis. Full reinstatement will occur on a rolling basis. Areas of amenity land will be restored to maintain the current aesthetic appeal and usability of the area for the community and use matching materials and finishes. Habitats will be reinstated, or allowed to reinstate naturally, following the completion of the construction phase.	Project Description chapter
The programme for construction is presented in the Project Description chapter with the construction of the temporary compounds to facilitate the trenchless crossings at the identified locations. The reinstatement of the TCC's will be scheduled upon completion of installation. The onshore ECR will be constructed and reinstated within the programme identified on a rolling basis.	Project Description chapter
A PAS128:2022 compliant utility survey will be undertaken. If the pre-construction utility survey check work identifies existing utilities crossing the site, these will be located on site using an appropriate technique and equipment, such as Cable Avoidance Tool (CAT)/Ground Penetrating Radar (GPR) equipment, and the location clearly set out prior to	Project Description chapter

Project design feature/other avoidance and preventative measures	Where secured
any site clearance and excavations, so they can be safely exposed and positively identified, worked around or diverted.	
Preliminary site works will be required before construction commences within each onshore ECR sector. These may include: ▪ Installation of site fencing, in accordance with ecological, arboricultural and noise requirements, to demark construction site and safeguarding members of the public safety. Traffic management measures, safe pedestrian access together with necessary signage will be provided. ▪ Utility diversions and installation of temporary site drainage where required. Appropriate temporary drainage measures will also be implemented as part of the TCC enabling works to manage run-off and prevent water polluted with sediment and/or other contaminants leaving the site. This will include the implementation of measures such as filter drains, silt fencing, soakaways, infiltration trenches and settlement ponds/tanks. Where water is held in temporary locations it will be tanked off-site by a licensed service provider for treatment at a licensed wastewater facility. ▪ Protection measures during construction will include warning signs and markings indicating the location of utility infrastructure, safe digging techniques in the vicinity of known utilities, and in certain circumstances where possible, isolation of the section of infrastructure during works in the immediate vicinity.	Project Description Chapter
To facilitate construction of the onshore ECR within public land, a road opening licence will be required from DLRCC under Section 13 of the Roads Act 1993. A Traffic Management Plan (TMP) will be approved by DLRCC in advance of works commencing on site. The TMP will outline the location of traffic management signage, together with the location of any necessary road closures and the routing of appropriate diversions. Where diversions are required, these will be approved by DLRCC in advance of the preparation of the TMP.	Project Description Chapter

Project design feature/other avoidance and preventative measures	Where secured
110 kV OHL at the site of the proposed OSS Due to the presence of the existing 110 kV Overhead Line (OHL) at the site of the proposed OSS a temporary safety exclusion zone will be installed around the OHL during construction. The exclusion zone will be set back 10 m from the edge of the OHL and will be demarcated, with appropriate warning signage. A crossing point with height restrictions will also be installed to allow crossing of the exclusion zone. Where works are required inside the exclusion zone, the works will be risk assessed, and appropriate mitigation measures will be implemented as set out in the risk assessment and method statement for the construction activity at detailed design.	Project Description
Other avoidance and preventative measures	
Where works are required alongside or crossing a known utility infrastructure, precautions will be implemented by the appointed contractor to protect the infrastructure from damage, in accordance with the requirements of the utility companies, where practicable.	Volume 7, Appendix 8 CEMP In agreement with the utility operators.
A Construction Traffic Management Plan (CTMP) will be developed for the construction phase. The CTMP sets out mitigation measures that would be suitable to apply during the construction phase prior to the commencement of the construction and during the construction phase. A draft CTMP has been appended to the CEMP.	Volume 7, Appendix 8 CEMP
Welfare facilities at construction sites will be provided with portable toilets which will be maintained by an approved contractor, and the waste will be disposed of to a licensed facility.	Volume 7, Appendix 8 CEMP

11.12 Environmental assessment: Construction phase

Impact 1: Potential construction effects of onshore infrastructure on material assets

Land use and properties

11.12.1 To facilitate construction of the onshore infrastructure, permanent and temporary land take will be required.

Onshore ECR

11.12.2 Temporary land take will be required on sections of the onshore ECR including the Landfall Site TCC, Clifton Park TCC and Leopardstown TCC. These will be required to accommodate construction activities, construction compounds and access/haul routes.

11.12.3 Given that fencing will be erected around these areas these lands will not be available for their current use or for the uses designated in the zoning objectives described in Section 11.6 for the duration of the construction works in these areas. The temporary working areas will also be securely fenced for protection of the public and to prevent trespass. The fencing will remain in place for the duration of the works and until reinstatement of the land to its original condition has been completed. For the publicly accessible locations, fencing will be in-situ for:

- Landfall Site TCC, Leopardstown TCC and Clifton Park TCC – for full duration of construction works up to 36 months. Public access will be temporarily routed around these;
- HDD compounds for trenchless crossings (up to 40 working days); and
- Onshore ECR (rolling construction of the cable route typically advancing at a rate of 20 m linear per day within roads and 40 m linear per day in open greenspace).

11.12.4 Once construction works are complete, lands not permanently acquired will be returned to their original condition and use. Reinstatement is detailed in the Project Description chapter. A small amount of land will permanently change land use along the route of the onshore ECR. Details are presented in Volume 5, Chapter 3: Land, Soils and Geology of this EIAR.

11.12.5 Whilst a large proportion of land will be affected during the construction phase, the disruption to the current land use will be short term only, lasting in most cases for less than 2 months.

11.12.6 The only locations where this duration will be longer will be at the Landfall Site TCC, the Clifton Park TCC and the Leopardstown TCC where the duration will be longer term (up to 36 months). The locations chosen for these TCCs are all considered to be of low sensitivity as the land on which they will be located will be of local importance only. Therefore, at these locations, the sensitivity of the receptor will be **Low**. The magnitude of the impact will be **Medium** due to the duration of the works.

11.12.7 Careful routeing of the onshore ECR has ensured that the majority of land uses crossed are of local importance (low sensitivity) only. For these crossings the impact will be temporary and avoidance and preventative measures will be put in place to ensure the continued functioning of the material asset whilst the works are taking place.

11.12.8 This includes the DLRCC Parks depot, which is considered to be of local importance for the provision of landscaping and municipal services (low sensitivity). The onshore ECR will involve localised disruption to the operational activities normally undertaken in the depot. Dublin Array will agree the schedule and programme of work with DLRCC taking into consideration an optimal time for the works to be completed and include potential alternative provisions to accommodate the activities to be fulfil by DLRCC. On this basis, the magnitude of Impact is considered to be Low. The significance of effect will be **Slight**, which is **not significant** in EIA terms.

11.12.9 Eurofound is the only land use receptor on the route of onshore ECR which is considered to be of greater than local importance (Medium sensitivity). Dublin Array will ensure the continued operation of the activities of Eurofound for the duration of the construction works. Land use will be temporarily affected during the construction phase. However, project design features or avoidance and preventative mitigation measures proposed will be used to ensure continued functioning of the material asset whilst construction works are ongoing. The magnitude of impact is therefore considered to be of **Low** magnitude. The significance of effect will be **Slight**, which is **not significant** in EIA terms.

Table 9 Impact 1 Land use (onshore ECR) sensitivity and magnitude summary

Impact 1 Land use (Onshore ECR)	Sensitivity	Magnitude	Significance
Existing land uses at TCCs	**Low** (the locations for these will be of no greater than local importance)	**Medium** (the impact will last for more than 12 months)	Slight
DLRCC Parks Depot (Cherrywood west of Loughlinstown Drive)	**Low** (the receptor is of local importance)	**Low** (the impact will be temporary and avoidance and preventative measures in place to ensure continued functioning of the material asset whilst the works are taking place).	Slight
Eurofound (Cherrywood west of Loughlinstown Drive)	**Medium** (material asset of regional importance).	**Low** (the impact will be temporary and avoidance and preventative measures in place to ensure continued functioning of the material asset whilst the works are taking place).	Slight
Existing land uses along the remainder of the onshore ECR	**Low** (receptors crossed will be of no greater than local importance)	**Low** (the impact will be temporary and avoidance and preventative measures	Slight

Impact 1 Land use (Onshore ECR)	Sensitivity	Magnitude	Significance
		in place to ensure continued functioning of the material asset whilst the works are taking place)	

OSS

11.12.10 As set out in Section 11.6 the proposed OSS will be located on land which was formerly a settling pond associated with the former Ballyogan Landfill Facility (refer to the Project Description chapter). The OSS will be accessed via an upgraded existing access from Ballyogan Road which also provides access to the operational landfill gas compound and methane stripping plant and the DLR Operations Centre. All of these existing operations will continue to operate throughout the OSS construction phase. A description of the OSS construction process is set out in the Project Description chapter.

11.12.11 The sensitivity of the area is considered to be Low as it is considered to be a receptor of Local importance. Construction operations will be undertaken in a manner ensuring that existing operations at the adjacent DLRCC Operations centre continued as normal. Accordingly the magnitude of the impact is considered to be **Low**. Therefore, an overall significance of negative, **Slight** and short-term is anticipated which is **not significant** in EIA terms.

O&M Base

11.12.12 The proposed O&M Base is located within the operational area of Dún Laoghaire Harbour. The proposals will involve the demolition and removal of infrastructure associated with the former ferry terminal which previously operated from this area.

11.12.13 The O&M Base will be accessed via an existing access from Harbour Road in Dún Laoghaire which also provides access to storage and harbour offices in this area. Access will be taken directly on to the public road network avoiding further interaction with the wider port area including the commercial and recreational activities undertaken there. During the construction phase the harbour will continue to operate as normal with no disruption to day-to-day operations occurring. A description of the O&M Base construction phase is set out in the Project Description Chapter.

Table 10 Impact 1 Land Use (OSS and O&M Base) sensitivity and magnitude summary

Impact 1 Land use (OSS and O&M Base)	Sensitivity	Magnitude	Significance
Existing land use at OSS (DLR Operations Centre and landfill gas generation)	**Low** (the location for these is of no greater than local importance)	**Medium** (land use temporarily affected during the construction phase. However, project design features and avoidance and preventative measures proposed will be used to minimise disruption to functioning of the material asset whilst construction works are ongoing.)	Slight
Existing land use at O&M Base (Dún Laoghaire Harbour)	**Medium** (material asset of regional importance).	**Low** (land use temporarily affected during the construction phase. However, project design features and avoidance and preventative measures proposed will be used to ensure continued functioning of the material asset whilst construction works are ongoing.)	Slight

Road and rail infrastructure

11.12.14 During the construction phase the onshore ECR will cross under the existing Dublin/Rosslare Railway Line at the Landfall Site. HDD will be utilised to cross under the railway line, with the final details to be agreed with Irish Rail prior to construction (albeit technical acceptance has been provided in writing from Irish Rail for the exact location and a number of boreholes under the railway line).

11.12.15 Given that the cables will be laid using trenchless technology under the railway, in accordance with Irish Rail requirements, there will be no significant impact arising from proposed development on the railway line. Consultation has been undertaken with Irish Rail to agree crossing methodologies.

11.12.16 The onshore ECR will run underneath the Luas Green Line in Sector 3 following the carriageway of the R118. The onshore ECR will not directly affect the Luas line as the Luas line crosses the R118 by an overpass in this area.

11.12.17 As set out in the description of the receiving environment, the proposed onshore ECR will cross the M50 motorway and N11 national road. These crossings will be undertaken using trenchless technology HDD, with the final proposed crossing methodology to be agreed with TII. As a result, there will be **no significant** impact arising from proposed development on the M50 and N11 during the construction phase.

11.12.18 The M50, N11 and Dublin/Rosslare railway line are considered to have a High sensitivity rating due to the national importance of these infrastructure assets. The Luas Green Line has been assigned High sensitivity also as it is a nationally important transport corridor providing access into Dublin. However, given that trenchless techniques (HDD or similar) will be utilised for all of these crossing points along the onshore ECR it is anticipated that there should be negligible disruption to services throughout the construction phase. Accordingly, a magnitude impact rating of **Negligible** is applied to this assessment. As a result, the onshore infrastructure will have a **Not Significant** effect on nationally important road and rail infrastructure.

11.12.19 A description of the onshore ECR including the interfaces with public roads is provided in the Project Description chapter. Consultation has been undertaken with DLRCC in relation to construction works within sections of the public road.

11.12.20 Installation of the onshore ECR will be undertaken on a rolling basis and full reinstatement will take after the onshore ECR has been installed. These roads are assessed as regional and local roads and are considered to be of **Medium** sensitivity. Therefore, significance of effect is anticipated to be **Slight**. Effects on driver delay and safety are included in the Traffic and Transport Chapter.

Table 11 Impact 1 Roads and Rail Infrastructure sensitivity and magnitude summary

Impact 1 Land use (Roads and Railways)	Sensitivity	Magnitude	Significance
Landfall and onshore ECR			
National or nationally important Roads and Railways Material Assets -Dublin/Wexford railway -Luas -M50 -N11	**High** (receptors of national importance)	**Negligible** (onshore ECR will cross under these by HDD no change occurring to land or disruption to service. In the case of the Luas, the onshore ECR will run under it following the route of the R118)	Not significant
Regional Roads -R119 Shanganagh Road -R118 (Cherrywood) -Ballyogan Road	**Medium** (receptors of regional importance)	**Negligible** (onshore ECR will either cross under these by HDD or in the case of the R118, the onshore ECR will be installed in one carriageway of a dual carriageway road. No change occurring to land or disruption to service)	Not significant
Local Roads including bridges -other public roads followed by the onshore ECR	**Low** (receptors of local importance only)	**Low** (Traffic management measures will be put in place during construction works – see Section 11.11)	Slight
OSS and O&M Base			
The construction of the OSS and the O&M Base will not have any direct impact on roads or rail infrastructure. Construction access routes to these will follow public roads. Impacts on driver delay are assessed in the Traffic and Transportation chapter.			

Utilities

11.12.21 As set out in the Project Description chapter and described in Section 11.11 a PAS128:2022[5] compliant utility survey will be undertaken. If the pre-construction utility survey check work identifies existing utilities crossing the site, these will be located on site using an appropriate technique and equipment, such as Cable Avoidance Tool (CAT)/Ground Penetrating Radar (GPR) equipment, and the location clearly set out prior to any site clearance and excavations, so they can be safely exposed and positively identified, worked around or diverted.

11.12.22 Consultation has been undertaken with major utility providers to agree crossing methodologies with key utility assets at known locations.

Electricity

OSS

11.12.23 As set out in Section 11.11 a temporary safety exclusion zone will be installed around the existing 110 kV OHL during construction. The exclusion zone will be set back 10 m from the edge of the OHL and will be demarcated, with appropriate warning signage. A crossing point with height restrictions will also be installed to allow crossing of the exclusion zone. With these measures in place the magnitude of impact is anticipated to be **Negligible** on this **High** sensitivity receptor.

11.12.24 The TCC locations, the OSS and O&M Base construction sites will be powered by diesel generators. Construction works along the route of the proposed onshore ECR will be undertaken by mobile plant. There will be no impact on material assets.

11.12.25 Given the onshore ECR will cross or run adjacent to several existing high voltage electricity lines, both underground and overhead, crossings of these will be required. However, given that any disruption of the service will be minimal, the magnitude of impact is assessed as **Negligible**. Therefore, the effects on electricity utilities **High** sensitivity from the proposed onshore infrastructure are considered to be **Not Significant**.

[5] PAS 128:2022 is a Publicly Available Specification developed by the British Standards Institution (BSI) to provide a standardized approach to underground utility detection, verification, and mapping.

Table 12 Impact 1 Utilities (Electricity) sensitivity and magnitude summary

Impact 1 Utilities (Electricity)	Sensitivity	Magnitude	Significance
110 kV OHL at the OSS site	**High** (Material Asset of national importance)	**Negligible** (OHL will be left in situ and mitigation measures in place during construction works)	Not significant
Electricity infrastructure crossed by the onshore ECR	**High** (Material Assets of regional and national importance)	**Negligible** (full utility searches will be undertaken and mitigation measures agreed with utility providers)	Not significant

Telecommunications

11.12.26 The telecommunications network within the study area consists of overhead and underground telecommunications lines and fibre optic cables.

11.12.27 There is the potential for interaction with telecommunications in a number of locations during the construction phase. As fibre telecommunications are considered utilities with high importance, the sensitivity of telecommunications receptors is assessed as **High**.

11.12.28 However, where the onshore cable route passes beneath existing overhead telecommunications services, suitable fencing, goal post (height restrictors for construction traffic), and guarding will be installed during construction in accordance with best practice. Crossings will be undertaken in accordance with the requirements of the utility company.

11.12.29 The magnitude of impact arising from the construction of the proposed development is considered to be **Negligible**. Consequently, the effects of the proposed development on telecommunication utilities is considered **Not Significant**.

Table 13 Impact 1 Utilities (Telecommunications) sensitivity and magnitude summary

Impact 1 Utilities (Telecommunications)	Sensitivity	Magnitude	Significance
Telecommunications – overhead and fibre	**High** (Material Asset of national importance)	**Negligible** (full utility searches will be undertaken and mitigation measures agreed with utility providers)	Not significant

Gas

11.12.30 Installation of the onshore ECR will involve the crossing of several GNI pipelines. As set out in Section 11.6, the vast majority of these are 4 bar MP gas pipelines which are considered to be **Medium** sensitivity receptors as they are of regional importance. There is one 40 bar HP gas pipeline in Sector 4, which will be crossed by the onshore ECR. This is considered to be a material asset of **High** sensitivity due to its national importance. Crossings will be undertaken in strict accordance with the requirements of GNI Code of Practice for Working in the Vicinity of the Transmission Network (May 2021).

11.12.31 The magnitude of impact arising from the construction of the onshore infrastructure on Gas infrastructure is assessed as Negligible. Consequently, the effects of the proposed development on Gas infrastructure is considered **Not Significant**.

Table 14 Impact 1 Utilities (Gas) sensitivity and magnitude summary

Impact 1 Utilities (Gas)	Sensitivity	Magnitude	Significance
40 bar HP gas pipeline Sector 4	**High** (Material Asset of national importance)	**Negligible** (gas pipeline will be left in situ and mitigation measures agreed with GNI)	Not significant
4 bar MP gas pipelines	**Medium** (Material Assets of at highest regional importance)	**Negligible** (full utility searches will be undertaken and mitigation measures agreed with GNI)	Not significant

Water supply

11.12.32 The baseline study identified that there are several watermains in the vicinity of the onshore infrastructure. Consultation has been undertaken with Uisce Éireann and the crossing of these utilities is not anticipated to result in any disruption to supply. The sensitivity of this infrastructure is considered to be **High**. Crossings will be undertaken in accordance with the requirements of Uisce Éireann[6].

11.12.33 The magnitude of impact on Water Supply infrastructure is considered to be Negligible during the construction phase. Therefore, the proposed development will have a **Not Significant** effect on water supply infrastructure.

[6] https://www.water.ie/connections/developer-services/diversion-and-build-over

Table 15 Impact 1 Utilities (Water) sensitivity and magnitude summary

Impact 1 Utilities (Water)	Sensitivity	Magnitude	Significance
Water infrastructure	**High** (Material Assets of at highest national importance)	**Negligible** (water pipelines will be left in situ and mitigation measures agreed with asset owner)	Not significant

Wastewater and surface water infrastructure

11.12.34 Wastewater arising from the temporary TCCs will be stored in wastewater holding tanks, which will be emptied on a regular basis by licensed/authorised contractors and disposed at a licensed facility appropriately located and with sufficient capacity. Welfare facilities at the working areas along the onshore ECR will be provided via portable toilets which will be maintained by an approved contractor, and the contents disposed of to a licensed facility. The sensitivity of this infrastructure is considered to be **Medium**, as it is assumed this asset will be of regional importance. The Impact on this capacity during the construction phase is expected to be **Negligible**.

11.12.35 Therefore, the effects on wastewater treatment capacity during the construction phase will be **Not Significant**.

11.12.36 As identified in the baseline study, the onshore ECR interacts with numerous wastewater and surface water drainage infrastructure assets. Given the importance of drainage infrastructure the sensitivity of these receptors is considered to be **High**. However, the crossing of these utilities is not anticipated to result in any disruption to services which leads to a magnitude impact rating of **Negligible** during the construction phase. Crossings will be undertaken in accordance with the requirements of Uisce Éireann.

11.12.37 Therefore, the onshore infrastructure will have a **Not Significant** effect wastewater and surface water infrastructure.

Table 16 Impact 1 Utilities (Wastewater and Surface Water) sensitivity and magnitude summary

Impact 1 Utilities (Wastewater and Surface Water)	Sensitivity	Magnitude	Significance
Wastewater and surface water Infrastructure	**High** (Material Assets of at highest national importance)	**Negligible** (wastewater pipelines will be left in situ and mitigation measures agreed with asset owner)	Not significant

Summary of construction phase effects

11.12.38 The likely significant effects arising from the construction of the proposed development on material assets are summarised in Table 17. As noted, there are no significant effects in EIA terms arising from the construction of the onshore infrastructure on material assets.

Table 17 Summary of construction phase effects

Assessment topic	Potential effect
Land use due to direct construction impacts	**Slight adverse**
Road and rail infrastructure (national or regional road and railway infrastructure)	**Not significant**
Local roads	**Slight adverse**
Utilities – Electricity	**Not significant**
Utilities – Telecommunications	**Not significant**
Utilities – Gas	**Not significant**
Utilities – Water supply	**Not significant**
Utilities – Wastewater infrastructure	**Not significant**
Utilities – Surface water infrastructure	**Not significant**

Proposed mitigation

11.12.39 No further mitigation beyond the measures set out in Section 11.11 are necessary.

11.13 Environmental assessment: Operational phase

Impact 2: Potential operational phase effects on the operation of Dún Laoghaire Harbour

Land use and properties

11.13.1 The proposed development will provide offices and warehouse space together with berthing facilities for maintenance vessels (hereafter referred to as crew transfer vessels (CTVs)) associated with the ongoing operation and maintenance of the Dublin Array.

11.13.2 The site of the proposed O&M Base includes a maintenance depot and service yard for maintenance activities associated with harbour operations by DLRCC. The current infrastructure within the site includes a parking area, office buildings, storage buildings and storage containers. Following the development of the O&M Base, the existing harbour operations will continue. Due to its regional importance, the harbour is considered to be of **Medium** importance.

11.13.3 As set out in Section 11.6, the land at the site of the proposed O&M Base is zoned Land Use Zone W – 'to provide for waterfront development and/or harbour related uses'. An objective of this policy is to protect the harbour/marine entity of Dún Laoghaire Harbour by facilitating harbour-related uses, but not to confine permitted uses in the harbour to a degree that exclusively attracts those with an interest in active maritime recreation. Any development proposal should seek to ensure public accessibility to the harbour and shorefront.

11.13.4 The O&M Base will not affect the operation of the harbour as a material asset, either in terms of its commercial use or for recreational purposes. In this respect the magnitude of the impact is considered to be **Negligible**. Accordingly, the significance of the effect is considered to be **Not Significant**.

11.14 Environmental assessment: decommissioning effects

Onshore Electrical System

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

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

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

- The baseline environment at the time decommissioning works are carried out;
- Technological developments relating to decommissioning of onshore transmission infrastructure;
- Changes in what is accepted as best practice relating to decommissioning of onshore transmission infrastructure;

- Submissions or recommendations made by interested parties, organisations and other bodies concerned with decommissioning of onshore transmission infrastructure; and
- Any new relevant regulatory requirements.

11.14.4 Further, any decommissioning works must:

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

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

O&M Base

11.14.6 A Decommissioning and Restoration Plan has been included in Volume 7 Appendix 7.2 of the Environmental Impact Assessment Report. As outlined in the Decommissioning and Restoration Plan, the O&M building will be either re-purposed for an alternative use, or demolished following the decommissioning of the offshore infrastructure.

11.14.7 Following the decommissioning of the offshore infrastructure the fencing and pontoon will be removed, and the hardstanding area will be taken over by DLRCC for general harbour operations.

11.14.8 Decommissioning activities for the OES and the O&M Base are not anticipated to exceed the construction phase design parameters which have been assessed in Section 11.12. Accordingly, it is anticipated that there will be the same level of impact and resulting level of effect and significance (or less) in comparison to the assessment of construction effects set out in Section 11.12 of this chapter.

11.15 Environmental assessment: Cumulative effects

Onshore projects for cumulative assessment

11.15.1 The specific projects scoped into this cumulative impact assessment, and the tiers into which they have been allocated are presented in Table 18 below. The operational projects included within the table are included due to their completion/commission subsequent to the data collection process for Dublin Array and as such not included within the baseline characterisation.

Table 18 Tier descriptions

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

Effect 1: Potential construction phase effects of onshore infrastructure on material assets

Overview

11.15.2 This section outlines the cumulative impact assessment on material assets and takes in account the impacts of the proposed development alone, together with other plans and projects. As outlined in the Cumulative Impact Assessment Methodology chapter (Volume 2, Chapter 4), the screening process involved determination of appropriate search areas for projects, plans and activities and Zones of Influence (ZoIs) for potential cumulative effects. These were then screened according to the level of detail publicly available and the potential for interactions with regard to the presence of an impact pathway as well as spatial and temporal overlap.

11.15.3 The CEA long list of projects, plans and activities with which Dublin Array's onshore infrastructure has the potential to interact with to produce a cumulative impact is presented within the Cumulative Impact Assessment Methodology chapter. Each plan and project has been considered on case by case basis with the maximum suite of projects identified from a long list within a search area defined as 200 m from the OES and O&M Base is considered appropriate for this exercise in relation to material assets receptors as this is considered to encapsulate the reasonable zone of influence of the onshore infrastructure on material assets receptors.

Projects for cumulative assessment

11.15.4 The specific projects scoped into this cumulative impact assessment on material assets receptors, and the tiers into which they have been allocated are presented in Table 19 below.

Table 19 Projects for cumulative assessment

Development type	Project Name	Current Status of Development	Data confidence assessment/phase	Planned programme
Tier 1				
District Road Scheme	Glenamuck District Road Scheme	Consented – construction commenced	High – Consented	Construction has started
Tier 2				
Road Re-alignment and Ancillary Amendments	Beckett Road Re-alignment and Ancillary Amendments	Consented	High – Consented	Construction has not started
Tier 3				
Flood relief scheme	Deansgrange Flood Relief Scheme at Glenavon Park	Pre-application	High – designs developed	2025
Coastal protection measures	The East Coast Railway Infrastructure Protection Project (ECRIPP).	Pre-application	Low – currently at project concept, feasibility and option selection stage	Post 2027
Electricity infrastructure	Dublin Replacement Underground Cable Programme CP1146 Carrickmines to Poolbeg Cable Replacement	Pre-application	Medium – route options identified	Post 2026

Development type	Project Name	Current Status of Development	Data confidence assessment/phase	Planned programme
National Watersports Campus	National Watersports Campus, Dún Laoghaire	Pre-application	Medium - concept development	Post 2026

Impact 7: Cumulative changes to materials assets

11.15.5 The potential for significant cumulative effects is presented in Table 20 .

Table 20 Determination of potential for cumulative changes to material assets

	Justification
Step 1: Drivers	Changes to the baseline environment through the construction of shortlisted projects within the study area could potentially affect material assets.
Step 2: Pressures	Interaction between these projects and the Dublin Array onshore infrastructure on the same material asset could potentially have an additive effect. Whilst this may potentially happen the impact assessment for Dublin Array has concluded that on the basis of avoidance and preventative measures set out in Section 11.11, the effects on Material Assets will be Not Significant. Avoidance and preventative measures adopted for these short listed projects including securing the consent of landowners and strictly following utility company's requirements will ensure that they also have no significant effects on material assets.
Step 3: States	The states which may be affected are the material assets within the zone of influence for the cumulative assessment.
Step 4: Impacts	The effects on material assets from the project alone were deemed to be Not Significant. Despite being potentially additive, it is not anticipated that the cumulative changes arising from the developments will be measurable or be significant in EIA terms when considered cumulatively.
Step 5: Responses	No additional mitigation to that already identified in Section 11.11 is considered necessary to prevent significant effects.
Conclusion	Despite being potentially additive, it is not anticipated that the cumulative changes arising from the developments will be measurable at the identified receptors or be significant in EIA terms when considered cumulatively.

11.16 Interactions of the environmental factors

11.16.1 A matrix illustrating the likely interactions of the foregoing arising from the Dublin Array on Material Assets receptors is provided in Volume 8, Chapter 1: Interactions of the Environmental Factors.

11.16.2 Interactions of the foregoing are considered to be the effects and associated effects of different aspects of the proposal on the same receptor. These are considered to be:

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of Dublin Arrau (construction, operation, and decommissioning) to interact and potentially create a more significant effect on a receptor than if just assessed in isolation in these three project phases; and
- Receptor-led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. For example, all effects on material assets may interact to produce a different, or greater effect on a receptor than when the effects are considered in isolation. Receptor-led effects might be short-term, temporary or transient effects, or incorporate longer-term effects. In the case of Material Assets there are no instances where there are multiple impacts on the same receptor. Therefore, this is scoped out of the assessment.

11.16.3 As indicated in the interactions matrix (Volume 8, Chapter 1: Interactions of the Environmental Factors), there are linkages between the topic-specific chapters presented within this EIAR, whereby the effects assessed in one chapter have either the potential to result in secondary effects on another receptor (e.g. effects on material assets (roads) have the potential to result in secondary effects on traffic flows on roads.

11.16.4 Effects on Material Assets have the potential to have secondary effects on other receptors which have been fully assessed in the topic-specific chapters. These chapters are:

- Infrastructure and Other Users – Volume 5, Chapter 11; and
- Traffic and Transport – Volume 5, Chapter 6.

Project lifetime effects

11.16.5 Project lifetime effects consider impacts from the construction, operation, or decommissioning of the proposed development on the same receptor (or group). The potential inter-related effects that could arise in relation to Material Assets receptors are presented in Table 21.

11.16.6 The following potential effects have been considered within the interactions assessment:

- Potential effects on the operation of Dún Laoghaire Harbour due to the construction, operation and decommissioning of the O&M Base.

Table 21 Project lifetime effects – material assets

Impact Type	Effects (assessment alone)			Interaction assessment
	Construction	O&M	Decommissioning	Project lifetime effects
Impacts to operation of Dún Laoghaire Harbour	Slight adverse	Negligible	Slight adverse	The construction, operation and decommissioning of the O&M Base will not affect the operation of the harbour as a material asset, either in terms of its commercial use or for recreational purposes. The impact is assessed as being Slight Adverse or Negligible across all project phases, which is not significant in EIA terms. The interaction of these impacts across the stages of the Dublin Array lifecycle is not predicted to result in an effect of any greater significance than those assessed in the individual project phases.

11.17 Transboundary statement

11.17.1 There are no national transboundary implications with regards to onshore Archaeology and Cultural Heritage.

11.18 Summary of effects

11.18.1 This chapter has identified the potential direct and indirect impacts upon material assets as a result of the onshore infrastructure. All other impacts associated with the construction, operation and maintenance, and decommissioning phases of Dublin Array have been scoped out in this chapter.

11.18.2 See Table 22 for a summary of effects.

Table 22 Summary of effects

Description of effect	Effect	Possible mitigation measures	Residual effect[7]
Construction			
Potential construction effects of onshore infrastructure on material assets	Slight Adverse	None beyond those set out in Section 11.11	Slight Adverse
Operation and maintenance			
Operation of Dún Laoghaire Port	Not significant	None beyond those set out in Section 11.11	Not significant
Decommissioning			
Decommissioning effects are considered to be the same or less to the construction phase.			
Cumulative effects			
Potential construction effects of onshore infrastructure on material assets	Not Significant	None beyond those set out in Section 11.11	Not significant
Transboundary			
N/A			

[7] Maximum effect derived from the impact assessment

11.19 References

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Registered office:
Unit 5,
Desart House,
Lower New Street,
Kilkenny
www.RWE.com