

Chapter 29: Material Assets





ORIEL WIND FARM PROJECT

Environmental Impact Assessment Report Chapter 29: Material Assets

MDR1520B
EIAR – Chapter 29
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March 2024

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29 CHAPTER 29 – MATERIAL ASSETS

29.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) identifies, describes and presents an assessment of the likely significant effects of the Oriel Wind Farm Project (hereafter referred to as “the Project”) on material assets during the construction, operational and maintenance and decommissioning phases of the Project. The assessment presented is informed by the following chapter:

- Chapter 5: Project Description.

The EPA ‘Guidelines on the information to be contained in Environmental Impact Assessment Reports’ (2022) states that *‘material assets can now be taken to mean built services and infrastructure’* and lists *‘built services, roads and traffic, and waste management’* as topics under which environmental factors could be considered in an EIAR. This chapter addresses the built services element. The other elements referred to in the EPA Guidelines are addressed in other chapters of this EIAR, namely:

- Chapter 28: Traffic and Transport; and
- Chapter 30: Resource and Waste Management.

This chapter addresses onshore built services and infrastructure only. Offshore infrastructure including communication devices, cables, and pipelines are addressed in the following chapters (in volume 2B):

- Chapter 14: Aviation, Military and Communications; and
- Chapter 16: Infrastructure, Marine Recreation and Other Users.

Architectural and archaeological heritage was previously considered to be a subcategory of material assets under Directive 2011/92/EU. However, Directive 2014/52/EU amended this to consider those as components of cultural heritage. This EIAR has assessed elements related to onshore cultural, architectural, and archaeological heritage in the following chapters:

- Chapter 15: Marine Archaeology (volume 2B); and
- Chapter 26: Cultural Heritage (volume 2C).

The following built services and infrastructure were identified for assessment in this chapter:

- Electricity (ESB);
- Gas (Gas Networks Ireland (GNI));
- Telecommunications (Eir, ComReg);
- Potable watermains and foul sewers (Uisce Éireann (formerly Irish Water) (UE)); and
- Rail services.

The details and competencies of the specialist who prepared this chapter can be found in volume 2A, chapter 1: Introduction.

29.2 Purpose of this chapter

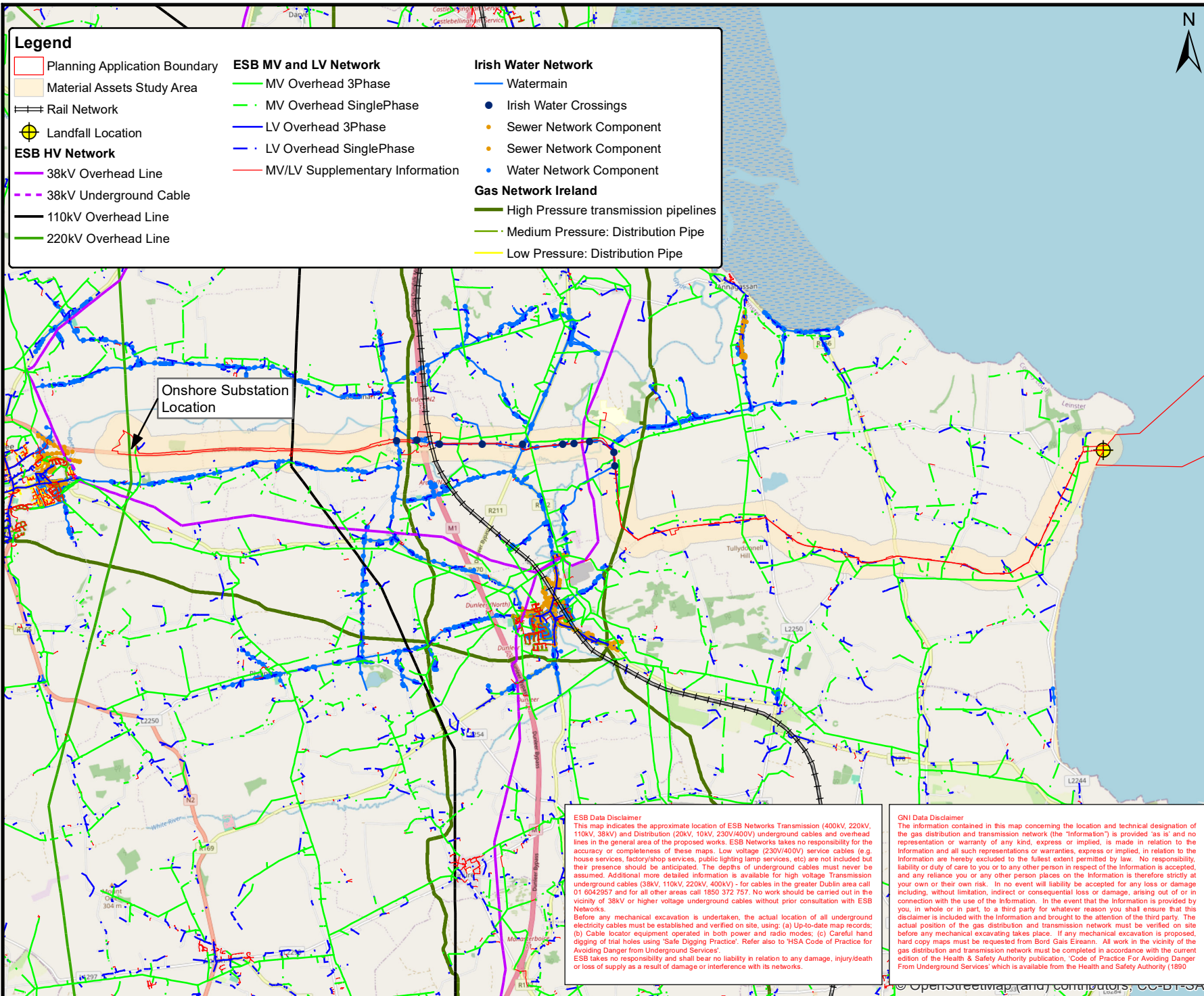
The primary purpose of this EIAR chapter is to assess the likely direct and indirect effects of the Project on material assets. In particular, this chapter:

- Presents the existing environmental baseline established from desk studies (section 29.7);
- Identifies any assumptions and limitations encountered in compiling the environmental information (section 29.7.9);
- Presents the potential likely significant effects on material assets arising from the Project, based on the information gathered and the analysis and assessments undertaken (section 29.10). An assessment of potential cumulative impacts is provided in section 29.11 and an assessment of transboundary effects is outlined in section 29.12; and
- Highlights any necessary monitoring (section 29.10.3) and/or mitigation measures (section 29.8.2 and 29.10.2) which could prevent, minimise, reduce, or offset the possible environmental effects identified in the EIAR (section 29.10).

29.3 Study area

There are no guidelines or criteria to define the size of the study area for the assessment of material assets. The Material Assets Study Area (Figure 29-1) has been defined by RPS for the purpose of this assessment as the area in which there is potential for direct and indirect impact on material assets as a result of the Project. This includes the area within the proposed planning application boundary for the onshore infrastructure of the Project and an area extending 300 m from this boundary.

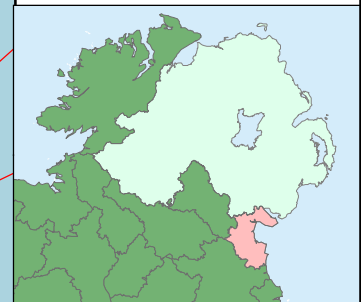
Figure 29-2, Figure 29-3, Figure 29-4 and Figure 29-5 show the approximate locations of the built services present in and within the vicinity of the Material Assets Study Area.



Legend

- Planning Application Boundary
- Material Assets Study Area
- Rail Network
- Landfall Location
- ESB HV Network**
 - 38kV Overhead Line
 - 38kV Underground Cable
 - 110kV Overhead Line
 - 220kV Overhead Line
- ESB MV and LV Network**
 - MV Overhead 3Phase
 - MV Overhead SinglePhase
 - LV Overhead 3Phase
 - LV Overhead SinglePhase
 - MV/LV Supplementary Information
- Irish Water Network**
 - Watermain
 - Irish Water Crossings
 - Sewer Network Component
 - Sewer Network Component
 - Water Network Component
- Gas Network Ireland**
 - High Pressure transmission pipelines
 - Medium Pressure: Distribution Pipe
 - Low Pressure: Distribution Pipe

Data Sources: OWL, Taitte Éireann, EPA, GSI, ESB, UE



Client

ORIEL WINDFARM
 OFFSHORE RENEWABLE ENERGY

Project
Oriel Wind Farm Project

Title
**Figure 29-1
 Material Assets
 Study Area**

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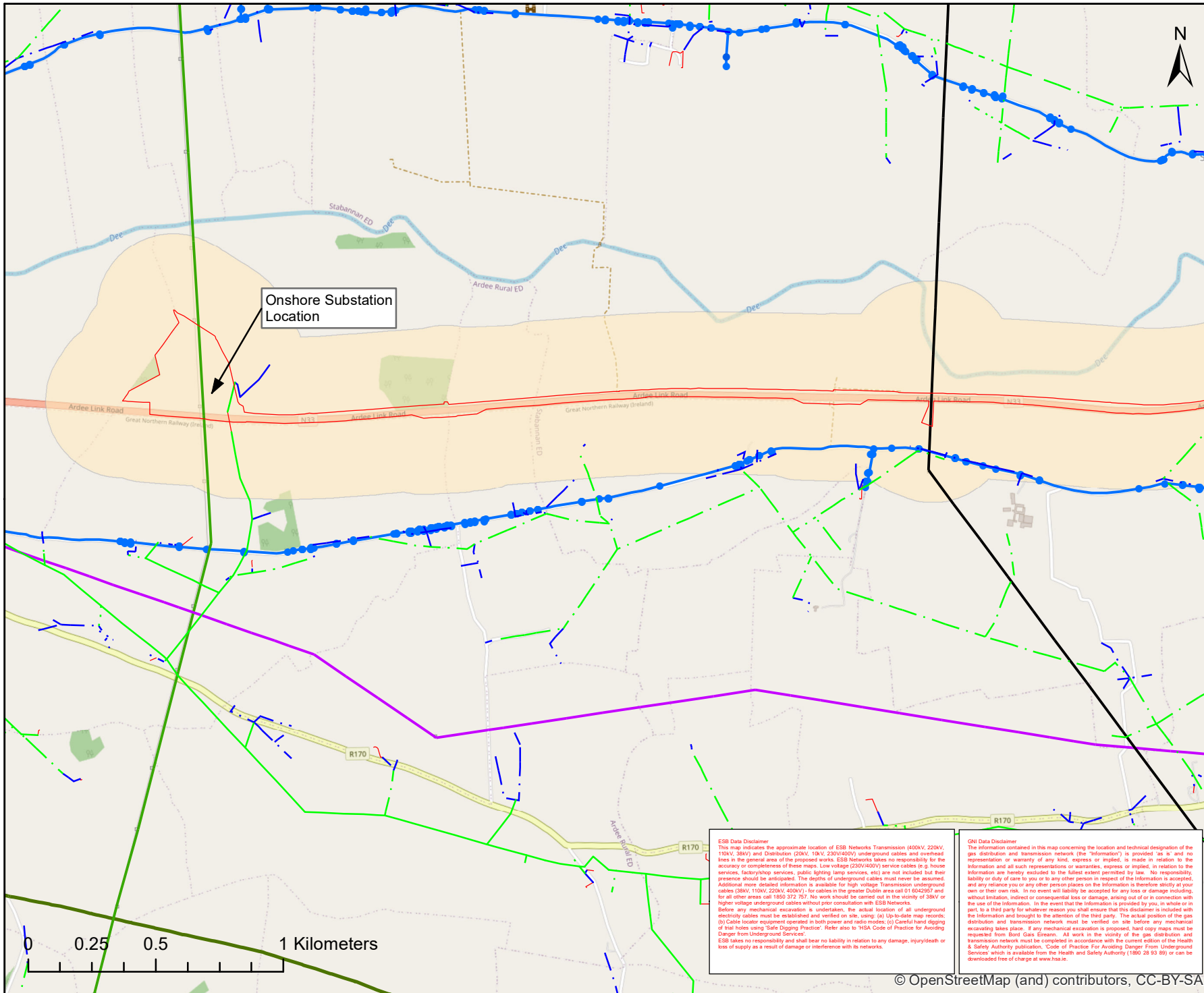
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 Before any mechanical excavation is undertaken, the actual location of all underground electricity cables must be established and verified on site, using: (a) Up-to-date map records; (b) Cable locator equipment operated in both power and radio modes; (c) Careful hand digging of trial holes using 'Safe Digging Practice'. Refer also to 'HSA Code of Practice for Avoiding Danger from Underground Services'.
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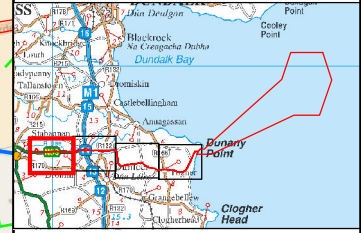
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Onshore Substation Location

- ### Legend
- Planning Application Boundary
 - Material Assets Study Area
 - ESB MV and LV Network**
 - MV Overhead 3Phase
 - MV Overhead SinglePhase
 - LV Overhead 3Phase
 - LV Overhead SinglePhase
 - MV/LV Supplementary Information
 - ESB HV Network**
 - 38kV Overhead Line
 - 110kV Overhead Line
 - 220kV Overhead Line
 - Gas Network Ireland**
 - High Pressure transmission pipelines
 - Irish Water Network**
 - Watermain
 - Water Network Component

Data Sources: OWL, Taite Éireann, EPA, GSI, ESB, UE



Client



ORIEL WINDFARM
OFFSHORE RENEWABLE ENERGY

Project

Oriel Wind Farm Project

Title

**Figure 29-2:
Approximate locations of
the known built services
Map 1 of 4**

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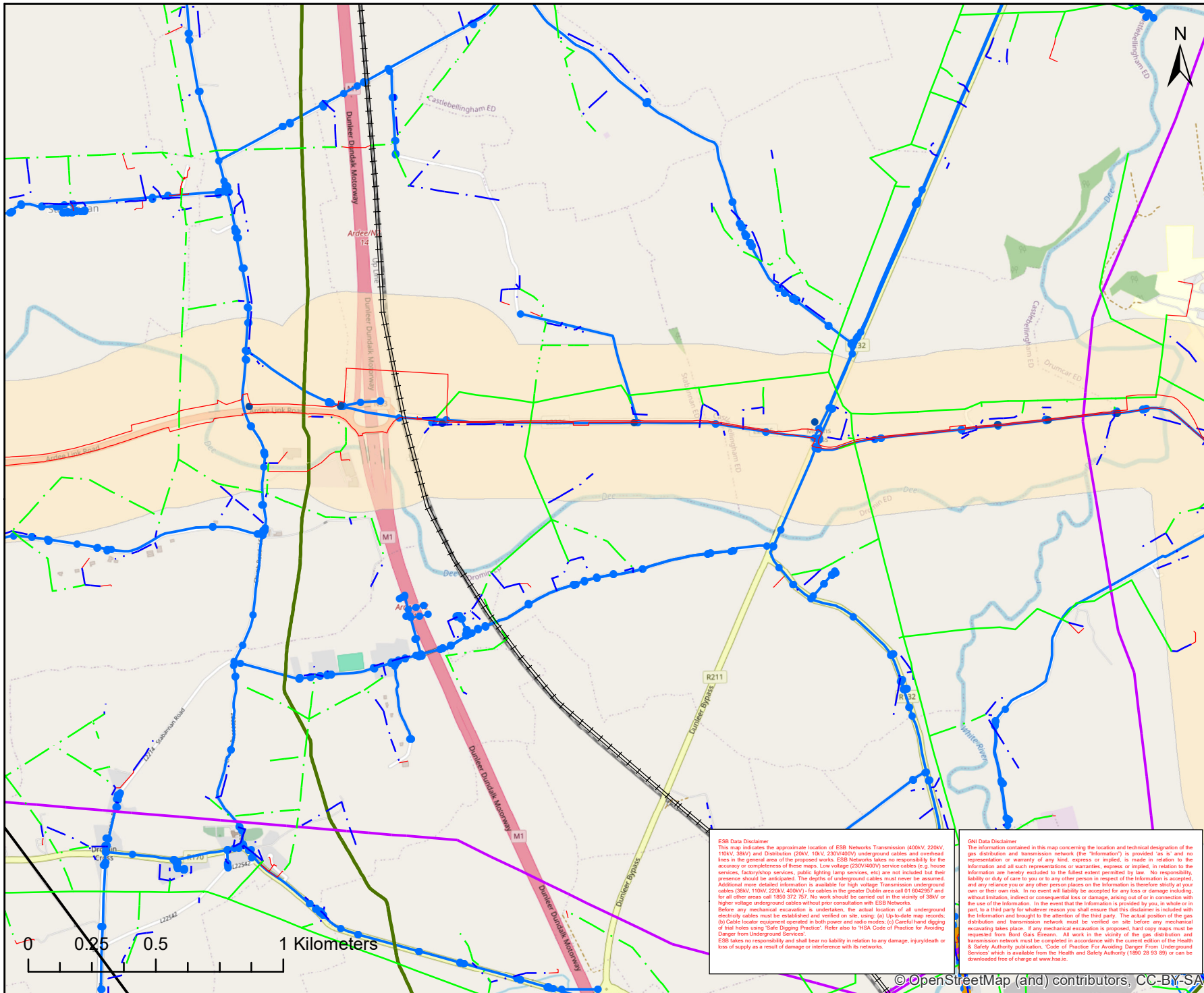
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Approved By: CC	MDR1520b-Arc3013F02
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Date: 01/03/2024	ITM (IRENET95) Geographic Co-ordinates: ETRS89

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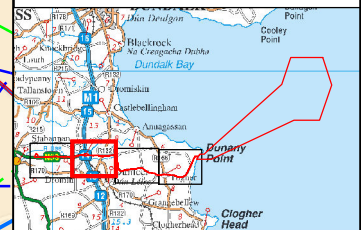
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- ESB HV Network**
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- Gas Network Ireland**
 - High Pressure transmission pipelines
- Irish Water Network**
 - Watermain
 - Water Network Component

Data Sources: OWL, Taitte Éireann, EPA, GSI, ESB, UE



Client



ORIEL WINDFARM
OFFSHORE RENEWABLE ENERGY

Project

Oriel Wind Farm Project

Title

Figure 29-3: Approximate locations of the known built services Map 2 of 4



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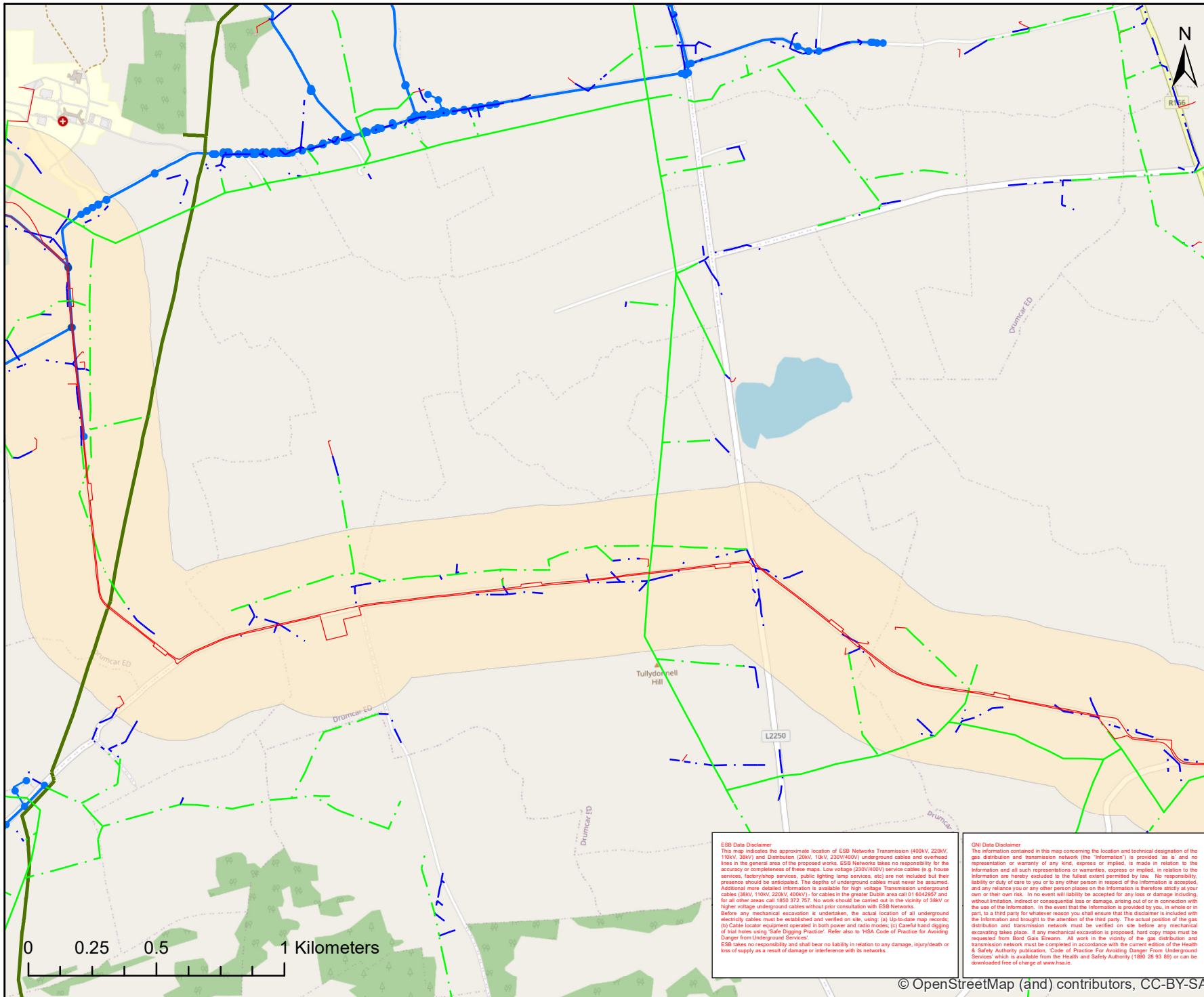
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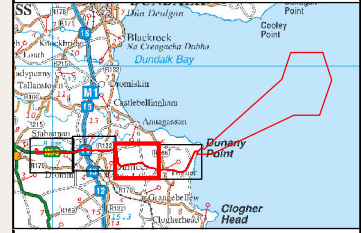
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- Watermain
- Irish Water Crossings
- Water Network Component

Data Sources: OWL, Taitte Éireann, EPA, GSI, ESB, UE



Client
Oriel Wind Farm Project

Project
Oriel Wind Farm Project

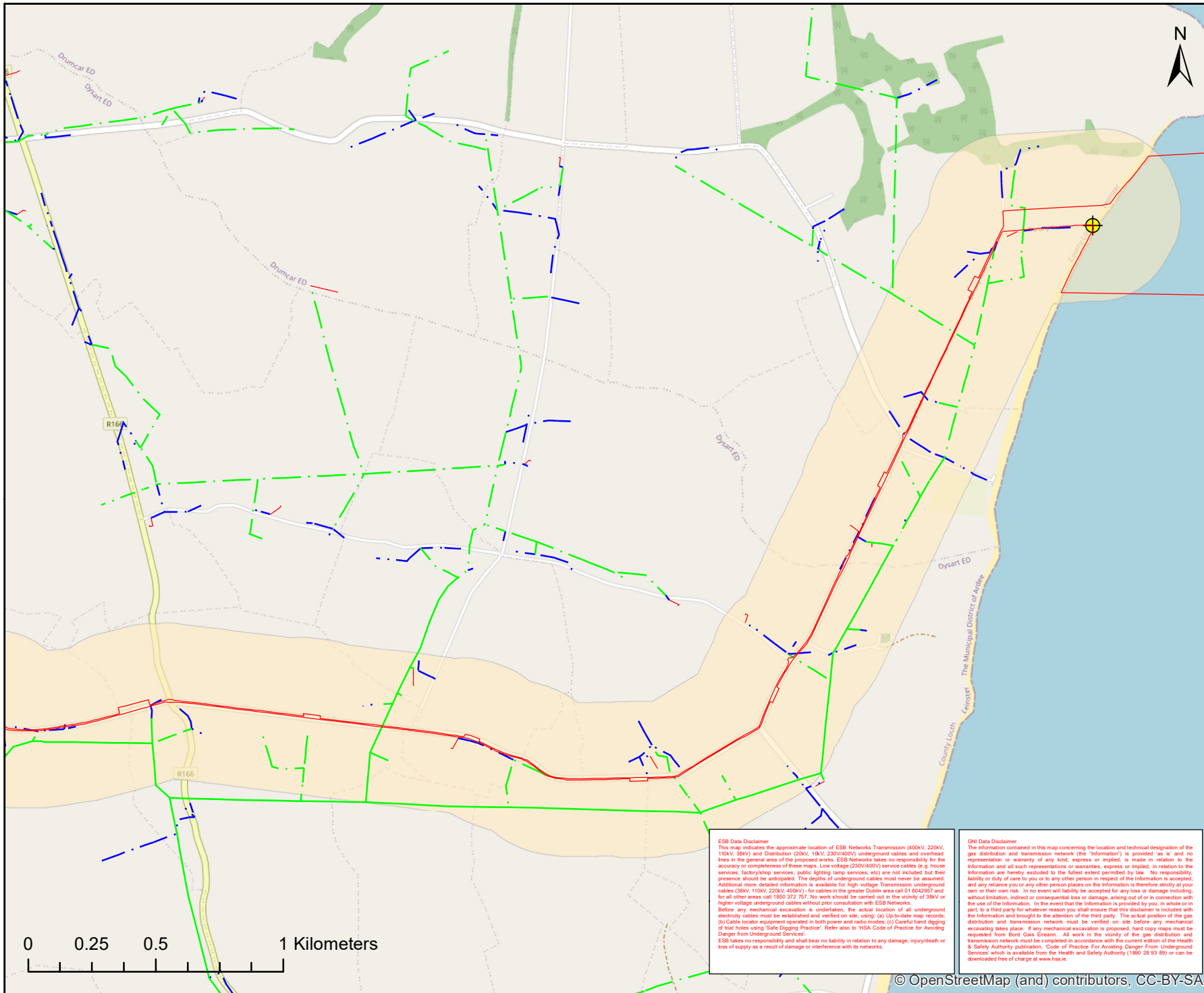
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Figure 29-4:
Approximate locations of
the known built services
Map 3 of 4

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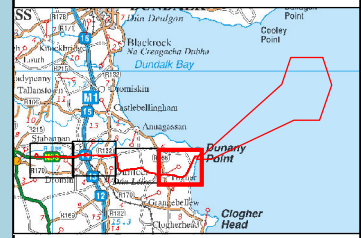
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 - LV Overhead 3Phase
 - - - LV Overhead SinglePhase
 - MV/LV Supplementary Information
- Irish Water Network**
- Watermain
 - Water Network Component

Data Sources: OWL, Taite Éireann, EPA, GSI, ESB, UE



Project

Oriel Wind Farm Project

Title

**Figure 29-5:
Approximate locations of
the known built services
Map 4 of 4**

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This map indicates the approximate location of ESB Networks Transmission (400kV, 220kV, 110kV, 38kV) and Distribution (20kV, 10kV, 230V/400V) underground cables and overhead lines in the general area of the proposed works. ESB Networks takes no responsibility for the accuracy or completeness of these maps. Low voltage (230V/400V) service cables (e.g. house services, factory/shop services, public lighting lamp services, etc) are not included but their presence should be anticipated. The depths of underground cables must never be assumed. Additional more detailed information is available for high voltage Transmission underground cables (38kV, 110kV, 220kV, 400kV); for cables in the greater Dublin area call 01 604267 and for all other areas call 1850 372 377. No work should be carried out in the vicinity of 38kV or higher voltage underground cables without prior consultation with ESB Networks. Before any mechanical excavation is undertaken, the actual location of all underground electricity cables must be established and verified on site, using: (a) Up-to-date map records; (b) Cable locator equipment operated in both power and radio modes; (c) Careful/hand digging of trial holes using 'Safe Digging Practices'. Refer also to 'HSA Code of Practice for Avoiding Danger from Underground Services'. ESB takes no responsibility and shall bear no liability in relation to any damage, injury/death or loss of supply as a result of damage or interference with its networks.

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The information contained in this map concerning the location and technical designation of the gas distribution and transmission network (the "information") is provided as is and no representation or warranty of any kind, express or implied, is made in relation to the information and all such representations or warranties, express or implied, in relation to the information are hereby excluded to the fullest extent permitted by law. No responsibility, liability or duty of care to you or to any other person in respect of the information is accepted, and any reliance you or any other person places on the information is therefore strictly at your own or their own risk. In no event will liability be accepted for any loss or damage (including, without limitation, indirect or consequential loss or damage, arising out of or in connection with the use of the information). In the event that the information is provided by you, in whole or in part, to a third party for whatever reason you shall ensure that this disclaimer is included with the information and brought to the attention of the third party. The actual position of the gas distribution and transmission network must be verified on site before any mechanical excavating takes place. If any mechanical excavation is proposed, hard copy maps must be requested from Bord Gáis Éireann. All work in the vicinity of the gas distribution and transmission network must be completed in accordance with the current edition of the Health & Safety Authority publication, 'Code of Practice For Avoiding Danger From Underground Services' which is available from the Health and Safety Authority (1890, 28 93 89) or can be downloaded free of charge at www.hsa.ie.



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29.4 Policy context

Planning policy on renewable energy infrastructure is presented in volume 2A, chapter 2: Policy and Legislation. This section presents planning policy that specifically relates to material assets, which is contained in the Louth County Development Plan (LCDP) 2021-2027 (LCC, 2021) (see Table 29–1).

Table 29–1: Summary of the LCDP policy provisions relevant to material assets.

Summary of relevant policy framework	How and where considered in the EIAR
Water	
IU 6: To require all new developments connect to the public supply where public water and wastewater infrastructure is available or likely to be available and which has sufficient capacity.	No requirement for the Project to connect to public waste or wastewater infrastructure. Rainwater harvesting and bottled water will be used as water sources at the onshore substation (see volume 2A, chapter 5: Project Description).
IU 11: To encourage new developments to incorporate water conservation measures such as rainwater harvesting to minimise wastage of water supply.	Wastewater will be stored onsite and removed offsite periodically.
IU 19: To require the use of Sustainable Drainage Systems to minimise and limit the extent of hard surfacing and paving and require the use of SuDS measures be incorporated in all new development (including extensions to existing developments). All development proposals shall be accompanied by a comprehensive SuDS assessment including run-off quantity, run off quality and impacts on habitat and water quality.	The drainage design for the onshore substation includes SuDS measures (see volume 2A, chapter 5: Project Description).
Rail	
Any development in the vicinity of existing rail lines shall comply with the setbacks and construction requirements of Iarnród Éireann, the National Transport Authority, Transport Infrastructure Ireland, and any other relevant stakeholders (section 13.6.2).	The Project traverses under the Dublin-Belfast railway line (see section 29.7.1). Construction will comply with the guidelines (see volume 2A, chapter 5: Project Description).
Services	
IU 76: To require that in all new developments, local services such as electricity be undergrounded where possible and appropriate.	As outlined in volume 2A chapter 5: Project Description the onshore cable will be buried underground.

29.5 Consultation

Table 29–2 summarises the issues raised during consultation activities undertaken to date, which are relevant to material assets, together with how these issues have been considered in the preparation of this EIAR chapter. Chapter 6: Consultation provides details on the types of consultation activities undertaken for the Project between 2019 and 2024 and the consultees that were contacted.

Table 29–2: Summary of key consultation issues raised during consultation activities undertaken for the Project relevant to material assets.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
January 2020	Iarnród Éireann (Irish Rail) - Meeting	Meeting between Irish Rail and ESB to discuss construction methodology. Project drawings were acceptable to Irish Rail as the crossing is at a point where there is not a significant change in track alignment levels.	Refer to volume 2, chapter 5: Project Description.
October 2022	GNI - Email	Emails between ESB and GNI regarding proposed onshore cable route and any objections to the planning application. Noted that proposal was found acceptable.	Prior to commencement of construction works, the Contractor will be required to

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Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
		<p>When the planning application is submitted, GNI then request a condition on the planning application that they are contacted to ensure the Project complies with their requirements, namely:</p> <ul style="list-style-type: none"> • Avoidance of placement of devices in areas where sediment transport pathways and coastal processes are modelled as highly sensitive to change; • Cable crossings at two locations of their gas transmission pipeline are designed to be in trefoil formation; and • GNI Code of Practice in terms of separation distances will be adhered to. 	engage with all built services providers, including GNI (see section 29.8.2).
November 2022	Uisce Éireann (UE) (Irish Water) – Meeting and follow-up email	<p>Meeting between UE, OWL and ESB to give UE an overview of the Project.</p> <p>Follow up email from ESB to UE requesting technical specs for construction in proximity to UE buried assets. Response from UE including specs and additional info, namely:</p> <ul style="list-style-type: none"> • Designs for the onshore cable route will need to be in compliance with the UE Codes of Practice and Standard Details for Water and Wastewater; • At any locations where the 220 kV underground cable (UGC) route is proposed to run close to, or in parallel with, existing UE assets, then the relevant separation distance needs to be achieved. If the distance cannot be achieved, then UE will need to review, and in such cases a diversion will need to be proposed; and • For locations where crossings of existing UE assets proposed, UE's preference is always for the 220 kV UGC infrastructure to cross below the assets. At any locations where crossing above is proposed then it will must be demonstrated that no other option is feasible but to cross above, and also propose appropriate and adequate mitigation measures as part of the design. 	Prior to commencement of construction works, the Contractor will be required to engage with all built services providers, including UE and all works will be required to comply with the relevant code of practices provided by each of the service providers (see section 29.8.2).

29.6 Methodology to inform the baseline

29.6.1 Desktop study

The key sources (i.e. data and reports) used to inform the baseline characterisation of the Material Assets Study Area are summarised in Table 29–3 below. These sources are considered to provide up to date data to inform this assessment.

Table 29–3: Summary of data sources.

Title	Source	Year
Built service provider's existing assets datasets to inform baseline mapping for the assessment.	GNI	2021
	ESB	2023
	Uisce Éireann	2023
	Eir	2019
ComReg Site Viewer	ComReg	2023
Louth County Development Plan 2021-2027	Louth County Council	2021
GeoDirectory	An Post	2022

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29.6.2 Site-specific surveys

No site visits or surveys were necessary to inform the material assets assessment as the information is available through desktop studies.

29.7 Baseline environment

The onshore infrastructure (including the onshore cable route, joint bays, and substation) of the Project will be situated in County Louth, starting at the landfall at Dunany Point and extending west for approximately 20.1 km towards the proposed onshore substation site location at Stickillin (approximately 3 km east of Ardee town).

The Louth County Development Plan (2021-2027) identifies settlements in both urban and rural areas of the county in a 'Settlement Hierarchy'. This hierarchy is based on factors such as population size, range of services, the range and extent of the community and other facilities available. There are two large towns designated as 'Regional Growth Centres' in the vicinity of the onshore elements of the Project: Drogheda (approximately 15.5 km to the south) and Dundalk (approximately 16.5 km to the north).

Two designated 'Self-Sustaining Growth Towns' are located within 3 km of the Project: Ardee, located along the N33 approximately 3 km to the west of the proposed substation site; and Dunleer, located approximately 1.9 km southwest of the onshore cable route. Three designated 'Rural Nodes' are located within 3 km of the Project: Dromin, located along the N33 approximately 1.7 km south of the onshore cable route; Grangebellew, located approximately 2.9 km southwest of the onshore cable route; and Stabannan, located along the N33 approximately 0.85 km north of the onshore cable route.

There is a low population density in the vicinity of the Project. The local area is rural and consists mainly of one-off detached residential properties or small groupings of properties located along local roads including the roads located along the onshore cable route. An Post GeoDirectory indicates there are 272 properties located within the Material Assets Study Area between the landfall at Dunany Point to the onshore substation site at Stickillin on the N33. Of the 272 properties, 215 were identified as 'residential' properties, 13 were identified as 'commercial', 35 were classified as 'both' and 9 properties were designated as 'unclassified'.

Population and settlements, including properties and schools within the vicinity of the Project, are considered and assessed in chapter 18: Population and Human Health.

Much of the land in the vicinity of the Project is used for various agricultural purposes, with farm buildings located throughout the area, as is evident from aerial photography. Land use and agriculture is considered further in chapter 20: Land and Agriculture.

29.7.1 Existing built services

A review of existing built services in the Material Assets Study Area was undertaken as part of this assessment using GIS, existing datasets and information provided by built service providers (Table 29-2).

The following services were identified within, or adjacent to the Material Assets Study Area and these are described further in the subsections below:

- Electricity: ESB;
- Gas: Gas Networks Ireland;
- Telecommunications: Eir and ComReg;
- Potable watermains and sewerage: Uisce Éireann; and
- Rail: Iarnród Éireann.

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The approximate locations of the built services present in and within the vicinity of the Material Assets Study Area are shown in Figure 29-2 to Figure 29-5. These maps were developed using available data from service providers as outlined in Table 29–3.

29.7.2 Electricity

Information provided by ESB networks (see Table 29–3) has confirmed a number of electrical overhead lines (OHL) and UGCs are present along the onshore cable route at varying distances from the road, including Low Voltage (LV) (400 V/230 V), Medium Voltage (MV) (10 kV/20 kV) and High Voltage (HV) (38 kV/110 kV/220 kV) (see Table 29–4).

Transmission and distribution OHLs and poles are evident along sections of the road network. There are several locations within the Material Assets Study Area where the electrical network is located close to, travels along, or crosses the onshore cable route.

While UGCs were not identified in Figure 29-2 to Figure 29-5, it is anticipated that UGC connections to properties will occur along the onshore cable route.

HV OHLs traverse the onshore cable route at the following locations:

- 110 kV OHL crosses the N33 Ardee Link Road approximately 2.8 km east of the substation site (see Figure 29-2).
- 220 kV OHL crosses the N33 Ardee link Road at Stickillin, at the location of the substation site (see Figure 29-2). There are pylons associated with these OHLs, the nearest of which is located approximately 80 m west of the substation site. This OHL and associated pylons are part of the Woodford to Louth 220 kV network, which the onshore cable route and substation site will connect to. A 38 kV OHL crosses the onshore cable route at Drumcar, to the west of the Drumcar Bridge (see Figure 29-3).

Table 29–4 below lists where HV, MV, and LV OHLs and UGCs are present and traverse the onshore cable route (see Figure 29-2 to Figure 29-5). These are listed as stretches of the onshore cable route, travelling in an east to west direction from the landfall, south of Dunany Point to the substation site at Stickillin.

Table 29–4: Summary of the electrical network in the vicinity of the onshore cable route (as shown in Figure 29-2 to Figure 29-5).

Stretch of the onshore cable route (east to west)	Infrastructure present
From the landfall location, along the lane from the beach to junction with Dunany Road	On the stretch of laneway from the landfall (Dunany Bay Beach) to the turn on to Dunany road (the junction) there are LV OHLs present on the left-hand side of the road traveling west toward the junction with Dunany Road. MV OHLs are present and traverse this road (in a north to south direction). MV/LV UGCs are present on the left-hand side of the road at a property at the junction with Dunany Road.
From Dunany Road and Lane junction heading south to the junction of Dunany Road and Coast Road	MV OHLs are present at varying distances in the lands to the east and west of the onshore cable route. Lines are closest to the onshore cable route in the northern section. Lines traverse the onshore cable route at two locations before the junction of Dunany Road and the Coast Road. Sections of LV OHLs present at three locations on this stretch of the onshore cable route. Lines traverse this road at two locations before the junction with the Coast Road.
From the Dunany Road/Coast Road Junction, all of Coast Road to junction of Coast Road/L2244 and the Togher Road	MV OHLs are present at varying distances from the onshore cable route, travelling north to south, in the lands to the east of the coast road. MV OHLs traverse the onshore cable route at a group of properties to the south of this stretch. LV OHL are present and cross the onshore cable route at the junction of Dunany Road and the Coast Road. A section of LV OHLs are

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Stretch of the onshore cable route (east to west)	Infrastructure present
	<p>present along a stretch of the onshore cable route, at a group of properties and crosses the onshore cable route here. LV OHLs cross the onshore cable route again at the next cluster of houses to the south.</p>
<p>From the junction of the Coast Road/L2244 and Togher Road (heading west) to Togher/R166 Crossroad</p>	<p>MV OHLs are present at varying distances from the onshore cable route in the lands to the south and north of the onshore cable route. MV OHLs traverse the onshore cable route at three points along this stretch of road.</p> <p>Sections of LV OHLs are present at varying distances from the onshore cable route at four locations along this stretch of road, crossing the onshore cable route at two points.</p>
<p>From Togher/R166 crossroad, west along Togher Road to junction at Clonmore (group of properties)</p>	<p>Along this stretch of the onshore cable route MV OHLs are present at varying distances from the onshore cable route, travelling east to west/northwest, in the lands to the south and west of the onshore cable route.</p> <p>LV OHLs are present to the west and south of Togher/R166 crossroad, traversing the onshore cable route immediately west of the crossroad (Togher Road). A section of LV OHLs are located along the onshore cable route for a brief stretch before the junction at Clonmore, where they cross the onshore cable route at three locations. A section of MV OHLs (to the south) also connect to these LV OHLs here. LV OHLs are present and cross at the junction (group of properties).</p>
<p>From Clonmore Graveyard, heading northwest along road to Keenan's Cross</p>	<p>Along this stretch of the onshore cable route a network of MV OHLs are present at varying distances from the road in the lands to the north and south of the onshore cable route. MV OHLs are closest to the onshore cable route at three points, crossing the onshore cable route at one of these.</p> <p>Sections of LV OHLs are present along this stretch of the onshore cable route. These lines are located close to the road and cross the onshore cable route at six points along this stretch before Keenan's Cross.</p> <p>MV/LV UGCs are present at three properties located on this stretch of the onshore cable route.</p>
<p>From Keenan's Cross heading west to junction with Castlethomas Road</p>	<p>MV OHLs are present in the lands to the north and south of this stretch of the onshore cable route at varying distances from the road. MV OHLs cross the onshore cable route at one point.</p> <p>LV OHLs are present and cross the junction of Keenan's Cross (north to south). Further sections of LV OHLs are present along this stretch of the onshore cable route (mainly at properties), and cross at seven points.</p>
<p>Castlethomas Road/Drumcar Road heading north to junction of Drumcar Road/L-2226 east of R132</p>	<p>MV OHLs are present along this stretch of the onshore cable route at varying distances from the road and cross at three points along the onshore cable route before the junction.</p> <p>Sections of LV OHLs are present along this stretch of the onshore cable route, mainly to the front of housing situated on this road. These lines cross at four points along the onshore cable route before the junction.</p> <p>MV/LV UGCs are present at three properties located on this stretch of the onshore cable route.</p>
<p>L-2226 (east of R132) through to junction with the R132 (Dorians Bar)</p>	<p>MV OHLs are present to the north, along this stretch of the onshore cable route at varying distances from the road and cross at one point on the onshore cable route before the junction.</p> <p>Sections of LV OHLs are present along this stretch of the onshore cable route, mainly located at properties. These lines cross at six points along this stretch.</p> <p>A 38 kV HV OHL traverses the onshore cable route (north to south) approximately 0.32 km west of Drumcar Bridge.</p>

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Stretch of the onshore cable route (east to west)	Infrastructure present
L-2226 (west of R132) to Charleville Bridge	<p>MV OHLs are present along this stretch of the onshore cable route at varying distances from the road, crossing at one point, approximately 0.5 km east of the Charleville Bridge.</p> <p>There are approximately three sections of LV OHL along this stretch of the onshore cable route, with lines crossing the road at four points. The longest section of the line is located along an approximately 0.42 km stretch of the onshore cable route approaching Charleville Bridge (to the west).</p> <p>MV/LV UGCs is present approximately 50 m east of the Charleville Bridge (under road).</p>
M1 and Exit 14 for N33 Ardee, heading west along N33 to the proposed substation	<p>MV OHLs are present just west of the M1/Exit 14 for Ardee. A short section of LV OHLs are also present just after the Exit. A short section MV/LV UGC is present here also.</p> <p>MV OHLs cross the onshore cable route (north to south) on the N33 approximately 0.26 km west of the junction for Dromin L2214/Stabannan L-2226.</p> <p>A 110 kV HV OHL traverses the onshore cable route on the N33 approximately 2.8 km east of the substation site.</p> <p>At the substation site, a section of MV OHL is present, a section of MV/LV UGC is present here also, crossing the N33 connecting with MV OHLs to the south.</p> <p>A 220 kV HV OHL and associated pylon traverses the onshore cable route (north to south) approximately 80 m west of the substation site.</p>

HV OHL = 38 kV & Higher Voltage Overhead Lines

MV OHL = MV (10 kV/20 kV) Overhead Lines

LV OHL = LV (400 V/230 V) Overhead Lines

HV Underground Onshore cable route = 38 kV & Higher Voltage Underground Onshore cable routes

MV/LV Underground Onshore cable route = MV/LV (10 kV/20 kV/400 V/230 V) Underground Onshore cable routes

29.7.3 Gas network

GNI own and operate a number of high pressure (HP), medium pressure (MP) and low pressure (LP) distribution and transmission gas pipelines in the vicinity of the onshore cable route.

Information provided by GNI has confirmed that the gas pipeline located closest to the onshore substation site is a HP transmission pipeline approximately 2 km to the south (see Figure 29-2). No gas pipelines were identified close to the landfall location. The nearest one is a HP transmission pipeline located over 8 km west of the landfall location.

The onshore cable route crosses two HP gas transmission pipelines, one at a point on the N33, just west of the M1 Exit 14 (Ardee/N2) (see Figure 29-2), and another at a point on the southern section of the Castlethomas Road (see Figure 29-4).

No other transmission or distribution gas pipelines have been identified in the area of the onshore cable route between the landfall and substation other than those outlined above.

The nearest MP and LP gas pipelines identified in the vicinity of the Project are all located beyond the Material Assets Study Area; an MP pipeline is located approximately 0.4 km northeast of the onshore cable route at St. Mary's School, Drumcar, MP and LP pipelines are present in Ardee Town (nearest being approximately 1 km southeast of the substation site) and in Dunleer (nearest being approximately 1.7 km southwest of the onshore cable route).

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29.7.4 Telecommunications

Telecommunication infrastructure (lines and poles) has been identified along the onshore cable route from data retrieved from Eir and have been described in Table 29–5 below.

Table 29–5: Summary of telecommunication infrastructure in the vicinity of the onshore cable route.

Location on the onshore cable route (east to west)	Infrastructure present
From the landfall, along the lane from the beach to junction with Dunany Road	Telecom lines are located along the stretch of laneway from the landfall (Dunany Bay Beach) to the junction with Dunany road.
From Dunany Road and Lane junction heading south to the junction of Dunany Road and Coast Road	Telecom lines continue along Dunany Road to junction with the Coast Road.
From the Dunany Road/Coast Road Junction, all of Coast Road to junction of Coast Road/L2244 and the Togher Road	Telecom lines continues south along stretch of the Coast Road for approximately 1 km. Telecom lines on the onshore cable route begin again at the junction of the Coast Road/L2244 and the Togher Road.
From the junction of the Coast Road/L2244 and Togher Road (heading west) to Togher/R166 Crossroad	Telecom lines continue along the stretch of the Togher Road to the Togher Crossroad with the R166.
From Togher/R166 crossroad, west along Togher Road to junction at Clonmore (group of properties)	Telecom lines continue from the Togher Crossroad through to Clonmore.
Clonmore, heading northwest along road to Keenan’s Cross	Telecom lines continue along the onshore cable route from here through to Keenan’s Cross, where lines cross this junction from east to west and north to south.
From Keenan’s Cross heading west to junction with Castlethomas Road	Telecom lines continue along a stretch of the onshore cable route from Keenan’s Cross for approximately 1.3 km (then ends). Telecom lines appear again travelling away from the onshore cable route, south towards Dunleer from the junction for Castlethomas.
Castlethomas Road/Drumcar Road heading north to junction of Drumcar Road/L-2226 east of R132	Telecom lines continue along the onshore cable route again on Castlethomas Road (approximately 0.6 km north of the junction for Castlethomas) to Drumcar road (and junction) Telecom lines continue north along the onshore cable route on Drumcar Road, and on to its junction with the road linking it (Drumcar Road) and the R132.
L-2226 (east of R132) through to junction with the R132 (Dorian’s Bar)	Telecom lines travel west along this link road to the junction with the R132 at Mullins Cross and Dorian’s Bar. Telecom Lines cross the onshore cable route at this junction.
L-2226 (west of R132) to Charleville Bridge	Telecom lines continue from the junction with the R132 along the L-2226, west towards the M1. Telecom Lines cross the onshore cable route at (Charleville) junction on L-2226. Telecom Lines continue along the L-2226 to Charleville Bridge.
M1 and Exit 14 for N33 Ardee, heading west along N33 to the proposed substation	Telecom lines cross the onshore cable route on N33 at junction for Dromin (L2214) and Stabannan (L-2226). There are no telecom lines located along the remainder of the N33 travelling west to the substation site location at Stickillin.

No mobile telecom mast sites were identified within the Material Assets Study Area.

29.7.5 Water

The onshore cable route crosses UE water assets at ten locations with potential for three further crossings. The cable will cross below the assets at all locations, in line with UE preferences outlined during consultation. These crossings are shown in Figure 29-3 and Figure 29-4.

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29.7.6 Rail

The Dublin-Belfast rail line crosses the onshore cable route approximately 3.7 km northwest of Dunleer, at a point just east of Junction 14 where it runs parallel to the M1. No other interactions with rail services were identified.

29.7.7 Built Service Crossings

The built service crossings that have been identified in this section are summarised in Table 29-7 below.

Table 29–6: Summary of built service crossings identified along the onshore cable route (see Figure 29-2 to Figure 29-5).

Service	Number of Crossings	Notes
Electricity (ESB HV Network)	1	A 38 kV OHL crosses the onshore cable route at Drumcar, to the west of the Drumcar Bridge.
	1	A 110 kV HV OHL crosses the onshore cable route on the N33 approximately 2.8 km east of the substation site.
	1	A 220 kV OHL crosses the N33 Ardee link Road at Stickillin, at the location of the substation site.
Gas Networks	2	2 HP transmission pipelines cross the onshore cable route, one to the northwest of Dunleer where the onshore cable route changes direction from westbound to northbound, and one just west of where the N33 meets the M1 at Charleville Bridge.
Telecommunications	Exact number TBC.	Several overhead telecom lines occur along the cable route. The exact number of crossings will be confirmed prior to construction (see Table 29-4)).
Water	10 confirmed crossings with potential for an additional 3.	The onshore cable route intersects with UE assets at 10 points (see Figure 29-3 and Figure 29-4).
Rail	1	The Dublin-Belfast rail line crosses the onshore cable route to the east of Junction 14.

29.7.8 Future baseline scenario

The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (hereafter the EIA Regulations 2018) require that “a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge” is included within the EIAR.

In the event that the Project is not constructed, an assessment of the future baseline conditions has been carried out and is described within this section.

Some general improvements or changes in the area, such as new connections to the various services, may occur due to legislative and local policy-driven measures as well as new service lines/connections associated with new buildings. For example, telecommunications infrastructure will be developed as part of the rollout of the National Broadband Plan (NBP). The rollout plan for the NBP is progressing at various stages throughout Co. Louth, with the county divided into seven Deployment Areas. The Material Assets Study Area lies within the boundaries of two of these Deployment Areas. Both of these areas are categorised as having “survey pending” status and the anticipated date for completion of works is January 2025 - December 2026.

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29.7.9 Data validity and limitations

RPS have used up to date datasets (see section 29.6.1) to inform this assessment. However as there is potential for utilities to change or errors in exact utility locations to be noted, prior to construction, consultation will be held with the utility companies and also the exact locations of all utilities will be confirmed (as outlined in section 29.8.2). Overall, it is not considered that this limitation affects the results of this assessment.

29.8 Key parameters for assessment

29.8.1 Project design parameters

The project description is provided in volume 2A, chapter 5: Project Description. Table 29–7 outlines the project design parameters that have been used to inform the assessment of potential impacts of the construction, operation and maintenance and decommissioning phases of the Project on material assets.

The final location of the Transition Joint Bay (TJB) will be confirmed on examination of the electrical and thermal properties of the selected offshore export cable and the ground conditions at the landfall. For the purposes of the assessment presented in section 27.10, both options presented in chapter 5: Project Description (volume 2A) result in the same potential for impacts on material assets during the construction phase only.

Table 29–7: Project design parameters considered for the assessment of potential impacts on material assets.

Potential impact	Phase ¹			Project Design Parameters	Justification
	C	O	D		
Disruption to built services (electricity, gas networks, telecommunications, water, rail)	✓	×	×	Construction phase Construction of 20.1 km onshore cable route and all associated temporary and permanent infrastructure including 29 joint bays, TJB (option 1 and 2), 16 passing bays, fibreoptic cable connections and onshore substation site.	Based on the area (within the planning application boundary) required for construction in which services could be disrupted, i.e. the extents of the construction areas along the onshore cable route, construction compounds, joint bays, onshore substation site, landfall and the TJB at the landfall location.

1. C = Construction, O = Operation, D = Decommissioning.

29.8.2 Measures included in the Project

As part of the project design process, a number of measures have been proposed to reduce the potential for impacts on material assets (see Table 29–8). As there is a commitment to implementing these measures, they are considered inherently part of the design of the Project and have therefore been considered in the assessment presented in section 29.10 below (i.e. the determination of magnitude and therefore significance assumes implementation of these measures). These measures are considered standard industry practice for this type of development.

Table 29–8: Measures included in the Project.

Measures included in the Project	Justification
Any disruption to built services will be reinstated as soon as is practicable, unless otherwise agreed with the asset owner, and where practicable by the Contractor.	Without measures being put in place, the construction of the Project may disturb built services as a result of necessary rerouting of infrastructure.
Where required, ducting will be provided to allow for the provision of services (electrical/water) across severed areas unless otherwise agreed with the asset owner and where practicable.	The design of this Project will not sever any properties permanently. However, during construction and in particular during the cable lay temporary severance may occur. In these situations, it may be appropriate to provide ducting, on an interim basis, to provide a conduit to severed property.

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Measures included in the Project	Justification
Any disruption to water supply will be reinstated immediately by the Contractor or an alternative source supplied until the source is reinstated, unless otherwise agreed with the landowner or Uisce Éireann as appropriate.	Without measures being put in place, the construction of the Project may disturb water supplies for residential and commercial properties and livestock in fields.
Prior to commencement of construction works the Contractor will be required to engage with all built services providers. The Contractor will continue liaison with providers as required throughout the construction phase.	Consultation is required to ensure service providers are kept up to date on the Project and also to ensure the Contractor is aware of any changes to services.
Prior to any mechanical excavation taking place, there will be consultation with ESB Networks to establish and verify the exact locations of all underground electricity cables. GNI will also be consulted, and the exact position of the two gas transmission gas pipelines will be verified prior to works commencing.	
All work being conducted in the vicinity of underground services will be completed in accordance with the current HSA 'Code of Practice for Avoiding Danger from Underground Services'. Furthermore, the ESB Code of Practice and HSA guidance, including the 'Code of Practice for Avoiding Danger from Overhead Electricity Lines', regarding exclusion and safe operating distances around electricity infrastructure will be adhered to. Height restriction barriers and equipment will be used to demark electrical infrastructure.	All works are required to comply with the relevant code of practices provided by each of the service providers. This includes the GNI Code of Practice and UE Codes of Practice and Standard Details for Water and Wastewater.

29.8.3 Impacts scoped out of the assessment

On the basis of the baseline environment (section 29.7) and the project description outlined in volume 2A, chapter 5: Project Description, some impacts are proposed to be scoped out of the assessment for material assets. These impacts are outlined, together with a justification for the scoping out decision, in Table 29–9 below.

Table 29–9: Impacts scoped out of the assessment for material assets.

Potential Impact	Justification
Disruption to built services during operational and maintenance phase.	The operation and maintenance requirements for the onshore infrastructure will be largely corrective (because there is limited requirement for preventative maintenance on the onshore cable), accompanied by infrequent on-site inspections of the onshore cable and onshore substation. The onshore cable will be consistently monitored remotely. No impacts to material assets during the operational and maintenance phases of the Project have been predicted once the substation has been built and the onshore cable has been laid.
Increase in demand for services during operational and maintenance phase.	During the operational and maintenance phase, there is limited potential for increase in demand for services at the onshore substation site. There is no requirement for the Project to connect to water or wastewater infrastructure as rainwater harvesting and bottled water will be used at the onshore substation. An electrical connection to the onshore substation will be required. As demand for services is low, no significant impacts on built services is predicted during the operational and maintenance phase.
Disruption to built services during decommissioning phase.	It is expected that the onshore cables will be removed by disconnecting each section at the joint bay and pulling them through the cable ducts. The structures of the joint bays and link boxes may be removed only if it is feasible with minimal disturbance. At the onshore substation site, it is proposed that all infrastructure would be

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Potential Impact	Justification
	decommissioned and removed offsite. The 220 kV Overhead Line is the only service that is located in close proximity to the onshore substation site, however there is limited potential to disrupt this service decommissioning. Therefore, it is predicted that there will be no significant impacts on material assets during the decommissioning phase of the Project.

29.9 Impact assessment methodology

29.9.1 Overview

The assessment on material assets has followed the methodology set out in volume 2A, chapter 3: EIA Methodology. Specific to the material assets impact assessment, the following guidance documents have also been considered:

- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022); and
- Advice Notes for Preparing Environmental Impact Statements (EPA, 2015).

The scope of the evaluation of material assets is based on a desktop review of online and published resources as outlined in Table 29–3. Built services located in the vicinity of the Project were identified using:

- Mapping resources (see Table 29–3);
- Built service provider datasets (see Table 29–3); and
- Consultation feedback received from built service providers (see Table 29–2).

29.9.2 Impact assessment criteria

The criteria for determining the significance of effects comprises defining the magnitude of the impacts and the sensitivity of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in chapter 3: EIA Methodology.

The criteria for defining magnitude in this chapter are outlined in Table 29–10 below.

Table 29–10: Definition of terms relating to the magnitude of an impact.

Magnitude of Impact	Definition
High	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements (Adverse)
	Large scale or major improvement or resource quality; extensive restoration or enhancement; major improvement of attribute quality (Beneficial)
Medium	Loss of resource, but not adversely affecting integrity of resource; partial loss of/damage to key characteristics, features or elements (Adverse)
	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (Beneficial)
Low	Some measurable change in attributes, quality or vulnerability, minor loss or, or alteration to, one or more key characteristics, features or elements (Adverse)
	Minor benefit to, or addition of, one or more key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial)

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Magnitude of Impact	Definition
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements (Adverse)
	Very minor benefit to, or positive addition of one or more characteristics, features or elements (Beneficial)

The criteria for defining sensitivity in this chapter are outlined in Table 29–11 below.

Table 29–11: Definition of terms relating to the sensitivity of the receptor.

Sensitivity	Definition
High	High importance, national scale, and limited potential for substitution: <ul style="list-style-type: none"> • HP gas pipelines; • Electricity OHLs and UGCs >110 kV; • Transmission pipelines (potable water); and • Large scale foul water infrastructure.
Medium	High or medium importance, regional scale, limited potential for substitution: <ul style="list-style-type: none"> • M and LP gas pipelines; • Electricity OHL and UGCs <110 kV; • Distribution pipelines (potable water); • Small scale foul water infrastructure and local collection systems; and • Telecommunications infrastructure.
Low	Low or medium importance, local scale: <ul style="list-style-type: none"> • Local connections for water; and • Electricity OHL and UGCs – low voltage.
Negligible	Low importance, local scale: <ul style="list-style-type: none"> • Domestic connections for service.

The significance of the effect upon material assets is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 29–12. Where a range of significance of effect is presented in Table 29–12, the final assessment for each effect is based on calculated assessment and professional judgement.

For the purposes of this assessment, any effects with a significance level of slight or less have been concluded to be not significant in terms of the EIA Regulations.

The definitions for significance in Table 29–12 are as defined in the EPA Guidelines (2022), with ‘moderate’ and ‘major’ using the EPA definitions of ‘significant’ and ‘very significant’ respectively when referred to as ‘moderate or major’ and ‘major’.

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Table 29–12: Matrix used for the assessment of the significance of the effect.

		Magnitude of impact			
		Negligible	Low	Medium	High
Sensitivity of receptor	Negligible	Imperceptible	Imperceptible or slight	Imperceptible or slight	Slight
	Low	Imperceptible or slight	Imperceptible or slight	Slight	Slight or moderate
	Medium	Imperceptible or slight	Slight	Moderate	Moderate or major
	High	Slight	Slight or moderate	Moderate or major	Major or Profound

29.10 Assessment of significance

The potential impacts arising from the construction, operational and maintenance and decommissioning phases of the Project are listed in Table 29–7, along with the project design parameters against which each impact has been assessed.

A description of the potential effect on material asset receptors caused by each identified impact is given below.

29.10.1 Disruption to built services

Construction phase

During the construction phase of the Project, there is potential for disruption to built services during excavation and construction works to install the onshore cable from the landfall to the onshore substation.

Existing built services is located at various points within the Material Assets Study Area, with some located along and intersecting the onshore cable route (see Table 29–6). Built services located along or in the vicinity of the Project have the potential to be impacted while the cable is being laid and during construction of the onshore substation. It is not anticipated that there will be a need for any temporary or permanent diversions of services to install the onshore infrastructure.

Magnitude of impact

Any disruption to built services during the construction phase of the Project is predicted to be of local spatial extent, short-term duration and high reversibility. Based on the definitions outlined in Table 29–10, the magnitude of impact on all built services during the construction phase is therefore considered negligible.

Sensitivity of the receptor

Built services are deemed to be of high to medium vulnerability, high recoverability, and high value.

In terms of electricity receptors, OHLs exceeding 110 kV are defined as having high sensitivity, and those less than 110 kV as having medium sensitivity (Table 29–11). As outlined in section 29.7, there were 3 HV OHLs identified as crossing the onshore cable route (220 kV, 119 kV, and 38 kV respectively). The sensitivity of electricity receptors is therefore considered medium-high.

The onshore cable route crosses 2 HP gas pipelines. These are considered to be of high sensitivity (Table 29–11).

Telecommunications infrastructure is present at various points along the onshore cable route and is considered to have medium sensitivity.

Watermains and water network components intersect with the onshore cable route at various locations along the route. These receptors are considered to have medium-high sensitivity.

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The Dublin-Belfast rail line crosses the onshore cable route at one location. Since this rail service operates on a national scale, this receptor is considered to have high sensitivity.

Significance of the effect

The matrix presented in Table 29–12 was used to assess the overall significance of the effects by comparing the sensitivity of each receptor to the magnitude of the impact. In this case, the magnitude of the impact was considered to be negligible for all built services as outlined above.

Since electricity is considered to have medium-high sensitivity, the effect on electricity is considered to have imperceptible-slight adverse significance.

HP gas pipelines have high sensitivity, therefore the effect on gas networks is considered to be of slight adverse significance.

Telecommunications infrastructure are of medium sensitivity, therefore, the effect on telecommunication services is considered to be of imperceptible-slight adverse significance.

Watermains and water network components are of medium-high sensitivity, therefore the effect on water services is considered to be of imperceptible-slight adverse significance.

The Dublin-Belfast rail service is of high sensitivity, therefore the significance of the effect on rail services is considered to be of slight adverse significance.

Overall, the magnitude of the impact is deemed to be negligible and the sensitivity of built services in the area of the Project is considered to be medium-high. The effect on built services will, therefore, be of **slight adverse significance**, which is not significant in EIA terms.

29.10.2 Mitigation and residual effects

The impact assessment concluded that there would be no significant adverse effects on material assets with the implementation of the measures included in the project (see Table 29–8) during the construction of the Project. Therefore, no measures over those outlined in Table 29–8 are required.

Residual effects

With the implementation of the measures included in the Project (Table 29–8), the residual effects are as outlined in the assessment provided in section 29.10.1.

29.10.3 Future monitoring

No monitoring to test the predictions made within the material assets impact assessment is considered necessary.

29.11 Cumulative Impact Assessment

29.11.1 Methodology

The Cumulative Impact Assessment (CIA) takes into account the impact associated with the Project together with other projects. Projects selected for the CIA are based upon the results of a project screening exercise (see volume 2A, appendix 3-1: CIA Screening Annex). Each project is considered on a case-by-case basis for screening in or out of each topic assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

The approach to CIA examines the effects of the Project alongside the following projects if they fall within the Material Assets Study Area:

- Other projects with consent but not yet constructed/construction not completed;

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- Other projects in a consent application process but not yet determined (including planning applications, foreshore lease/licence applications, Dumping at Sea Permit applications);
- Other projects currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact; and
- Projects, which satisfy the definition of ‘relevant maritime usage’ under the Maritime Area Planning Act (2021) (i.e. wind farm projects designated as ‘Relevant Projects’ or ‘Phase 1 Projects’) including Arklow Bank II, Bray Bank and Kish Bank; North Irish Sea Array, Codling Wind Park (I and II).

No projects were screened into the CIA for this assessment as there was no temporal or spatial overlap with the Project.

29.12 Transboundary effects

The border between Ireland and Northern Ireland (UK) lies approximately 20 km from the Material Assets Study Area. Therefore, there is no potential for significant transboundary effects from the Project on utilities, which would impact on the interests of the UK or other EEA States.

The rail service identified in the baseline environment (see section 29.7.1) connects Dublin with Belfast and crosses the border between Ireland and Northern Ireland (UK). As this assessment concluded that there would be no disruption to this service, the Project will have no significant transboundary effects on material assets.

29.13 Interactions

A description of the likely inter-related effects arising from the Project on material assets is provided in chapter 31: Interactions.

29.14 Summary of impacts, mitigation measures and residual effects

This chapter assessed the potential impacts of the Project on material assets during the construction, operational and maintenance, and decommissioning phases. Potential receptors within the Material Assets Study Area were identified as electricity, gas, telecommunications, water, and rail services and the impacts assessed included potential disruptions to these services.

These receptors were deemed to be of medium-high sensitivity based on the information set out in the impact assessment criteria and overall, the magnitude of any potential impacts was deemed to be negligible due to the local spatial extent, short-term duration, and high reversibility of the impacts. Table 29-17 presents a summary of the potential impacts, mitigation measures and residual effects in respect to material assets.

The assessment concluded that the impact of the Project on material assets will therefore be of slight significance. The EPA Guidelines define an effect of slight significance as causing ‘noticeable changes in the character of the environment without affecting its sensitivities’. Mitigation measures are only deemed necessary where significant environmental effects of a moderate or higher significance level have been identified (as outlined in volume 2A, chapter 3: EIA Methodology). The measures included as part of the Project (Table 29–8) are considered sufficient to reduce the potential impacts of the Project on material assets and no mitigation measures are proposed in addition to these.

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Table 29–13: Summary of potential environment effects, mitigation and monitoring.

Description of impact	Phase			Measures Included in the Project	Magnitude of Impact	Sensitivity of Receptor	Significance of Effect	Additional Measures	Residual Effect	Proposed Monitoring
	C	O	D							
Disruption to built services	✓	✗	✗	Liaison and planning with the relevant service providers in advance of construction work.	C: Negligible	C: High	C: Slight (not significant in EIA terms)	C: None	C: Slight (not significant in EIA terms)	C: None

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