

Volume 4: Onshore Chapters

Chapter 26
Material Assets

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26. Material Assets

26.1 Introduction

An assessment of likely significant effects from the North Irish Sea Array (NISA) Offshore Wind Farm (hereafter referred to as the ‘proposed development’) has been undertaken for this Environmental Impact Assessment Report (EIAR). This chapter of the EIAR presents an assessment of likely significant effects on material assets landward of the High-Water Mark (HWM) during its construction, operation and decommissioning phases.

The assessment (with respect to material assets) of offshore infrastructure located seaward of the HWM is provided in Volume 3, Chapter 20: Infrastructure and Other Users (hereafter referred to as the ‘Infrastructure and Other Users Chapter’).

This assessment sets out the methodology followed (Section 26.2), describes the baseline environment (Section 26.3) and summarises the main characteristics of the proposed development which are of relevance to material assets (Section 26.4). The evaluation of the potential impacts of the proposed development on material assets are described (Section 26.5). Measures are proposed to mitigate and monitor these effects (Section 26.6) and any residual likely significant effects are described (Section 26.7). Transboundary effects are considered (Section 26.8), and cumulative effects are summarised in Section 26.8 and detailed in full in Chapter 38 Cumulative and Inter-Related Effects (hereafter referred to as the ‘Cumulative Effects Chapter’). The chapter then provides a reference section (Section 26.10).

The EIAR also includes the following:

- Detail on the competent experts that have prepared this chapter is provided in Appendix 1.1 in Volume 8;
- Detail on the extensive consultation has been undertaken with a range of stakeholders during the development of the EIAR including those relating to material assets is set out in Appendix 1.2; and
- A glossary of terminology, abbreviations and acronyms is provided at the beginning of Volume 2 of the EIAR.

A detailed description of the onshore infrastructure associated with the proposed development including construction, operation and decommissioning is provided in Volume 2, Chapter 7: Description of the Proposed Development – Onshore (hereafter referred to as the ‘Onshore Description Chapter’), and the Construction methodology is described in Volume 2, Chapter 9: Construction Strategy – Onshore (hereafter referred to as the ‘Onshore Construction Chapter’).

26.2 Methodology

26.2.1 Introduction

The Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the ‘EPA Guidelines’) discuss material assets as follows:

‘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. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils.’

The EPA Guidelines specifically list built services, roads and traffic, and waste management as topics which fall into the category of material assets. Furthermore, the Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission 2017) references buildings, other structures, mineral resources and water resources as material assets. For the purposes of this EIAR, these topics are assessed separately in Volume 4 and 5 of this EIAR. As such, they are not considered further in this assessment.

The impacts of the proposed development on roads, rail and bridge infrastructure, and properties are addressed in this chapter. Due to the nature of the proposed development and the location of the onshore infrastructure landward of the HWM (hereafter referred to as the ‘onshore development area’), from the HWM at the landfall site at Bremore Beach north of Balbriggan North Co. Dublin, to the existing Belcamp 220kV substation in Co. Dublin (refer to Figure 7.1 in Volume 7), the proposed development will not have any direct impacts on existing buildings.

The purpose of this assessment is therefore to consider the likely significant effects of the proposed development on existing onshore built services and infrastructure, including:

- Land use (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; and
- Onshore utilities (such as electricity; telecommunications; gas; water supply; foul and surface water drainage).

26.2.2 Study Area

The study area comprises all areas within the onshore development area. Refer to Figure 7.1 in Volume 7 which illustrates the onshore development area landward of the HWM.

26.2.3 Relevant Guidance and Policy

This chapter has been prepared having regard to the overarching EPA Guidelines as described in Volume 2, Chapter 2: EIA and Methodology for the preparation of an EIAR. The significance of effects has been determined based on the severity of potential disturbance to those existing material assets (onshore land-use, properties, bridges and utilities).

26.2.4 Data Collection and Collation

In relation to landowner and land use data, engagement with landowners began in 2020 and will continue through and beyond the planning process.

Existing infrastructure and utility information was requested from utility companies and service providers (see Appendix 1.2 for further information on consultation with companies and service providers). The following service providers provided utility information of relevance to the study area:

- Dublin City Council (DCC)
- Fingal County Council (FCC)
- Electricity Supply Board (ESB) Networks
- EirGrid
- Gas Networks Ireland
- Irish Rail
- Uisce Éireann (formerly Irish Water)
- EWIC (East West Interconnector)
- The Aviation Fuel Pipe to Dublin Airport; and
- Telecommunications providers such as Eir and Virgin.

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.

26.2.5 Impact Assessment Methodology

The assessment of likely significant effects of the proposed development on material assets has been undertaken having regard to the EPA Guidelines. The assessment includes the following of particular relevance to the proposed development:

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

There are no specific criteria used for assessing the significance of effect of the proposed development on land use within the onshore development area. As such, the assessment of effect on land use considers any 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. Consideration is also given to any residential, commercial, or sensitive land use activities which are likely to be directly affected, including any resultant environmental effects.

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.

26.2.5.1 Sensitivity of the Receptor

The sensitivity of the receptors for material assets is determined by considering the importance and sensitivity of the service and supply of a utility, and land that is zoned for development or with a current agricultural use. These are presented in Table 26.1.

Table 26.1 Sensitivity rating for material assets receptors

Rating	Criteria
High	Land/site that is zoned and/or has planning permission for development Land that is community property used for public and private education Utilities with high importance with limited potential for substitution: <ul style="list-style-type: none">• EirGrid East West Interconnector;• Gas transmission network /high pressure pipework/Interconnector 1 and 2;• Drinking water and foul/combined sewer trunk mains (greater than or equal to 600mm diameter);• Surface water sewers greater than 300mm diameter;• High voltage distribution cables, both underground and overhead;• National road network and motorways;• Fibre telecommunications; and• Waterways.
Medium	Land/site that is not zoned Utilities with medium importance with limited potential for substitution: <ul style="list-style-type: none">• Arterial drinking water mains and foul/combined sewer mains (less than 600mm diameter);• Regional road network;• Surface water sewers less than 300mm diameter; and• Medium and low voltage transmission cables, both underground and overhead.
Low	Land use consisting of public road/private road Utilities of low importance, potential for substitution: <ul style="list-style-type: none">• Local road network; and• Local water and foul connections.

Rating	Criteria
Negligible	Utilities of low importance, potential for substitution: <ul style="list-style-type: none"> Domestic service connections.

26.2.5.2 Magnitude of Impact

The criteria used for defining the magnitude of impact for this assessment is based on the EPA Guidelines and is outlined in Table 26.2. For land use, the magnitude of impact is assessed based on the predicted change of the affected land parcel. The magnitude of impact for utilities has been considered in terms of the duration of service interruption that would likely occur, service provider notification and level of service reinstatement.

Table 26.2 Magnitude impact rating for material assets

Impact Magnitude	Criteria
Very High	Disruption of utility service for more than one week. Relevant stakeholders were notified at short notice or not at all. The level of utility service provided by the impacted utilities is not reinstated.
High	A high proportion of the land permanently taken where the proposed land use differs from the existing land use or zoning objectives. Disruption of utility service for less than one week. Relevant stakeholders were notified at short notice. The level of utility service provided by the impacted utilities is reinstated.
Medium	A medium proportion of the land permanently taken where the proposed land use differs from the existing land use or zoning objectives. Disruption of utility service for up to two days. Relevant stakeholders were notified. The level of utility service provided by the impacted utilities is reinstated or improved.
Low	A small proportion of the land permanently taken where the proposed land use differs from the existing land use or zoning objectives. Disruption of service for up to two days. Relevant stakeholders were notified. The level of service provided by the impacted utilities is reinstated or improved
Negligible	A very small proportion of the land permanently taken where the proposed land use differs from the existing land use or zoning objectives. No disruption to utilities service, such as the removal of redundant assets.

26.2.5.3 Significance of Effect

Table 26.3 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 be not significant from a rating of imperceptible to moderate, and significant from significant to profound.

Table 26.3 Significance of Effect Assessment Matrix

Magnitude of Impact	Sensitivity of Receptor			
	Low	Medium	High	Very High
Negligible	Imperceptible	Not Significant	Not Significant	Not Significant
Low	Not Significant	Slight	Slight	Moderate
Medium	Slight	Moderate	Moderate	Significant
High	Moderate	Significant	Significant	Very Significant
Very High	Significant	Very Significant	Profound	Profound

26.3 Baseline Environment

This section describes the existing environment of the study area relevant to land-use, properties, bridges, and utilities prior to the implementation of the proposed development.

26.3.1 Land-Use and Properties

26.3.1.1 Landfall site

The landfall site is located north of Balbriggan and immediately south of Bremore Point in the townland of Bremore in North County Dublin. The landfall site encompasses Bremore Bay Beach, agricultural fields behind, a section of the Dublin to Belfast railway line and the R132.

The landfall site consists of a mixture of sandy and rocky beach (Bremore Bay Beach) with undulating agricultural fields behind coastal cliffs. The Dublin to Belfast railway line passes through the agricultural fields in a north-south direction. Of note, the onshore export cable will cross under the Dublin-Belfast railway line before connecting to the grid facility.

The landfall site is primarily zoned as high amenity (HA) or open space (OS) in the Fingal County Council Development Plan 2023-2029 and is illustrated in Figure 26.1. There are some single residential dwellings located off the R132 in the vicinity of the proposed development boundary at the landfall site. The outskirts of Balbriggan are located to the south of the landfall site. Land use within the landfall area is dominated by intensive agriculture of arable crops and some internal hedgerows. A coastal walk/greenway is proposed along the coastal edge of the landfall area as depicted on the Fingal County Council Development Plan 2023-2029.

26.3.1.2 Grid Facility

The grid facility will be located in the townland of Bremore, Co. Dublin, approximately 2km north of Balbriggan town centre, west of the R132, close to the landfall site. The grid facility is zoned as Rural (RU) in the Fingal County Council Development Plan 2023-2029 as illustrated in Figure 26.1. Land use within the grid facility area is dominated by intensive agriculture of arable crops with some internal hedgerows and with a surrounding boundary of hedgerow and mixed vegetation. The grid facility site covers an area of approximately 8.2 hectares (82,000 m²) and the immediate surrounding fields are in pasture. There are a number of residential dwellings in the vicinity of the grid facility site, with two dwellings immediately east of the grid facility off the R132 and another house approximately 100m north-east of the grid facility. The lands immediately to the south of the proposed development are zoned for residential development (RA) in the Fingal County Council Development Plan (2023-2029). Onshore cable route

The onshore cable route is approximately 33-35km in length and will be routed along public roads as much as possible apart from the connection point to the existing transmission network (at Belcamp substation) and where it is necessary to divert the route off the road for technical reasons. It passes through several urban areas including Balbriggan, Swords, and the northern boundaries of Dublin City Council (DCC). Smaller rural communities within the onshore cable corridor include Balrothery and Knock Cross.

Multiple industrial estates are also situated adjacent to the proposed development including the M1 Business Park, Blakes Cross Industrial Estate, and Turvey Business Park. A detailed description of the onshore cable route including the interfaces with public roads is provided Section 7.5.2 of the Onshore Description Chapter. Of note, the onshore cable route will pass beneath the M1 Motorway. In addition, the onshore cable route will interface with 25no. watercourses.

26.3.1.3 Onshore Cable Route

Land use zones within the study area of the onshore cable route are listed within both the Fingal County Council County Development Plan 2023-2029 and the Dublin City Council Development Plan 2022-2028.

These include: residential, major town centres, general employment, high technology, green belt, open space, rural, rural cluster, rural business, rural village, high amenity, metro economic corridor, local centre, community infrastructure, and key urban villages. A small section of the proposed development within DCC jurisdiction at the Belcamp substation are in lands currently zoned as Strategic Development and Regeneration Areas (Z14) within the Dublin City Council Development Plan 2022-2028. This section is immediately adjacent to an area zoned as High Technology (HT) in the Fingal County Council Development Plan 2023-2029 (see Figure 26.1). It is also noted that there is an extant planning permission for an extension to the existing Belcamp substation (planning reference F23A/0040). The remainder of lands in DCC are zoned as sustainable residential neighbourhoods (Z1), amenity/open space lands/green network (Z9) key urban villages (Z4) or employment/enterprise (Z6). The zoning within key areas where the cable route is off-line (i.e. not on the public road) is as follows and is illustrated in Figure 26.1:

- Blakes Cross North and South – Rural (RU)
- M1 Crossing – Green Belt (GB) and Metro and Rail Economic Corridor (MRE); and
- Sluice Stream crossing – Green Belt (GB) and Rural Village (RV).

26.3.2 Utilities

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

- Electricity
- Telecommunications
- Gas
- Water supply; and
- Foul and Surface Water drainage infrastructure.

The most significant existing utilities (e.g. due to size, strategic importance, etc.) with which the landfall site, grid facility and onshore cable route interacts are described below. As the onshore cable route is predominantly located within the existing road network, it runs parallel with, and crosses under/over several existing utilities throughout the route.

26.3.2.1 Electricity

The Electricity Supply Board (ESB) Network maintains both underground and overhead lines within and around the proposed development.

There is an overhead power line that crosses the R132 from the grid facility to the landfall site. The overhead lines cross diagonally through the fields in the proximity of the onshore export cable route.

The onshore cable route crosses or runs adjacent to high voltage infrastructure, both underground and above ground at various locations throughout the onshore development area.

Both above and below ground services are situated along the R139 at the entrance to the existing Belcamp substation. Underground services are also present in the vicinity of the existing Belcamp substation.

In addition to the above, the East West Interconnector (EWIC) runs east-west through the lands north of Blakes Cross and crosses at a depth of circa 10m below existing ground level at its intersection with the onshore cable route. EWIC is a high voltage electricity interconnector, with a power rating of 500MW, which links the electricity transmission grids of Ireland and Great Britain. EWIC connects the converter stations at Portan, Co Meath in Ireland to Shotton in Wales. EWIC, on an east-west alignment, crosses the onshore cable route in the R132 north of Blakes Cross.

The current proposal agreed in principle through consultation with EWIC is that the onshore cable will cross EWIC at a right angle and is proposed to be buried in a standard trench located above the EWIC cable.

26.3.2.2 Telecommunications

Indicative record drawings provided by Eir and Virgin as well as limited GPR survey information indicate that there are no existing telecom lines in the vicinity of the landfall site and grid facility.

The onshore cable route runs adjacent to, and crosses telecommunications networks, such as Eir and 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.

26.3.2.3 Gas

There is no known gas infrastructure within the proposed development boundary at the landfall site and grid facility.

However, the onshore cable route runs adjacent to, or crosses, a number of Gas Networks Ireland (GNI) pipelines (low pressure (LP), medium pressure (MP) and high pressure (HP)) at various locations within the onshore development area.

Record (as-built) drawings provided by utility providers indicate that there is no known gas infrastructure within the vicinity of the existing 220kV Belcamp substation.

The onshore cable route, laid in the R132, will cross Interconnector 2 at two locations. The northern location is between Knock Cross business park and Knock Cross itself, south of Wx04 Balrothery Stream. The southern location is south of the Five Roads and Wx08 Courtlough Stream. Interconnector 2 is a high pressure gas pipeline which links the gas transmission systems in Ireland and Scotland. It extends from Beattock, north of Moffat in Scotland, to the Baldrumman Above Ground Infrastructure (AGI), in Co Dublin, via the pipeline landfall at Gormanstown in County Meath.

The onshore cable route, laid in the R132, will cross Interconnector 1 south of the junction of the R132 with the L1155 Quickpenny Lane. Interconnector 1 is a high-pressure gas pipeline which links the gas transmission systems in Ireland and Scotland.

It extends from Beattock, north of Moffat in Scotland, to the Ballough AGI, in Co Dublin, via the pipeline landfall at Loughshinny, in County Dublin. It is a 750mm in diameter, high strength steel pipeline operating at a pressure of 85bar.

Planning permission has also been granted for an aviation fuel pipeline between Dublin Port and Dublin Airport (planning reference, Fingal County Council 2552/15, An Bord Pleanála PL29N.245738) and construction work has started on its installation. This aviation fuel pipeline runs along the R139 at Belcamp substation and the onshore cable route will cross this pipeline to connect to the Belcamp substation.

26.3.2.4 Water Supply

Indicative record drawings provided by Uisce Éireann do not indicate the presence of water supply infrastructure at the landfall site, however there is an existing watermain located within the R132 which runs adjacent to the grid facility. A full utility survey will be carried out prior to construction and all existing utility diversions, or temporary works will be confirmed.

The onshore cable route crosses and/or runs adjacent to significant water supply infrastructure over 600mm in diameter at various locations throughout the onshore development area.

26.3.2.5 Foul and Surface Water Drainage Infrastructure

Record drawings provided by utility owners, topographical surveys, and site walks over indicate there is no foul water or surface water drainage infrastructure at the landfall site or grid facility. However, there are a number of fields, drains or ditches / swales crossing these lands which were installed for agricultural purposes.

The onshore cable route crosses and/ or runs adjacent to significant foul water infrastructure including sewers above 600mm in diameter at various locations throughout the onshore development area.

Record drawings from FCC and DCC indicate minimal surface water drainage infrastructure are located along and within the road network. However, further survey work (ground penetrating radar survey, slit trenching, undertaken by the Developer from 2021 to 2023) and site walkovers have indicated that there are likely localised surface water drainage pipes/gullies/manholes located throughout the proposed development boundary. Further surveys will be undertaken prior to construction to confirm this.

26.3.2.6 Bridges

The onshore cable route will interface with 25no. watercourses. Consultation with the FCC Bridge Engineer confirmed that of the 25 watercourses, only eight crossings are identified as bridges. These are detailed in Table 26.4. All watercourse crossings are presented on Figure 22.2 of Volume 7.

Table 26.4 Bridges within the proposed development boundary

Bridge Location	Bridge Structure Type	RPS	Crossing Options (In order of preference)
Existing Irish Rail overbridge at Landfall – Balbriggan (OBB62)	Modern Concrete abutment and beams over original stone abutment.	No	Access route to Landfall area during construction and operational phases. Structural capacity of bridge to be assessed during detailed design.
Wx2 Bracken (Matt) River, Harry Reynolds Road – Balbriggan	Modern Concrete Arch	No	In-road Open Cut Trench (Potential Shallow Depth of Cover) Inline HDD
Wx11 Ballough Stream, R132 – Blakes Cross (FGR132-016.00)	Modern Stone Arch	RPS 0905	Offline HDD
Wx12 Deanestown Stream, R132 – Blakes Cross (FGR132-0.15.00)	Modern Stone Arch	RPS 0906	Inline HDD (Combined with Wx13) Offline HDD (Combined with Wx13)
Wx13 Ballyboghil Stream, R132 – Blakes Cross (FGR132-015.00)	Modern Stone Arch	No	Inline HDD (Combined with Wx12) Offline HDD (Combined with Wx12)
Wx14 Turvey Stream, R132	Modern Concrete Arch	No	In-road Open Cut Trench (Potential Shallow Depth of Cover) Inline HDD
Wx20 Gaybrooks Stream, R106 – Malahide (FG-R106-003.00)	Modern Concrete Arch	No	In-Road open Cut (Potential Shallow Depth of Cover) Inline HDD Offline Open Cut Trench
Wx22 Sluice River, R107 – Kinsealy (FG-R107-003.00)	Modern Stone Arch	RPS 0913	Inline open cut-trench (Potential Shallow Depth of Cover) Offline Open Cut Trench Offline HDD
Wx23 Cuckoo Stream, R107 – Balgriffin (FG-R107-002.00)	Modern Stone Arch	No	Inline open cut-trench (Potential Shallow Depth of Cover) Inline HDD

26.4 Characteristics of the Proposed Development

The main elements of the proposed development relevant to onshore material assets include the following:

- Landfall site, at Bremore Point, Balbriggan: where the offshore export cables come ashore and transition to onshore export cables. Transition joint bays will be provided at the landfall site where the offshore (subsea) export cables transition to onshore (terrestrial) export cables. The onshore export cables then traverse through agricultural fields, across the R132 and under the Dublin-Belfast railway line to connect to the grid facility
- Grid facility: this comprises the compensation substation and Bremore substation and associated access, drainage, attenuation pond, boundary fence, lighting, and landscaping infrastructure. As noted in Section 26.3.2.1, there is an overhead electricity line that runs diagonally through the grid facility and landfall site that will require relocating to facilitate the construction of the grid facility
- Onshore cable route: approximately 33-35km in length, with strategically positioned joint bays located along the cable route at approximately 300m to 800m spacings, to facilitate cable installation. The onshore cable will be installed along public roads as much as possible apart from offline sections, where off road is required due to existing constraints. The onshore cable route will connect into the existing 220kV substation at Belcamp, Swords, Co. Dublin.

Construction of the proposed development will require temporary and permanent land take. Temporary land take will be required to accommodate construction activities, construction compounds, and access/ haul routes. Permanent land take will be required to accommodate specific above ground elements of the proposed development such as the grid facility. Permanent land take will also be required at the landfall and at the offline routes along the onshore cable route to construct permanent access tracks to facilitate access to underground joint bays and manholes.

The location of any sensitive neighbouring occupied premises likely to be directly affected, and other premises which although located elsewhere, may be the subject of secondary effects such as alteration of traffic flows or increased urban development are also considered.

The Onshore Description and Onshore Construction chapters provide further information on the land requirements for the proposed development.

The following aspects are particularly relevant to the material assets assessment:

Design:

- proximity of the proposed development to existing material assets; and
- land-use requirements.

Construction:

- Temporary land-take;
- Diversions required to undertake construction activities in the vicinity of existing material assets; and
- Intrusive construction activities occurring in proximity to existing material assets.

Operation:

- Permanent land-use/access restrictions for siting of infrastructure and maintenance works.

Decommissioning:

- Temporary land-take/access restrictions; and
- Diversions required to undertake decommissioning.

26.5 Potential Effects

26.5.1 Do-Nothing Scenario

In the scenario where the proposed development does not proceed as planned, none of the effects as set out in this chapter would occur. Under the ‘do nothing’ scenario, the material assets baseline as presented in Section 26.3 would persist and no significant effects would arise.

The do-nothing scenario would result in the proposed development not proceeding and a loss of offshore wind capacity in Ireland.

If the proposed development did not proceed, it would not contribute to Ireland’s progress in meeting EU, national or regional planning objectives or in meeting renewable energy and decarbonisation targets, in particular, the targets in the CAP, 2024. Achievement of the total 5GW offshore wind target set for 2030 would not be achievable if the proposed development did not proceed.

26.5.2 Construction Phase

26.5.2.1 Land Use and Properties

To facilitate construction of the proposed development, permanent and temporary land take will be required. Permanent land take is discussed in Section 26.5.3.1 below.

Temporary land take will be required at offline areas within the proposed development boundary to accommodate construction activities, construction compounds and access/ haul routes. The typical off-line working corridor is approximately 18m to provide sufficient space for the excavation activities at the trench. This will be reduced to 11m as it passes through hedgerows or other similar ecological features but may extend to 30m in certain instances. Given that fencing will be erected around the construction compounds and around the working areas associated with the installation of the onshore cables, these lands at offline areas will not be available for their current use or for the uses designated in the zoning objectives described in Section 26.3.1 and illustrated in Figure 26.1 during the construction phase.

However, access will be made available for landowners where necessary. Existing fences, hedgerows and/or walls will be removed as required for construction and replaced, on completion of the works, with appropriate materials in agreement with the landowner. The temporary working areas will also be fenced for protection of the public and livestock 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. Lands at the grid facility will be permanently acquired (see section 26.5.3.1 below). As the lands are zoned where the onshore development area extends beyond the road corridor, the sensitivity rating for land-use is considered to be high.

It is expected that construction works at the landfall site will take approximately 10 months. Construction and commissioning of the grid facility is anticipated to last approximately 24 months. It is expected that construction works along the onshore cable route will also take approximately 24 months. Where no obstacles or constraints exist within or near the onshore cable route, it is expected that progress rates for the trench excavation and installation of ducts will be up to:

- 80m/day in farmland and on road sections with full road closure
- 60m/day on road with single lane closure
- 30m/day on road maintaining two-way traffic; and
- 5m/day on sections with watercourse crossings (depending on span, flow, access, seasonal restrictions).

These progress rates may reduce where obstructions and underground utility services are encountered. Further details on construction duration are provided in Section 9.3 of the Onshore Construction chapter.

Once construction works are complete, lands acquired temporarily will be returned to their original condition and use. Reinstatement is detailed in Section 9.12 of the Onshore Construction chapter. Section 7.2.3 of the Onshore Description Chapter provides information on the extent of the temporary and permanent change of land use for the proposed development and describes the wayleave arrangements in place along the onshore cable route. However, given the proportion of land which will be utilised during the construction phase, a short-term, medium magnitude of impact is considered for land-use and properties during the construction phase. Therefore, a negative, moderate and short-term effect on land-use will arise during the construction phase of the proposed development which is not significant in EIA terms.

There is the potential for dust and noise emissions from the construction works to have an indirect effect on land use and properties in some locations in the vicinity of the proposed development. These potential dust and noise effects, which would be very localised and short-term, are addressed in Volume 5, Chapter 27: Air Quality (hereafter referred to as the ‘Air Quality Chapter’) and Volume 5, Chapter 30: Noise and Vibration (hereafter referred to as the ‘Noise and Vibration Chapter’).

Effects on traffic and transportation in the area of the proposed development are discussed in Volume 4, Chapter 24: Traffic and Transportation (hereafter referred to as the ‘Traffic and Transportation Chapter’).

The Air Quality Chapter and Noise and Vibration Chapter concluded that there will be no significant impacts from dust or noise emissions arising from the construction of the proposed development. As a result, no significant air quality or noise effects of relevance to material assets are predicted.

The land-use during the construction phase will inevitably differ from the zoning objectives for this land, as set out in the Fingal County Development Plan 2023-2029 and Dublin City Council Development Plan 2022-2028 and as a consequence, there are construction phase impacts on land-use. However, these impacts will be short-term in nature and the land (which is not acquired permanently) will be re-instated to its previous use (see Section 26.5.3.1 for operational impacts on land use where permanent land take is assessed). The land use sensitivity is assessed as high, with a medium impact arising during the construction phase. Therefore, an overall significance rating of negative, moderate and short-term is considered appropriate which is not significant in EIA terms.

The footprint of the proposed development, together with all construction works, will be wholly within the proposed development boundary as outlined in Figure 7.1 and the planning drawings included in Appendix 7.1 of Volume 8. As a result, there will not be a direct effect on property, or the use of any land, outside the proposed development boundary during the construction phase. Therefore, a rating of neutral, imperceptible and short-term will arise during the construction phase of the proposed development on properties.

26.5.2.2 Utilities

Any area to be excavated will be subject to further utilities searches and CAT scanning prior to construction. Services, where encountered, will be exposed in accordance with Utility Provider, Local Authority requirements and in accordance with the Guidelines for Managing Openings in Public Roads (Department of Transport, Tourism and Sport, 2015). Subject to design requirements and in agreement with the relevant utility or service provider, appropriate protection methods (such as steel plating, concrete slab etc.) will be installed.

Consultation has been undertaken with major utility providers to agree crossing methodologies with key utility assets. Consultation with bodies such as EirGrid, Uisce Éireann, ESB and Irish Rail is documented in Appendix 1.2.

Electricity

Electricity will be provided to the grid facility via the local distribution network operated by ESB networks. To facilitate the construction and operation of the grid facility, rerouting of ESB overhead lines is required. However, any disruptions to the electricity supply will be minimal within the area and apart from a temporary outage to make the connection at the grid facility and diversion of the existing ESB overhead line, there will be no anticipated disruption to the existing distribution network at the grid facility.

Where possible, the construction compounds and working areas along the onshore cable route will be powered by the existing electricity supply, but if not available, via diesel generators. Typically, one 20,000 litre tanker for the delivery of diesel to the construction compounds will be required each week if generators are required. The use of generators is predicted to have a slight negative and short-term effect on the supply of electricity during the construction phase which is not significant in EIA terms.

Given the onshore cable route will cross or run adjacent to several existing high voltage electricity lines, both underground and overhead, localised diversion or modification works may be required. Additionally, the onshore cable route will pass above the existing EWIC (the crossing methodology of which is described in Section 9.5.5.2 of the Onshore Construction Chapter). The construction methodology has been discussed and will be agreed with EirGrid during consultation. However, as high voltage distribution cables and EWIC are both classified as utilities with high importance, the sensitivity of the receptor is consequently assessed as high. However, given that relevant stakeholders have been consulted and that any disruption of service will be minimal (the EWIC cables are at a depth of approximately 10m), the magnitude of impact is assessed as low. Therefore, the effects on electricity utilities from the proposed development are considered to be negative, slight and short-term which is not significant in EIA terms.

Telecommunications

The telecommunications network surrounding the proposed development consists of overhead and underground telecommunications lines and fibre optic cables.

The construction phase of the onshore cable route will be served by existing mobile phone networks, which are located throughout most of the route. During the construction phase fibre optic cables will be laid with the onshore cable and will be used for operation and control purposes of the electrical infrastructure associated with the proposed development.

The population reported in the 2022 census for the communities in the vicinity of the project is around 418,292 (87,786 for Balbriggan, Swords & Malahide; 330,506 for Fingal County). The vast majority of the population is expected to use mobile phones. As noted in Section 9.8.1 of the Onshore Construction Chapter, an additional 250 construction workers are required for the construction phase. The additional presence of 250 construction workers is not expected to have a significant negative impact on the capacity of mobile phone services in the area. Therefore, the level of additional individuals required during the construction phase will not give rise to a noticeable demand on the telecommunications network.

There may be 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.

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. Further, consultation with relevant telecommunications providers will be undertaken prior to the crossing of any underground telecommunications assets to ensure any disruption to services are kept to a minimum. Therefore, the magnitude of impact arising from the construction of the proposed development is assessed as low. Consequently, the effects of the proposed development on telecommunication utilities is considered negative, slight and short-term which is not significant in EIA terms.

Gas

Installation of the onshore cable route will involve the crossing of several Gas Networks Ireland (GNI) medium and high-pressure pipelines. These pipelines will be crossed by open cut trench which will be undertaken by hand digging. Where the crossing of the gas pipeline is achieved by use of an open cut trench, this will be undertaken in accordance with the requirements of GNI. Protective timbers will be strapped around the gas pipeline as it is exposed, such that the timber will provide support and protection to the short length of exposed gas pipeline. The trench will be deeper than a standard cable trench to allow the ducts to be installed under the gas pipeline. The protective/supporting timbers will be removed as the cable trench is backfilled carefully by hand.

Any crossing or interaction with any GNI infrastructure will be undertaken in accordance with the GNI Safety Advice for Working in the Vicinity of Gas Pipelines (2016). As gas transmission pipelines are considered utilities with high importance, the resulting sensitivity of these receptors is considered high for this assessment.

As detailed above, there is an aviation fuel pipeline which has planning permission along the cable route, which interacts with the proposed onshore cable route on the R139 Malahide Road. A crossing of this pipeline (if it is in place prior to the commencement of construction of the proposed development) is required to enable the connection to be made to the Belcamp substation. Consultation with the developer of this aviation fuel pipeline has been undertaken and this has confirmed that the crossing can be undertaken with standard construction methodologies such as those noted above for the other gas infrastructure. Details will be confirmed with the developer prior to construction.

Given no gas connection is required, the proposed development will have no impact on gas usage during the construction phase.

While there may be minor disruption during the pipeline crossings, any disruption will be brief in nature and as a result, the proposed development will have, at most, a magnitude rating impact of low.

As a result, the effects of the proposed development on gas utilities (including the aviation fuel pipeline) during the construction phase is considered negative, slight and short-term which is not significant in EIA terms.

Water Supply

The supply of potable water to the grid facility will be provided through the construction of a new watermain which will connect to the existing watermain located within the R132. This water connection is expected to be approximately 32mm diameter. Uisce Éireann provided a confirmation of feasibility for the connection to the existing 100mm uPVC main adjacent to the grid facility (Uisce Éireann ref: CDS23001563).

During the construction phase, the supply of potable water to the construction compounds at the landfall site and grid facility will be supplied from Uisce Éireann mains, however this connection will be dependent on the timing of the upgrade works. Where a connection to the local watermain is not feasible, potable water required at the temporary construction compounds and the working areas along the onshore cable route will be provided via mobile bowzers. Typically, one delivery each week of approximately 50,000 litres will be required for the provision of potable water.

Grey water required for welfare facilities and construction related activities (such as wheel washes and dust control measures) will be sourced via rainfall collection or transported via tanker to the working areas.

Any potable water supplies, affected by the construction works, will be reinstated as soon as is feasible, or an alternative supply provided on a temporary basis until the permanent supply can be reinstated. Where access to drinking troughs for animals is severed by the works, an alternative supply via mobile bowzers will be provided until the original supply is reinstated. Given the relatively low potable water demand needed during construction, the sensitivity of the receptor is assessed as low, and the magnitude of the impact is considered low as the service of water supply to the region will not be impacted. Consequently, the significance of the effect of the proposed development arising from the use of the local water supply is considered not significant.

Section 26.3.2.4 notes that there are several watermains with a diameter of greater than or equal to 600mm diameter in the vicinity of the proposed development.. As a result, the sensitivity of water supply receptors is considered high for this assessment. However, consultation has been undertaken with Uisce Éireann and the crossing of these utilities is not anticipated to result in any disruption to supply which leads to a magnitude impact rating of low during the construction phase. Therefore, the proposed development will have a negative, slight and short-term effect on water supply utilities which is not significant in EIA terms.

Foul Wastewater Infrastructure

Wastewater arising from the temporary construction compounds will be stored in wastewater holding tanks, which will be emptied on a regular basis (typically bi-weekly) by licensed contractors and disposed of appropriately. Welfare facilities at the working areas along the onshore cable route will be provided via portable toilets which will be maintained by the contractor, and the contents disposed of to a licensed facility. As detailed, it is anticipated that the construction phase will require a workforce of approximately 250. The sensitivity of the existing wastewater treatment capacity is considered to be low. The magnitude of impact of the foul wastewater generated on wastewater facilities is considered to be negligible. Therefore, the effects from the on wastewater treatment capacity during the construction phase will be negative, imperceptible, and short term which is not significant in EIA terms.

As noted in Section 26.3.2.5, the onshore cable route interacts with several foul sewers with a diameter of greater than or equal to 600mm diameter. As a result, the sensitivity of foul wastewater receptors is considered high for this assessment. However, the crossing of these utilities is not anticipated to result in any disruption to supply which leads to a magnitude impact rating of low during the construction phase. Therefore, the proposed development will have a negative, slight and short-term effect on foul wastewater infrastructure which is not significant in EIA terms .

Surface Water Infrastructure

Any existing field drainage crossing the landfall site will be temporarily diverted or facilities put in place to over-pump to settlement ponds prior to discharge of treated water into the existing surface water drainage system.

A new dedicated surface water network will be installed at the grid facility site as described Section 7.4.3 of the Onshore Description Chapter. Impacts arising from an increase in impermeable surfaces on existing surface water infrastructure is provided in Volume 4, Chapter 22: Water.

Where existing drainage is present along the onshore cable route, whether in open ditch or buried field drains, these will be temporarily diverted, or facilities put in place to over-pump to the temporary surface water drainage system. Field drains will be reinstated on completion of the works or new drainage installed to match the drainage characteristics of the ground prior to development, to ensure agriculture is not affected. Landowners will be consulted on the proposed drainage provisions prior to any installation.

As noted in Section 26.3.2.5, there are existing surface water sewers with a diameter greater than or equal to 600mm diameter within the vicinity of the proposed development. However, the proposed development does not directly interact with any surface water sewers with a diameter greater than 600mm. As a result, the sensitivity of surface water infrastructure is considered medium for this assessment. However, the diversion of any infrastructure is not anticipated to result in any disruption to the drainage characteristics of the existing environment which leads to a magnitude impact rating of low during the construction phase. Therefore, the proposed development will have a negative, slight and short-term effect on surface water infrastructure which is not significant in EIA terms.

Road and Rail Infrastructure

During the construction phase the onshore export cables will cross under the existing Dublin – Belfast railway line at the landfall site. Horizontal directional drilling (HDD) will be utilised to cross under the railway line, with the final details to be agreed with Irish Rail prior to construction. Given that the cables will be laid using trenchless technologies under the railway, in accordance with Irish Rail requirements, there will be no significant impact arising from proposed development on the railway line. Extensive consultation has been undertaken with Irish Rail (and the DART+ Coastal North project which is currently being planned) to agree crossing methodologies.

A crossing of the M1 motorway is also required along the onshore cable route. This crossing will also be undertaken using HDD, with the proposed crossing methodology agreed with Transport Infrastructure Ireland (TII). Final details for the HDD crossing will be agreed in advance of construction in consultation with TII. As a result, there will be no significant impact arising from proposed development on the M1 during the construction phase.

The interactions with both the M1 and the Dublin – Belfast railway line are considered to have a high sensitivity rating due to the national importance of both pieces of infrastructure. However, given the consultation undertaken with both Irish Rail and TII and the lack of anticipated disruption to both services throughout the construction phase, a magnitude impact rating of negligible is applied to this assessment. As a result, the proposed development will have a negative, not significant and temporary effect on nationally important road and rail infrastructure which is not significant in EIA terms.

A detailed description of the onshore cable route including the interfaces with public roads is provided in Section 7.5 of the Onshore Description Chapter. Consultation has been undertaken with TII, FCC and DCC in relation to construction works within the public road. As noted in Section 26.5.2.1 above it is expected that construction works along the onshore cable route will take approximately 24 months, with some activities, at different locations, taking place in parallel. However, individual road closures (as assessed in the Traffic and Transportation Chapter) will be localised and temporary. Installation of the onshore cable will be undertaken on a rolling basis. These roads are assessed as regional and local roads and are subsequently assigned a sensitivity rating of medium. As consultation has been undertaken with relevant stakeholders, and the public roads will be reinstated following construction works, a magnitude rating of low has been applied. Therefore, a significance rating of negative, slight and short-term have been applied during the construction phase from a material assets perspective. The assessment of the subsequent traffic impacts are included in the Traffic and Transportation Chapter.

Bridges

The onshore cable route will interface with 25no. watercourses. The watercourses will be crossed via one of the following methods: crossing within the existing bridge/culvert via standard open trench, inline HDD crossing, offline open cut or offline HDD.

The methodology for crossing the watercourses is described in detail in Section 9.5.5.2 of the Onshore Construction chapter.

Impacts on water quality, flooding and aquatic ecology at the watercourses are addressed in Volume 4, Chapter 22: Water and Volume 4, Chapter 23: Biodiversity respectively. Impacts on the bridges over these watercourses (where relevant) are discussed below.

Consultation with the Fingal County Council Bridge Engineer confirmed that of the 25 watercourses, only eight crossings are identified as bridges. These are detailed in Table 26.3 in Section 26.3.2.6. Where possible, interactions were minimised with bridges which had intrinsic heritage value and which are included in the Record of Protected Structures (RPS). In these instances, alternative offline options or inline HDD under the bridge foundations are the preferred crossing options.

Access to the East side of the Dublin-Belfast Railway line is required during the construction phase and this access will be over an existing bridge over the railway track (OBB62). There may be a requirement to temporarily strengthen this bridge to cater for construction traffic. A detailed assessment will be undertaken prior to construction and consultation has been undertaken with Irish Rail in this regard. Any such strengthening, if required, will be agreed, in consultation with Irish Rail, prior to construction. As a result, there will be slight, negative and temporary impact on the existing bridge.

The local importance of these bridges necessitates a sensitivity rating of high for the bridge infrastructure present within the onshore development area. However, during engagement with the Fingal County Council Bridge Engineer, it was agreed that the proposed crossing methodology and sizes of HDD bores will not impact the structural integrity of any bridges. Given the proposed construction methodology and the consultation undertaken with Fingal County Council as well as with Irish Rail (regarding OBB62), it is concluded that there will be no significant effects on the bridges from a material assets perspective arising from the proposed development. Therefore, a magnitude rating of negligible has been applied which concludes a negative, not significant and short-term effect on bridge infrastructure, during the construction phase. Further information on interactions with the bridges listed under the RPS is provided in Volume 4, Chapter 25: Onshore Archaeology, Architecture and Cultural Heritage.

26.5.2.3 Summary of Construction Phase Effects

The likely significant effects arising from the construction of the proposed development on material assets are summarised in Table 26.5. As noted in Section 26.2.5.3, any effect rating from moderate to imperceptible is considered not significant. As a result, there are no significant effects in EIA terms arising from the construction of the proposed development on material assets.

Table 26.5 Summary of construction phase effects

Assessment topic	Potential Effect
Land Use due to direct construction impacts	Negative, moderate and short-term
Land Use and Properties due to Air Quality or Noise and Vibration Impacts	Negative, not significant and short-term
Properties	Neutral, imperceptible and short-term
Utilities – Electricity	Negative, slight and short-term
Utilities – Telecommunications	Negative, slight and short-term
Utilities – Gas	Negative, slight and short-term
Utilities – Water Supply	Negative, slight and short-term
Utilities – Foul Wastewater Infrastructure	Negative, slight and short-term
Utilities – Surface Water Infrastructure	Negative, slight and short-term
Utilities – Road and Rail Infrastructure (M1 and Dublin-Belfast Railway Line)	Negative, not significant and short-term
Utilities – Road and Rail Infrastructure (public roads)	Negative, slight and short-term
Utilities – Bridges	Negative, not significant and short-term

26.5.3 Operational Phase

26.5.3.1 Land-use and Properties

Permanent land take will be required to accommodate specific above ground elements of the proposed development. Approximately 8.53 ha (85,300 m²) of land will be permanently acquired for the grid facility. Of this, approximately 2.48 ha (24,800 m²) of the grid facility site will be used in the provision of permanent above ground infrastructure (buildings, electrical equipment, access roads etc. as described in Section 7.4 of the Onshore Description Chapter) with the remaining approximately 6.05 ha (60,500 m²) proposed to be finished as greenfield.

The zoning objective set out for the land on which the grid facility will be located is defined in the Fingal Development Plan 2023-2029 as ‘Rural’, with an associated objective of “*Protect and promote in a balanced way, the development of agriculture and rural related enterprise, biodiversity, the rural landscape, and the built and cultural heritage.*”. The area required for the grid facility will be permanently acquired and will not be available for other uses. However, the 6.05ha which is not being utilised for permanent infrastructure, as noted above will continue to comply with the zoning objectives as outlined in the Fingal Development Plan 2023-2029.

Permanent land take will also be required at the landfall and at various locations along the onshore cable route (offline routes) for permanent access tracks which will facilitate access to joint bays and associated infrastructure. Where possible, and in consultation with landowners, permanent access tracks have been located alongside existing farming tracks to reduce any potential impacts.

Normal farming activities continue as usual at the landfall section and other offline sections. The access tracks to the joint bays will be retained and will have a permanent localised effect on land use. However, whilst the zoning includes high amenity lands (landfall area), the effect will be imperceptible, given that the access tracks can be utilised by landowners and therefore this beneficial use will balance the loss of agricultural land use. There will be occasional access to the joint bays to test the cable or replace the cable if it becomes damaged.

Direct effects will also occur through operational restrictions on activities within the permanent wayleave width once the proposed development is operational. These restrictions, which are essential for the safety of personnel and the integrity of the cables, includes the following:

- On completion of the construction works and energisation of the project, the permanent wayleave will be 8m in Third Party Lands. No building will be allowed within the permanent wayleave width
- No storing of materials or changing of ground levels will be allowed within the wayleave width (i.e., soil, sand, straw, or hay)
- New utilities crossing the onshore cable route, must be agreed with ESB who will take ownership of the onshore cable route following the completion of construction
- Any digging or excavations within the wayleave width must be agreed with ESB; and
- No planting of any kind other than farming crops will be allowed within the wayleave width.

All restrictions within the wayleave width will be agreed with each landowner.

The permanent land take for the grid facility and access tracks are situated on areas of zoned land which necessitates a sensitivity rating of high for land use. However, given the proportion of land permanently acquired which will result in a differing land use from the existing, a magnitude rating of medium has been applied, such that the effect during the operational phase is determined as negative, moderate and permanent, which is not significant in EIA terms.

26.5.3.2 Utilities

Electricity

The proposed development will increase the capacity of the existing power supply network and provide enough electricity to supply approximately 500,000 – 700,000 homes.

The proposed development will provide a significant source of domestic offshore renewable energy off the east coast of Ireland. The proposed development aims to be fully operational before 2030 and will deliver clean electricity to contribute to Ireland's climate targets. Thus, the proposed development delivers a strategic source of renewable energy that will further the Irish Government's objectives regarding increasing the generation and supply of renewable electricity and reducing the emissions of Greenhouse gases. Further details on the benefits are provided in Volume 2 Chapter 4: Need for the Proposed Development. EirGrid has confirmed that Belcamp-Shellybanks 220kV project (EirGrid project code CP0984), which has had full planning permission since July 2020, will create sufficient capacity for the Belcamp substation for the grid connection requirements of the proposed development. Therefore, no additional reinforcements of the grid or modifications of the substation are required to accommodate the connection of the proposed development to the Irish electricity network other than the approved Belcamp Extension Project (F23A/0040).

The operation of the grid facility will result in an increase in demand on the existing power supply network, but this will be immaterial in comparison to the increase in supply.

Overall, the operation of the proposed development will have a significant, positive, and long-term effect on electricity supply in Ireland.

Telecommunications

The grid facility will be unmanned and operated remotely. One or two vehicles will attend the grid facility approximately every four weeks for an inspection, and as needed should any maintenance or operational issues arise, with each routine inspection limited to approximately four hours.

Given the fibre optic cable, which will be laid with the onshore cable, will be used for operation and control purposes of the electrical infrastructure associated with the proposed development, it is anticipated the operation of the proposed development a neutral, imperceptible and long-term effect on the telecommunications network.

Gas

The operation of the proposed development will not require a connection to a gas supply. Therefore, no significant effects on gas supply will occur during the operation or maintenance of the proposed development.

Water Supply

As previously mentioned, the grid facility will be connected to the existing Uisce Éireann watermain. However, as the grid facility will be unmanned, with only occasional staff on site for maintenance works, the water demand will be minimal and will be significantly less than a domestic requirement. Therefore, a sensitivity rating of low and a magnitude impact of negligible is applied for this assessment.

As a result, the proposed development will have a neutral, imperceptible and long-term effect on water services during the operation and maintenance of the proposed development. No significant effect is identified.

Foul and Surface Water Drainage Infrastructure

Foul Wastewater

As the grid facility will not be manned, other than for a limited number of site inspections, the volume of wastewater generated is expected to be minimal and less than a domestic requirement. Therefore, a sensitivity rating of low and a magnitude impact of negligible is applied for this assessment.

As a result, the proposed development will have a neutral, imperceptible and long-term effect on foul wastewater services during the operation and maintenance of the proposed development.

Surface Water

Surface water runoff generated at the grid facility will be managed by a new dedicated surface water network. Runoff from impermeable yard areas and site roads will be collected by filter drains, whereas runoff from buildings and equipment slabs will be collected by rainwater downpipes/gullies before both are discharged to the carrier pipe network. Surface water will be attenuated and will discharge at a rate equal to the existing greenfield runoff rate via an attenuation basin to an existing ditch located to the south of the grid facility.

The management of surface water runoff and the impacts on existing surface water infrastructure is assessed in Volume 4, Chapter 22: Water, which concludes no significant operational phase effects. Therefore, a neutral, imperceptible and permanent effect on surface water infrastructure are predicted during the operation of the proposed development.

Road and Rail Infrastructure

The potential for electromagnetic interference (EMI) to impact other utilities because of electromagnetic fields generated by the proposed development has been assessed. Potential EMI effects have been considered for all relevant receptors, including in particular in respect of road and rail infrastructure:

- The Dublin-Belfast railway line and associated systems, in particular the railway's Continuous Automatic Warning System (CAWS), which provides in-cab signalling information to train drivers. The onshore export cable will cross underneath the railway line, in one location.
- The proposed MetroLink underground electrical cables, which may run alongside the onshore cable route for approximately 4,750m along the R139 and the R107; and

The Electromagnetic Fields Assessment (Volume 11, Appendix 32.1) concluded that no significant EMI effects are likely in respect of the proposed development and hence, a neutral, imperceptible and long-term effect on road and rail infrastructure, from EMI are predicted.

Bridges

Maintenance of the onshore cable route will comprise an inspection approximately every two years or on an ad-hoc basis to respond to a cable fault or issue. However, these will be undertaken via the link box and communication chambers within the joint bays. There will be no joint bays located on any bridge throughout the proposed development and as such, there will be no interactions with the bridge infrastructure during the operation of the proposed development. Therefore, there is a neutral, imperceptible and long-term effect associated with bridges during the operation phase.

26.5.3.3 Summary of Operational Phase Effects

Table 26.6 Summary of operational phase effects on material assets

Assessment topic	Potential Effect
Land Use due to operational impacts	Negative, moderate and permanent
Utilities – Electricity	Positive, significant, and long-term
Utilities – Telecommunications	Neutral, imperceptible and long-term
Utilities – Gas	No significant effects
Utilities – Water Supply	Neutral, imperceptible and long-term
Utilities – Foul Wastewater Infrastructure	Neutral, imperceptible and long-term
Utilities – Surface Water Infrastructure	Neutral, imperceptible and long-term
Utilities – Road and Rail Infrastructure (M1 and Dublin-Belfast Railway Line)	Neutral, imperceptible and long-term
Utilities – Road and Rail Infrastructure (public roads)	Neutral, imperceptible and long-term
Utilities – Bridges	Neutral, imperceptible and long-term

26.5.4 Decommissioning

As described in Section 7.7 of the Onshore Description Chapter, once the proposed development comes to the end of its operational life it will be decommissioned.

It is anticipated that the decommissioning process will involve similar activities to the construction process, however, decommissioning will be undertaken in reverse with the removal of above ground structures between the landfall site and grid facility. The Bremore substation and underground onshore cable route will not be decommissioned as these will form part of the wider National Electricity Transmission Network owned by EirGrid. The compensation substation at the grid facility and onshore export cable to the transition joint bays at the landfall site are likely to be decommissioned.

Given the removal of the underground onshore cable will have a greater environmental impact than if the cables were to remain in-situ, these will not be removed.

Even though the decommissioning phase will consume power, telecoms, and water, and may cause interruption to services, the decommissioning activities will be greatly reduced in scope, will not include any excavation or groundworks and will require a smaller workforce than for the construction phase. As a result, the potential impact of the proposed development on utilities and services during the decommissioning phase will be imperceptible.

Therefore, there are no likely significant effects arising from the decommissioning of the proposed development.

26.6 Mitigation and Monitoring Measures

26.6.1 Construction Phase

Effects during the construction phase will be short-term to temporary in nature and will last only for the duration of the localised construction works. As a result of the assessment undertaken in Section 26.5, no likely significant effects are anticipated during construction, operation or decommissioning of the proposed development. Therefore, the mitigation measures presented in this section are included as best practice measures.

Where works are required alongside or to cross known utility infrastructure, precautions will be implemented by the appointed contractor to protect the infrastructure from damage, in accordance with best practice methodologies and the requirements of the utility companies, where practicable. 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. Further methods that will be used to mitigate the risk of damage to existing services will be as follows.

- Assessing route records for existing assets to understand their depth, location and proximity to the planned cable trenches
- Where the onshore cable route passes beneath existing overhead services, suitable fencing, goal posts, and guarding will be installed during construction in accordance with best practice
- The use of Ground Penetration Radar (GPR), to provide greater confirmation of the locations of existing assets
- All excavation works to be completed in accordance with Guidelines for Managing Openings in Public Roads
- The use of trial holes/slit trenches to provide greater knowledge on the exact location of existing assets; and
- Full liaison with asset owners to discuss and agree clearances and where necessary, final details.

Interruptions to existing utilities will be kept to a minimum and these will only occur where interruptions are unavoidable. In these instances, any interruption will be planned in advance by the appointed contractor and prior notice will be given to all impacted residents or businesses. This notification shall include all information on when the works will take place and the expected duration of such interruptions. All works will be carefully planned by the contractor to minimise any disturbances as far as practicable.

For all crossings taking place within the bridges listed in Section 26.5.2.2, in addition to the embedded mitigation inherent in the design of the bridge crossings, all details of the bridge crossings, including any pre-construction surveys will be agreed with local authorities prior to construction. Further mitigation measures relating to the protection of structures listed under the RPS are provided in Volume 4, Chapter 25: Onshore Archaeology, Architecture and Cultural Heritage.

Pre-construction surveys to determine the structural capacity of the existing bridge at the landfall site (OBB62) will be undertaken and assessed against the anticipated construction traffic. This will inform what interventions (if any) in terms of strengthening or temporary works may be required. Further information is provided in Section 9.5 of the Onshore Construction Chapter.

All works near existing services and utilities will be carried out in consultation with the relevant Utility Provider and Local Authority and will follow any requirements or guidelines they may have.

26.6.2 Operational Phase

Due to the measures already incorporated in the design as outlined in Section 26.3 and Section 26.5, there will be minimal negative impact on services during operation. No mitigation measures will be necessary during the operational phase.

The restrictions on the activities which can be undertaken within the wayleave width cannot be mitigated. However, the wayleave width has been minimised as far as is reasonably practicable.

26.6.3 Decommissioning

As there are no likely significant effects arising from the decommissioning of the proposed development, no mitigation measures are required.

26.7 Residual Effects

26.7.1 Construction Phase

Following implementation of the mitigation measures outlined in Section 26.6, it is anticipated that the proposed development will have no significant negative residual effects on land-use and property, electricity, telecommunications, gas, water supply, or the sewer network and drainage infrastructure. The residual effects of the proposed development on material assets are summarised in Table 26.7. The greatest significance of effect arising from the construction phase following mitigation is negative and moderate, which is not significant in EIA terms. Therefore, there are no significant residual construction phase effects.

Table 26.7 Summary of residual effects

Assessment topic	Predicted impact (pre-mitigation and monitoring)	Residual Impact (post mitigation)
Land Use due to direct construction impacts	Negative, moderate and short-term	Negative, moderate, and short-term
Land Use and Properties due to Air Quality or Noise and Vibration Impacts	Negative, not significant and short-term	No significant effects
Properties	Neutral, imperceptible and short-term	No significant effects
Utilities – Electricity	Negative, slight and short-term	Negative, imperceptible and short-term
Utilities – Telecommunications	Negative, slight and short-term	Negative, imperceptible and short-term
Utilities – Gas	Negative, slight and short-term	Negative, imperceptible and short-term
Utilities – Water Supply	Negative, slight and short-term	Negative, imperceptible and short-term
Utilities – Foul Wastewater Infrastructure	Negative, slight and short-term	Negative, imperceptible and short-term
Utilities – Surface Water Infrastructure	Negative, slight and short-term	Negative, imperceptible and short-term
Utilities – Road and Rail Infrastructure (M1 and Dublin-Belfast Railway Line)	Negative, not significant and short-term	Negative, imperceptible and short-term
Utilities – Road and Rail Infrastructure (public roads)	Negative, slight and short-term	Negative, slight and short-term
Utilities – Bridges	Negative, not significant and short-term	Negative, not significant and short-term

26.7.2 Operational Phase

The delivery of the proposed development will result in a significant, positive, and long-term effect on the electricity network in Ireland, and a slight, negative, and long-term effect on land use within the cable wayleave which is not significant in EIA terms.

Overall, the proposed development will have a significant, positive, and long-term residual effect through the generation of renewable energy and a reduction in the reliance on fossil fuels.

26.7.3 Decommissioning Phase

As there are no mitigation measures required for the decommissioning of the proposed development, the residual effects of decommissioning are the same as those in the Section 26.5. Therefore, there are no significant residual effects for the decommissioning of the proposed development.

26.8 Transboundary Effects

Considering the nature and location of the proposed development, no transboundary effects on material assets are predicted.

26.9 Cumulative Effects

A long list of “other projects” which were deemed to be potentially relevant to be included in the cumulative impact assessment was compiled (refer to the Cumulative Effects Chapter). A screening exercise of the “long list” was carried out to determine whether each of those other projects have the potential to give rise to likely significant cumulative effects with the proposed development from a material assets perspective. Many of the other projects were screened out for a few reasons including their location, scale, and nature of the project. Those projects which were “screened in” were carried forward for assessment. The results of the assessment are presented in the Cumulative Effects chapter.

The assessment concluded that no likely significant effects on material assets landward of the HWM from the Tier 1 and Tier 3 onshore and offshore projects. The proposed development alone will result in a significant, positive and long-term effect on the national electricity supply in Ireland. Due to the nature of the Tier 2 projects (offshore renewable energy), the cumulative effect of the proposed development in combination with these projects will be at least significant positive (or higher) and long term on the national electricity supply (due to the combined generation/connection of renewable energy into the grid). Therefore, there will be a likely significant direct positive cumulative effect predicted during the operation phase.

26.10 References

EirGrid (2023) Network Delivery Portfolio 361: Reporting Period Q3 2023

EirGrid (2023) Standard 220kV Cable Drawings (Drawing Numbers OFD-SSS-527 – OFD-SSS-533)

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