

## East Meath - North Dublin Grid Upgrade Environmental Impact Assessment Report (EIAR): Volume 2

Chapter 17 – Material Assets

EirGrid

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## Contents

<b>17. Material Assets .....</b>	<b>1</b>
17.1 Introduction .....	1
17.2 Methodology.....	2
17.2.1 Study Area .....	2
17.2.2 Relevant Guidelines, Policy and Legislation .....	2
17.2.3 Data Collection and Collation.....	2
17.2.4 Appraisal Method for the Assessment of Impacts.....	3
17.3 Baseline Environment.....	4
17.4 Potential Impacts .....	5
17.4.1 'Do Nothing' Scenario .....	5
17.4.2 Construction Phase.....	5
17.4.3 Operational Phase.....	7
17.5 Mitigation and Monitoring Measures .....	7
17.5.1 Construction Phase.....	7
17.5.2 Operational Phase.....	8
17.6 Residual Impacts .....	8
17.7 Conclusion.....	9
17.8 References.....	9

## 17. Material Assets

### 17.1 Introduction

This Chapter presents the assessment of the likely potential impacts of the East Meath – North Dublin Grid Upgrade Project (hereafter referred to as the Proposed Development) on material assets during the Construction and Operational Phases. A full description of the Proposed Development is presented in Chapter 4 (Proposed Development Description) in Volume 2 of this Environmental Impact Assessment Report (EIAR).

Material assets are resources of both natural and human origin that have intrinsic value. The Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2022) discuss material assets as follows:

*"In Directive 2011/92/EU this factor included architectural and archaeological heritages. Directive 2014/52/EU includes those heritage assets 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 and 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. Further to this, the Environmental Impact Assessment of Projects – 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. This EIAR includes separate chapters covering a number of those listed material assets and other material assets, as follows:

- Property and land use assets – Chapter 5 (Population);
- Ecological assets – Chapter 10 (Biodiversity);
- Soils, geology and mining or quarrying potential – Chapter 11 (Soils, Geology and Hydrogeology);
- Waterways, rivers and streams – Chapter 12 (Hydrology);
- Cultural heritage assets – Chapter 13 (Archaeology, Architectural Heritage and Cultural Heritage);
- Roads and transport assets – Chapter 14 (Traffic and Transport);
- Agricultural assets – Chapter 15 (Agronomy and Equine);
- Materials and waste management – Chapter 16 (Waste); and
- Visual amenity assets – Chapter 18 (Landscape and Visual).

This Chapter records the assessment of the potential impacts on the surrounding environment arising from the Construction and Operational Phases of the Proposed Development and, where appropriate, specifies mitigation measures based on the information presented in Chapter 4 (Proposed Development Description) in Volume 2 of this EIAR.

This Chapter focuses on both the direct and indirect likely potential impacts of the Proposed Development on existing built services and major infrastructure comprising:

- Electricity infrastructure;
- Telecommunications infrastructure;
- Gas infrastructure;
- Water supply infrastructure; and

- Sewer network and drainage infrastructure.

## 17.2 Methodology

### 17.2.1 Study Area

The study area, for the purpose of the assessment described in this Chapter, comprises the area within the Planning Application Boundary.

### 17.2.2 Relevant Guidelines, Policy and Legislation

This Chapter has been prepared in accordance with the following guidance:

- EPA Guidelines (EPA 2022); and
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission 2017).

### 17.2.3 Data Collection and Collation

A desk-based study has been carried out to identify existing utility services and infrastructure within the study area. This has been based on publicly available datasets and mapping, consultation with utility providers (as listed below) and targeted investigations. It is possible that some utility services located in proximity to the works may not have been identified. However, the mitigation detailed and proposed as part of this EIAR applies to all potential utility diversions and will be implemented when dealing with any such unidentified features.

All major infrastructure and utilities which may be impacted by the Proposed Development have been assessed as follows:

- Electricity;
- Water / wastewater;
- Gas;
- Telecommunications; and
- Other major infrastructure which interfaces with the Proposed Development (i.e., the sections of the aviation fuel pipeline to Dublin Airport that has been progressed to-date) and has not been addressed in the EIAR chapters listed in Section 17.1.

Existing utility information was requested from utility companies and service providers in 2023. In addition, as part of the design development, the potential for diversions and change being required to existing utility infrastructure have been considered. The following service providers provided utility information for the study area of the Proposed Development:

- Fingal County Council (FCC);
- Meath County Council (MCC);
- Electricity Supply Board (ESB) Networks / EirGrid;
- Uisce Éireann (formerly Irish Water) (for foul and water networks);
- Gas Networks Ireland (GNI);
- Telecommunication providers;
- AirNav Ireland;
- Irish Rail; and
- daa (formerly Dublin Airport Authority) for any potential infrastructure associated with the airfield along the R108 Barberstown Road or L3132 Naul Road.

In addition, cross-sectional Ground Penetrating Radar (GPR) surveys were undertaken in Q3 / Q4 2023 at selected locations along the proposed cable route to identify potential utility crossings.

### 17.2.4 Appraisal Method for the Assessment of Impacts

The assessment of the potential impact of the Proposed Development on material assets has been undertaken based on professional judgement and having regard to the EPA Guidelines (EPA 2022). The following issues have been considered as part of the assessment of impacts:

- Potential for impacts on major infrastructure and public utilities and the need to divert or adequately protect them in place during the Construction Phase, and to ensure ongoing protection into the Operational Phase; and
- Requirement for connections to public utilities by the Proposed Development during both the Construction and Operational Phases.

Each impact has been categorised based on:

- The quality of the impact arising from the Proposed Development;
- The significance of the impact; and
- The duration of the impact.

The definition of these impact characteristics is as per the EPA Guidelines is provided in Table 1.3 in Chapter 1 (Introduction and the Environmental Impact Assessment Process) in Volume 2 of this EIAR. These characteristics have been used to determine the quality and duration of the impacts.

The likely significant impacts of the Proposed Development on major infrastructure and utilities have been assessed using the significance criteria set out in Table 17.1, which has been adapted from the criteria in the EPA Guidelines.

For the purposes of assessing the impacts on major infrastructure and utilities, an impact is deemed to be not significant from a rating of Imperceptible to Moderate, and significant from Significant to Profound.

**Table 17.1: Significance Criteria for Utilities**

Significance Level	Criteria
<b>Profound</b>	Where there is a continuous utility interruption of more than a week; or Where additional demand on a utility would consume all remaining capacity.
<b>Very Significant</b>	Where there is a continuous utility interruption of more than 48 hours; or Where additional demand on a utility would significantly reduce the available capacity of that utility.
<b>Significant</b>	Where there is a continuous utility interruption of more than 24 hours; or Where there is significant additional demand on a utility.
<b>Moderate</b>	Where there are discrete utility interruptions of no more than eight hours for up to seven consecutive days; or Where the additional demand on a utility is relatively large.
<b>Slight</b>	Where there are discrete utility interruptions of no more than eight hours for up to three consecutive days; or Where additional demand on a utility is relatively small.
<b>Not Significant</b>	Where there is a utility interruption of no more than eight hours on a single day; or Where additional demand on a utility is quantifiable but is too small to have any impact on capacity.
<b>Imperceptible</b>	Where there is no utility interruption during diversion works; or Where additional demand on a utility has no material change.

### 17.3 Baseline Environment

The following provides an overview of the existing conditions within the study area with respect to material assets, utilising the information sources as outlined in Section 17.2. As outlined, this information has been based on publicly available datasets and mapping, consultation with utility providers, and targeted investigations. It reflects the available information at the time of undertaking this assessment. However, there is the potential that there may be unknown utilities within the study area or the available data may have incorrect location information. These data limitations however do not affect the assessment conclusions and any differences will be managed as per the mitigation set out in Section 17.5.

Approximately 26 kilometres (km) (70%) of the approximate 37.5km proposed cable route will be sited along existing roads, with the remainder (30%) to be located in private lands to avoid location-specific constraints. The proposed cable route will be in a cable trench, generally 1.5m in width and approximately 1.3m in depth in the public road (approximately 26km), and approximately 1.8m in depth in private lands and will run the full length of the Proposed Development between Woodland and Belcamp Substations. There are a number of existing utility services of varying diameters and depths along and crossing the Proposed Development.

The following existing utilities are located within the study area for the Proposed Development:

- Electricity lines, ducts and cabling and associated infrastructure;
- Potable watermains and associated infrastructure;
- Sewer lines and associated infrastructure;
- Gas mains (high and medium pressure);
- Telecommunications lines and associated infrastructure for multiple providers; and
- Infrastructure associated with Dublin Airport including the Aviation Fuel Pipeline.

Known utilities within the study area of the Proposed Development are summarised in Table 17.2 and utility crossings are listed in Appendix A4.1 (Utility Crossings) in Volume 3 of this EIAR.

**Table 17.2: Summary of Utilities Within the Study Area**

Utility Provider	Service Type	Description
ESB	High Voltage Electricity	Underground 400kV lines.
		Overhead and underground 220kV lines and cables.
		Overhead and underground 110kV lines and cables.
		Overhead 38kV lines.
	Medium Voltage Electricity	Underground cables.
		Overhead three phase Lines.
		Overhead single phase lines.
	Low Voltage Electricity	Underground cables.
		Overhead three phase lines.
Overhead single phase lines.		
Uisce Éireann	Potable Water	Trunk and distribution mains at various diameters and materials, with supporting infrastructure such as valves and hydrants.
	Sewer Lines	Foul sewer lines and associated infrastructure. Combined sewer lines and associated infrastructure.
Gas Networks Ireland	High Pressure Gas	900 millimetre (mm) steel main at 70bar.
		450mm steel main at 70bar.
	Medium Pressure Gas	250mm polyethylene mains at 4bar.
Telecommunications	National Broadband Ireland	Underground cables and associated infrastructure.
	Eir Network	Underground cables and associated infrastructure.
	Aurora Telecoms	Underground cables and associated infrastructure.
MSD	Electricity	20kV underground cable and associated infrastructure which overlaps with the Proposed Development for a section between approximate Chainage 13,550 and Chainage 18,150.
Independent Pipeline Company Ltd.	Aviation Fuel	The Aviation Fuel Pipeline is currently under construction and once completed, will connect Dublin Airport and Dublin Port, allowing aviation fuel to be piped from the port to the airport. The Proposed Development will overlap with the pipeline for a short section along Stockhole Lane.
AirNav Ireland	Air Navigation Services	Infrastructure associated with air navigation services at Dublin Airport at Naul Road.
daa	Landing Lights	Infrastructure associated with the runway landing lights at Dublin Airport.

## 17.4 Potential Impacts

This Section sets out the assessment of potential impacts that are predicted to occur due to the Proposed Development, in the absence of mitigation. This informs the need for mitigation or monitoring to be proposed (Section 17.5). Predicted residual impacts taking into account any proposed mitigation are presented in Section 17.6.

### 17.4.1 'Do Nothing' Scenario

In the Do Nothing scenario, the Proposed Development would not be implemented and there would be no changes to existing infrastructure or utilities as a result of the Proposed Development. Therefore, there would be a Neutral impact on infrastructure and utilities under the Do Nothing scenario.

### 17.4.2 Construction Phase

This Section outlines the key potential impacts on major infrastructure and utilities as a result of the Construction Phase of the Proposed Development. Chapter 19 (Risk of Major Accidents and / or Disasters) in Volume 2 of this EIAR presents an assessment of the impacts associated with major accidents involving

utilities. Chapter 4 (Proposed Development Description) in Volume 2 of this EIAR should also be referenced for additional detail on the Construction Phase of the Proposed Development.

The main potential for impacts on utilities associated with the Construction Phase of the Proposed Development will be as a result of:

- The potential to require diversion or protection in place of any of the existing utility infrastructure where there may be a direct interface with aspects of the Proposed Development; and
- Utility usage by Temporary Construction Compounds and Horizontal Directional Drilling (HDD) Compounds, and construction equipment (i.e. powering site offices and equipment, water and wastewater for construction activities and welfare facilities, and telecommunications connections for site offices and equipment).

### 17.4.2.1 Utility Interfaces

A number of potential interfaces between existing utility infrastructure and the Proposed Development have been identified but these will need to be confirmed prior to commencement of the Construction Phase. Such interfaces may necessitate diversion of the existing infrastructure. These potential diversions are listed in Table 17.3.

**Table 17.3: Utility Interfaces with Potential to Require Diversions**

Name of Utility	Description	Approximate Chainage
Electricity	Medium voltage underground cable (if located on southern side of carriageway)	32,530
Water	125mm HDPE water distribution main in the verge to the north	4,587
	150mm HDPE water distribution main in the verge to the north	9,088
	150mm HDPE water distribution main in the verge to the north	9,935
	100mm uPVC water distribution main in the verge to the north	
	75mm uPVC water main	13,600 – 18,200 (various individual locations)
	2 x 450mm ductile iron trunk water mains in middle of carriageway	24,215
	2 x abandoned water pipes in both verges	
Wastewater	350mm Ductile Iron Pumped Foul in the verge to the southwest	19,750

Diversion of utilities and services, as outlined in Table 17.3, may require planned service outages. These will generally be limited in duration (generally minutes to hours, and not over multiple days, as far as reasonably practicable), occurring only where absolutely necessary in order to facilitate the construction of the Proposed Development. Given that the exact duration of each potential service outage cannot be ascertained at this stage, a conservative scenario of brief disruptions over the course of a week has been assumed. Using the criteria as outlined in Section 17.2.4 and the conservative scenario for disruptions, where a diversion of a service / utility will result in a planned interruption in provision, the potential impact will be Negative, Moderate and Temporary.

### 17.4.2.2 Utility Use

There is the potential for impacts as a result of the need to access utilities for carrying out construction works. During the Construction Phase, Temporary Construction Compounds and HDD Compounds will be required along the Proposed Development, as described in Chapter 4 (Proposed Development Description) in Volume 2 of this EIAR, and will require electricity, welfare facilities, and telecommunications, as described below:

- Temporary Construction Compounds and HDD Compounds will require electricity to power any temporary office and welfare facilities during the Construction Phase. Power for the Temporary Construction Compounds and HDD Compounds will be supplied through a connection into the



electricity network, or where this is unavailable, via generators. Temporary electricity provision for works areas along the Proposed Development to power items such as temporary lighting, temporary traffic signals and other construction equipment will be provided through generators, as required;

- Telecommunications access will be required at the temporary Construction Compounds and HDD Compounds, which will be supplied through local networks as appropriate;
- Temporary Construction Compounds, HDD Compounds and construction areas will require a water supply for welfare facilities and will be connected into the local mains water supply, where possible. Where a connection is not possible, water tankers will be used; and
- Wastewater and surface water runoff will be created by the Temporary Construction Compounds, HDD Compounds and construction areas. Wastewater will be created by welfare facilities within the Temporary Construction Compounds, and surface water runoff will emanate from any areas of the Construction Compounds and construction areas which are paved. The Construction Compounds will be connected into the local foul / combined sewers where possible, or where not possible, will have on-site tanks for the collection of foul water which will be emptied by means of a suction tanker and the wastewater shall be disposed of to a licensed wastewater treatment plant. Where required, temporary welfare facilities (for example portable toilets) will be used, which will be collected as required for offsite disposal of the wastewater to a suitably licensed facility.

Given that the demand on local services and utilities as a result of the above connection requirements will be minimal (i.e., will be quantifiable but will not impact on existing capacities) and temporary / short-term, it is anticipated that the demand on electricity, water, wastewater and telecommunications services during the Construction Phase will result in a Negative, Not Significant, Short-Term impact as per the criteria set out in Table 17.1.

### **17.4.3 Operational Phase**

All utility connections and works on the required utility infrastructure will be finished prior to the Operational Phase. Routine maintenance will be required along the proposed cable route during the Operational Phase. Should there be utility requirements associated with maintenance activities, this will generally be for brief periods and therefore the impact as a result of demand on any utilities or service disruptions impacting the surrounding residential, social and commercial properties will be Negative, Imperceptible and Brief as per Table 17.1. No impacts on other existing utilities in close proximity to the Proposed Development are anticipated during maintenance activities as any diversions or protection measures required to facilitate the Proposed Development will have been completed during the Construction Phase.

The improvement of the electricity infrastructure of the region once the Proposed Development is operational, will result in a Positive, Significant and Long-Term impact.

## **17.5 Mitigation and Monitoring Measures**

This Section outlines the mitigation measures which will be adhered to for material assets during the Construction and Operational Phases of the Proposed Development. No monitoring measures are considered to be required for material assets.

### **17.5.1 Construction Phase**

The Proposed Development has been designed to minimise the impact on major utility infrastructure. This includes the avoidance of interactions with major utility infrastructure, as far as is possible. Where there are interfaces with existing utility infrastructure, protection in place or diversion as necessary is proposed to prevent long-term interruption to the provision of the affected services, which will be based on applicable minimum safety clearances and design standards.

All measures set out in this Section will be taken to avoid unplanned disruptions to any services during the Construction Phase. Potential utility diversions as per Table 17.3 are based on available records, and preliminary site investigations. Prior to excavation works commencing, localised confirmatory surveys will be undertaken by the appointed contractor to verify the results of the pre-construction assessments undertaken and reported in this EIAR and to ensure any unknown utilities are identified. Where works are required in and around known utility infrastructure, precautions will be implemented by the appointed contractor to protect the infrastructure from damage. 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.

All utility companies for which diversions are potentially required will continue to be consulted when designing any diversions to ensure that the proposed diversions conform to the utility provider's requirements and to ensure that service interruptions are kept to a minimum.

Where diversion, or modifications, are required to utility infrastructure, service interruptions and disturbance to the surrounding residential, commercial and / or community property may be unavoidable. Where this is the case, it will be planned in advance by the appointed contractor. Required service interruptions will generally only occur for a set period of time per day (a set number of hours not exceeding eight hours where reasonably practicable) and generally will not be continuous for a full day at a time. Prior notification of disruptions will be given to all impacted properties. This notification will include information on when interruptions and works are scheduled to occur and the duration of such interruptions. Any required works will be carefully planned by the appointed contractor to ensure that the duration of the interruptions is minimised, in as far as possible. Consultation with relevant neighbouring parties will be undertaken prior to any proposed disruptions.

The level of significance of impacts during the Construction Phase is not predicted to change even with implemented mitigation in place.

### **17.5.2 Operational Phase**

Should maintenance measures necessitate it, service disruptions impacting the surrounding residential, social and commercial properties will be kept to a minimum only occurring where unavoidable. Prior notification of disruptions will be given to all impacted properties. This will include information on when disruptions are scheduled to occur and the duration of the disruption. Consultation with relevant neighbouring parties will be undertaken prior to any proposed disruption.

## **17.6 Residual Impacts**

No significant negative residual impacts on major infrastructure or utilities are predicted either in the Construction or Operational Phase of the Proposed Development. Once operational, the Proposed Development will have a residual Positive, Significant and Long-Term impact on the electricity infrastructure in the region.

Future utility work (outside the scope of the Proposed Development) will ultimately be undertaken by the relevant utility company using their own statutory powers and will need to be done in consultation with ESB to ensure that any future development does not impact the Proposed Development. There are minimum safety clearances and design standards that will need to be maintained but it will be possible for future utilities to co-exist with the Proposed Development (see Chapter 4 (Proposed Development Description) for further detail).

## **17.7 Conclusion**

This Chapter presented the results of the assessment for material assets arising from the Proposed Development. No significant negative residual impacts on major infrastructure or utilities are predicted either during construction or operation. Once operational, the Proposed Development will have a positive, significant impact on the electricity infrastructure in the region.

## **17.8 References**

EPA (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports

European Commission (2017). Environmental Impact Assessment of Projects - Guidance on the Preparation of the Environmental Impact Assessment Report

### Directives and Legislation

Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment

Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment