Chapter 15 – Material Assets - Utilities

AWN Consulting Ltd, The Tecpro Building, IDA Business & Technology Park, Clonshaugh, Dublin 17, D17 XD90

TABLE OF CONTENTS

15. MATERIAL ASSETS - UTILITIES

15.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) assesses the potential effects of the Proposed Development on Material Assets, with particular emphasis on built services and utilities, in accordance with the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) and the *Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2022).

The EPA Guidelines (2022, p.21) describe material assets as encompassing built services and infrastructure, noting that while earlier iterations of the EIA Directive included architectural and archaeological heritage within this factor, these are now addressed under cultural heritage. Material assets are therefore considered to include infrastructure such as electricity, gas, telecommunications, water supply and wastewater networks, as well as transport infrastructure, recognising that traffic effectively represents the use of such infrastructure. The Guidelines also clarify that effects relating to the sealing of agricultural land or impacts on mineral resources are addressed under the factors of land and soils.

The EPA Guidelines (2022, pp.21 and 27) identify Roads and Traffic and Built Services as key components of the Material Assets assessment. Built services include electricity, telecommunications, gas, water supply infrastructure and sewerage, while Roads and Traffic are considered across the construction and operational phases, as well as during unplanned events such as accidents.

The purpose of this assessment is to identify and evaluate any significant potential impacts that the Proposed Development may have on material assets—for example, damage to existing infrastructure or disruption to essential services. Where potential significant effects are identified, appropriate mitigation measures are proposed to avoid, reduce or offset adverse impacts and to ensure that the development proceeds in an environmentally responsible manner.

15.2 Methodology

In this EIAR, the impacts on the Material Assets described in the above guidance have already been considered in the following chapters and therefore these aspects will not be addressed in specific detail within this chapter.

The following topics are addressed in other chapters of the EIAR:

- Employment and land-use assets and economic resources - Chapter 4 – Human Health and Populations;
- Soils, lands, and mining or quarrying potential - Chapter 5 – Land, Soils and Geology;
- Waterways, rivers, and streams - Chapter 6 – Hydrology and Hydrogeology;
- Air related effects on land use assets - Chapter 8 – Air Quality;
- Chapter 9 – Climate;
- Noise related effects on land use assets - Chapter 10 – Noise and Vibration;
- Visual amenity asset - Chapter 11 – Landscape and Visual;
- Cultural heritage assets - Chapter 12 – Archaeological, Architectural and Cultural Heritage; and
- Roads and traffic - Chapter 13 – Traffic and Transportation
- Waste management - Chapter 14 – Material Assets – Waste.

This chapter assesses major infrastructure and utilities which have not already been addressed elsewhere in this EIAR. The assessment considers the potential for interaction with, or impacts on, existing utilities infrastructure during the construction and operational phases of the Proposed Development.

The utilities assessed within this chapter include:

- Electrical Power infrastructure.
- Surface water and Foul drainage infrastructure.
- Potable Water infrastructure,
- Telecommunications infrastructure, and
- Natural Gas network infrastructure

The methodology adopted includes a review of available utility datasets, publicly available mapping sources and site walkover surveys, as described in Section 15.2.1. P Potential impacts are identified and assessed qualitatively to determine their significance with reference to Table 15-2, and where relevant, mitigation measures are proposed to avoid, reduce or offset adverse effects on utilities infrastructure and the continuity of services.

15.2.1 Determination of Receiving Environment

The existing utilities environment has been established through a desk-based review of publicly available and licensed datasets, supplemented by site walkover surveys undertaken by the project engineers, Fingleton White. The study area includes all existing utilities infrastructure within and adjacent to the site that has the potential to be affected by the Proposed Development.

Available spatial datasets obtained from utility providers and publicly accessible sources were reviewed to identify existing underground and overground services within and adjacent to the study area. The site walkovers were used to verify available information and to identify visible and above-ground infrastructure, including overhead electricity lines, pylons, and other utility-related features. Additional information relating to surface infrastructure and local utility constraints was reviewed using OpenStreetMap and Google Maps.

The outcome of the utilities assessment is illustrated on drawings GNI143-GNI-PL-SLA-0001, Sheets 1 to 11, prepared by Fingleton White. These drawings present the location and extent of identified existing utilities and infrastructure within and adjacent to the study area, based on the reviewed datasets, site walkover observations and publicly available mapping sources.

Table 15-1 Summary of Utilities Data Sources Reviewed

Dataset	Data Provider	Source / Link
IW Mains (potable water)	Uisce Éireann	datarequests@water.ie Licence Agreement
Sewer Gravity Mains	Uisce Éireann	datarequests@water.ie Licence Agreement
ESB HV Cables and Towers	Electricity Supply Board (ESB)	https://www.esbnetworks.ie/staying-safe/contractor-safety-/digging-and-excavation-work
GNI Mains (gas infrastructure)	Gas Networks Ireland	GIS_Information@gasnetworks.ie License Agreement
Aurora Telecom	Gas Networks Ireland	GIS_Information@gasnetworks.ie License Agreement
Proposed IW Mains	Uisce Éireann	https://www.water.ie/sites/default/files/projects/national-projects/water-supply-project-east-1/publications/Final-Option-Appraisal-Report-Full-Report-November-2016.pdf
Existing Infrastructure and Buildings	Open Street Map (OSM)	https://wiki.openstreetmap.org/wiki/Key:building
	Google Maps	https://www.google.com/maps
BT As Laid	BT GIS Team	gis.ireland@bt.com
Eir eMaps	Eir	cei.openeir.ie/emaps/index.html#/map/52.861085,-6.979747,16z

Enet Telecoms Services	Enet	Info@e-net.ie; planning@enet.ie

15.2.2 Determination of Sensitive Receptors

The sensitivity of the existing environment is determined by describing changes to the environment that could limit access to, or use of, the material assets (EPA, 2003). For the purpose of this assessment, the sensitive receptors are the existing built services in the study area i.e., within the Proposed Development site boundary and immediate surrounding area.

These receptors include electricity, water supply, wastewater, telecommunications and gas infrastructure that could potentially be affected during the construction or operational phases of the Proposed Development.

15.2.3 Assessment Significance Terminology

As identified in Chapter 1 of this EIAR, a common framework of assessment criteria and terminology has been used based on the EPA's EIAR Guidance 2022 in order to determine the significance of the impacts from the Proposed Development.

Table 15.1 below sets out the significance criteria common framework, along with explanatories notes to correlate these terms with effects on Material Assets (utilities) . It is noted that the terms "imperceptible effects", "not significant effects", "slight effects", and "moderate effects" used within this report, while exhibiting varying degrees of impact, are all considered to be without significant consequence.

Table 15-2 Description of Significance of Effects

Effect Significance	Description
Imperceptible	An impact capable of measurement but without noticeable consequences. Imperceptible effects on Material Assets occur cases where there is no disruption to utility services or where an increase in demand on a utility results in no noticeable change.
Not Significant	An effect which causes noticeable changes in the character of the environment but without noticeable consequences. Not Significant effects on Material Assets occur in cases of momentary utility interruptions or where there is a measurable increase in utility demand.
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. Slight effects on Material Assets occur in cases where there are brief utility interruptions or where there is only a slight increase in demand on a utility.
Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging trends. Moderate effects on Material Assets occur in cases of intermittent utility outages, occurring for up to seven days or when there is a moderate increase in demand on a utility.
Significant	An effect, which by its character, magnitude, duration, or intensity alters a sensitive aspect of the environment. Significant effects on Material Assets occur in cases of prolonged utility disruption (temporary effect) or situations involving significant demand on a utility.
Very Significant	An effect which, by its character, magnitude, duration, or intensity significantly alters the majority of a sensitive aspect of the environment. Very significant effects on Material Assets occur in cases of prolonged interrupted utility outage (short term effect) or when an increased demand would exhaust remaining capacity.
Profound	An impact which obliterates sensitive characteristics

	Profound effects on Material Assets occur in cases of sustained utility interruption or when the demand on a utility would disrupt the wider network.
The descriptions of effects characteristics stated as per the EPA Guidelines Table 3.4 (EPA, 2022, p 50-51).	

15.2.4 Forecasting Methods and Difficulties Encountered

There were no significant difficulties encountered in compiling the information for this EIA chapter.

The assessment is based on currently available information from utility records, existing mapping and known infrastructure constraints identified along the route.

It is recognised that the precise location and depth of some underground utilities will be confirmed in advance of construction, through more detailed surveys such as ground-penetrating radar, slit trenches and trial pits. As set out in Section 15.5.1, this process will ensure that all services are identified prior to works commencing and that appropriate protection or management measures are implemented to prevent unplanned outages and maintain service continuity.

15.3 Receiving Environment

The Proposed Development comprises the construction, commissioning, and operation of the GNI 143 Ballykilleen Pipeline and all ancillary and associated temporary works. The proposed GNI 143 Ballykilleen Pipeline is designed to connect the existing BGE77 pipeline (also known as Pipeline to the West (PTTW)) to the Edenderry Renewable Energy Complex.

The pipeline commences at the Kilwarden Offtake Installation, located in Kilwarden, Co. Meath, and routes south cross-country through Counties Meath and Offaly, terminating at the new Ballykilleen AGI within the existing Edenderry Power Station site, Co. Offaly.

The purpose of this section is to provide an overview of the key relevant details of the construction phase and operational phase of the Proposed Development particularly in areas where potential impacts to material assets – utilities may occur. The information presented in this section is informed by the project design, but it is not a complete description of the Proposed Development. Therefore, it should be read in conjunction with the full development package. For a more comprehensive understanding of the Proposed Development, please refer to Chapter 2 of the EIA Report. Chapter 2 provides a detailed overview of the lifecycle of the project, including reference to technical specifications, plans, and other relevant documents.

15.3.1 Electrical Power Infrastructure

A review of available Electricity Supply Board (ESB) electricity network records and utility mapping datasets has been undertaken, together with site walkover surveys, to identify to establish the existing electricity infrastructure within the vicinity of the Proposed Development site.

Based on this review, no underground electricity lines have been identified within the vicinity of the Proposed Development site. Overhead electrical infrastructure have been identified where they intersect the pipeline corridor or run parallel to it for limited distances.

In total, the Proposed Development intersects with existing overhead electricity lines approximately 27 no. times. The infrastructure it intersects with comprises a combination of medium-voltage and low-voltage electrical lines. Known locations where the pipeline intersects or runs parallel to overhead electricity infrastructure are summarised in Table 15-3 below. This overhead electrical infrastructure is illustrated on drawings GNI143-GNI-PL-SLA-0001, Sheets 1 to 11, prepared by Fingleton White.

Table 15-3 Known Electricity Infrastructure

Ref / Chainage / Feature	Utilities
Ch. 700–800	Overhead electricity
Ch. 842–858 – R161 Road Crossing (RDX01)	Overhead telecom
Ch. 1,500–1,600	Overhead electricity
Ch. 2,400–2,550 – RDX02 & RDX03	Overhead electricity; overhead telecom; underground telecom
Ch. 3,800–4,000	Overhead electricity ×2
Ch. 6,450–6,550 – RDX07	Overhead telecom; overhead electricity
Ch. 6,550–6,700	Overhead electricity ×3
Ch. 6,790–7,100	Pipeline runs parallel to overhead electricity
Ch. 7,421-7,441 – L4091 Road Crossing (RDX09)	Overhead telecom
Ch. 8,050–8,150	Overhead electricity
Ch. 13,750–13,800	Overhead electricity
Ch. 14,435–14,448 – L1004 (Roosk) Road Crossing (RDX10)	Watermain; overhead telecom; overhead electricity
Ch. 14,500–14,750	Overhead electricity ×2
Ch. 15,329–15,348 – R441 Road Crossing (RDX12)	Underground watermain; overhead telecom; underground telecom
Ch. 15,450–15,550	Overhead electricity
Ch. 15,900–16,000	Overhead electricity
Ch. 16,790–16,810 – L5007 (Monasteroris Road) Crossing (RDX13)	Underground watermain; overhead telecom
Ch. 18,730–18,756 – R402 Road Crossing (RDX14)	Overhead telecom
Ch. 18,800–18,900	Overhead electricity
Ch. 19,485–19,494 – L5003 (Drumcooly) Road Crossing (RDX15)	Overhead electricity
Ch. 21,050–22,800	Pipeline runs parallel to overhead electricity
Ch. 21,600–21,700	Overhead electricity
Ch. 22,695–22,815 – Unnamed Stream (WCX29) & R401 Road Crossing (RDX17)	Overhead telecom; overhead electricity
Ch. 22,750–22,850	Overhead electricity
Ch. 23,650 – Ballykilleen AGI	Overhead electricity

15.3.2 Surface Water and Foul Wastewater Infrastructure and Supply

A review of available Uisce Éireann records and utility mapping datasets has been undertaken to establish the existing surface water and foul wastewater infrastructure within the vicinity of the Proposed Development site.

Based on this review, no existing surface water and foul wastewater has been identified along the pipeline route. With the exception of the Edenderry Renewable Energy Complex which includes established industrial infrastructure and its own dedicated underground stormwater drainage network. Surface water runoff from the complex is attenuated on site prior to discharge to the Figile River.

15.3.3 Potable Water Infrastructure

A review of available Uisce Éireann records and utility mapping datasets has been undertaken to establish the existing and proposed potable water infrastructure within the vicinity of the Proposed Development site.

Based on this review, no existing potable water infrastructure has been identified within the agricultural lands along the pipeline route.

Existing watermains are located underground a limited number of road crossings. Known locations where the pipeline intersects watermain infrastructure are summarised in Table 15-4 below identified based on a review of available records and utility mapping datasets within the vicinity of the Proposed Development site.

The proposed Water Supply Project Eastern and Midlands Region (An Coimisiún Pleanála Reg. Ref. 323980) also intersects the Proposed Development to the north of the Edenderry Power Station. The proposed water supply infrastructure runs in an east–west direction through the townlands of Shean / Ballykilleen, in proximity to the GNI143 Ballykilleen Pipeline road and watercourse crossings, RDX17 and WCX29.

Table 15-4 Known Potable Water Infrastructure

Ref / Chainage / Feature	Utility
Ch. 14,435–14,448 – L1004 (Roosk) Road Crossing (RDX10)	Underground Watermain
Ch. 15,329–15,348 – R441 Road Crossing (RDX12)	Underground watermain
Ch. 16,790–16,810 – L5007 (Monasteroris Road) Crossing (RDX13)	Underground watermain
Ch. 22695 to 22815 - Unnamed Stream (WCX29) and R401 Road Crossing (RDX17)	Proposed Water Supply Project Eastern and Midlands Region (An Coimisiún Pleanála Reg. Ref. 323980)

15.3.4 Telecommunications Infrastructure

A review of available records and utility mapping datasets has been undertaken to establish the existing telecommunications infrastructure within the vicinity of the Proposed Development site.

Based on this review, no existing telecommunications infrastructure has been identified within the agricultural lands along the pipeline route. Existing telecommunications infrastructure (overground and underground) is present within public roads or over public roads intersecting the Proposed Development site. Known locations where the pipeline intersects telecommunication infrastructure are summarised in Table 15-5 below.

Table 15-5 Known telecommunication Infrastructure

Ref / Chainage / Feature	Utility
Ch. 842–858 – R161 Road Crossing (RDX01)	Overhead telecom
Ch. 2,400–2,550 – RDX02 & RDX03	Overhead telecom; underground telecom
Ch. 6,450–6,550 – RDX07	Overhead telecom
Ch. 7,421-7,441 – L4091 Road Crossing (RDX09	Overhead telecom
Ch. 14,435–14,448 – L1004 (Roosk) Road Crossing (RDX10)	Overhead telecom
Ch. 15,329–15,348 – R441 Road Crossing (RDX12)	Overhead telecom; underground telecom
Ch. 16,790–16,810 – L5007 (Monasteroris Road) Crossing (RDX13)	Overhead telecom
Ch. 18,730–18,756 – R402 Road Crossing (RDX14)	Overhead telecom
Ch. 22,695–22,815 – Unnamed Stream (WCX29) & R401 Road Crossing (RDX17)	Overhead telecom

15.3.5 Natural Gas Network Infrastructure

A review of available Gas Networks Ireland records and utility mapping datasets has been undertaken to establish the existing natural gas infrastructure within the vicinity of the Proposed Development site.

Based on this review, no existing natural gas infrastructure has been identified within within the vicinity of the Proposed Development site, with the exception of the connection point where the proposed GNI143 Ballykilleen Pipeline ties into the existing BGE77 gas transmission pipeline.

15.4 Characteristics of the Proposed Development

15.4.1 Construction Phase

15.4.1.1 Electrical Power Infrastructure

During construction, contractors will require temporary power for onsite accommodation, and construction equipment and plant. The power requirements will be relatively minor. During construction it is anticipated that generators will be provided on site to provide temporary power.

Standard pre-construction utility checks and site-specific controls will be applied to manage the unlikely event that previously unrecorded electrical services are encountered

15.4.1.2 Surface Water and Foul Wastewater Infrastructure

There is no connection to any public surface water infrastructure proposed during the construction phase. Dewatering of the pipe trench may be required along sections of the pipeline route. However, its likely that these dewatering activities will discharge to land or nearby watercourses as opposed to stormwater networks (utilities). The management of construction water is detailed in Chapter 6 (Hydrology and Hydrogeology) of this EIAR.

There is no connection to any foul wastewater infrastructure proposed during the construction phase. Welfare facilities will be provided for the contractors via portable sanitary facilities within the construction compound(s) during the construction works. Foul water will be collected from the welfare facilities by a licensed waste sewerage contractor.

Standard construction-phase drainage controls and best-practice measures will be implemented to manage surface water run-off and sediment, and to protect existing drainage infrastructure. In addition, standard pre-construction utility checks will be undertaken as part of the construction methodology to manage the unlikely event that previously unrecorded drainage infrastructure is encountered.

15.4.1.3 Potable Water Infrastructure

During construction, water will be required for welfare facilities, dust suppression and general construction activities. It is anticipated that due to the short duration of works and low water requirements that water supply will be provided by tanker to the site.

During commissioning, the GNI143 Ballykilleen Pipeline is hydrostatic tested (pressurised with clean water) to prove the strength and integrity of the pipeline after construction. This will involve filling the entire pipeline with clean potable water, requiring approximately 6,667,655 litres and pressurised to identify any leak. There are no chemical additives to this water. The required water will be sourced from an existing supply either from nearby municipal supply point (mains water supply, local authority fire hydrants) or alternatively, abstraction from another water supply in private ownership from groundwater / surface water that is permitted and registered with the EPA under the Water Environment (Abstractions and Associated Impoundments) Act 2022 (No. 48 of 2022).

Standard pre-construction utility checks and site-specific controls will be applied as part of the construction methodology to manage the unlikely event that previously unrecorded potable water services are encountered

15.4.1.4 Telecommunications Infrastructure

Telecommunications and data connectivity required during the construction phase will be facilitated through mobile communication systems.

In parallel with the pipeline installation, ancillary ducting system (2 no. 32/24mm fibre ducts) will be laid within the same trench alongside the gas pipeline to facilitate future telecommunications and fibre-optic services within the same utility corridor.

Standard pre-construction utility checks and site-specific controls will be applied as part of the construction methodology to manage the unlikely event that previously unrecorded telecommunication services are encountered

15.4.1.5 Natural Gas Infrastructure

The construction works of the Proposed Development does not interact with any existing gas distribution infrastructure, except at the connection point with the BGE77 gas transmission pipeline. During construction, there will be no requirement for a temporary gas connection.

The nature of the Proposed Development is such that, rather than utilising gas itself, it will facilitate the connection of existing infrastructure to the BGE77 gas transmission network. The proposed underground gas transmission pipeline will not have any operational gas demand; its sole function is to transport gas from the existing transmission network to the Bord na Móna Cushaling Peaker Plant.

At the Ballykilleen AGI, limited gas usage will occur to support ancillary equipment, including gas-fired boilers and a gas-fired backup generator. This gas demand will be minor and intermittent in nature and will be supplied via the proposed pipeline. No additional interaction with existing gas distribution infrastructure is required.

15.4.2 Operational Phase

15.4.2.1 Electrical Infrastructure

Once operational, the underground gas transmission pipeline will not require a permanent electrical supply. The Kilwarden Offtake Installation will not require an electrical connection.

At the Ballykilleen AGI, an electrical connection will be required to support the operation of kiosks and associated equipment, with a gas-fired backup generator provided to ensure continuity of operations. Components of the AGI that will require a power connection are the Pressure Reduction System (PRS) kiosk, Packaged Boiler Unit (PBU) kiosk, the Electrical and Instrumentation (E&I) kiosk; the Gas Analyser kiosk, as well as lighting / CCTV networks. There is electrical infrastructure, on the existing Edenderry Renewable Energy Facility, adjacent to the proposed Ballykilleen AGI. It is expected that connections can be made to utilities.

15.4.2.2 Surface Water and Foul Wastewater Infrastructure

Once reinstated, the GNI 143 Ballykilleen Pipeline does not alter any existing hardstanding areas or create any new impermeable surfaces along its length that could generate stormwater runoff. The transmission pipeline is installed entirely below ground and the working corridor is fully reinstated to its original agricultural or greenfield condition following construction. As a result, the reinstated pipeline corridor remains permeable, allowing infiltration and natural drainage to occur unchanged.

Stormwater falling on impermeable surfaces within the Kilwarden Offtake Installation will drain to a purpose designed soakaway located to the southeast of the compound. The soakaway will overflow to an existing agricultural drainage ditch running along the access laneway.

Operational stormwater on impermeable surfaces from the Ballykileen AGI will connect to the existing surface water drainage network within the Edenderry Renewable Energy Complex. This established system ultimately discharges to the Figile River, located to the south of the AGI, consistent with existing drainage pathways on the wider site. The increase in surface water flows from this installation will be minimal and will not adversely impact the existing drainage system.

The Proposed Development once operational will not generate foul wastewater, nor will it require a connection to a wastewater network. There are no staff are permanently based at any of the installations.

15.4.2.3 Potable Water Infrastructure

The Proposed Development does not require an operational potable water supply. No processes, equipment, or facilities within the pipeline, Kilwarden Offtake Installation, or Ballykileen AGI require water for operation. There are no staff are permanently based at any of the installations.

15.4.2.4 Telecommunications Infrastructure

Once operational, the Kilwarden Offtake Installation and GNI 143 Ballykilleen Pipeline do not require a telecommunications connection.

The Ballykilleen AGI requires telecommunications connections to support pressure regulation, metering, instrumentation, control systems, boilers, and telemetry. There are available utilities within the existing Edenderry Renewable Energy Complex site and adjacent to the proposed Ballykilleen AGI it is expected that connection can be made to these.

15.4.2.5 Natural Gas Infrastructure

The nature of the GNI 143 Ballykilleen Pipeline is such that, rather than utilising gas itself, it will facilitate the connection of existing infrastructure to the BGE77 gas transmission network. The proposed underground gas transmission pipeline will not have any operational gas demand; its sole function is to transport gas from the existing transmission network to the Bord na Móna Cushaling Peaker Plant.

An exception to this occurs at the Ballykilleen AGI, A limited gas usage will occur to support ancillary equipment, including gas-fired boilers and a gas-fired backup generator. This gas demand will be minor and intermittent in nature and will be supplied via the proposed GNI 143 Ballykilleen Pipeline. No additional operational phase interaction with existing gas distribution infrastructure is required.

15.5 Potential Impacts of the Proposed Development

15.5.1 Construction Phase

15.5.1.1 Electrical Power Infrastructure

The power requirements for the construction phase will be relatively minor, no connection to the public network will be made.

Where the Proposed Development passes beneath or in proximity to existing overhead electricity utilities the works will be undertaken to avoid direct interaction with the overhead infrastructure. No disruption or disconnection of electricity utilities is anticipated as part of the works.

All service crossings will be carried out in consultation with the relevant asset owners, and appropriate protection, monitoring and reinstatement measures will be implemented in accordance with statutory requirements and best practice.

The potential impact associated with power and electrical supply for the construction phase is ***neutral, imperceptible*** and ***short-term.***

15.5.1.2 Surface Water and Foul Wastewater Infrastructure

There is no connection to any public surface water infrastructure proposed during the construction phase, there are therefore no direct impacts on the existing surface wastewater infrastructure.

Welfare facilities will be provided for the construction workers on site during the construction works and wastewater will be of domestic origin only, this will be tankered off site by an apparently licenced contractor, there are therefore no potential impacts on the capacity of the existing foul wastewater infrastructure.

During the construction phase, there is potential for an increase in run-off due to the introduction of impermeable surfaces and the compaction of soils at the proposed Kilwarden Offtake Installation. This will reduce the infiltration capacity and increase the rate and volume of direct surface run-off. The potential impact of this is a possible increase in surface water run-off and sediment loading which could potentially impact the existing stormwater system on the Edenderry Power Station site.

The potential impact on surface water and foul drainage for the construction phase is ***neutral, imperceptible,*** and ***short-term.***

15.5.1.3 Potable Water Infrastructure

During the construction phase the water requirements for the site will be minimal and facilitated through road tanker delivery. This will serve the construction compound, welfare facilities and any other construction activities for the duration of construction works on the Proposed Development. The demand during the construction phase is not expected to be significant enough to have any potential impact on the existing water supply network.

The potential impact associated with hydrostatic testing water use creates a temporary increase in demand on the water supply source. Given that the hydrostatic testing will be a one-off activity, and that water will be sourced from existing supplies with appropriate permissions in place, no significant impacts on potable water infrastructure or water resources are anticipated. Any abstraction from private groundwater or surface water sources will be undertaken in accordance with the Water Environment (Abstractions and Associated Impoundments) Act 2022 (No. 48 of 2022).

Crossing of existing underground watermains will follow a typical service crossing, whereby the pipeline will be installed to avoid interaction with the existing underground service. A minimum separation distance of 500mm will be maintained between the pipeline and the third-party service where required. A typical service crossing drawing provided is included in drawing GNI143-GNI-PL-MIS-0006-01. No disruption or disconnection of watermains is anticipated as part of the works.

All service crossings will be carried out in consultation with the relevant asset owners, and appropriate protection, monitoring and reinstatement measures will be implemented in accordance with statutory requirements and best practice.

The potential impact on potable water infrastructure for the construction phase is ***neutral, imperceptible,*** and ***short-term.***

15.5.1.4 Telecommunications Infrastructure

Where the Proposed Development passes beneath or in proximity to existing overhead telecommunication utilities the works will be undertaken to avoid direct interaction with the overhead infrastructure.

Crossing of existing underground telecommunication utilities will follow a typical service crossing, whereby the pipeline will be installed to avoid interaction with the existing underground service. A minimum separation distance of 500mm will be maintained between the pipeline and the third-party service where

required. A typical service crossing drawing provided is included in drawing GNI143-GNI-PL-MIS-0006-01. No disruption or disconnection of telecommunication utilities is anticipated as part of the works.

All service crossings will be carried out in consultation with the relevant asset owners, and appropriate protection, monitoring and reinstatement measures will be implemented in accordance with statutory requirements and best practice.

The potential impact on telecommunications infrastructure for the construction phase is ***neutral, imperceptible,*** and ***short-term.***

15.5.1.5 Natural Gas Infrastructure

The connection to the existing transmission gas line will be undertaken via a hot tap connection. Hot Tapping allows a connection to an existing pipeline to be completed while the line is fully operational, ensuring no shutdown is required and that no gas is lost from the pipe.

There are no potential impacts associated with natural gas network infrastructure for the Proposed Development during the construction phase.

15.5.2 Operational Phase

15.5.2.1 Electrical Power Infrastructure

During the operational phase, electrical power is required at the Ballykilleen AGI to support the operation of kiosks, instrumentation, control systems and ancillary equipment. This electrical supply will be provided via connection to the existing electricity network in the vicinity of the Edenderry Renewable Energy Complex.

The electricity demand associated with the AGI is low in magnitude and can be accommodated by the existing electricity infrastructure without the requirement for network reinforcement. The Proposed Development will not adversely affect electricity supply capacity or reliability to other users.

There are no electricity requirements for the Kilwarden Offtake Installation or the GNI 143 Ballykilleen Pipeline.

The potential impact associated with power and electrical supply infrastructure for the operational phase is ***neutral, imperceptible***, and ***long-term.***

15.5.2.2 Surface Water and Foul Wastewater Infrastructure

During the operational phase, surface water runoff will arise from areas of new impermeable surfacing at the Ballykilleen AGI. Surface water from these areas will discharge to the existing private surface water drainage network within the Edenderry Renewable Energy Complex, which ultimately discharges to the Figile River in accordance with existing arrangements, and not via public utility.

The Kilwarden Offtake Installation manages surface water onsite via a purpose-designed soakaway, with overflow to an existing agricultural drainage ditch not via public utility.

During the operational phase there will be generation of surface water , there will be a connection from the Ballykilleen AGI to the Edenderry Power Station private stormwater drainage infrastructure and therefore no potential impacts public material assets.

There are no surface or foul water connections from the Kilwarden Offtake Installation or the GNI 143 Ballykilleen Pipeline.

The operational surface water discharges represent a negligible increase in flow to existing systems and will not result in any adverse effects on drainage infrastructure.

The potential impact on surface water and foul drainage infrastructure for the operational phase is ***neutral, imperceptible,*** and ***long-term.***

15.5.2.3 Potable Water Infrastructure

During the operational phase there is no consumption of potable water, there is no connection to any potable water infrastructure and therefore no potential impacts on these material assets.

The potential impact on potable water infrastructure for the operational phase is ***neutral, imperceptible,*** and ***long-term.***

15.5.2.4 Telecommunications Infrastructure

During the operational phase, telecommunications connections will be required at the Ballykilleen AGI to facilitate system monitoring, remote operation, data transmission and telemetry. These connections will be provided via existing telecommunications infrastructure in the vicinity of the Edenderry Renewable Energy Complex. Telecommunications demands at the AGI are low and will not require network reinforcement or affect the performance or availability of telecommunications services to other users.

The Kilwarden Offtake Installation and the GNI 143 Ballykilleen Pipeline do not require telecommunications connections.

The potential impact on telecommunications infrastructure for the operational phase is ***neutral, imperceptible,*** and ***long-term.***

15.5.2.5 Natural Gas Infrastructure

The GNI 143 Ballykilleen Pipeline itself does not have any operational gas requirements.

During the operational phase, a limited quantity of natural gas will be used at the Ballykilleen AGI to support ancillary equipment The gas usage during operations will not affect the capacity, operation or integrity of the wider gas transmission or distribution network.

The potential impact on gas infrastructure for the operational phase is ***neutral, imperceptible,*** and ***long-term.***

15.6 Mitigation Measures

15.6.1 Construction Phase

Ongoing consultation with third party service providers (e.g. Uisce Éireann, EirGrid, ESB Networks, Aurora) will be undertaken prior to and during construction. All works in the vicinity of existing services will be undertaken in consultation with the relevant utility providers and in accordance with their requirements to minimise the risk of disruption to local communities and businesses. Any planned service interruptions, should they be necessary, will be agreed in advance with the relevant service providers.

Prior to commencement of excavation, the Contractor must undertake appropriate surveys and investigations to confirm the locations of utilities and services in the works area prior to commencing work. It is acknowledged that the location of services shown on drawings is indicative only and that additional or previously unrecorded services may be present. Contractor is responsible for locating all services on site and shall liaise with all Utilities Providers in advance of any works.

All works in proximity of utilities shall be carried out in accordance with statutory requirements and best practice, including compliance with the Health and Safety Authority *Code of Practice For Avoiding Danger From Underground Services*[1].

All applicable standards, guidelines and codes of practice will be adhered to regarding both installation of the gas transmission pipeline and working in the vicinity of existing services, in particular the Gas Networks Ireland (GNI) Guidelines for Designers and Builders – Industrial and Commercial (Non-Domestic) Sites (2018) and the Health & Safety Authority (HSA) Code of Practice for Avoiding Danger from Underground Services (2016).

The mitigation measures set out in this EIAR will be implemented and adhered to by the construction Contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Ecological Clerk of Works where relevant. All personnel working on the Site will be trained in the implementation of the procedures. The construction Contractor will provide a detailed CEMP that will include any subsequent planning conditions relevant to the Proposed Development and set out further detail of the overarching vision of how the construction Contractor of the Proposed Development manage the Site in a safe and organised manner.

15.6.2 Operational Phase

No specific mitigation measures are required during the operational phase. The Proposed Development will not result in significant demands on utility infrastructure or disruption to existing services, and operational interactions with electricity, telecommunications, drainage and gas infrastructure are limited.

15.7 Monitoring or Reinstatement Measures

15.7.1 Construction Phase

Monitoring and inspection of works in the vicinity of existing utility infrastructure will be undertaken during construction to ensure that agreed protection measures are correctly implemented and that third-party services are not damaged or disrupted.

Any ground disturbance, service crossings or temporary works areas will be reinstated on completion of construction in accordance with the requirements of the relevant utility providers and to a condition equivalent to, or better than, the pre-construction condition.

15.7.2 Operational Phase

No ongoing monitoring or reinstatement measures are required during the operational phase.

15.8 Residual Effects of the Proposed Development

15.8.1 Construction Phase

The works contractor will be obliged to put best practice measures to ensure that there are no interruptions to services from the existing telecommunications network, watermain, sewer and electrical grid. Any planned interruptions will be agreed in advance with the utility's suppliers. Strict quality control measures will be undertaken while laying pipes to minimise or eradicate infiltration and ex-filtration. The predicted impact will be neutral, imperceptible, and temporary for the construction phase.

[1] https://www.hsa.ie/media/4dpjtpaq/underground_services_cop.pdf

The implementation of mitigation measures within each chapter and detailed in Section 15.6.1 will ensure that the predicted impacts on the material assets will be ***neutral, imperceptible***, and ***temporary*** for the construction phase.

15.8.2 Operational Phase

There are no potentially significant impacts during the operational phase in respect of material assets utilities and therefore residual effects the material assets during the operational phase will be ***neutral, imperceptible*** and ***long-term***.