MWP

Environmental Impact Assessment Report (EIAR)

Chapter 13 Material Assets – Built Infrastructure

Dernacart Wind Farm
110kV Substation and Grid Connection

Statkraft Ireland

October 2024

Contents

Tables

Figures

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13. Material Assets – Built Infrastructure

13.1 Introduction

This chapter considers the potential effects on material assets arising from the Proposed Development. A full description of the Proposed Development is provided in Chapter 2 Description of the Proposed Development of this Environmental Impact Assessment Report (EIAR).

The Environmental Protection Agency's (EPA) 'Guidelines on the information to be contained in an Environmental Impact Assessment Report' (EPA, 2022) describes material assets to be taken to mean 'built services' (i.e. built services networks including electricity, telecommunications, gas, water supply infrastructure and sewerage), and 'waste management'. These are all considered within this chapter. Roads and traffic infrastructure is addressed in Chapter 12 of this EIAR.

The nature and probability of effects on material assets arising from the proposed development has been assessed. The assessment comprises:

- A review of the existing receiving environment.
- Prediction and characterisation of likely impacts and associated effects;
- Evaluation of effects significance; and
- Consideration of mitigation measures, where appropriate.

13.1.1 Competency of Assessors

The assessment was completed by Zeba Haseeb and Aileen O'Connor of Malachy Walsh and Partners (MWP).

Zeba Haseeb, BS Hons., MS, works as an Environmental Scientist at MWP. Zeba has worked on a variety of projects conducting environmental assessments and supporting the delivery of a number of environmental deliverables including Environmental Impact Assessment (EIA) Screening Reports, Appropriate Assessment Screening Reports, feasibility studies, Construction Environmental Management Plans (CEMP), health, safety and environment management and monitoring, and Environmental Impact Assessment Reports (EIAR). She has also contributed to EIA's of wind farms, dam, mines, tourism, and residential developments.

Aileen O'Connor (MWP), BSc(Hons), PGDip, has over 13 years' experience in the environmental field both in industry and consultancy work. Aileen is a Senior Environmental Consultant and holds a BSc(Hons) in Environmental Science and PGDip in Energy Management. Aileen is an experienced and competent environmental professional with a background in contaminated land assessment, licence compliance and waste management. Aileen has prepared and peer reviewed chapters of EIARs and has coordinated and delivered many environmental assessment reports and consent applications for transmission and power generation projects including the preparation of Resource Waste Management Plans (RWMPs), CEMPs and contributed to Material Assets Impact Assessments. More specially, she has worked on a wide variety of projects during her career to date including renewable energy, marine, quarries, industrial and commercial developments.

13.1.2 Legislation

This chapter has been prepared in accordance with the Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU.

13.2 Methodology

The methodology used for this study included desk-based research of published information to assemble information on the relevant potentially impacted material assets.

13.2.1 Desktop Study

A desktop review of the following sources was conducted for information regarding existing built services:

- Gas networks Ireland Dial Before You Dig Maps (DBYD);
- ESB DBYD Maps;
- Uisce Eireann Maps
- Commission for Communications Regulation Telecommunications coverage maps
- EPA Waste Collection Register, Waste Facility Permit Register, Waste Licences

13.2.2 Guidelines and Best Practice

The following publications were consulted as part of the preparation of this assessment:

- Guidelines on the Information to be Contained in Environmental Effect assessment Reports (Environmental Protection Agency (EPA), May 2022);
- The European Commission 'Guidance on the preparation of the Environmental Effect Assessment Report, 2017.

13.2.3 Study Area

The study area for the built services and waste assessment was based upon the construction footprint, namely the proposed development site boundary as shown in Figure 13.1.

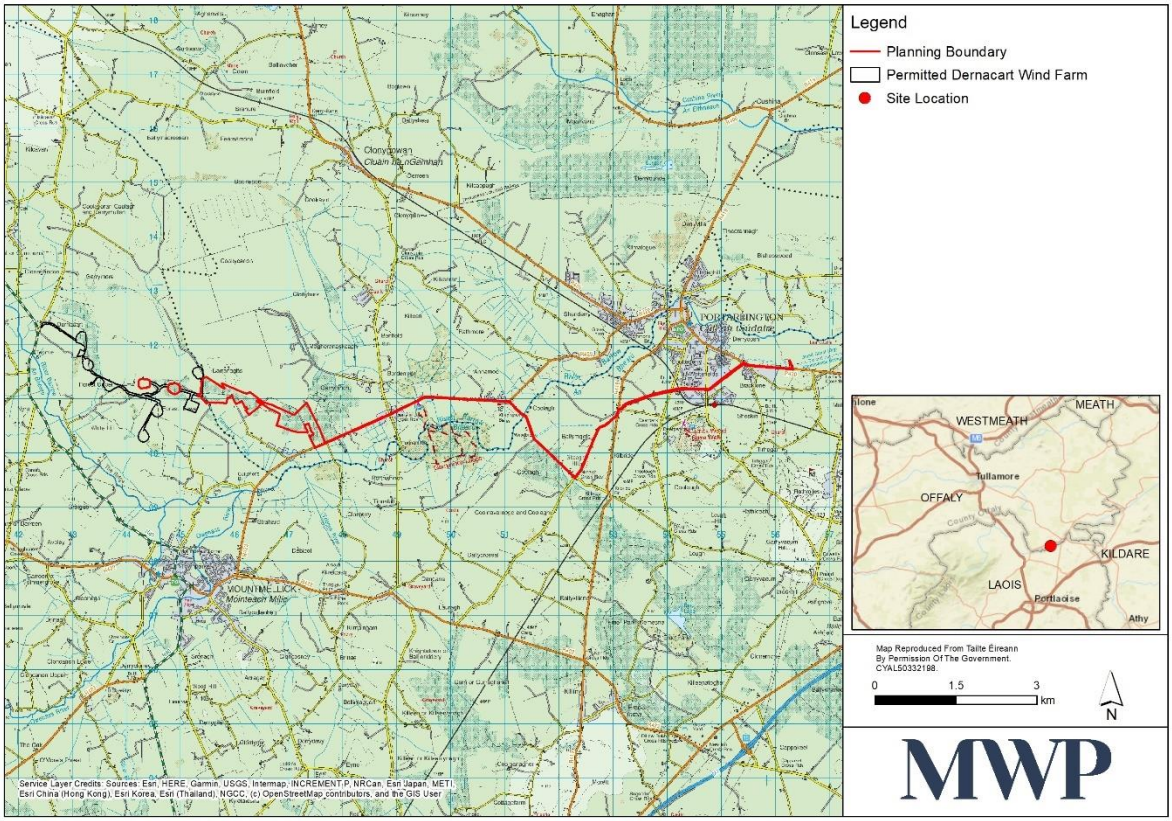

Figure 13.1 Site Location

13.2.4 Scope of Assessment

Table 13.1 outlines the issues which the EPA guidance documents suggest may be examined as part of the material assets impact assessment.

Table 13.1 Material Assets Topics

Material Asset	Topics to be Covered
Built Services	Electricity Telecommunications Gas Water Supply Infrastructure Sewage
Waste Management	Construction Wate Operational Waste

Accordingly, the scope of this assessment is made with respect to these topic areas and considers the effects of the construction and operation of the Proposed Development in terms of how the proposal could affect each.

13.2.4.1 Assessment Criteria

Determination of the significance of an effect will be made in accordance with the criteria and terminology outlined in the 'Guidelines on the information to be contained in Environmental Impact Assessment Reports EIAR (EPA, 2022) as outlined in Section 1.4.3 under Chapter 1 Introduction of this EIAR.

13.2.5 Statement on Limitations and Difficulties Encountered

No difficulties were encountered during the writing of this chapter.

13.3 Baseline Environment

13.3.1 Sensitivity of Baseline Environment

The sensitivity of the existing environment identifies the ability of the receptor to respond to potential effects and can be determined by describing changes to the environment that could limit the access to, or use of, the material asset. For the purpose of this assessment, the sensitive receptors are regarded as the existing built services network (i.e. electricity, telecommunications, gas, water supply and sewerage networks), and waste management infrastructure capacity within the study area. Traffic Transport networks are considered in Chapter 12.

13.3.2 Electricity

EirGrid is the national electricity Transmission Systems Operator (TSO) in Ireland. In its role as TSO, EirGrid is responsible for the grid infrastructure required to support the development of Ireland's economy. EirGrid's Transmission Development Plan (TDP) 2018-2027 is the plan for the development of the Irish transmission network and interconnection over the ten years from 2018. This ten-year plan presents projects that are needed for the operation of the transmission network. The grid developments have been planned to ensure that the intended grid reinforcements facilitate the connection of significant amounts of wind generation.

The TDP sets out a number of planned reinforcement projects of the Transmission Network in Laois. This plan includes the Coolnabacky- Portlaoise 110 kV Line Uprate. The development strategy has stated that it is vital that this new electricity infrastructure is built to ensure that the region meets the standards required for a safe and secure electricity system and to cater for connecting the electricity generated by the region's huge renewable energy resources.

Bracklone 110kV substation has recently received permission for development. The consented substation will provide sufficient MW capacity for the proposed 110kV generation connection.

The electricity infrastructure associated with the proposed development includes medium voltage (MV) and low voltage (LV) lines and cables.

Key elements of this infrastructure are described as follows:

At the proposed substation site, there are 10kV/20kV medium voltage overhead lines.

There are a variety of overhead lines including 10kV/20kV/38kV and higher voltage electrical capacity along the 110kV grid cable route. However, since the proposed grid connection will be underground, the overhead lines along the route are not expected to be effected by the proposed development.

The grid route encounters underground electrical infrastructure lines at two locations.

- As the route approaches Portarlington town, passing by an industrial facility and Portarlington GAA club along the L3158, it encounters underground cables of MV/LV (10kV/20kV/400V/230V). This underground cable route continues until it intersects with the R420 road.
- Upon reaching and turning from the R420 road towards the Bracklone substation, the route again encounters underground cables MV/LV (10kV/20kV/400V/230V).

13.3.3 Television and Telecommunications

RTE's analogue service was turned off in October 2012 and was replaced by a new Digital Terrestrial Television (DTT) service, commonly known as Saorview TV. The digital Saorview service is still provided from the large RTE transmission sites and a number of new transmission sites have also been built. A review of the Saorview coverage map[1] indicates that TV reception in the area is principally received from the transmitter at Kippure, Co. Dublin. See Figure 13.2.

The Saorview coverage map also indicates that Saorview service coverage is currently good within and around the development site, as shown in Figure 13-3.

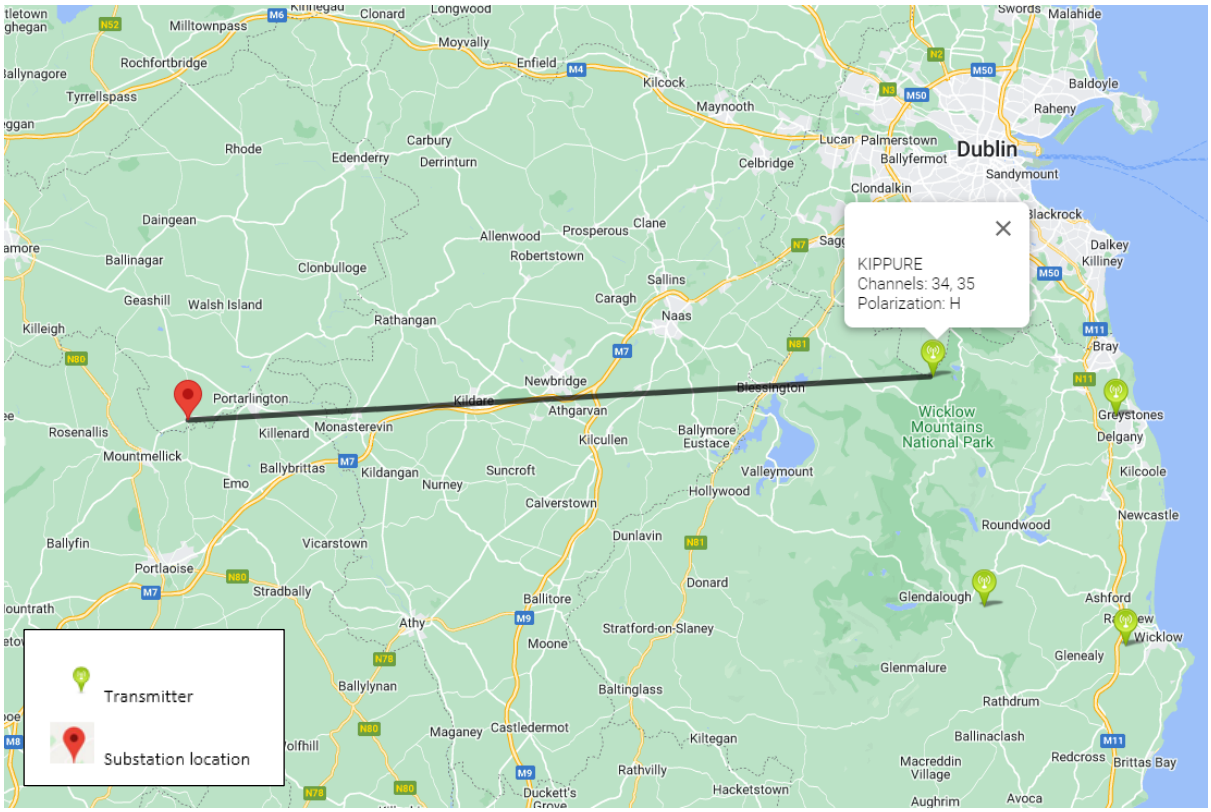

Figure 13.2 TV transmitters in proximity of the Proposed Development

[1] https://saorview.ie/en/check-coverage/

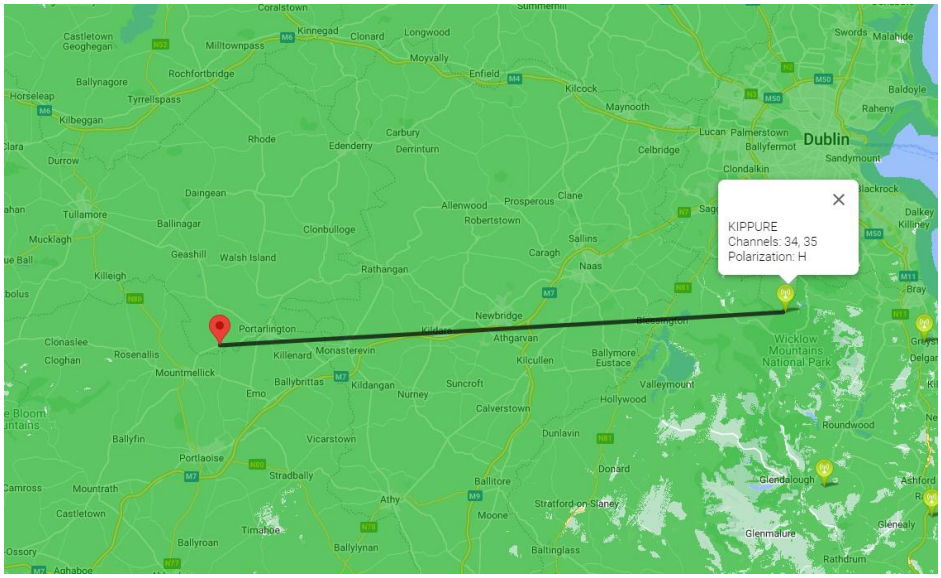

Figure 13.3 Saorview Coverage in proximity to the proposed development (https://www.saorview.ie/en/get/coverage)

A review of the Commission for Communications Regulation site was undertaken to check the Mobile network operators with masts and communication links in the area. The ComReg[2] site map in **Figure 13.4** shows mobile communication masts (highlighted in green circle) in the surrounding areas of the study area. These include Vodafone, Three, Eircom and Imagine Communications Ireland.

Figure 13.4 Communication Infrastructure in proximity of the Proposed Development

[2] Service Coverage - Commission for Communications Regulation (comreg.ie) accessed 24/05/2024

13.3.4 Gas

Figure 13.5, 13.6 and 13.7 from Gas Networks Ireland display current gas infrastructure within the study area. The maps show distribution pipes (medium pressures) along the section of the proposed underground grid route from R419 to the consented Bracklone 110kV substation.

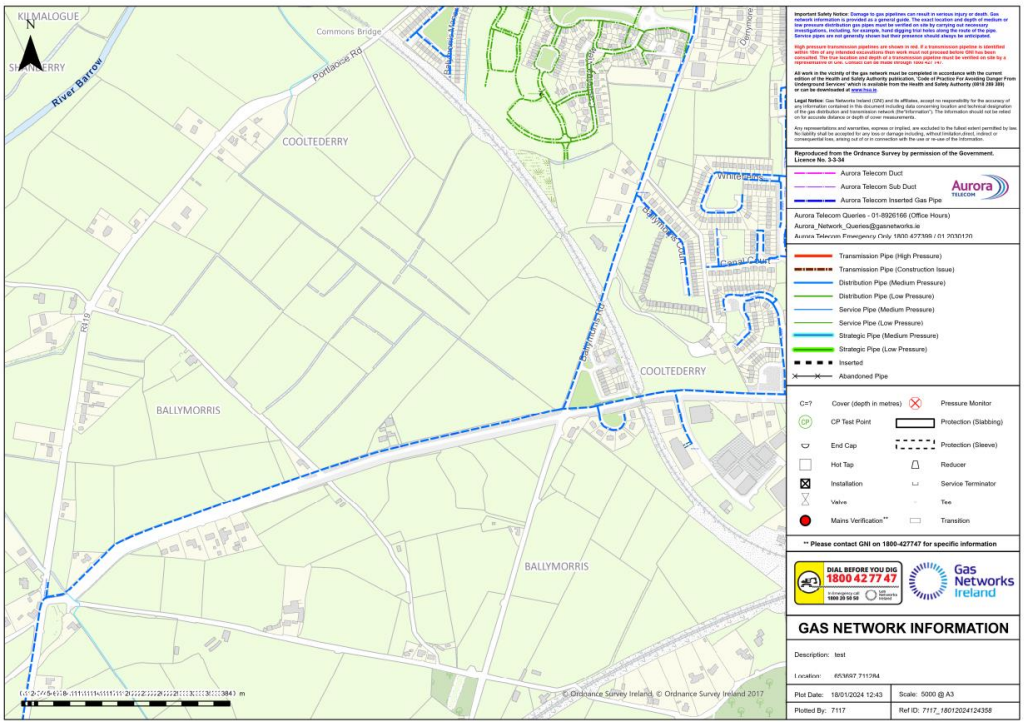

Figure 13.5 Gas Network Ireland (Section 1-Along the Grid Cable Route)

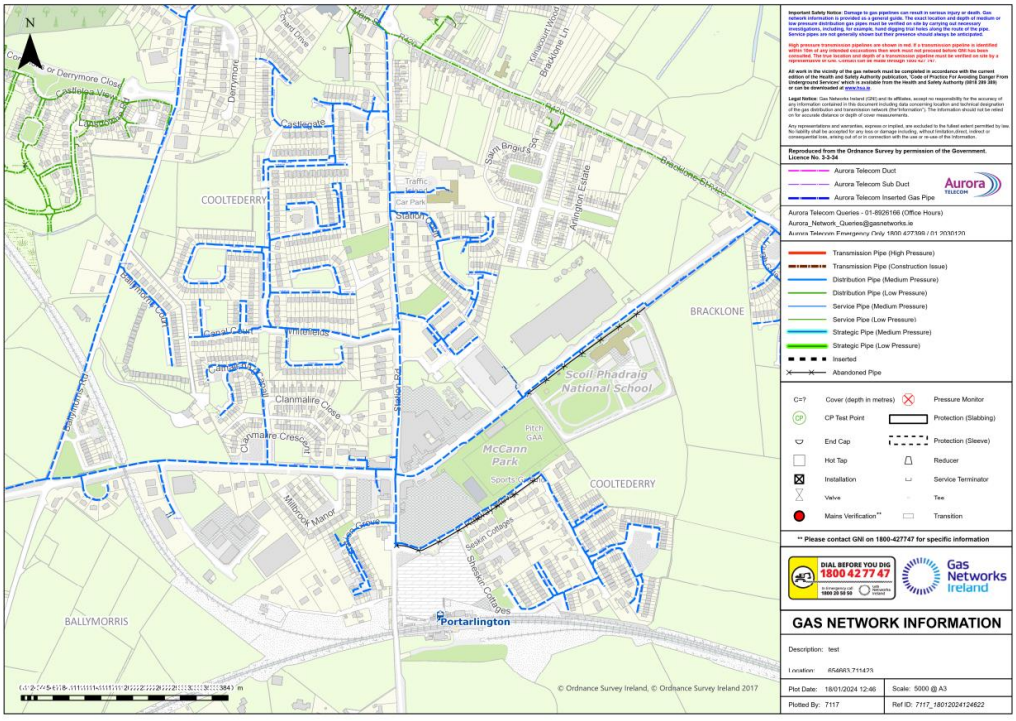

Figure 13.6 Gas Network Ireland (Section 2-Along the Grid Cable Route)

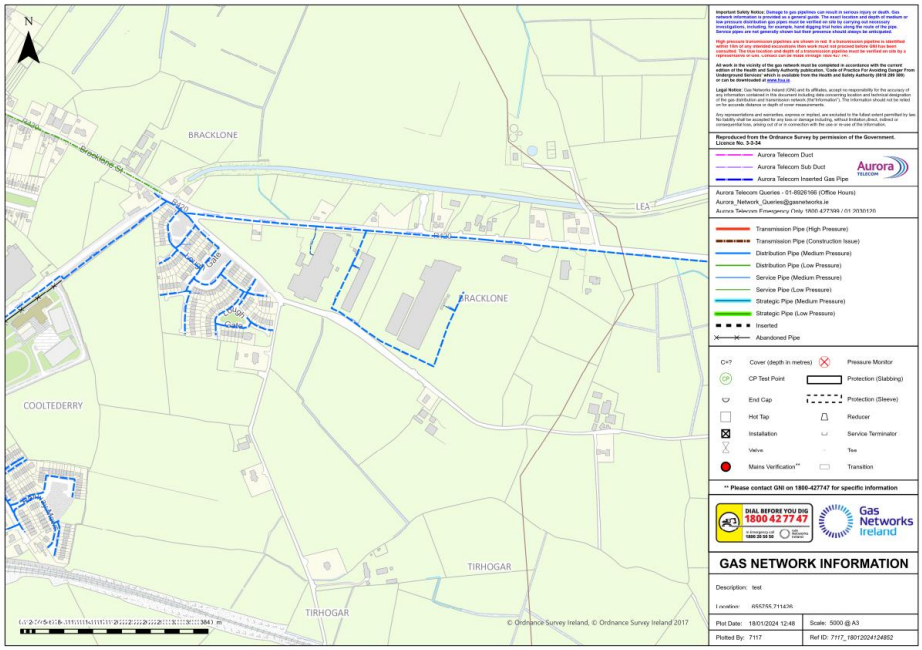

Figure 13.7 Gas Network Ireland (Section 3-Along the Grid Cable Route)

13.3.5 Water and Wastewater Infrastructure

13.3.5.1 Water

According to the current data sourced from Uisce Éireann Network, the nearest public water main is located on the R423 approximately 1.8km east of the proposed substation site. Bases on maps provided by Uisce Éireann there are known water mains infrastructure within the carriage way along the grid connection route.

There is an existing public water main approximately less than 170m to the south of the permitted Bracklone substation.

13.3.5.2 Wastewater

Data accessed from Uisce Éireann Network suggests the nearest wastewater network is located approximately 7.8km to the east of the proposed substation site. The Urban Wastewater Treatment Plant in Mountmellick, Co. Laois, is the nearest wastewater treatment facility to the proposed substation site (approximately 2.9km southwest).

The wastewater network was located along the proposed 110kV grid cable route at the L3158 for a 450-meter section before passing an industrial facility in Portarlington. The Portarlington wastewater treatment plant is located immediately north of the permitted Bracklone substation.

13.3.6 Waste

There are several waste collection, treatment, recovery, and disposal facilities within both Co. Laois and Co. Offaly to efficiently manage waste in the surrounding area. Authorised waste facilities in the study area are listed in Table 13.2.

Table 13.2 Sample Authorised Waste Facilities

EWC Code	Waste Type/Stream	Facility	Location
13 02 08*	Waste oils	Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
		Healions Contractors Ltd	Spollanstown Tullamore Co. Offaly R35 A3F1
13 05 06* 13 05 07* 13 05 08*	Oil interceptors	Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
17 01 01	Concrete	ROC Recycling Solutions Ltd	Clonminam Business Park, Portlaoise, Co. Laois.
		Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
17 01 07	C&D waste	Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois
		Patrick Larke Haulage Ltd.	Killenure, Ballybrittas, Co.Laois.
		Kantara Environmental Waste Services Ltd	Newline Road, Durrow, Co. Laois.
17 02 01	Wood	ROC Recycling Solutions Ltd	Clonminam Business Park, Portlaoise, Co. Laois.
		Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
17 02 03	Plastic	ROC Recycling Solutions Ltd	Clonminam Business Park, Portlaoise, Co. Laois.
17 03 01*	Bituminous mixtures containing coal tar	McGuire Plant Hire Limited	33 Burrells Walk, College Park, Callan Road, Co Kilkenny.
		Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
17 04 07	Mixed Metal	ROC Recycling Solutions Ltd	Clonminam Business Park, Portlaoise, Co. Laois.
		A1 Metal Recycling Ltd.	Acragar, Mountmellick, Co. Laois.
17 04 11	Cables	A1 Metal Recycling Ltd.	Acragar, Mountmellick, Co. Laois.
		Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
17 05 03*	Soil and stones containing hazardous substances	Patrick Larke Haulage Ltd.	Killenure Ballybrittas Co.Laois
		A1 Metal Recycling Ltd.	Acragar, Mountmellick, Co. Laois.
17 05 04	Soil and stones	ROC Recycling Solutions Ltd	Clonminam Business Park, Portlaoise, Co. Laois.
		A1 Metal Recycling Ltd.	Acragar, Mountmellick, Co. Laois.

EWC Code	Waste Type/Stream	Facility	Location
		Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
17 06 04	Insulation materials	A1 Metal Recycling Ltd.	Acragar, Mountmellick, Co. Laois.
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
20 01 01	Paper and cardboard	ROC Recycling Solutions Ltd	Clonminam Business Park, Portlaoise, Co. Laois.
		Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
20 03 01	Domestic waste	ROC Recycling Solutions Ltd	Clonminam Business Park, Portlaoise, Co. Laois.
		Kollect on Demand Limited	Leinster Express Business Park Dublin Road Portlaoise Co. Laois
20 03 04	Domestic Wastewater	Enva Ireland Limited	Clonminam Industrial Estate, Portlaoise, Co. Laois.
		Laceys Drain Cleaning Services Ltd	The Strand Tolerton Ballickmoyler Co Laois R93 T959

*Hazardous waste

13.4 Assessment of Impacts and Effects

13.4.1 Construction phase

13.4.1.1 Electricity and Gas Infrastructure

The construction methodology of providing a cable route under and along local road networks is well established and accepted nationwide. During the construction phase of the Proposed Development, it will be necessary to excavate close to existing underground services such as gas networks, telecommunications, or existing cables. The excavations could cause negative effects to built services infrastructure. The appointed contractor will be obliged to conduct the works in accordance with Laois/Offaly County Council and service provider requirements.

During the construction phase, electricity will be supplied using onsite generators. Therefore, there will be no additional power demands on the existing network.

Any excavation close to the existing built services infrastructure will likely result in a ***negative, not significant to imperceptible effect*** on the existing built services networks; therefore, the significance of the effect on the built services network during construction works will likely be ***not significant***.

13.4.1.2 Water and Wastewater

No public water or wastewater utility infrastructure is required at the Proposed Development site. Water needs for construction activities will be low and limited to to concrete truck chute washing, dust suppression and sanitary facilities. It is proposed that this water requirement will be sourced from on-site rainwater collection systems and settlement ponds. Potable water demand will be minimal and will be satisfied by an imported bottled water supply. Hence, it is expected that the proposed development will have ***no impact*** on the water infrastructure.

During the construction time period, sanitary wastewater, estimated to be 1,500-2000 litres per day, will be collected in integrated wastewater holding tanks associated with the toilet units. An application to Irish Water (IW) will be requested for a Tankered wastewater Treatment agreement in order to facilitate the appropriate disposal of the sanitary wastewater. Disposal of stored effluent will be managed through a contract with a licenced waste contractor. Considering no wastewater infrastructure will be utilised on site during construction phase, it is expected that the proposed development will have ***no impact*** on the wastewater infrastructure in the study area.

13.4.1.3 Telecommunication

Given the proposed substation and collector cable's location not appearing to fall between receptors and TV transmitters, it's unlikely that receptors in the vicinity would experience television reception interference. Desk-based research reveals that services provider like Vodafone, Eircom, and Three are not in close proximity to the site but rather are situated in the wider area, indicating minimal impact on telecommunication assets. Nevertheless, in the event of encountering any service infrastructure during excavation for substation, collector cable and 110kV grid cable route, appropriate mitigation measures would be implemented in consultation with the relevant operations provider.

Any excavation close to the existing telecommunication services infrastructure will likely result in a ***negative, slight*** to ***imperceptible effect*** on the existing services networks.

Overall, the proposed development if not encountered by any telecommunication services infrastructure, is expected to have ***no impact*** on telecommunication infrastructure.

13.4.1.4 Waste

During the construction phase, waste materials such as hardcore, concrete, spare steel reinforcement, cable wires, shuttering timber, and building materials may be generated. These waste materials will be stored within the construction compound and periodically collected for off-site disposal. Waste removal from the site will be conducted by approved contractors and directed to permitted facilities for recycling or disposal.

Furthermore, domestic refuse waste generated by contractors will be collected on-site, placed in enclosed skips within the construction compounds, and will be disposed of at licensed landfill facilities. Given the type and estimated volumes of waste materials generated, it is anticipated that the generation of waste from the proposed development will likely result in a ***neutral***, ***brief to temporary*** and ***imperceptible*** effect on waste management infrastructure in the area. The significance of effect from the generation and management of solid waste streams arising from the proposed development is therefore considered ***not significant*** as no major reduction or alteration in the capacity of waste infrastructure at a regional and national scale is anticipated.

Table 13.3 Summary of Construction Effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration
Electricity & Gas Infrastructure	Neutral	Not significant	Local - Regional	Short term
Water and Wastewater Infrastructure	Neutral		No impact	
Telecommunications	Neutral		No impact	
Waste	Neutral	Not significant	Local - Regional	Short term

13.4.2 Operational Phase

There will be ***no impacts*** on existing built services networks/infrastructure during the operational phase. The new substation and grid connection will become a new national grid infrastructure asset facilitating the supply of renewable energy to the national grid. This is considered to be ***a significant positive*** impact.

During the operational phase, minimal waste production is expected from the onsite operations and maintenance works. Wastewater and any waste oils will be collected by the approved contractor.

The general waste will be removed from the site and managed through reuse, recycling, or disposal at an authorised facility in accordance with best practices. This will have a ***neutral impact*** on waste services.

Table 13.4 Summary of Operational Effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration
Electricity & Gas Infrastructure	Positive	Significant	Local – Regional-National	Long term
Water and Wastewater Infrastructure	Neutral		No impact	
Telecommunications	Neutral		No impact	
Waste	Neutral	Not significant	Local - Regional	Long term

13.4.3 Decommissioning Phase

The potential impacts associated with the decommissioning phase regarding water and wastewater activity will mirror those of the construction phase but to a lesser extent. A construction team will be necessary on site for dismantling the infrastructure and carrying out restoration as needed. The activity of construction workers to the substation site will have a ***neutral impact*** on water and wastewater services, similar to that of the construction phase but of lesser magnitude.

The decommissioning of the proposed development would result in a loss of a national grid infrastructure asset. This is considered to be a ***negative significant impact***. The grid route element and collector cables will remain in situ following decommissioning. There is ***no impact*** expected on other built infrastructure as a result of the decommissioning of this element of the proposed developemnt.

The potential impacts associated with the decommissioning phase regarding waste activity will be similar to the construction phase but to a lesser extent. Waste generated on-site during the decommissioning phase will primarily originate from the substation and its associated infrastructure, similar to those of the construction phase.

A construction team will be required on site for dismantling the infrastructure and carrying out restoration as needed. This will have a ***temporary to short-term neutral impact*** on waste services, similar to that of the construction phase but of lesser magnitude.

Table 13.5 Summary of Decommissioning Effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration
Electricity & Gas Infrastructure	Negative	Significant	Local – Regional-National	Long term
Water and Wastewater Infrastructure	Neutral		No impact	
Telecommunications	Neutral		No impact	
Waste	Neutral	Not significant	Local - Regional	Long term

13.4.4 Do-Nothing

If the Proposed Development did not proceed, there would be no change to the existing material assets, other than ongoing maintenance of existing built services and road network.

13.4.5 Cumulative Impacts and Effects

In the assessment of cumulative impacts, all existing, permitted, or proposed developments in the surrounding area have been considered for their potential to create cumulative effects with the proposed development.

During the construction phase, there may arise some cumulative effects on built infrastructure. These impacts associated with both the permitted Dernacart wind farm and Bracklone substation, as construction activities for the proposed development may coincide with those of the Dernacart wind farm and Bracklone substation.

Considering the grid connection cables will be installed in sections (75-100m) each day and with the implementation of the mitigation measures, no significant impacts on built infrastructure are expected during the construction phase. If any service infrastructure is encountered during the excavation, mitigation measures will be implemented as mentioned below and in CEMP (see Appendix 2).

Considering the minimal use of material assets during construction, there is no likely cumulative impact expected.

13.5 Mitigation and Monitoring Measures

13.5.1 Construction Phase

13.5.1.1 Built services Infrastructure

Although it has been determined that the significance of effects on the existing built services network will likely be not significant, the following best practice measures will be implemented during the construction phase:

- All relevant bodies i.e. ESB Networks, EirGrid, Gas Networks Ireland, Eir, Laois County Council/Offaly County Council etc. will be re-contacted and drawings for all existing underground services along the proposed development sought prior to the commencement of the proposed development.
- In advance of any construction activity, the contractor will undertake detailed surveys and scans of the Proposed Development site to confirm the presence of any services. If found to be present, the relevant service provider will be consulted with in order to determine the requirement for specific excavation methods and to schedule a suitable time to carry out works. Some minor alignment alterations may be required if previously unknown services are encountered which will likely result in brief suspension of services. Although the exact number of interruption days for particular utility customers cannot be ascertained at this stage, any service interruptions are likely to be brief and occur rarely if required and will generally occur for a set number of hours per day.
- Any underground services encountered will initially be surveyed for levels in order to determine if there is adequate cover available for ducting to pass over the services.
- During the construction phase, all excavation material will be kept within the public roadway boundaries i.e. in road or grass margins.

- Works during the construction phase, if required, including service diversions and realignment will be carried out in accordance with relevant guidance documents, including Gas Networks Ireland's publication 'Safety advice for working in the vicinity of natural gas pipelines'; the HSA 'Code of Practice for Avoiding Danger from Underground Services', 2010;
- The Contractor will be obliged to put measures in place to ensure that there are no significant interruptions to existing services and all services and built services are maintained unless this has been agreed in advance with the relevant service provider; and
- Any construction works in the vicinity of utility networks will be carried out in accordance with the utility providers method statement and service providers Codes of Practice, as well as best practice in accordance with the CEMP.

13.5.1.2 Waste Management

Notwithstanding the effect from the generation and management of solid waste streams arising from the Proposed Development being assessed as imperceptible during the construction phase, the following best practice measures will be implemented:

- Waste is to be managed in accordance with the waste hierarchy in Council Directive 98/2008/EC on waste and section 21A of the Waste Management Act 1996, as amended, as follows: (a)Prevention; (b)re-use; (c)Recycling; (d)Other recovery (including energy recovery); and (e) Disposal;
- All waste to be removed from site is to be undertaken by authorised waste contractors and transported to an authorised facility in accordance with best practice.

13.5.2 Operational Phase

No mitigation measures are required.

13.6 Residual Impacts and Effects

Table 13.6 Residual Impacts and Effects

Phase	Category	Impact	Quality Of Effect	Significance	Spatial Extent	Duration
Construction Phase	Built services Infrastructure	Electricity and Gas	Neutral	Imperceptible	Localised	Brief to temporary
		Water			N/A	
		Telecommunications			N/A	
	Waste	Solid waste generation	Neutral	Imperceptible	Localised	Brief to temporary
Operational Phase	Built services Infrastructure	Electricity, gas, water, telecommunication	Positive	Significant	Local – Regional-National	Long term
	Waste	Solid waste generation	Neutral	Imperceptible	Localised	Long Term

13.7 Conclusion

No significant effects on the existing built services and waste infrastructure from the proposed development will occur during construction or operational phases.

The assessment also confirms that there will be no significant cumulative effects as a result of the proposed development when assessed in conjunction with all other existing, approved or proposed projects.

The new substation and grid connection will become a new national grid infrastructure asset facilitating the supply of renewable energy to the national grid. This is considered to be ***a significant positive*** impact.