

EIAR FOR POWERSTOWN BIOENERGY

Volume 2 - MAIN EIAR

Chapter 14 – Material Assets

Prepared for:

Greengate Biogas 001 Ltd.



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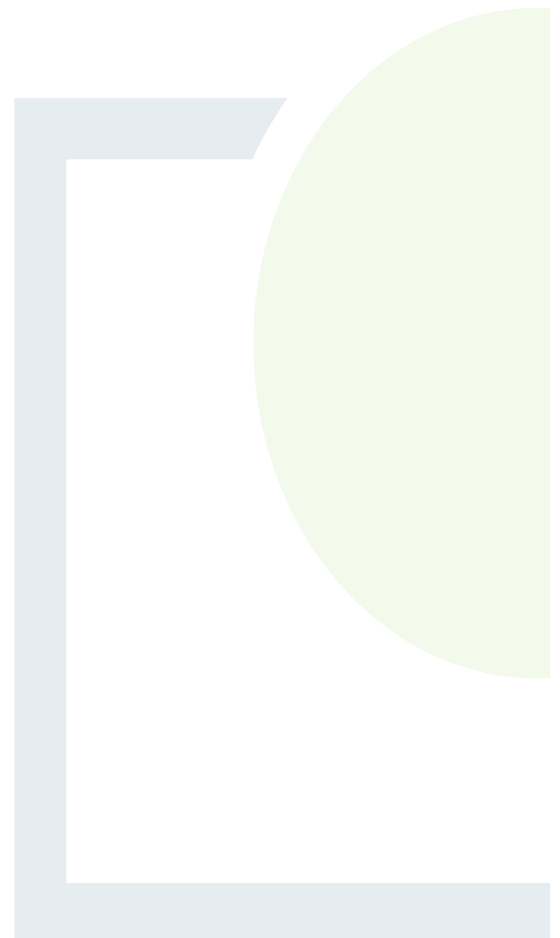


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14. MATERIAL ASSETS TO INCLUDE MATERIALS MANAGEMENT

14.1 Introduction

This chapter has been prepared to examine the potential for significant effects of the proposed development on material assets. Material assets considered include infrastructure, utilities, and materials. Infrastructure considerations include built infrastructure and the roads and transport infrastructure. Utilities considerations include telecommunications, electricity, gas, water supply, and wastewater utilities. Materials include materials used and materials generated throughout all phases of the proposed development. The assessment considers the potential significant effects during all phases of the proposed development and the proposed gas pipeline: construction, operation and decommissioning. Appropriate mitigation measures are identified to mitigate effects, where necessary.

14.2 Statement of Authority

This chapter has been prepared by Eibhlín Vaughan and Paul Nolan, and approved by Tanya Ruddy, all of Fehily Timoney and Company (FT).

Eibhlín is a Project Environmental Scientist in the Circular Economy and Environment Department at FT. She holds a First Class Honours Bachelor's Degree in Environmental Science from Trinity College Dublin and a Master of Engineering Science Degree from University College Dublin. She has three years of experience supporting with Environmental Impact Assessment Reports (EIARs) for infrastructure projects. Eibhlín provides technical support to the EIAR teams for a variety of projects.

Paul is a Senior Project Scientist working as part of the Circular Economy and Environment team in FT. Paul holds a BSc (Hons) in Environmental Sciences from University of Limerick. He has ca. 9 years of experience in the field of Environmental Science, Management and Consultancy. Paul has vast experience in the areas of waste management, reporting, auditing, environmental management systems and IE/IPC/Waste Licensing, Compliance and monitoring. He has worked on several development projects producing waste management reports that included Construction Waste Management Plans (CEMP), Resource Waste Management Plans (RWMP) and Operational Waste Management Plans (OWMP) for Large Scale Residential (LRD), Mixed-Use Developments, Commercial and Industrial projects. Paul supported the assessment of the effects of the proposed development on material assets.

This chapter was reviewed by Tanya Ruddy. Tanya is the EIAR Coordinator for the proposed development. Tanya is a Chartered Scientist (CIWEM) and holds a BA in Environmental Science and a MSc in Environmental Management. She is also a Chartered Environmentalist (CIWEM) and Chartered Waste Manager (MCIWM). Tanya has over 20 years post qualification experience in environmental consultancy. She provides advice on statutory consents including planning applications, licence applications with supporting EIAR and NIS. She provides consultancy advice to the waste management sector and the construction sector on materials management including waste management and resource reuse.



14.3 Assessment Methodology

As part of the scoping and consultation process for the proposed development, and as outlined within Chapter 5, Scoping and Consultation, in Volume 2 of this EIAR, private and State utility companies such as EirGrid, Uisce Éireann (formerly Irish Water), ESB Networks (ESBN) and Gas Networks Ireland (GNI) were consulted during this period. A full description of the scoping and consultation responses received are set out in Appendix 5.1 of Volume 3 of this EIAR, and a summary is provided within Chapter 5, Scoping and Consultation, in Volume 2 of this EIAR. In addition, the assessors consulted with the design team throughout the design process to avoid impacts and during the assessment to determine potential effects.

The methodology adopted for this assessment is as follows:

- A review of the proposed development.
- A desktop review of the receiving environment and existing publicly available information/data on utility and materials management infrastructure.
- Legislation and policy relevant to utilities and materials management in the area was identified and considered.
- An assessment of potential effects of the proposed development on material assets was undertaken.
- Mitigation measures for assets were defined.
- An assessment of the residual impacts of the proposed development was carried out.

Material assets, as defined in Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022) refers to built services, roads and traffic, and waste management. The potential for the proposed development to affect roads and traffic is addressed in detail in Chapter 6, Traffic and Transport, in Volume 2 of this EIAR. Potential for effects on land use is addressed Chapter 7, Population and Human Health, Chapter 14, Biodiversity and Chapter 10, Soils, Geology and Hydrogeology, all in Volume 2 of this EIAR. Assets of Archaeological, Architectural and Cultural Heritage are considered in Chapter 15, Archaeology, Architectural and Cultural Heritage, in Volume 2 of this EIAR. A Resource and Waste Management Plan (RWMP) for the Proposed Development has been included in the CEMP, Appendix 3.1 of Volume 3 of this EIAR.

14.3.1 Relevant Guidance and Reference Documents

The EIA guidelines (EPA, 2022) referred to when completing this assessment are described in Chapter 1 – Introduction, in Volume 2 of this EIAR. All topic specific relevant guidelines and reference documents/data that have been considered in the preparation of this chapter are shown below.

14.3.1.1 *Legislation*

There is no specific legislation sector specific guidance relating to the assessment of a proposed development's effects on material assets. This material assets impact assessment has therefore followed the overall impact assessment methodology set out in Chapter 1 - Introduction, in Volume 2 of this EIAR following:

- Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU) (European Commission, 2017)
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022)



Specific legislation relating to materials management which has been considered within this chapter of the EIAR includes:

- Waste Management Acts 1996, as amended
- Waste Framework Directive 2008/98/EC
- European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011), as amended
- Circular Economy and Miscellaneous Provisions Act 2022

The legislative context is described in Chapter 2, Planning and Policy of this EIAR.

14.3.1.2 Policy

The assessment has considered electricity, gas, telecommunications, waste management, water supply and wastewater policy defined in the Carlow County Development Plan 2022 - 2028 (Carlow County Council, 2022). These are included in Table 14-1, with an overall review of the Carlow County Development Plan 2022-2028 and its relevance to the proposed development available in Chapter 2, Planning, Policy and Need, in Volume 2 of this EIAR. Table 14-1 shows that the development plan is supportive of both utility connection to and from the proposed development.

Table 14-1: Relevant Policies and Objectives from Carlow County Development Plan (Carlow County Council, 2022)

Relevant Policies (P) and Objectives (O)	Description
Energy Infrastructure Policies	
El. P1	Support and facilitate the reinforcement and development of enhanced energy infrastructure, and associated networks, to serve the existing and future needs of the County and Region. This will include the delivery of the necessary integration of transmission network requirements facilitating linkages of renewable energy proposals to the electricity and gas transmission grid, in a sustainable and timely manner, subject to proper planning and environmental considerations.
El. P2	Ensure that development proposals for energy transmission and distribution infrastructure follow best practice with regard to siting and design. Proposed high voltage overhead lines shall as far as possible seek to avoid areas of sensitivity. Where avoidance is not possible, full consideration shall be given to undergrounding the lines where technically feasible, economically viable and environmentally appropriate.
El. P6	Support the development of renewable gas production in the County at farms or industrial facilities to increase the percentage of locally recovered biogas into the national gas network through injection.
Information and Communications Technology Policies	
IC. P1:	Promote and facilitate the sustainable development of a high-quality ICT network including broadband and other technologies throughout the County in order to achieve balanced social and economic development, whilst protecting the amenities of urban and rural areas.



Relevant Policies (P) and Objectives (O)	Description
Waste Management Policies and Objectives	
WM. P1:	Implement European Union, National and Regional waste related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.
WM. P2:	Encourage the transition from a waste management economy to a green circular economy in accordance with A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020-2025', to enhance employment and increase the value recovery and recirculation of resources.
WM. P5:	Require the appropriate provision for the sustainable management of waste within developments, including the provision of facilities for storage, separation and collection of waste.
WM. O1:	Implement the provisions of the Southern Region Waste Management Plan 2015-2021, and any updates thereto during the life of this Plan, subject to compliance with the Habitats Directive and normal planning and environmental considerations.
WM. O2:	Continue to rehabilitate the former Powerstown landfill site and following completion of these works to accommodate an appropriate end-use that is compatible with the local environment.
Water Supply and Wastewater Policy	
WS:P5	Promote best practice water conservation practices in all developments including rainwater harvesting and grey water recycling and supporting the implementation of BS8515-2009 Rainwater Harvesting Systems – Code of Practice.
SW. P6:	Require all new developments to provide a separate foul and surface water drainage system and to incorporate sustainable urban drainage systems where appropriate / viable in new development and the public realm.

The following waste management principles as they relate to materials management, requirements and policies were considered during this assessment:

- Prevention of waste is the preferred option such that any surplus materials generated are reused within the proposed development. This means that products, materials, and resources are maintained at their highest value in the economy for as long as possible, the generation of waste is minimised, and the principles of circular economy are implemented.
- Where construction waste is generated, it should be source-separated to facilitate reuse, recycling and maximise diversion of waste from landfill.
- Where waste cannot be prevented, reused, or recycled, it should be transported and disposed of in accordance with the Waste Management Act, as amended.
- Waste may only be transferred from site by a waste collection permit holder and delivered to an authorised waste facility, i.e. a facility which holds a Certificate of Registration, Waste Facility Permit or Waste/Industrial Emissions Licence.



The principal objective of sustainable waste and resource management is to use material resources more efficiently, to maximize recycling, reuse, and recovery of material and to reduce the amount of waste requiring final disposal. The value of products, material and resources is maintained in the economy for as long as possible such that the generation of waste is minimised. To achieve resource efficiency there is a need to move from a traditional linear economy to a circular economy. The Waste Framework Directive¹ sets the basic concepts and definitions related to waste management, including definitions of waste, recycling and recovery. The waste hierarchy principles of the Waste Framework Directive are shown in Figure 14-1.

The National Waste Management Plan for a Circular Economy (NWMP) (Local Government Ireland, 2024) sets out a framework for the prevention and management of waste in Ireland for the period 2024 to 2030. The proposed development is in the functional area of Carlow County Council which is governed by the NWMP.

The strategic vision of the NWMP is to rethink the approach to managing waste, and to move towards a 'circular economy' approach where resources are reused or recycled as much as possible and the overall generation of waste is minimised. The NWMP has set out several specific and measurable performance targets in relation to construction and demolition waste which includes:

- Achieve a 2% reduction per annum is proposed for total construction and demolition waste to achieve a cumulative 12% reduction by 2030 (baseline of 9 million tonnes).
- Achieve 70% of C&D waste sent for reuse, recycling and other recovery of construction and demolition waste (excluding natural soils and stones and hazardous wastes).



Figure 14-1: Waste Hierarchy (Source: Waste Framework Directive)

¹ [Waste Framework Directive - European Commission](#)



14.3.1.3 *Guidance*

The methodology and associated impact assessment has had regard to the general guidance (EPA, 2022) regarding the undertaking of an EIA (as presented in Chapter 1, Introduction, in Volume 2 of this EIAR) and the following topic-specific guidance:

- Best Practice Guidelines for the Preparation of Resources & Waste Management Plans for Construction and Demolition Projects (EPA, 2021).
- Guide to Materials and Waste in Environmental Impact Assessment (IEMA, 2020).

14.3.2 Desktop Study and Fieldwork

This EIAR chapter involved a desktop review of relevant existing data sources, including online and published resources, guidance documents, legislation and information about the proposed development contained within the EIAR.

As part of the desktop study to inform the assessment, the following information sources have been consulted and reviewed in relation to the assessment of Material Assets:

- Chapter 3, Description of the Existing and Proposed Development, in Volume 2 of this EIAR.
- National Waste Management Plan for a Circular Economy 2024 – 2030 (Local Government Ireland, 2024)
- Uisce Eireann databases
- Gas Network Ireland databases
- The EPA's Website and Geoportal
- Carlow County Development Plan 2022-2028 (Carlow County Council, 2022).

14.3.3 Assessment of Potential for Significant Effects

The potential significant effects of the proposed development on material assets have been assessed.

The assessment of potential significant effects on utilities has considered infrastructure, utilities (electricity, gas, telecommunications and wastewater infrastructure) and materials as follows:

- infrastructure
 - built infrastructure
- utilities
 - upgrades required to existing utilities to facilitate the proposed development
 - interruption of supply during construction and upgrades
 - long-term demand for on utilities has considered potential impacts on electricity, gas, and wastewater infrastructure and capacity of this infrastructure to meet this demand.
- materials
 - use of materials
 - generation of materials



The assessment of effects on materials management focusses on prevention of waste including waste generated during construction, operational and decommissioning phases of the proposed development, how to prevent waste generation and if unavoidable, how this waste will be managed, compliance with waste related policy and legislation, and mitigation measure to support waste prevention, reuse and recycling in accordance with 'Waste Hierarchy' principles.

Ground water supply is assessed in Chapter 12, Geology, Soils and Hydrogeology, stormwater management is described in Chapter 13, Surface Water and Hydrology both in Volume 2 of this EIAR.

14.3.3.1 Assessment Criteria and Significance

Assessment criteria for evaluating material asset related sensitivities, the magnitude of impacts on material assets and the significance of impacts on material assets are provided in Table 14-2, Table 14-3 and Table 14-4 respectively. The significance of impacts on material assets is a product of material asset sensitivity and magnitude of impacts. The approach to assessing and characterising the significance of impacts on material assets aligns with the guidelines (EPA, 2022).

Table 3.4 – Description of Effects, in these guidelines, defines criteria for characterising environmental effects of a project, were used to further characterise effects (e.g., the probability, duration and frequency and type of effects).

Table 14-2: Assessment Criteria for Sensitivity of Material Asset Receptors

Sensitivity	Sensitivity Criteria
High	Utilities - High Importance, national scale and limited potential for substitution: • High Pressure (HP) gas pipelines. • Electricity overhead lines (OHL) and underground cables >38 kV. • Transmission pipelines (potable water) • Large-scale wastewater infrastructure
	Waste – No or extremely limited sustainable waste management capacity in the region.
Moderate	Utilities – High or medium importance, regional scale, limited potential for substitution • Medium Pressure (MP) and Low Pressure (LP) gas pipelines • Electricity OHL and underground cables <38 kV • Distribution pipelines (potable water) • Medium scale wastewater infrastructure and local collection networks
	Waste - Limited sustainable waste management capacity in the region.
Minor	Utilities – Low or medium importance, local scale: • Local infrastructure/connections for gas. • Electricity OHL and underground cables – low voltage • Local infrastructure/connections for water • Local infrastructure/connections for wastewater
	Waste – Some sustainable waste management capacity in the region.
Negligible	Utilities – Low importance, local scale: • Minor domestic connections for services
	Waste – A large quantum of sustainable waste management capacity in the region.



Table 14-3: Magnitude of Impact Criteria for Material Assets

Magnitude of Impact	Topic	Character of Impact	Magnitude of Impact Criteria
High	Utilities	Positive	Provision of material assets of national or regional importance.
		Negative	Unplanned and complete loss of service; where material assets of regional or national importance are permanently damaged or lost, or where a serious and unacceptable environmental risk is posed.
	Waste	Positive	Provision of large or medium-scale sustainable waste management infrastructure.
		Negative	Overloading of sustainable waste management capacity in the region, leading to unsustainable waste management.
Moderate	Utilities	Positive	Provision of material assets of importance to many residences and/or commercial/business properties .
		Negative	Planned outage to service or impact on service that affects many residences, commercial/business properties; or moderate impact on quality or quantity of service, which may pose some risk to environmental receptors.
	Waste	Positive	Provision of small-scale sustainable waste management infrastructure.
		Negative	Substantial increase in waste management demand and/or sustainable waste management capacity in the region being met or nearly met.
Minor	Utilities	Positive	Provision of a material asset to a smaller number of residences and/or commercial/business properties.
		Negative	Local short-term temporary disruption/interruption to service that affects a small number of residences or commercial/business properties; or slight impact on quality or quantity of service, which does not pose any risk to environmental receptors.
	Waste	Positive	Provision of local or site level waste management infrastructure.
		Negative	Slight increase in waste management demand.
Negligible	Utilities	Positive	No discernible improvement in the quality or quantity of a service.
		Negative	Minor activities/works or works in proximity only to service, which do not affect the quality or quantity of a service, or lead to an interruption of a service.
	Waste	Positive	No discernible improvement in the sustainable waste management infrastructure.
		Negative	No discernible impact on sustainable waste management capacity.



Table 14-4: Matrix of the Assessment of the Significance of the Effect

Sensitivity of Receptors	Magnitude of Effect			
	High	Moderate	Minor	Negligible
High	Profound or Very Significant	Significant	Moderate / Slight	Not Significant
Moderate	Significant	Moderate	Slight	Imperceptible
Minor	Moderate / Slight	Slight	Not Significant	Imperceptible
Negligible	Not Significant	Imperceptible	Imperceptible	Imperceptible

14.4 Baseline Environment

A description of the existing environment and the proposed development is set out in Chapter 3, Description of the Proposed Development, in Volume 2 of this EIAR.

14.4.1 Infrastructure

Existing Site Infrastructure

There is very limited infrastructure within the site of the proposed development, as described in Chapter 3, Description of the Proposed Development, in Volume 2 of this EIAR. As described, there is one groundwater abstraction well. The applicant installed 4 no. groundwater monitoring wells as part of site investigation works for the proposed development and a groundwater supply well. There is one small concrete building on site which is not in use. It is single storey with no windows, one door and a flat roof. There is existing site fencing. There are two entrances to the site (with gates and concrete aprons), on the L3045 road, which connects to the R448 Regional Road. Refer to Chapter 6, Traffic and Transportation, in Volume 2 of this EIAR for descriptions of the baseline road and traffic conditions.

There is no other permanent infrastructure on the existing quarry.

There is no drainage infrastructure on-site. There are no stormwater or process water discharges from the existing development. Rainwater/stormwater currently infiltrates to ground. Refer to Chapter 13, Soils, Geology, and Hydrogeology for further information.

Existing Gas Pipeline Route Infrastructure

Existing infrastructure along the route of the proposed pipeline includes the road network, 3 no. culverts of watercourses and 2 no. culverts of land drains, and two bridges:

- the Cardinal Moran bridge on the R448
- Transport Infrastructure Ireland (TII) overbridge carrying the L3038 across the M9 motorway (Eirspan Name: Tomard Lower Road Overbridge 2, Ref no CW-M09-012.00)



To avoid the Cardinal Moran Bridge (R448 crossing of River Barrow) it is proposed to cross the river using a trenchless construction methodology such as Horizontal Directional Drilling (HDD). To avoid the TII overbridge, it is proposed to cross the M9 motorway using a trenchless construction methodology such as Horizontal Directional Drilling (HDD). Further detail on the proposed construction methodology for the bridge crossings are available in Chapter 3, Description of the Proposed Development, in Volume 2 of this EIAR.

The potential for significant effects on the road network has been assessed in Chapter 7 Traffic and Transportation, in Volume 2 of this EIAR.

14.4.2 Utilities

14.4.2.1 *On-Site Utilities*

The existing quarry site is not directly served by electricity, telecommunications, gas, water supply, or sewerage utilities. As noted in Chapter 3, the property directly adjacent and within the ownership of the landowner has an electricity supply.

Electricity Supply

There is an existing electricity supply to a point directly outside the proposed development boundary. Similarly, there are potable water, foul water connection and telecommunications to points directly outside the proposed development but no connections for any of these on the proposed development site.

There are existing overhead electricity lines in the vicinity of the site connecting the properties along the L3045. There is a 38 kV circuit running north south 3 km east of the site.

Gas Supply System

There is a Gas Networks Ireland (GNI) transmission network pipeline (operating pressure 70 bar) to the west of the M9 motorway, running north south. There is an existing GNI distribution network (operating pressure 4 bar) to the west of the site at Clogrennane Lime Works.

Water Supply

A groundwater well has been installed on site to provide a water supply. There is no piped supply on site. Refer to Chapter 12, Soils, Geology and Hydrogeology, in Volume 2 of this EIAR for further information.

Foul Water

There is no existing foul water management system on site.

14.4.2.2 *Gas Pipeline Route Utilities*

GNI are responsible for development of proposed gas pipeline, and it is therefore their responsibility to assess the existing utilities along this route. However, for the purpose of this EIAR, and in the interest of ensuring that baseline conditions reflect potential constraints which may arise during the development of the proposed gas pipeline, it is assumed that telecommunications, electricity supply, water, and foul water infrastructure are present along the route.

There is no existing gas supply along the proposed gas pipeline route.



14.4.3 Materials

During the construction, operation and decommissioning of the proposed development and the proposed gas pipeline, there is potential for use of materials and generation of materials (see Section 3.8 of Chapter 3 of this EIAR). Materials that will be used include construction materials and natural resources, water, energy, and fuel. Materials that will be generated include soil and stone, biomethane and biogenic CO₂, solar energy, digestate and waste materials.

The existing site is an operational and partially restored quarry. Refer to Chapter 3, Description of the Proposed Development, in Volume 2 of this EIAR.

Of relevance to this chapter of the EIAR is the cut fill balance for the proposed development. The existing site has been partially restored, and soil and stone are continuing to be imported at a maximum rate of 5,000 tonnes per annum for ongoing restoration and under the existing planning permission for the site and a waste facility permit as described in Chapter 1, Introduction, in Volume 2 of this EIAR. In addition, as sand and gravel are quarried from the eastern end of the site, overburden and excess material is being used to restore the site. The existing topography of the site is shown in drawings in Volume 4 of the EIAR.

The management of existing feedstock is described in Chapter 3, Description of the Proposed Development and is not within the scope of this chapter. The materials used for the construction of the proposed development and proposed gas pipeline route are described in Chapter 3, Description of the Proposed Development, and the potential for significant effects on climate are assessed in Chapter 9, Population and Human Health, in Volume 2 of this EIAR. The potential for significant effects on groundwater supply is assessed in Chapter 12, Soils, Geology and Hydrogeology, in Volume 2 of this EIAR.

The construction, operation, and decommissioning of the proposed development and proposed gas pipeline will require the use of various materials and will generate materials, including wastes, on-site. A summary of the anticipated materials used, and materials generated on-site is provided in Table 14-5.

The potential for significant effects on natural resources is assessed in this chapter.

Table 14-5: Materials usage and materials generation for the proposed development

Phase	Material Use	Materials Generated
Construction - General	Soil and stone	Soil and stone for recovery off site
	Sand, gravel, stone, brick, concrete, water for foundations, slabs, internal roads and yards, buildings, tanks, plywood (shuttering and formwork)	Damaged plywood from shuttering/formwork for recycling Plywood for reuse off site
	Steel for pipework, tanks, buildings and internal elements such as gantries, stairs, ladders, cranes etc. HDPE for drainage infrastructure, liner for stormwater lagoon Solar panels Cladding	Excess materials for recycling Packaging for recycling
	Fuel Diesel and electricity	N/A



Phase	Material Use	Materials Generated
Construction - Gas Pipeline	Gas pipeline, sand, subbase and Hot rolled asphalt. Drilling fluid for HDD.	Excavated materials for trench not suitable for reuse in reinstatement. Excess drilling fluid.
Operation	Fuel Diesel for vehicles Electricity for power Biomass for heating center	Biomethane Biogenic CO ₂ Solar energy Heat Biomass boiler ash
	Feedstock (manures)	Digestate Physical contaminants from feedstock such as Stones, Grit, Horseshoes and other physical contaminants
	Activated carbon chemicals	Spent activated carbon for specialist hazardous waste treatment Spent amine from biogas upgrading for specialist hazardous waste treatment
	N/A	Canteen and office waste for recycling and recovery Septic tank waste for disposal
Decommissioning	N/A	Concrete, steel, piping, cladding materials, electrical and control equipment, masonry, blocks, timber, and insulation

14.5 Assessment of Likely Significant Effects

The likely significant effects of the proposed development on utilities and materials management have been assessed in this section. Impacts associated with each phase of the proposed development (construction, operation and decommissioning, as described in Chapter 3, Description of the Existing and Proposed Development, in Volume 2 of this EIAR have been evaluated.

Likely significant effects are assessed in accordance with the evaluation criteria outlined in Section 14.3.3. Likely significant effects in the absence of mitigation are assessed, with mitigation measures to prevent, reduce and control potential effects then defined in Section 14.6. An evaluation of residual impacts of the proposed, considering the adoption and implementation of defined mitigation is presented in Section 14.7.

14.5.1 'Do Nothing' Scenario

Under the 'Do Nothing' scenario, no commercial-scale anaerobic digestion (AD) facility is developed. The existing use of land as a quarry and the surrounding lands for agriculture will remain unchanged. It is likely that the landowner would commence the latest planning consent for the existing site (planning ref: PL01.320180 2025, refer Section 1.4.4 of Chapter 1, Introduction, in Volume 2 of this EIAR). Under this planning consent, quarry activities will cease and the restoration of the site would be completed by the importation of 200,000 tonnes of soil and stone over 8 years. A revision of the current waste facility permit would be required to facilitate this.



Under the 'Do Nothing' scenario, there would be:

No increase in demand for raw materials, fuel, or water resulting from the proposed development

- No generation of construction or operational waste associated with the proposed development.
- Continued low levels of material throughput at the site.
- Assuming the latest planning consent is activated and completed, in 8 years, the former quarry would be restored to grassland.

If the proposed development does not proceed, the various benefits of the proposed development would not be generated.

- No beneficial reuse of organic feedstocks (e.g. agricultural residues, slurries) for renewable energy generation.
- Continued reliance on existing waste management practices and infrastructure, including off-site treatment and disposal facilities.
- A missed opportunity to contribute to circular economy objectives and reduce reliance on fossil fuel-based energy sources.

If the proposed gas pipeline is not constructed, the existing material assets environment would remain unchanged.

14.5.2 Construction Phase Impacts

14.5.2.1 *Infrastructure*

On-Site Infrastructure

During the construction phase, on-site infrastructure has the potential to be temporarily affected by construction activities, including site preparation, excavation, plant movement, and material storage. The sensitivity of on-site infrastructure has been assessed as negligible.

The small concrete building on site will be removed to facilitate the proposed development. Given its size, condition, and lack of current use, no significant adverse effects on infrastructure are anticipated. The concrete arising from the demolition shall be reused if suitable on site as a replacement for virgin aggregate in subbase /granular layers. Other materials will be segregated for recycling or recovery.

The groundwater abstraction well and three monitoring wells have the potential to be affected if not appropriately protected during construction. With the implementation of standard construction controls, no significant effects on groundwater infrastructure are expected.

Construction of the proposed development will also necessitate the temporary provision of additional, temporary infrastructure, including construction access, temporary services, plant, and ancillary facilities required for construction activities. This infrastructure will be in place for the duration of the construction phase only and will be removed on completion of works, with the impact assessed as being not significant.



Given the negligible sensitivity of on-site infrastructure, and the temporary, localised nature of construction activities, the construction phase effects on existing on-site infrastructure are assessed as being of negligible magnitude and imperceptible significance.

Roads and traffic are considered to be of minor sensitivity in this area, due to the high-quality of the R448 dual carriageway, and the close proximity to the M9 motorway. The existing site entrances from the L3045 road will be used for construction access and may experience increased traffic loading and wear. This is assessed in Chapter 6 of this EIAR.

Gas Pipeline Route Infrastructure

Existing infrastructure along the route of the proposed pipeline includes elements of the road network, 3 no. culverts (watercourses), 2 no. culverts of land drains, and two bridges.

The potential for effects on the road network has been assessed in Chapter 6, Traffic and Transport, in Volume 2 of this EIAR. Pre-mitigation effects on the road network are predicted to be negative, not significant, and short-term in duration.

The proposed gas pipeline connection will require both standard cut and cover construction (i.e. excavate trench, place pipe, cover pipe and reinstate surface finish) and horizontal directional drilling methods of installation.

During a site visit undertaken in October 2025, the available cover over the culverts within the potential gas pipeline route was approximated (refer to Chapter 13, Surface Water and Hydrology, in Volume 2 of this EIAR). It was determined that the gas pipe can be routed across the existing culverts and bridges by utilising the grass verge or surfaced road verge, thereby avoiding direct excavation, loading, or structural interaction with these features. As a result, no physical alteration or damage to culverts or bridge structures is anticipated.

Construction-phase impacts near existing culverts will be limited to short-term, localised disturbance associated with trenching, temporary traffic management, and plant movements within the road verge. There are no proposed works on existing culverts. Therefore, the likely effects of the proposed gas pipeline route on existing culverts are assessed as being of negligible magnitude and imperceptible in significance.

The use of HDD at the Cardinal Moran Bridge and at the TII M9 motorway overbridge will avoid direct interaction with the bridge structures and the River Barrow channel. With the proposed construction methodologies in place, construction-phase effects on existing infrastructure along the pipeline route are assessed as being of negligible magnitude and imperceptible significance.

Any interaction with the TII structure will be undertaken in accordance with TII procedures and approval as described in Chapter 3. The construction phase effects on the existing bridge are assessed as being minor as temporary traffic management will be required to facilitate the works over a period of 4-5 days. Traffic on the local road, would be temporarily delayed with a one lane stop go system.

14.5.2.2 Utilities

On-Site Utilities

The utilities (electricity, telecommunications, gas, water supply infrastructure, foul water) in the area of the proposed development are of minor sensitivity, as they comprise local distribution networks and connections. Construction activities are not expected to result in any interruption or damage to these services.



Electricity Supply

An electricity supply is required to power the proposed development. The route and nature of the permanent electricity supply have not yet been determined by the Electricity Supply Board (ESB), and a grid connection application was submitted by the Applicant in May 2025. ESB, as the Statutory Undertaker, will be responsible for obtaining any necessary development consent for the electricity supply infrastructure.

It is anticipated that installation of a new electrical supply to the site may require some local outage of services during connection, but it will be short term and ESB will notify customers. Construction-phase electricity demand will be temporary and limited in duration, and no significant effects on electricity infrastructure are anticipated.

No disruption to existing electricity infrastructure is anticipated. The impact on the electricity supply system during the construction phase is assessed as minor, arising from temporary and localised demand only. The overall significance of effects is imperceptible.

Gas Supply System

No disruption to existing gas infrastructure is anticipated during the construction phase of the proposed development. The impact on the gas supply system during the construction phase is assessed as negligible. The overall significance of effects is imperceptible.

Water Supply

It is not proposed to connect to a water supply. The stormwater lagoon and groundwater well will provide water. There is no impact on water supply.

Foul Water

Construction phase foul water impacts will arise from welfare facilities provided on-site for construction personnel. All foul effluent will be collected in a sealed temporary holding tank and removed off-site by a licensed waste contractor to an authorised private wastewater treatment facility. The Applicant has secured a letter of support from private wastewater treatment facilities to provide treatment. See Appendix 3.3 of Volume 3 of this EIAR.

No discharge of foul water to ground or surface water will occur. The receptor sensitivity is minor, and the magnitude of impact is minor, as effects are temporary and fully controlled. The overall significance of effects is assessed as imperceptible.

Summary

Overall construction phase impacts on utilities are assessed not significant, due to the temporary nature of works and absence of any long-term disruption to regional infrastructure.

Gas Pipeline Route Utilities

The construction of the proposed gas pipeline will require standard cut and cover construction (i.e. excavate trench, place pipe, cover pipe and reinstate surface finish) method of installation. The utilities (telecommunications, electricity, gas, water supply infrastructure, foul water) in the area of the proposed gas pipeline are considered of moderate sensitivity, as they may be of medium importance with limited potential for substitution.



Telecommunications

Potential effects on telecommunications may arise during the construction phase of the proposed gas pipeline from excavation, trenching, and pipe installation works along the pipeline route. If unmitigated, these activities have the potential to cause temporary disturbance to underground telecommunications services, if present.

The unmitigated significance of impact is moderate.

Electricity Supply

If unmitigated, the construction phase activities for the proposed gas pipeline have the potential to cause temporary disturbance to underground electricity services, if present.

The unmitigated significance of impact is moderate.

Water Supply

No impact.

Foul Water

If unmitigated, the construction phase activities for the proposed gas pipeline have the potential to cause temporary disturbance to local foul water infrastructure.

The unmitigated significance of the potential impact is moderate.

14.5.2.3 Materials

On-Site Materials

The construction of the proposed development will require the movement of 98,000 m³ of soil and stone with the majority of that material retained on site during reprofiling. There will be an excess of 5,000 tonnes of soil and subsoil for recovery from the site to licensed or permitted facilities or for reuse. This has been assessed in Chapter 12, Soils, Geology, and Hydrogeology, in Volume 2 of this EIAR. The Impact of material volumes and types including energy used to construct and operate the facility has been assessed in Chapter 9 Climate.

Construction works associated with the proposed development will generate waste primarily in the form of non-hazardous construction materials, including damaged plywood from shuttering and formwork, surplus or excess materials, and packaging, all of which will be segregated on site for reuse or recycling where practicable. A Construction Environmental Management Plan (CEMP) has been prepared and is included in Appendix 3-1, in Volume 3 of this EIAR. It specifies environmental controls that the Contractor will be required to undertake during the construction phase. The Contractor will be required to update the CEMP for approval to commence. Please refer to the CEMP for the resources and waste management plan.

The waste management environment is considered to have minor sensitivity, reflecting the availability of regional waste management capacity.

The magnitude of impact is assessed as minor negative, as the increase in waste generation will be limited and managed in accordance with the waste hierarchy under the Waste Framework Directive.

The significance of effects on material management due to the construction phase of the proposed development is characterised as not significant, with potential for slight positive effects associated with material reuse.



Gas Pipeline Materials

The construction of the proposed gas pipeline will require 9.6 km of gas piping, sand, Unbound Granular Material, and hot rolled asphalt (HRA). A drilling fluid will be used for Horizontal Directional Drilling (HDD) with excess captured for disposal at an appropriately licensed facility.

Construction works associated with the proposed gas pipeline will likely generate small quantities of material, likely in the form of excavated trench material that is not suitable for reuse in reinstatement and will therefore require off-site recovery, reuse, or disposal at authorised facilities.

The use and generation of materials will be temporary and confined to the construction period, and no significant adverse effects on material assets are anticipated.

The construction phase for the proposed gas pipeline impact is assessed as slight and not significant.

14.5.2.4 Construction Phase Impacts Summary

The construction works for the proposed development are described in Chapter 3 Description of the Existing and Proposed Development, in Volume 2 of this EIAR.

The receiving environment is characterised by minor to moderate sensitivity, reflecting the presence of local utility infrastructure and available regional waste management capacity. The magnitude of impacts during construction is generally minor, as effects will be short-term, localised, and reversible.

Accordingly, the overall construction phase impact is assessed as slight and not significant, in accordance with the significance matrix.

14.5.3 Operational Phase Impacts

14.5.3.1 Infrastructure

On-Site Infrastructure

During the operational stage, the proposed development will introduce permanent infrastructure associated with its intended use as an anaerobic digestion facility. The infrastructure proposed as part of the proposed development is available in Chapter 3, Description of the Proposed Development, in Volume 2 of this EIAR. This infrastructure will be integrated into the existing environment and will not give rise to adverse effects on existing material assets or infrastructure. The presence of the completed development will represent a permanent change from the baseline infrastructure. However, the operation of the development will not place additional demands on surrounding infrastructure or services, nor will it result in damage, disruption, or loss of existing assets.

As presented in Chapter 6, Traffic and Transportation, in Volume 2 of this EIAR, it is anticipated that there will be an increase in traffic generation in the locality as a result of the operation of the proposed development. An operational stage capacity of the R448 (the primary road linking the proposed development site to the M9 motorway) showed that the effects of development-generated traffic on the operation of the local junction of R448/L3045 and at M9 Junction 6 are not significant. The proposed development will not significantly reduce the level of service on the R448 and will maintain the efficiency and safety of the regional road network infrastructure. Therefore, the operational stage effects on transport infrastructure are considered not significant.



The operational-stage effects on infrastructure are assessed as being of negligible magnitude and imperceptible significance.

Gas Pipeline Route Infrastructure

The proposed gas pipeline will remain in situ throughout the operational phase of the proposed development, with no anticipated interaction with existing infrastructure during this period. Accordingly, the operational-phase effects of the proposed gas pipeline route on infrastructure are assessed as being of imperceptible significance.

14.5.3.2 Utilities

Heat will be generated on site in the heating centre, which is a biomass boiler, thereby placing no reliance on external energy infrastructure.

On-Site Utilities

Electricity Supply

During the operational phase, the proposed development will have a continuous requirement for electricity. The primary power demand on site will be from the operation of the process plant and ancillary usage e.g. lighting to site offices and perimeter lighting. The proposed development will generate solar power from panels on building roofs. The energy produced by the solar panels will be used on site and is estimated at 430,000 kWh per annum. The proposed power demand is 30,660 MWh per annum. Total electricity use in Ireland was 31,900 GWh per annum in 2024 (CSO, 2025), of which 268 GWh per annum was used in Co. Carlow. Carlow has the second lowest metered electrical consumption in Ireland according to the CSO. The electrical demand for the proposed development is 11% of Carlows metered electrical consumption and 0.1% of Irelands metered electrical consumption. The ESB has confirmed that it can service this demand at Powerstown. As per Chapter 3, a new substation at the proposed development will provide the electrical supply. The impact of electricity use has been assessed in terms of carbon in Chapter 9 Climate. The electricity will be procured from renewable sources. The impact on electricity supply will be neutral, not significant and permanent.

Gas Supply

Biomethane produced at the proposed development will be exported via pipeline to the Gas Networks Ireland transmission system at the AGI in Clogrennan. This represents a beneficial contribution to the national gas grid through renewable energy injection (250 MWh per annum) displacing fossil fuel derived gas and imported gas. This impact has been assessed in Chapter 9, Climate, in Volume 2 of this EIAR. The volume of gas produced per annum is equivalent to Carlows residential annual gas demand. This is a major positive, long term impact on gas supply.

Water Supply

Water demand for the proposed development will be met through rainwater harvesting and the on-site groundwater well. There will be no reliance on the public potable water supply network. Drinking water for staff will be provided via bottled water, resulting in no significant demand on municipal water infrastructure.

As a result, there is no impact on external water infrastructure, and effects are assessed as not significant.



Foul Water

Foul water or wastewater will be collected from the welfare units and canteen and directed to the Foul Storage Tank. This will be a sealed, underground foul water holding tank beneath the proposed car park area. A dedicated foul drainage network will connect the welfare units in the Administration Building, Liquid Reception Building, and Heating Centre to the Foul Storage Tank.

Foul and wastewater will be removed off-site by a licensed contractor to a private wastewater treatment plant. The Applicant has secured outlets for foul water treatment as demonstrated in Appendix 3.2 of Volume 3 of this EIAR. No foul water discharge will occur to ground or surface water. Impacts are negligible and not significant.

Summary

Given the industrial nature of the development and provision of onsite infrastructure, the magnitude of impact on utilities during operation is assessed as minor, negligible, and overall effects are considered not significant for electricity, water supply and foul water.

Gas Pipeline Route Utilities

The proposed gas pipeline will remain in situ throughout the operational phase of the proposed development, with no anticipated interaction with existing utilities during this period. Accordingly, the operational-phase effects of the proposed gas pipeline route on utilities are assessed as being of imperceptible significance.

14.5.3.3 Materials

On-Site Materials

During the operational phase, the proposed development will process approximately 663,000 tonnes per annum of agricultural residues (solid farmyard manures and liquid farmyard manures) to generate raw biogas, renewable natural gas, and liquefied CO₂. The proposed development will generate digestate which will be returned to farmers as a fertiliser. For further details, please refer to Chapter 3, Description of the Proposed Development, in Volume 2 of this EIAR.

Given the large-scale nature of the proposed development, the magnitude of positive impacts is characterised as high, and positive as it constitutes the provision of large-scale sustainable renewable natural gas and bioenergy infrastructure.

The significance of the positive effects on materials arising from the operation of the proposed development is assessed as significant beneficial and long-term.

Sustainably sourced wood chip will be used in the boiler to generate heat for the anaerobic digestion process. This has been assessed in Chapter 9 Climate. The wood chip will be compliant with Annex IX of the Renewable Energy Directive (RED) (European Union, 2023). The use of sustainably sourced wood chip is from a renewable resource and is a small fraction of national demand. This is assessed as negligible, negative and long term.

There are likely to be waste materials generated in the form of physical contaminants from feedstock generated on-site during the operational phase of the proposed development. Such likely materials include stones, grit, horseshoes and other physical contaminants. This waste will be removed off site by waste collection contractors holding valid Waste Collection Permits to approved authorised facilities.



Other wastes associated with process operations and day-to-day site activities are also anticipated during the operational phase of the proposed development. These will include spent activated carbon and spent amine arising from biogas upgrading, both of which will be managed as hazardous waste and removed from site for treatment or disposal at appropriately authorised specialist facilities. General canteen and office wastes will also be generated and will be segregated on site for recycling and recovery where practicable. Septic tank waste generated during operation will be collected and disposed of by authorised contractors at licensed facilities.

The significance of waste materials generated arising from the operation of the proposed development is assessed as not significant, reflecting the small quantities involved, the controlled nature of the waste streams, and the implementation of appropriate on-site segregation and off-site management at authorised facilities.

Gas Pipeline Route Materials

The proposed gas pipeline will remain in situ throughout the operational phase of the proposed development, with no anticipated additional materials consumption during this period. Accordingly, the operational-phase effects of the proposed gas pipeline route on materials are assessed as being of imperceptible significance

14.5.3.4 Operational Phase Impacts Summary

The operational stage effects on infrastructure are assessed as being of negligible magnitude and imperceptible significance. The impacts on utilities are considered not significant for electricity, water supply, and foul water, and is positive and long term for gas supply .

There is potential for significant positive impacts on materials during the operation of the proposed development, as a result of the large-scale treatment of agricultural residues, the production of renewable natural gas and bioenergy, and the beneficial recovery of digestate for use as fertiliser.

Waste materials generated during the operation of the proposed development are minor in quantity and limited in significance, reflecting the controlled nature of the waste streams and their management through authorised recovery, treatment, and disposal routes.

14.5.4 Decommissioning Phase Impacts

Upon cessation of anaerobic digestion activities at the site, the proposed development will be decommissioned in accordance with a Closure Plan. All feedstock inputs will cease, and all wastewaters will be removed for off-site treatment at an authorised facility. All hardstanding areas and plant equipment will be decommissioned and cleaned, with assets either reused, resold, recycled, or removed as appropriate. Temporary and permanent facilities may be left in situ where viable or dismantled for recovery and reuse. Environmental monitoring and record-keeping will be maintained. Refer to Chapter 3, Description of the Proposed Development, in Volume 2 of this EIAR, for further details.

The proposed gas pipeline is expected to remain in-situ for the foreseeable future and will not be removed as part of the decommissioning works. As such, it will not be considered as part of the decommissioning phase impacts assessment.



14.5.4.1 *Infrastructure*

During the decommissioning phase, impacts on infrastructure will be limited to temporary and localised disturbance associated with the cleaning, dismantling, and removal of plant, equipment, and services. Existing infrastructure may be retained in situ where appropriate or removed and reinstated in accordance with the Closure Plan. No interaction with surrounding infrastructure is anticipated, and no new permanent infrastructure will be introduced. Overall, decommissioning-phase impacts on infrastructure are assessed as temporary, of negligible magnitude, and imperceptible significance.

Traffic impact arising from decommissioning Are considered likely to be comparable to those arising during the construction period and are therefore considered to be of negligible magnitude and imperceptible in significance.

14.5.4.2 *Utilities*

Temporary utility demand may arise during decommissioning and dismantling activities. However, this will be limited in scale and duration and is anticipated to be comparable to the utility demand during the construction phase for the site.

Electricity Supply

No disruption to existing electricity infrastructure is anticipated during the decommissioning phase for the proposed development. The impact on the electricity supply system is assessed as minor, arising from temporary and localised demand only. The overall significance of effects is imperceptible.

Gas Supply System

No disruption to baseline gas infrastructure is anticipated during the decommissioning phase of the proposed development. The impact on the gas supply system during the decommissioning phase is assessed as negligible. The overall significance of effects is imperceptible. However, decommissioning of the plant would lead to a reduction in the volume of renewable biomethane injected into the grid which is assessed as major negative.

Water Supply

Decommissioning works associated with the proposed development will require water supply to support decommissioning works and welfare facilities.

Any demand for water supply will be met through groundwater supply using the groundwater well present on-site. The demand will be short-term and intermittent and will not represent a significant additional load on water resources.

As the water supply will be sourced on-site, not using mains supply, the receptor sensitivity is considered minor. The magnitude of impact is minor, as demand will be temporary, localised, and within available capacity. No disruption to existing public water supply infrastructure is anticipated. The overall significance of effects is assessed as imperceptible.

Foul Water

Decommissioning phase foul water impacts will arise from welfare facilities provided on-site for decommissioning personnel. All foul effluent will be collected in a sealed temporary holding tank and removed off-site by a licensed waste contractor to an authorised private wastewater treatment facility.



No discharge of foul water to ground or surface water will occur. The receptor sensitivity is minor, and the magnitude of impact is minor, as effects are temporary and fully controlled. The overall significance of effects is assessed as imperceptible.

Summary

Overall decommissioning phase impacts on utilities are assessed not significant, due to the temporary nature of works and absence of any disruption to baseline regional infrastructure.

14.5.4.3 Materials

The principal environmental impact during decommissioning will be the generation of demolition waste.

A significant proportion of materials will be suitable for reuse, recycling, or recovery, particularly steel and mechanical equipment. Any remaining materials will be managed in accordance with the waste hierarchy and appropriate licensed waste facilities.

The sensitivity of regional waste infrastructure is considered minor to moderate, and the magnitude of impact is moderate, resulting in an overall effect assessed as slight adverse and not significant, given the temporary nature of the works and the high potential for material recovery.

14.5.4.4 Decommissioning Phase Impacts Summary

Decommissioning-phase impacts on infrastructure and utilities are assessed as being of imperceptible significance. Decommissioning-phase impacts on materials are assessed as being not significant.

14.5.5 Cumulative Impacts

Cumulative impacts on utilities and infrastructure have been assessed in relation to the proposed development and proposed gas pipeline at Powerstown, Co. Carlow and other reasonably foreseeable developments. Utility and infrastructure receptors are of minor sensitivity, with electricity being of moderate sensitivity. The magnitude of cumulative effects is assessed as minor, as the development will be accommodated within, is self-sufficient in water supply, and will not place demand on public foul, while gas export provides a positive contribution to the national grid. Applying the assessment matrix, cumulative effects on utilities are assessed as slight and not significant, and overall neutral to positive.

Cumulative impacts on materials management are assessed in the context of regional waste infrastructure capacity. Waste receptors are of minor to moderate sensitivity, with a minor to moderate beneficial magnitude arising from the reuse of excavated material on-site. In accordance with the matrix, cumulative effects on materials management are assessed as slight to moderate and not significant.



14.5.6 Summary of Potential Impacts

Table 14-6: Summary of Potential Impacts

Activity/Source of Impact	Potential Impact	Description of Effects
Construction phase, proposed development	Interaction with existing infrastructure	Negligible sensitivity; temporary, localised; imperceptible significance
	Establishment of temporary construction infrastructure	Negligible sensitivity; temporary, localised; imperceptible significance
	Temporary use of utilities (electricity, water, drainage)	Temporary, localised utility demand; no service interruption; slight, not significant
	Excavation and construction waste generation	Reuse of excavated material on-site; licensed off-site management; not significant
Construction phase, proposed gas pipeline	Interaction with culverts and bridges	Temporary; controlled; negligible magnitude; imperceptible
	Interaction with utilities (telecoms, electricity, water/foul water services)	Temporary; local scale with potential for regional importance; moderate negative significance
	Excavation and construction waste generation	Slight; licensed off-site management; not significant
Operational phase, proposed development	Utility consumption (electricity and water)	Continuous demand; ESB supply; on-site water sourcing; no public supply demand; not significant
	Biomethane generation Biogenic CO ₂ Digestate	Renewable gas supply to national network; beneficial effect
	Physical contaminants from feedstock	Limited quantities; Controlled; not significant
	Spent activated carbon and spent amine	
	General canteen and office waste Septic tank waste	
Decommissioning phase, proposed development	Demolition material	Temporary dismantling; recyclable materials recovery; slight adverse, not significant



14.6 Mitigation Measures

14.6.1 Mitigation by Avoidance and Design

The development is located within a previously developed and semi-restored quarry, thereby avoiding greenfield landtake and utilising an existing brownfield development. The design minimises off-site material requirements, with most excavated material retained and reworked on-site. Only a limited quantity (approximately 5,000 tonnes) of clean inert material is expected to be exported off-site, with all material to be managed in accordance with the Resource Waste Management Plan within the CEMP in Appendix 3.1 in Volume 4 of this EIAR.

The proposed development is designed to be self-sufficient in water supply, with no requirement for connection to the public potable water network. Operational water demand will be met through rainwater harvesting and a groundwater abstraction well. Potable water for staff will be provided via bottled supply delivered to site.

A fully segregated drainage system incorporating attenuation has been embedded in the design to manage stormwater on-site and prevent uncontrolled discharge. Foul water will be fully contained within sealed systems and removed off-site by licensed contractors, ensuring no discharge to the environment or public wastewater infrastructure.

14.6.2 Construction Phase Mitigation

During construction, utility interactions will be managed through standard best practice measures, including utility mapping where available, service identification, and coordination with relevant infrastructure providers. Temporary utility demand will be met through planned and temporary arrangements, ensuring no disruption to existing services.

Construction of the proposed gas pipeline (as assessed within this EIAR) will be undertaken in accordance with Gas Networks Ireland specifications, including appropriate service protection, road crossing management, and reinstatement. As GNI is the statutory undertaker responsible for consenting and delivery of the pipeline, detailed route refinement and construction methodologies will be developed and consented separately.

Construction and excavation materials will be managed through a Construction Environmental Management Plan (CEMP), with emphasis on reuse of on-site soils and inert materials. Only a limited volume of clean inert material will be exported off-site, with all movements subject to appropriate classification and recovery/disposal routes.

14.6.3 Operational Phase Mitigation

Operational electricity demand will be supplied via ESB Networks infrastructure. As the detailed connection design and routing has not been provided at the time of assessment, this infrastructure will be subject to separate ESB-led design and consenting as a statutory undertaker. The proposed development itself has been designed to accommodate standard grid connection requirements without requiring off-site infrastructure works within the Applicant's control.

Water demand will be fully met on-site, eliminating demand on public water supply infrastructure. Foul water will be fully contained and removed off-site by licensed contractors, and stormwater will be managed via a segregated drainage and attenuation system to protect receiving environments.

The proposed development is designed to maximise recovery of agricultural residues through anaerobic digestion, producing renewable natural gas, biogenic CO₂, and digestate for beneficial reuse.



14.6.4 Decommissioning Phase Mitigation

A Closure Plan will be implemented in accordance with the Industrial Emissions Licence. This will ensure controlled decommissioning of infrastructure, safe disconnection of utilities, and segregation of materials for reuse, recycling, recovery, or disposal at authorised facilities. Given the quarry nature of the site and the high proportion of inert and recyclable materials, decommissioning impacts will be limited and managed in accordance with best practice.

14.7 Residual Impacts

Residual impacts on material assets, have been assessed following the implementation of mitigation measures.

14.7.1 Summary of Residual Impacts

Overall, residual effects on utilities are expected to be not significant, as the development will be self-sufficient in water supply, will not place demand on public foul or stormwater infrastructure, and will be served by standard electricity infrastructure, with gas export providing a positive contribution to the national grid.

Residual effects on materials management are predominantly positive, arising from the reuse of on-site materials during construction and decommissioning and the large-scale recovery of agricultural residues through anaerobic digestion.

Table 14-7: Summary of Residual Impacts

Activity/Source of Impact	Potential Impact	Description of Effects (Pre Mitigation)	Description of Effects (Post Mitigation)
Construction of AD facility and associated infrastructure	Temporary utility demand and infrastructure interaction	Temporary demand for electricity and water; construction traffic; excavation works; slight to moderate adverse	Managed through standard controls, utility coordination, and temporary supplies; no service disruption; not significant
Construction of proposed gas pipeline	Interaction with utilities and road infrastructure	Trenching, crossings, and temporary traffic disruption; moderate adverse	GNI-led construction standards, service protection, and traffic management; no gas network disruption; slight, not significant
Construction waste generation	Excavation and construction waste	Excavation of soils and limited construction waste; minor adverse	Reuse of excavated material on-site; approx. 5,000 tonnes inert off-site; not significant
Operational utilities demand	Electricity and water consumption	Continuous demand on utilities; potential pressure on public infrastructure if connected; minor adverse	Self-sufficient water supply; Solar and ESB electricity supply; no public water demand; not significant



Activity/Source of Impact	Potential Impact	Description of Effects (Pre Mitigation)	Description of Effects (Post Mitigation)
Operational materials management	Agricultural residue processing (663,000 tpa)	Anaerobic digestion producing RNG, CO ₂ and digestate; significant beneficial	Anaerobic digestion producing RNG, CO ₂ and digestate; significant beneficial
Foul water (operation)	No impact Fully contained and segregated systems; attenuation and licensed removal; not significant	No impact	No impact
Decommissioning activities	Utility removal and demolition waste	Infrastructure dismantling and waste generation; minor to moderate adverse	Controlled Closure Plan; high reuse/recycling potential; slight, not significant

14.8 Conclusion

Based on the characteristics of the site and the nature of the proposed development, no interference with or disruption to infrastructure, utilities, or material assets is predicted during construction, operation, or decommissioning. Any potential effects on material assets during the construction, operational, and decommissioning phases have been appropriately mitigated against, with the opportunity for significant positive contribution to national energy infrastructure through the generation of biomethane, biogenic CO₂, and digestate during the operational phase. Therefore, it is considered unlikely that the proposed development will interfere with, or disrupt, material assets and associated services during the proposed development's construction, operation and decommissioning.



14.9 References

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