



Contact us
+353 1 5242060
info@ors.ie
www.ors.ie

RECEIVED: 18/11/2025

2025

**Proposed Anaerobic Digestion Facility,
Glenloughaun, Co. Galway
EIAR Volume I: Non-Technical Summary**

RECEIVED: 18/11/2025

Proposed Anaerobic Digestion Facility, Glenloughaun, Co. Galway

EIAR Volume I: Non-Technical Summary

Document Control Sheet

Client:	CycleØ (IE) Limited
Document No:	231960-ORS-XX-XX-RP-EN-13d-001_NTS

Revision	Status	Author:	Reviewed by:	Approved By:	Issue Date
P01	S1	Various	OD	LM	18/11/2025

RECEIVED: 18/11/2025

Table of Contents

1	Introduction	1
1.1	Introduction	1
1.2	The Applicant	2
1.3	Site Location	2
1.4	Site Layout	3
1.5	3D Image of the Site Layout	4
2	Process and Design Description	6
2.1	Anaerobic Digestion Process	6
2.2	Biogas	6
2.3	Feedstock	6
2.4	Odour Treatment System	6
2.5	Primary and Secondary Digestion Tanks	6
2.6	Digestate Treatment	6
2.7	Biogas Upgrading	6
2.8	Grid Injection Unit (GIU)	6
2.9	CO ₂ Liquefaction	7
2.10	Licensing Requirements	7
3	Consideration of Alternatives	8
4	Planning and Policy	9
4.1	Application Site: Planning History	9
4.2	European Policy and Legislation	9
4.3	National Planning, Climate, and Waste Policy and Legislation	10
4.4	Regional Planning Policy	12
4.5	Local Planning Policy	12
5	Biodiversity	14
5.1	Methodology	14
5.2	Designated Sites	14
5.3	Ecological Evaluation	15
5.4	Impact Assessment	16
5.5	Mitigation Measures	17
5.6	Residual Impacts	18
6	Population and Human Health	19
6.1	Description of the Receiving Environment	19
6.2	Likely Significant Effects	20
6.3	Mitigation Measures	23
6.4	Cumulative Effects	24
6.5	Residual Effects	24
7	Land, Soils & Geology	26
7.1	Receiving Environment	26
7.2	Assessment of Impacts	30
7.3	Mitigation Measures	31
7.4	Residual Impacts	36
8	Hydrology & Hydrogeology	38
8.1	Receiving Environment	38
8.2	Assessment of Impacts	40
8.3	Mitigation Measures	43
8.4	Residual Effects	51
9	Air, Odour and Climate	52
9.1	Receiving Environment	52
9.2	Effects of the Proposed Development	54

RECEIVED: 18/11/2025

9.3 Mitigation Measures	57
9.4 Cumulative Effects	59
9.5 Residual Impacts	60
10 Noise and Vibration	62
10.1 Receiving Environment	62
10.2 Background Noise Survey	63
10.3 Assessment of Impacts	65
10.4 Description of Effects	65
10.5 Mitigation Measures	67
10.6 Monitoring	68
10.7 Residual Impacts	68
11 Landscape and Visual	69
11.1 Methodology for Landscape Assessment	69
11.2 Baseline Conditions	70
11.3 Predicted Impacts	72
11.4 Visual Assessment	73
11.5 Mitigation Measures	75
11.6 Interactions and Cumulative Impact	77
11.7 Residual Impacts	78
12 Traffic & Transport	79
12.1 Receiving Environment	79
12.2 Assessment of Impacts	83
12.3 Mitigation Measures	85
12.4 Residual Impacts	85
13 Archaeology & Cultural Heritage	86
13.1 Site Overview and Archaeological Context	86
13.2 Cultural Heritage Assessment	86
13.3 Existing Environment	86
13.4 Site Inspection	86
13.5 Archaeological Testing	87
13.6 Potential Effects	87
13.7 Cumulative Effects	87
13.8 Mitigation Measures and Residual Effects	88
14 Material Assets	89
14.1 Receiving Environment	89
14.2 Assessment of Impacts	90
14.3 Mitigation Measures	93
15 Interaction Between Effects on Different Factors	99
15.1 Introduction	99
16 Schedule of Mitigation	101
16.1 Introduction	101

1 Introduction

1.1 Introduction

CycleØ (IE) Limited (the Applicant), are pleased to submit this EIAR in support of a planning application for the construction and operation of a Renewable Biogas Facility at a site in the townland of Glenloughaun, Co. Galway.

The Proposed Development, spanning approximately 4.0 hectares, is designed to process up to 90,000 tonnes annually of locally sourced agricultural manures, slurries, dairy processing residues, and crop-based feedstocks. Its primary objective is to produce grid-quality biomethane (renewable natural gas), which will be injected into the Gas Networks Ireland (GNI) network via a dedicated pipeline connection to the existing gas infrastructure. This renewable natural gas (RNG) will directly replace conventional natural gas, contributing to the Government's target of generating 5.7 TWh of domestic biomethane annually.

The facility will also produce a nutrient-rich, biobased fertiliser, offering a sustainable alternative to conventional, fossil fuel-derived fertilisers. Additionally, the facility is designed to capture and recover biogenic carbon dioxide (CO₂).

The proposed development will consist of the following:

- Demolition and site clearance works including the removal of an existing shed (with a GFA of c. 126.8 sq.m), and adjacent hard standing areas and tank structure, located centrally on the site.
- Construction of 2 no. primary digesters (with an overall height of c. 12.1m), a pump house (with a GFA of c. 115.3 sq.m), and 2 no. post digester tanks (with an overall height of c. 12.1m), located in the northwestern section of the site.
- Construction of 2 no. prepits (c. 4.3m in height), a pasteurisation buffer tank (c. 4.3m in height), and a pasteurisation unit (with a maximum height of c. 4.2m), located to south of the primary digesters, within the western section of the site.
- Construction of a digestate storage tank (c. 16.4m in height) located centrally on site, to the southeast of the primary and post digester tanks.
- Construction of a digestate treatment building and a feedstock reception building (with a height of c. 12.1m and a GFA of c. 1,703.7 sq.m) with an odour abatement system (with a height of c. 13m to top of odour abatement stack), located in the southwestern section of site.
- Construction of combined heat and power (CHP) unit (c. 2.6m in height and c. 5.6m in height to flue, with a GFA of c. 38.53 sq.m), a biogas boiler (c. 2.6m in height and c. 5.6m in height to flue, with a GFA of c. 12.74 sq.m), a backup boiler (c. 2.6m in height), and a gas treatment system (c. 4.2m in height), located in the southeast section of the site.
- Construction of a CO₂ liquefactor (with an overall height of c. 10.7m to top of storage vessels), and an emergency/ safety flare (c. 11.3m in height), a grid injection unit (with a height of c. 2.8m and a GFA of c. 21.7 sq.m), a fuel storage tank (c. 2m in height), and a propane tank compound accommodating 2 no. propane tanks (c. 1.6m in height), located in the southern section of the site.
- Construction of roofed silage clamps (with a GFA of c. 665.7 sq.m and a height of c. 8.7m), located centrally on site.
- Construction of a two-storey office building (with a GFA of c. 327.4 sq.m and a height of c. 11m) and an ESB substation (with a GFA of c. 23.5 sq.m and a height of c. 3.4m), within the eastern section of the site, adjacent to the site entrance.

RECEIVED: 18/11/2025

- Alterations to the adjacent local road frontage including improved access arrangements and boundary setback to allow for improved access and safety.
- Associated and ancillary works including parking (8 no. standard, 3 no. EV and 1 no. accessible parking spaces and bike storage for 12 no. bikes), a weighbridge, solar PV arrays at roof level, wastewater treatment equipment, bunding and surface treatments, attenuation pond, boundary treatments, lighting, services, drainage, landscaping, and all associated and ancillary works.

The application is accompanied by an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS).

A detailed description of the Proposed Development is provided in **Chapter 2 – Project Description** of Volume I: EIAR.

1.2 The Applicant

CycleØ (IE) Limited

CycleØ (IE) Limited is an end-to-end biomethane provider delivering innovative solutions to slow the pace of global warming. CycleØ focuses on capturing methane from the agricultural sector and upgrading it to biomethane for grid injection. As experts in biomethane, CycleØ develops, builds, owns and operates plants for the benefit of farmers, local communities and in support of local and national decarbonisation targets.

CycleØ is fully committed to developing four projects in Ireland to help achieve the Government’s target to deliver up to 5.7 TWh of indigenously produced biomethane per annum by 2030, as set out in the Climate Action Plan and the National Biomethane Strategy published in 2024.

1.3 Site Location

The Proposed Development site (herein referred to as ‘the site’) is located in the townland of Glenloughaun, approximately 3km south of the town of Ballinasloe, Co. Galway, and approximately 22km northeast of Loughrea, Co. Galway. The approximate grid reference location for the centre of the site is M 83487 27197, ITM: 583405, 727223.

An overview of the site location is provided in **Figure NTS 1.1**

RECEIVED: 01/11/2025



Figure NTS 1.1: Site Location.

The total site area measures ca. 4.0 ha. The site is partially brownfield and partially greenfield in nature and is currently used as agricultural pastureland. It is bounded to the north by Torva Ireland Limited, a meat processing and preserving facility, with agricultural pastureland to the south, east and west. Whytes Concrete plant is located approximately 150 m east of the site. The Ballinure River is the primary surface-water feature in the vicinity, located approximately 125 m south of the site boundary. Field drainage ditches run along the southern and eastern boundaries of the site and discharge to the Ballinure River.

The site lies to the south of Glenloughaun Road (L8412) and approximately 20 m west of its junction with the R355 regional road. The Proposed Development will be accessed via Glenloughaun Road, sharing the existing access road with the Torva Ireland Limited facility, with localised improvements to the current access proposed.

1.4 Site Layout

The site layout is displayed in **Figure NTS 1.2**. Detailed site layout and structural drawings are included in **Volume IV: Drawings**.

RECEIVED: 18/11/2025

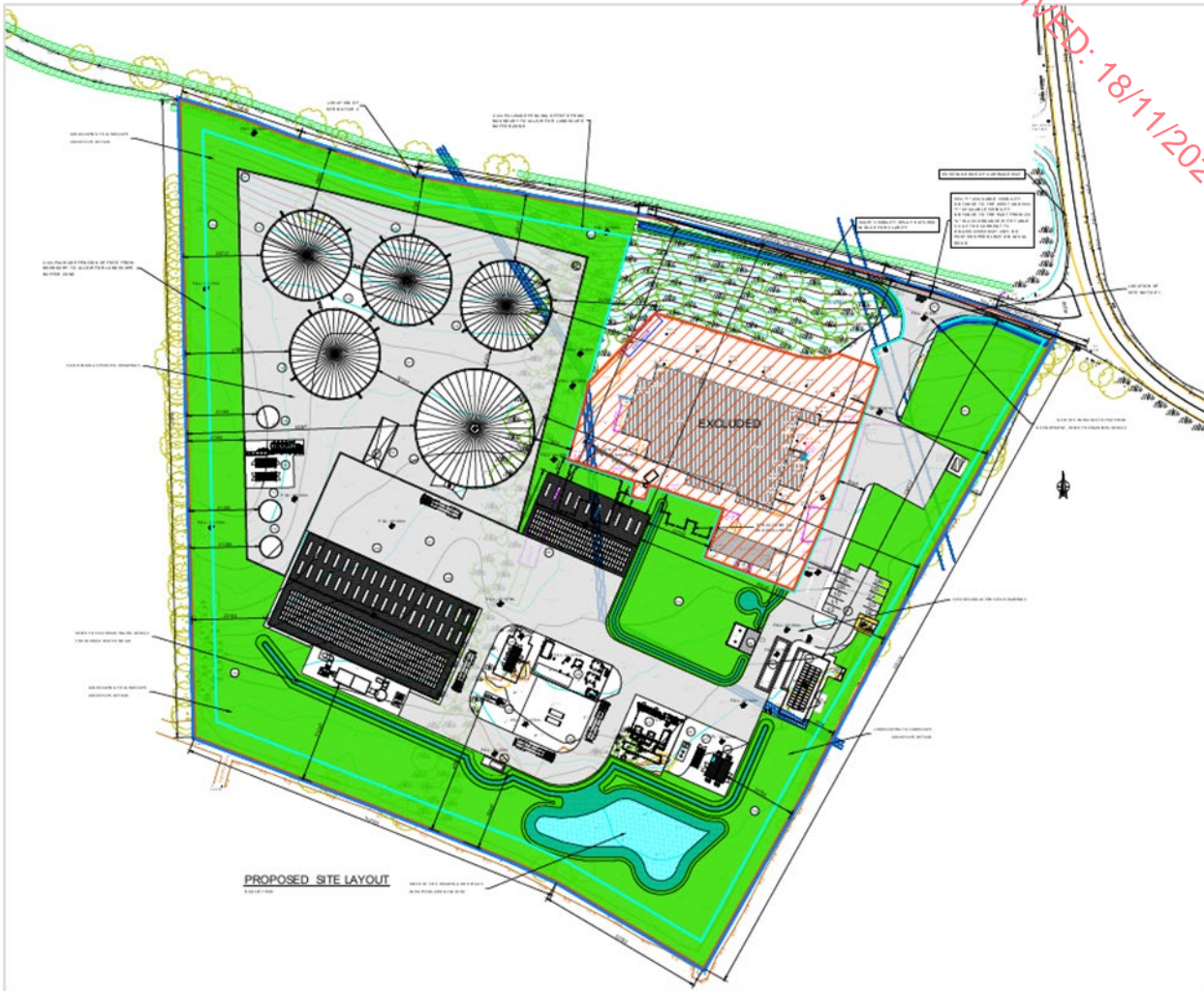


Figure NTS 1.2: Proposed Site Layout Plan.

1.5 3D Image of the Site Layout

A 3D model image of the site layout is included in **Figure NTS 1.3**.

RECEIVED: 18/11/2025



Figure NTS 1.3: 3D Image of Site Layout

2 Process and Design Description

2.1 Anaerobic Digestion Process

Anaerobic Digestion (AD) is a natural biological decomposition process which takes place in an oxygen-free environment, where micro-organisms break down organic matter to produce biogas.

2.2 Biogas

Biogas is the product of this complex biological decomposition of organic materials, mainly consisting of 55-70% by volume methane (CH_4), 30-45% carbon dioxide (CO_2).

2.3 Feedstock

The Proposed Development has been designed to accept and treat up to 90,000 tonnes per year of predominantly locally sourced agricultural manures, slurries, dairy processing residues and crop-based feedstocks.

2.4 Odour Treatment System

An Odour Treatment System will recover and treat all odours arising from potentially odorous activities occurring on site. All major odour sources, inclusive of the Feedstock, Digestate Storage Tanks, Liquid Feed Tanks, Pasteurisation Tanks are all connected to the Odour Treatment System.

2.5 Primary and Secondary Digestion Tanks

The Anaerobic Digestion process takes place in a series of 2no. Primary and 2no. Secondary Anaerobic Digestion Tanks. The Digestion Tanks are equipped with mechanical mixers featuring a series of paddles with externally mounted drive units and are equipped with a double membrane gas collection system.

2.6 Digestate Treatment

The Digestate Separation System is designed to treat a minimum of 78,000 tonnes of whole digestate per annum. Following treatment, approximately 24,500 tonnes of digestate fibre and 53,500 tonnes of liquid digestate will be produced.

2.7 Biogas Upgrading

The primary goal is to separate carbon dioxide (CO_2) from methane (CH_4) to produce renewable biomethane and CO_2 . Biogas upgrading removes trace impurities in the biogas stream. The proposed Biogas Upgrading Unit will recover over 99.9% of the biomethane present.

2.8 Grid Injection Unit (GIU)

Biomethane will be supplied to the existing gas network via the onsite Grid Injection Unit (GIU) and pipeline connecting the site to the existing medium pressure distribution gas pipeline located ca. 2.7km north of the site at Brackernagh, Ballinasloe

RECEIVED: 10/11/2025

2.9 CO₂ Liquefaction

By extending the Biogas Upgrading Unit with a CO₂ Liquefaction system, the gaseous CO₂ is processed into liquid CO₂ in a liquefaction system.

2.10 Licensing Requirements

Environmental Protection Agency (EPA)

Having regard to current law and practice, the Proposed Development will require an application for an Industrial Emissions (IE) licence to the EPA in accordance with Class 11.4 (b) of the First Schedule of the EPA Act 1992 as amended.

Department of Agriculture, Food and Marine (DAFM)

The application process for approval and operation of the Proposed Development by the DAFM will commence upon receipt of planning consent.

3 Consideration of Alternatives

A detailed site selection process was undertaken by the Applicant, with reference to the following criteria:

- Transport Network and Access
- Availability and proximity to Feedstock Supply
- Availability and proximity to Digestate Receivers
- Existing Land Use
- Landscape Sensitivity
- Ecological Designations
- Archaeological Designations
- Access to Gas Grid
- Access to Electricity Grid
- Proximity to Sensitive Receptors
- Available Land Size
- Land Availability
- Landscape and Visual Amenity
- Proximity to Suitable Water Course or Sewer
- Proximity to Drinking Water Source/Aquifer
- Topography
- Flood Risk

The applicant devised a scoring matrix based on each of the site-specific criteria outlined above. 7 no. site locations within County Galway were assessed under the above criteria, with the site at Glenloughaun Co. Galway scoring highest overall.

4 Planning and Policy

4.1 Application Site: Planning History

The following planning history is based on a review of the subject site and surrounding area using the Planning Authority online planning search tool.

2 no. planning application have been made on the Site, including the eastern portion of the Site and lands immediately to the north / northeast.

Reg. Ref.: 99/2499 – Abattoir

GCC issued a final grant of permission on the 7th January 2000, subject to 12 no. conditions, for “*extension/alteration of abattoir and upgrade treatment works*”.

Reg. Ref.: 05/5103 – Retain Revised Abattoir Layout

Within the same site boundary as the previously approved development under Reg. Ref.: 99/2499, GCC issued a final grant of permission on the 11th of September 2006, subject to 3 no. conditions, for development which includes the eastern portion of the Site. The proposed development was described as follows within the public notices:

“(a) retention of revised internal layout of existing abattoir including new boning halls, chills, boxing room, wash room, lairage, dispatch areas, stores, offices, welfare areas, toilets and canteen at ground and first floor levels (b) retain revised elevations (c) retain boilerhouse/workshop (gross floor space 1594sqm).”

4.2 European Policy and Legislation

4.2.1 The Paris Agreement

Under the Paris Agreement (COP21), the EU has pledged to achieve climate neutrality by 2050. Reaching this objective will require a transformation of Europe’s energy supply, society, and economy. The Proposed Development represents renewable energy development which will contribute to achieving this goal.

4.2.2 European Green Deal

The European Green Deal recognises that renewable and low-carbon gases, such as biomethane, will play a central role in achieving climate neutrality. The Green Deal notes that biogas and biomethane, in addition to green hydrogen, have the potential to displace fossil fuel gas.

4.2.3 EU Common Rules on Renewable Gasses

The Common Rules on Renewable Gasses seek to ensure that EU Member States take all necessary steps to assist in the wider use of sustainable biomethane, and to ensure that biomethane can be injected into and transported via the natural gas system.

4.2.4 Renewable Energy Directive

The current directive (2018/2001/EU, amended by Directive EU 2023/2413), or RED III sets a binding renewable energy target of at least 42.5% by 2030. It includes measures to facilitate renewable energy projects and strengthen bioenergy sustainability criteria.

4.2.5 REPowerEU Energy Plan

Introduced by the European Commission on the 18th May 2022, the Plan aims to accelerate the EU's clean energy transition and reduce dependency on Russian fossil fuels. It includes a Biomethane Action Plan to achieve 35 billion cubic meters of biomethane production by 2030 and recommends measures to facilitate renewable gas injection.

4.2.6 EU Strategy to Reduce Methane Emissions

Published in 2020, this strategy identifies the agricultural sector as a major contributor to methane emissions. It highlights the benefits of biogas from organic agricultural wastes, supports the development of the EU biogas market, and promotes sustainable farming practices.

4.2.7 Waste Management Legislation

The Waste Framework Directive (2008/98/EC, amended by Directive (EU) 2018/851) and the Landfill Directive (1999/31/EC) encourage the use of anaerobic digestion (AD) as a sustainable waste management method. The directives emphasise the diversion of waste from landfills and the separate collection of organic waste for biological treatment.

4.3 National Planning, Climate, and Waste Policy and Legislation

Chapter 4 provides an overview and analysis of the following relevant pieces of national policy and legislation, as summarised below.

- **National Biomethane Strategy:** The National Biomethane Strategy was finalised and published in May 2024. The Strategy seeks to promote delivery of a biomethane industry at scale in Ireland and sets out the significant benefits (both environmental and economic) that developments of this nature can realise. The Strategy also acknowledges the importance of biomethane production to ensure security of energy supply. It notes that without the development of biomethane production, Ireland is unlikely to meet its legally binding climate targets.
- **National Planning Framework:** The NPF supports low-carbon and energy-efficient initiatives in rural areas, aiming to strengthen rural towns through sustainable development and renewable energy projects.
- **The National Development Plan 2021-2030:** The National Development Plan provides further policy support for the transition to a climate neutral and climate resilient society, and the strengthening of the rural economy and communities. The proposed development delivers strongly on these objectives.
- **Climate Action Plan 2024:** The 2024 Climate Action Plan is the third annual Climate Action Plan, and provides direct policy support for biomethane development, noting a target of 5.7 terawatt hours of biomethane by 2030, with one terawatt hour to be delivered by 2025. The proposals will contribute to meeting this ambitious target.
- **Climate Action Plan 2023:** Similarly to the current 2024 Climate Action Plan, the 2023 Climate Action Plan also strongly supported biomethane development in the State.
- **Climate Action and Low Carbon Development Act:** Section 15 of this piece of climate legislation requires that Planning Authorities and An Bord Pleanála carry out their functions, in as far as is practicable, with key climate action policies, including the relevant Climate Action Plan. Chapter 4 outlines the compliance of the development with those relevant policies.

RECEIVED 18/11/2025

- **Sectoral Emissions Ceilings:** The Sectoral Emissions Ceilings represent binding limits on the greenhouse gas emissions for various sectors of the economy, including agriculture and energy. The proposed renewable energy development will assist in reducing greenhouse gas emissions in these sectors.
- **Support Scheme for Renewable Heat:** This Support Scheme seeks to advance the generation of energy from renewable sources in the heat sector, including biomass boilers and anaerobic digestion heating systems.
- **White Paper: Ireland’s Transition to a Low Carbon Energy Future 2015–2030:** The White Paper sets out a framework for policy actions of the Government from 2015-2020, it includes support for the further development of bioenergy. It recognises that anaerobic digestion projects can improve air quality and reduce odour emissions in rural areas, by diverting slurry from being spread on the land.
- **Biomethane Energy Report (Gas Networks Ireland):** While not strictly a policy document, this report published by GNI details the significant potential for biomethane development in the State, noting the ability of such development to improve security of supply, boost rural employment, and rapidly reduce climate emissions across hard to abate sectors of the economy.
- **Energy Security in Ireland to 2030:** This policy was published by Government following the invasion of Ukraine by Russia and the resulting energy crisis. The new National Biomethane Strategy is recognised as an important move towards improved energy security within this policy document.
- **National Policy Framework on Alternative Fuels Infrastructure for Transport in Ireland:** The Policy Framework highlights the importance of alternative fuels in decarbonising the transport sector, including via the incorporation of biomethane as a transport fuel.
- **Ag Climatise – National Climate & Air Roadmap for the Agriculture Sector:** This Roadmap includes an action for the promotion of anaerobic digestion for the agriculture sector.
- **National Energy and Climate Plan (NECP) 2021-2030:** This Plan included further policy support for biomethane development and included a target for 1.6 terawatt hours of biomethane production, which has since been revised upward under the 2023 and 2024 Climate Action Plans.
- **The Planning and Development Act 2000 (as amended):** The Planning and Development Act includes legislative recognition of the need to respond to climate change and to promote renewable energy development. It also provides the overall legislative framework for the Irish Planning System and Environmental Impact Assessment.
- **Whole of Government Circular Economy Strategy 2022 – 2023:** This Strategy directly targets the increased recycling of bio-waste and further renewable gas development, to enhance the circularity and sustainability of agriculture in the state.
- **A Waste Action Plan for a Circular Economy Strategy 2020-2025:** This Waste Action Plan recognises that anaerobic digestion plays a role in providing opportunities for regional development with benefits for local communities while producing renewable energy domestically.
- **National Policy Statement on the Bioeconomy (2018):** This Policy Statement notes that Ireland has a strong competitive advantage for the development of a more coherent and stronger bioeconomy.

RECEIVED 18/11/2025

- **Common Agricultural Policy (CAP) Strategic Plan 2023 – 2027:** The Common Agricultural Policy Strategic Plan provides support for farmers and contributes to improved sustainability in agriculture and agricultural practices.
- **European Union (Waste Directive) Regulations 2020:** This legislation regulates how waste compost and digestate are recycled into fertiliser products.
- **Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations, 2013:** These Regulations introduce a class of licence known as an Industrial Emissions Licence. The proposed development will require an Industrial Emissions Licence from the EPA to operate.
- **Animal By-Product Regulations:** These Regulations set out requirements which must be met in order to build and operate a biomethane development, including in relation to design, feedstock, and equipment requirements.

4.4 Regional Planning Policy

The Regional Spatial and Economic Strategy for the Northern and Western Region (RSES) supports renewable energy projects and highlights the importance of regional bio-economy initiatives. It encourages the sustainable management of organic waste and the development of anaerobic digestion facilities to generate renewable energy.

4.5 Local Planning Policy

4.5.1 Galway County Development Plan 2022-2028

The CDP recognises the central role of land use planning in promoting a low carbon society, mitigating the impact of climate change, and progressing towards a sustainable energy future for County Galway. The CDP aligns with the NPF, by recognising the role that rural areas play in driving the economy, for example by attracting entrepreneurship and innovation development, particularly where low carbon outputs can be achieved. The Vision of the CDP is:

“The promotion of a balanced urban and rural county that ensures future growth is based on the principles of sustainable development, delivering a high-quality living and working environment meeting the needs of all residents.”

Climate Change and Environmental Sensitivity is a ‘Key Principle’ of the CDP. At Section 2.3.13 (Key Principles), the CDP states, *“Climate Change has an increasing role to play in how the county is planned in the future. The plan has a critical role to play in ensuring the communities develop having regard to sustainable infrastructure networks which build resilience to climate change.”*

The Proposed Development will contribute to achieving the vision and guiding principles of the CDP creating a rural-based enterprise that produces renewable energy in a manner which directly benefits the local community and economy, while also helping to decarbonise the agricultural sector in the locality.

4.5.2 Galway County Council Climate Action Plan 2024-2029

The GCAP was adopted on 19th February 2024. According to the GCAP, agriculture accounted for 44% of emissions (2019).

We note the following **Strategic Goal (Energy and Built Environment):** *“Energy and Built Environment: Transform to low-carbon, resilient and sustainable energy and buildings,*

RECEIVED 18/11/2025

enhancing the well-being of our community”. **Objective EB1** to support this goal is to “Support the development of renewable energy sources, such as offshore wind only, solar, tidal, and biomass in suitable location.”

We note the following **Strategic Goal** (Circular Economy): “Promote and support a circular economy to reduce waste, conserve resources and enhance sustainability.” We note the following objectives to support this goal:

- **Objective CE1:** “Support communities, businesses and individuals to reduce the generation of waste and increase the quantity of waste reused and recycled.”
- **Objective CE2:** “Ensure waste is properly managed and reduce the quantity of waste that is sent to landfill or incinerated.”

4.7.3 Galway County Council Local Authority Renewable Energy Strategy

The Vision for the LARES is: “To facilitate and encourage renewable energy generation and a low carbon energy transition across County Galway, in the interests of future generations, through the application of energy efficient technology and the harnessing of indigenous renewable energy resources, whilst respecting the need to conserve areas of environmental, cultural and economic value.”

5 Biodiversity

The Ecological Impact Assessment addresses the potential ecological impacts that may occur in the future on the terrestrial and aquatic ecology of the Proposed Development.

5.1 Methodology

The assessment followed CIEEM, EPA, and NRA guidelines, evaluating ecological features and potential impacts, which were classified as positive, negative, or neutral, with mitigation measures proposed.

Ecological surveys were carried out in January, February, and July 2025. This is in line with best practice methodologies as it eliminates seasonal variation in data and allows the identification of habitats or species of conservation concern. In addition to the general habitat assessment, targeted surveys were undertaken for mammals (bat, badger and otter), breeding birds, invasive species, and signs of other species of conservation concern.

5.2 Designated Sites

Natura 2000 Sites

The proposed site is not within or immediately adjacent to any site that has been designated as a Special Area of Conservation (SAC) or a Special Protection Area (SPA) under the EU Habitats or EU Birds Directive.

There are seven Natura 2000 sites within the Zone of Influence of this Proposed Development site.

Nationally Important Sites

The proposed development is not within or immediately adjacent to any nationally designated site, such as a Natural Heritage Area or a proposed Natural Heritage Area. It is within the Zone of Influence of 14 sites that have been designated as Natural Heritage Areas/ proposed Natural Heritage Areas.

Habitats within the Study Area

The habitats within the proposed development site have been evaluated and are characterised as dry calcareous and neutral grassland, wet grassland, improved agricultural grassland, recolonising bare ground, drainage ditches, and hedgerows and treelines.

Overall, the biodiversity and ecology of this Proposed Development is of low value.

Fauna

Protected Mammals

- Records indicate the presence of various protected mammals in the wider 10km area, including several bat species, Eurasian badger, otter, Irish hare, and more.
- Targeted surveys were undertaken for mammals (bat, badger and otter), breeding birds, invasive species, and signs of other species of conservation concern.

RECEIVED: 18/11/2025

- No evidence of these species was found within the proposed development site itself.

Bats

- The landscape suitability index for bats in the study area is moderately high (39.67).
- No buildings or mature trees suitable for bat roosts are within the site, though the wider area offers good habitats for foraging and commuting bats.

Birds

- Moderate bird activity was noted, with common species such as blackbird, great tit, starling, and wren observed.
- Having regards to the network of treelines and hedgerows that surround the site, the site and its surrounding habitats are likely to be of medium-high local importance for birds.

Amphibians, Reptiles, and Invertebrates

- No amphibians or reptiles were observed during surveys, and no evidence of their presence was recorded on site.
- The grassland habitats offer value for invertebrates, while the hedgerows and unmanaged margins provide localised foraging habitat for pollinators.

Aquatic Environment

Water Features and Quality

- The proposed development is near the Ballinure River, about 135m meters south of the site.
- The Proposed Development site is within the Aughrim Groundwater Body, and the current status of this waterbody is noted as Good. This groundwater body is currently considered as “Not At Risk”. Within the proposed development site itself, groundwater vulnerability is classed as Moderate.

5.3 Ecological Evaluation

5.3.1 Summary of the Value of the Site

The proposed development site is within the Zone of Influence of four sites designated under the Natura 2000 network (SACs / SPAs). The closest of these is the Glenloughaun Esker SAC, which is located ca. 740m west of the site. The drainage ditches on the site flow into the Ballinure River ca. 135m southeast of the site. The Ballinure River flows for approximately 6.6km east, where it joins the River Suck. Before the Ballinure River joins the River Suck, it flows into the River Suck Callows SPA, ca. 5.4km from the proposed development site. The River Suck then flows for a further 6.3km east before discharging into the River Shannon. The Middle Shannon Callows SPA and River Shannon Callows SAC are also located at this point. Two no. NHAs are also hydrologically connected via this route; Suck River Callows NHA and River Shannon Callow NHA.

Within the proposed development site itself the dominant habitats are dry calcareous and neutral grassland, improved agricultural grassland, and wet grassland. The site is bordered by hedgerows, treelines, and drainage ditches. The treelines and hedgerows that occur within and along the perimeters of the site are important ecological features - these areas provide

important nesting areas and safe commuting corridors for local populations of birds and small mammals, including potentially bats. They also provide ecological connectivity to the surrounding area.

5.4 Impact Assessment

5.4.1 Impacts upon Designated Sites

- The location of the proposed development is deemed to be within the Zone of Influence of four Natura 2000 sites, due to their distance to the proposed development site and hydrological connectivity with the Ballinure River. As such and in accordance with Article 6(3) of the EU Habitats Directive (Council Directive 92/43/EEC) regarding Appropriate Assessment, the screening exercise for Appropriate Assessment was carried out to identify whether any significant impacts on designated sites are likely.
- An NIS as required under Article 6 of the EU Habitats Directive has been submitted as part of this application. This NIS will allow the competent authority to undertake its statutory obligations with regards to Appropriate Assessment.
- With the implementation of the mitigation measures contained in this EclA and the NIS, the current application will have no cumulative impacts upon the Glenloughaun Esker SAC, River Suck Callows SPA, River Shannon Callows SAC and Middle Shannon Callows SPA sites when considered in combination with other developments that are adequately screened for AA or where mitigation measures have been included as part of a Natura Impact Assessment.

5.4.2 Impacts within the Site

Construction Phase

Habitat Loss and Fragmentation: The site consists mainly of low-value improved agricultural grassland, with minimal ecological impact expected from its loss. Perimeter hedgerows will be retained.

Disturbance to Wildlife: Construction noise and activity may disturb local wildlife, including nesting birds.

Water Pollution: In the absence of mitigation, construction works could lead to sediment and pollutant runoff into the Ballinure River.

Operational Phase

Disturbance to Local Wildlife: Increased activity, noise, and lighting could disturb local wildlife. Mitigation will ensure minimal disruption, particularly for bats.

Pollution to Surface and Groundwater: In the absence of mitigation, operational runoff may contain pollutants. Structural weaknesses in tanks could lead to groundwater contamination.

Flood Risk: The site is at low flood risk, but in the absence of mitigation, flood events could overwhelm drainage systems, leading to potential off-site contamination.

Cumulative Impacts: Other local developments could reduce habitat availability. However, the creation of new areas of biodiversity within the Proposed Development and the retention and protection of treelines, will provide local ecological corridors and networks that will reduce the overall cumulative impact of this development in the Glenloughaun area.

RECEIVED: 18/11/2025

5.5 Mitigation Measures

In order to avoid any reductions in water quality in the area surrounding the Proposed Development in Glenloughaun, a number of mitigation measures must be implemented and followed. The implementation of these site-specific mitigation measures will ensure the protection of Natura 2000 habitats and species, and the local non-designated ecological receptors. These mitigation measures, outlined in **Table NTS 5.1** below, are also included in the accompanying NIS report.

Table NTS 5.1: Mitigation Measures

Table 5.3: Mitigation Measures	
Stage	Details
Pre-Construction and General Requirements	Site preparation and construction must be confined to the Proposed Development only and all mitigation measures must be adhered to.
	Contractors must be made aware of the ecological sensitivity and mitigation measures. This will be done prior to the commencement of any site works
Protection of Terrestrial Habitats and Features	Existing green infrastructure must be incorporated into the development. There must be no dumping or storage of construction waste or machinery in this zone during construction
	Removal of trees/shrubs should be outside the bird nesting season.
	Roadside hedgerows must be left intact, and the root systems of these hedgerows must not be damaged. Upon completion of the work, the soil should be reinstated, and grassy verge vegetation should be allowed to recolonise naturally
Protection of Water Quality and Management of Pollutants	Adherence to guidelines to protect water quality in the Ballinure River.
	Efficient construction practices to minimise soil erosion and pollution.
	Avoid works during heavy rainfall.
	Control of hydrocarbons on site with specific measures. All chemicals must be stored as per manufacturer's instructions.
	Best practice concrete / aggregate management measures must also be employed on site during construction.
	It is recommended that silt fences are installed along the eastern and southern extents of the construction site area. An interceptor trench will be required in front of this silt fence.
Management of Construction Waste and Soil	Management of construction waste and soil by registered contractors.
	All construction waste must be removed from site by a registered contractor to a registered site
	All topsoil generated from site works should only be stored within the Proposed Development until it is required for landscaping
Mitigation Measures during Operation	An Environmental Management System (EMS) accredited to ISO14001:2015 will be prepared and implemented by the operating company during the operational phase.
	The Proposed Development will operate under an Industrial Emissions Licence (IEL) issued by the Environmental Protection Agency (EPA).
	The licence will contain several conditions which the operator must remain in compliance with for the entire duration of the Anaerobic Digestion Facility's lifespan
Landscaping and Lighting	The stonewalls and hedgerows around the site should be enhanced and maintained for the benefit of wildlife.
	The existing gappy hedges should be enhanced with some more native shrubs, if possible, such as hawthorn, gorse, and blackthorn
	The natural verges along the stonewall hedgerows should be managed as old hay meadows, cutting only in late summer.
	It is recommended that further actions that are outlined as part of the National Pollinator Plan should be implemented
	Nesting areas for solitary bees could be included and bee boxes for cavity-nesting bees could be created.
	Bat boxes could be installed around the Proposed Development
The use of herbicides and rodenticides within the Proposed Development should be minimised and should be in accordance with relevant guidelines.	

RECEIVED: 8/11/2025

	Lighting should be kept to a minimum around the remaining trees on the Proposed Development and align with Guidelines.
	Lighting shall be controlled to avoid light pollution of green areas and shall be targeted to areas of human activity and for priority security areas.
Use of the Biobased Fertilisers by Customer Farmers	In order to avoid any reductions in water quality within the catchment as a whole, all biobased fertilisers must be used in accordance with S.I. 113 of 2022 European Communities
	The spreading of the biobased fertiliser on the customer farms must be done in accordance with the specific Nutrient Management Plan for that farm

5.6 Residual Impacts

Construction Phase

A summary of the predicted effects associated with the construction phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual effects are summarised in **Table 5.7** in Chapter 5 of the EIAR – Main Report.

The overall impact anticipated by the construction phase of the project following the implementation of suitable mitigation measures is considered to be **neutral-positive, slight, and temporary.**

Operational Phase

A summary of the predicted effects associated with the operational phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual effects are summarised in **Table 5.8** in Chapter 5 of the EIAR – Main Report.

The overall impact anticipated by the operational phase of the project following the implementation of suitable mitigation measures is considered to be **neutral, slight, and short-term to long-term.**

6 Population and Human Health

Chapter 6 of Volume 2 of the EIAR assesses the likely significant effects of the proposed development on Population and Human Health, with reference to population, human health, employment, and community. The assessment methodology involves a thorough desktop study and fieldwork, utilising guidelines from the EPA, European Commission, and the Institute of Environmental Management and Assessment (IEMA). The primary goal is to ensure that the development's effects on human health and welfare are comprehensively evaluated and mitigated.

6.1 Description of the Receiving Environment

Population & Employment

The health status of the population in the study area, as reported by the Central Statistics Office (CSO) in the 2022 Census, shows that 86% of the residents describe their health as 'very good,' or 'good' which aligns with national and county trends. Specifically, 56.7% in the Electoral Division (ED) report 'very good' health, comparable to the state and county averages.

The study area has experienced population growth between the 2016 and 2022 censuses. According to the Pobal HP Deprivation Index, the area is marginally above average, indicating moderate population sensitivity. The low age dependency ratio suggests that most of the population is of working age and largely independent, indicating low sensitivity to change. Additionally, the percentage of persons with a disability is lower than the national average, implying few restrictions on daily activities for residents.

Overall, the population within the study area is not particularly sensitive to change, with an overall ranking of *low to moderate sensitivity*.

Community

The two principal aspects of the community surrounding the subject site can be defined as follows:

- The site of the Proposed Development is located on the southern side of a local road called Glenloughaun Road, and south/southwest of the R355 Regional Road. Within the local area, residential dwellings are one-off and sparsely located; the closest established residential area is at Ballinasloe town (c. 2.3km north). Residential units are sparsely located within the surrounding area. As such, the wider residential community will become aware of any impact as a result of the Proposed Development.
- The working community in the vicinity of the Site comprise primarily agricultural-based employment. A meat processing factory is located immediately north of the Site. Other employment within the wider vicinity includes a concrete supplier (c. 315m east), a rugby club (c. 660m north), a restaurant (c. 920m north), a B&B (c. 1.02km north), a golf club (c. 815m north), a warehouse (c. 740m southeast), and timber supplier (c. 2.1km north).

Human Health (Off-Site)

The sensitivity of the surrounding area had been considered on the details of the published data available from CSO and Pobal. The ED has seen population growth between 2016 and 2022. The Pobal HP Deprivation Index shows the ED to be marginal above average, indicating a good to moderate population sensitivity (deprivation) within the study area (consistent with the Country as a whole).

RECEIVED 10/11/2025

There is a low age dependency ration within the ED therefore a large proportion of the population is within working age, thus considered as largely independent and judged to be not sensitive to change. The information presented above for the study area shows that a high proportion (86.53% for the ED) described their health status as 'very good' or 'good', while a low proportion as 'bad' or 'very bad'. The data shows that the ED has a consistent percentage of persons with a disability than that of the national and County average: indicating that for persons within the area, there are relatively few restrictions on daily activities. We note that Ballinasloe town has a slightly higher percentage of persons with a disability.

The population within the study area is therefore not particularly sensitive to change, with a ranking of low sensitivity.

Human Health (On-Site)

An anaerobic digestion plant is considered to be a biological treatment facility, the operation of which can have the potential for a variety of exposure scenarios involving a range of factors including:

- Pest Control
- Engineering specification
- Abatement technologies
- Hydrogeology
- Topography
- Type and quantity of waste accepted.
- Biogas generation

In the absence of appropriate mitigation, the primary hazards to human health at a biogas facility is mainly associated with uncontrolled air and water discharges

6.2 Likely Significant Effects

Do-Nothing Scenario

Under the 'Do Nothing' scenario, the current land use of the Proposed Development site would remain unchanged, with no additional effects on the following receptors:

Local Population & Employment: The local population and employment levels would remain unaffected, but the opportunity to create additional jobs and contribute to specific objectives in the County Development Plan would be lost.

Community: Community perceptions would remain unchanged, but the potential economic and social benefits from the development would be foregone.

Land Use: The land would likely continue to be used for agriculture.

Human Health (Off-Site Receptors): There would be no effects on human health, as the site would remain in its existing greenfield state. However, the opportunity to provide renewable energy to the national grid and address rising energy costs would be missed.

Human Health (On-Site Receptors): It is likely that the risks associated with uncontrolled pests and vermin on the surrounding area, livestock and ecological receptors will be significantly reduced.

RECEIVED 18/11/2025

Overall, the 'Do Nothing' scenario is sub-optimal in the context of national and county renewable energy targets and efforts to mitigate climate change. In the context of the national and county targets for the adoption of renewable energy sources, and in the context of anthropogenic climate change. Furthermore, an opportunity to introduce a bio-based fertiliser with reduced pathogen content into the local bioeconomy will be missed.

Receptor Sensitivity

Sensitivity of the receptors identified are summarised in **Table NTS 6.1** (extracted from Chapter 6)

Table NTS 6.1: Receptor Sensitivity

Receptor	Receptor Importance	Receptor Sensitivity	Rationale
Local Population & Employment	Low to moderate	High	The Proposed Development provides employment opportunities to the local area and surrounds, also with the potential to provide renewable energy.
Community	Low to moderate	Low	The overall economic and social benefits that the development would bring to the area would not be experienced by the community in the event of the development not occurring.
Human Health (Off Site)	Low to moderate	Low	If the Proposed Development were not to proceed this greenfield site would remain in its existing form and the unique opportunity of providing renewable energy will be missed.
Human Health (On-Site)	High	High	The development will result in a situation where human health will be put at risk due to typical hazards associated with the construction and operation of the proposed facility.

Sources

Construction Phase

Population

The construction phase is not considered to have any significant effect on the population of the surrounding area, as it is expected that the work force will primarily travel from their existing place of residence to the construction site. As such, activities associated with the construction phase are anticipated to have **positive, slight, temporary** effects on the local population.

Employment

The Proposed Development will provide important construction and related employment. The construction phase will also have secondary and indirect 'spin-off' effects on ancillary support services in the area of the Proposed Development, such as retail services, together with wider benefits in the aggregate extraction (quarry) sector, building supply services, professional and technical professions etc. As such, activities associated with the construction phase are anticipated to have **positive, slight, temporary** effects on employment within the area.

Community

It is acknowledged that the construction phase of the project may have some short-term negative effects on local residents. These effects are dealt with separately and assessed in other technical chapters of the EIAR. It is expected that these short term temporary localised effects may be experienced by those residing, working, and visiting the area. Such effects would include an increase in daytime noise levels in the area as a result of the machinery being

RECEIVED: 18/11/2025

used for construction purposes Activities associated with the construction phase are anticipated to have **negative, slight, temporary** effects on the local community.

Human Health

The Health and Safety policy, procedures and work practices of the Proposed Development will conform to all relevant health and safety legislation both during the construction and operational stages of the Proposed Development. The Proposed Development will be designed and constructed to best industry standards, with an emphasis being placed on the health and safety of employees, visitors, local residents and the community at large. Activities associated with the construction phase are anticipated to have **negative, slight, temporary** effects.

Operational Phase

Potential operational phase effects are summarised in **Table NTS 6.2** below.

Table NTS 6.2 – Operation Phase Effects Summary

Receptor	Sensitivity Rating	Potential Environmental Effects	Quality	Significance	Duration
Local Population	Low to moderate	No material effect on the existing local population. Likely to have a positive effect on the population in terms of employment and economic benefit in the long term.	Positive	Moderate	Long-term
Employment	Low to moderate	Creation of significant employment benefit for the local study area. Further indirect employment will be created as a result of the induced benefits of the development.	Positive	Significant	Long-term
Community	Low to moderate	The community may experience a slight change in mobility as a result of increased traffic on the road network.	Neutral	Slight	Long-term
Human Health (Off-Site)	Low to moderate	Air emissions from CHP, Biomethane Boiler and Odour Treatment System. Projected ambient concentrations including background levels fall within all National and EU ambient air quality limit values and, thus, will not cause any effect on human health.	Neutral	Imperceptible	Long-term
Human Health (On-Site)	Moderate	Pests The presence of vermin or insect pests in or around any waste management facility is a health hazard. Management must have a pest and vermin control standard operating procedure in place, which effectively controls any such presence and prevents possible contamination risk	Negative	Moderate	Long-term
Human Health (On-Site)	High	Fugitive Emissions	Negative	Moderate to Significant	Long-term
		Hazardous Substances			
		Biological Agents			
		Electrical Hazards			

RECEIVED: 18/11/2025

		Mechanical Hazards			
		Gas Hazards			
		Explosion and Fire Hazards			
		Malpractice - Operative Health and Safety			
		Major Accidents			

6.3 Mitigation Measures

Construction Phase

Potential effects during the construction phase will be minimised through the implementation of the Construction Environmental Management Plan which will be submitted to the council prior to construction.

Population

It is considered that the Proposed Development is unlikely to generate any significant adverse effects on the demographics of the area No mitigation measures are required during the operational phase.

Employment

The Proposed Development will have a positive effect on employment levels in the area and as such no mitigation measure are required.

Community

It is considered that the Proposed Development is unlikely to generate any adverse effect on the community of the area either during the construction phase or the operational phase and would actually have positive economic effects. No mitigation measures are required during the operational phase.

Human Health

Adverse health and safety effects during the construction phase will be minimised through the implementation of the Construction Management Plan to be prepared by the main contractor.

Operational Phase

Potential effects to the local population, employment and community are neutral to positive hence no mitigation measures are recommended for these receptors. A robust set of measures are proposed for the following operational aspects relating to Human Health, outlined in detail in section 6.7.2.1 of the main EIAR Report and within Chapter 16 - Schedule of Mitigation.

- Pest Control
- Fugitive Emissions
- Hazardous Substance
- Biological Agents
- Electrical Hazards
- Gas Hazards
- Explosion and Fire Hazards

- Malpractice.

6.4 Cumulative Effects

The cumulative effects of the proposed construction and operation of a biogas facility with other developments in the area are reviewed in this section with specific regard to the local population.

Construction Phase

The mitigation measures outlined in the CEMP and in Chapter 6 of the EIAR – Main Report, should be applied throughout the construction phase of the Proposed Development. This will ensure any significant cumulative effects on the local population and the greater environment are prevented.

Operational Phase

The cumulative effects on the local population and human health during the operational phase of the Proposed Development are expected to be minor. These effects primarily stem from a slight increase in demand for local services and increased employment, aligning with broader employment trends. Mitigation measures and sustainable use of resources will help manage this increased demand.

6.5 Residual Effects

The mitigation strategy above recommends actions which can be taken to reduce or offset the scale, significance, and duration of the effects on the surrounding population.

Population

The Proposed Development is not expected to have any significant adverse effect on the local population.

Employment

The development will create new employment opportunities, boosting local businesses and services.

Community

The Proposed Development is unlikely to adversely affect the local demography and will have positive economic effects.

Human Health

The various human health parameters discussed in chapter 6 also interact with many other aspects of the environment. The residual effects in relation to these aspects are detailed in the individual chapters as follows:

- Chapter 9 – Air, Odour and Climate
- Chapter 10 - Noise and Vibration

RECEIVED 18/11/2025

Following implementation of the mitigation measures proposed in **Section 6.7**, and the measures outlined in chapter 6, the residual effects are anticipated to be, **neutral, slight, long-term** effects on the Human Health.

Residual Effects Summary

The overall effect anticipated during the construction phase of the project following the implementation of suitable mitigation measures is considered to be **neutral and positive, imperceptible to slight, and long-term**.

Summary of Significant Effects

The aspects for this assessment are considered to be the Population, Employment, Community, and Human Health. Whilst the development proposals have the potential to cause detriment to the sensitive receptors identified, the recommended mitigation measures will ensure that the risk of potential effects are reduced to **negligible**.

7 Land, Soils & Geology

ORS assessed the likely impact of the Proposed Development on the land, soil and geology within the proposed development site and the wider region.

7.1 Receiving Environment

Topography

The proposed development site is located in Glenloughaun, Ballinasloe, Co. Galway, within the “Shannon Environs Landscape” character type—an ecologically sensitive area defined by open water, seasonally flooded grasslands (Shannon Callows), and rich biodiversity. Within 2km, the “Central Galway Complex Landscape” and “Urban Environs Landscape” are also present. The site comprises both brownfield and greenfield areas, bordered by farmland, local roads, and nearby industrial and agricultural facilities.

Topographically, the site slopes southeast toward the Ballinure River, with elevations ranging from 85m to 33m AOD. It features hummocky glaciofluvial sediments and existing drainage ditches that discharge to the river. Ground regrading is proposed to accommodate the biogas facility while maintaining natural drainage paths. Trial pits and surveys confirm variable subsurface conditions, with moderate to high groundwater vulnerability in parts of the site

Drift Geology

The proposed development site lies within a zone shaped by glacial processes, specifically hummocky glaciofluvial sediments formed by meltwater streams during the last glaciation. This terrain includes eskers, kames, and kettles - features typical of formerly glaciated regions. The site is classified as Flat to Undulating Lowland, with gentle slopes and elevations below 100m, making it suitable for agricultural use. Soils are primarily Grey Brown Podzolics and Brown Earths, developed on limestone-derived fluvioglacial deposits.

Locally, the area is underlain mainly tills derived from limestone, with eskers and alluvial deposits near the site boundaries. Soil types range from well-drained sandy loams to poorly drained peats and gleys, reflecting the area's complex glacial history and microrelief. These soils are abundant regionally and well-suited to agriculture, with the development expected to affect typical, non-sensitive soil types.

Regional Bedrock Geology

County Galway’s geology is divided east–west by Lough Corrib. The west features ancient metamorphic rocks (schist, gneiss, quartzite), Galway Granite, and Connemara marble, while the east is dominated by Carboniferous limestones and Devonian sandstones. This contrast reflects major tectonic boundaries and results in distinct hydrogeological regimes.

The development site lies on Dinantian Upper Impure Limestones (Lucan and Tobercolleen formations), composed of dark-grey cherty limestone and shale. Nearby, small areas of Dinantian Pure Unbedded Limestones occur northwest of the site.

Local Bedrock

The bedrock within the 2km study area is predominantly Carboniferous, specifically the Lucan Formation—dark limestone and shale deposited in deep marine conditions. It features interbedded argillaceous limestone, calcareous mudstone, and shale, with common chert and

pyrite, indicating a low-energy, anaerobic basin setting.

A single fault line runs northwest of the site, near Waulsortian Limestones and Visean formations. The Lucan Formation's complex layering and mineral content reflect its origin from distal turbidites and shelf-derived sediments.

Depth to Bedrock

Within 2km of the site, the GSI database identifies one groundwater well and three boreholes, with depths to bedrock ranging from 3.7m to 14m. The site is underlain by the Aughrim Groundwater Body, classified as a Locally Important Aquifer with limited productivity. Groundwater vulnerability is mostly moderate, increasing to high along the northern boundary near the Glenloughaun Road.

Karst Features

Karst refers to landscapes formed in soluble rocks like limestone, where water flows through enlarged underground conduits. These systems are common in Ireland and highly vulnerable to pollution due to rapid infiltration and minimal natural filtration.

No karst features are recorded within 2km of the proposed site. The nearest turlough is 7.7km east, with no hydrogeological connectivity identified.

Mineral Aggregate Resources

There are no active quarries within the proposed site. The nearest is Sheppard's Quarry, approx. 300m northeast, producing sand, gravel, and crushed rock from an esker ridge. The wider 2km area shows low overall potential for mineral extraction.

Radon

Radon is a carcinogenic gas from natural uranium and thorium decay, linked to ca. 250 lung cancer cases annually in Ireland. The proposed site lies in a Moderate Radon Area, meaning ca. 10% of nearby properties may exceed safe levels. Radon barriers should be installed in on-site buildings, though testing is not mandatory.

Seismic Activity

Ireland is not considered to be an area of high seismic risk. No seismicity data is available from GSI online resources. There is no significant seismic activity recorded within the vicinity of the Site.

Soils & Subsoils

Soil formation in Galway is shaped by geology, climate, and glacial history. The county features Brown Earths, blanket peat, and raised bogs, with sensitive peatlands designated under EU habitat protections. Other soil types include Lithosols, Gleys, Podzols, Luvisols, and Alluvial soils.

At the proposed development site, soils are mainly well-drained Grey Brown Podzolics and Brown Earths over limestone drift, with shallow Rendzinas and Lithosols to the north and Alluvial soils to the south. The Mullabane Series dominates, with coarse loamy textures and high sand content. Subsoils consist mostly of glacial till, with esker gravels and alluvium near

boundaries. The land is suited to pasture and crop production.

Soil Contaminants

No contaminants were recorded during the site investigations; however, Trial Pit 05 revealed made ground containing plastic fragments in the upper layer (0–0.4m), underlain by gravelly silt, an organic silt lens, and sandy gravel with cobbles. Groundwater inflow was noted at 3.5m depth. These findings warrant further examination of the man-made ground, as its presence may indicate potential contamination, particularly given the known location of a decommissioned soakaway associated with the adjacent meat processing facility.

A review of EPA and DCCA records found no illegal waste activities within 2km of the proposed site. However, a licensed peat extraction area and the Pollboy Landfill Facility are located approximately 1.7km east and northeast, respectively. A compliant domestic wastewater system exists 640m southeast, downstream of the Ballinure River.

Several registered extractive industry sites, including active quarries, are located within 2km, the closest being Whytes Sand and Gravel (240m east). No active IPPC-licensed facilities were identified, though two inactive sites lie beyond the study area. Planning records show steady rural development between 2020 and 2025, with permissions granted for agricultural, residential, and community infrastructure projects, consistent with local planning policy.

Historic Land Use

Historical mapping shows the site evolved from undeveloped greenfield in the 1830s to a partially developed rural area by the 2000s. Key changes include the establishment of Edward Sheppard Quarry (1990s), Whytes Sand and Gravel (early 2000s), and extensions to existing buildings. Despite these additions, the surrounding area remains largely agricultural with limited residential growth.

Recent aerial imagery (2013–2018) confirms the site's continued use for pasture, bordered by farmland and light industrial activity. No major changes have occurred in recent years.

Site Investigation

The results of the trial pits installed as part of the site investigation are shown below in **Table NTS 7.1**.

RECEIVED 18/11/2025

Table NTS 7.1: Soil Profile of Trial Pits

Location	Depth (m)	Ground Profile	Comments
TP01	0 – 0.4m	• Loose brown gravelly SILT with frequent rootlets. Gravel is fine to coarse, rounded to sub-rounded.	Trial pit Collapsed
	0.4 – 1.2m	• Firm pale brown laminated SILT. Becomes more gravelly with cobbles towards base.	
	1.2m-1.4m	• Firm grey sandy gravelly SILT with moderate cobbles present. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded.	
	1.4m-2.4m	• Loose brown-grey silty very sandy GRAVEL with frequent cobbles and rare boulders present. Sand is fine to coarse. Gravel is fine to coarse, rounded to sub-rounded. Cobbles and boulders are rounded to sub-rounded.	
TP02	0-0.70m	• Firm brown gravelly SILT with frequent rootlets present. Gravel is fine to coarse, rounded to sub-rounded.	Trial pit Collapsed
	0.70m-2m	• Firm pale brown laminated SILT. Becomes more gravelly with cobbles towards base.	
	2m – 2.8m	• Loose brown-grey silty very sandy GRAVEL with frequent cobbles and rare boulders present. Sand is fine to coarse. Gravel is fine to coarse, rounded to sub-rounded. Cobbles and boulders are rounded to sub-rounded.	
TP03	0 – 0.4m	• Loose brown slightly gravelly SILT with frequent rootlets.	
	0.4 – 1.1m	• Firm pale brown laminated SILT.	
	1.1 – 2m	• Firm brown gravelly SILT. Gravel is fine to coarse, angular to sub-angular.	
	2m – 2.5m	• Loose brown-grey silty very sandy GRAVEL with frequent cobbles and rare boulders present. Sand is fine to coarse. Gravel is fine to coarse, rounded to sub-rounded. Cobbles and boulders are rounded to sub-rounded.	
TP04	0-0.5m	• Organic silt topsoil	Rapid GW Inflow at 2.1mbgl
	0.5 – 1.8m	• gravelly SILT with cobbles	
	1.8 – 2.1m	• silty very sandy GRAVEL with cobble and boulders.	
TP05	0-0.4m	• MADE GROUND comprising of loose brown very gravelly silt with frequent cobbles present. Gravel is fine to coarse, rounded to sub-rounded. Contains frequent plastic fragments and plastic sheeting	Rapid GW Inflow at 3.5mbgl
	0.4 – 2m	• Firm dark brown very gravelly SILT with rare cobbles. Gravel is fine to coarse, rounded to sub-rounded. Cobbles are rounded to sub-rounded	
	2- 2.4m	• Dark brown organic SILT lens.	
	2.4 – 3.5m	• Loose grey sandy very gravelly SILT with frequent cobbles present. Sand is fine to coarse. Gravel is fine to coarse, sub-rounded to angular. Cobbles are sub-rounder to angular	
TP06	0-0.8m	• Loose brown slightly gravelly SILT with frequent rootlets.	
	0.8 – 3m	• Soft dark grey CLAY.	

The trial pit investigations revealed varied subsurface conditions across the site, including gravelly silts, laminated layers, organic lenses, and sandy gravels with cobbles and boulders. Groundwater inflows were observed in TP04 and TP05, and no bedrock was reached. These findings contrast with the Teagasc SIS classification of uniformly well-drained Brown Earths, indicating more complex and heterogeneous soil profiles.

Made ground and a decommissioned soakaway raise potential contamination concerns. While the site is regionally classified as having moderate groundwater vulnerability, trial data suggests localised high vulnerability. Additional trial pits are recommended before construction to better assess drainage and contamination risks.

RECEIVED: 18/11/2025

7.2 Assessment of Impacts

Receptor Sensitivity

The sensitivity of the receptors identified during the study of the land, soil & geology features within the vicinity of the site are summarised in **Table NTS 7.2** overleaf.

Table NTS 7.2: Receptor Sensitivity

Receptor	Receptor Importance	Receptor Sensitivity	Rationale
Topsoil	Local Level	Low	The trial pits revealed more variable subsurface conditions than the Teagasc SIS classification of well-drained Brown Earth soils (Mullabane 1100q association). The stratigraphy showed loose to firm gravelly silts overlying sandy gravels with cobbles/boulders, alongside localised features like laminated silts, organic lenses and groundwater inflows. Construction waste was present in eastern parts of the site, while the western portion remains undisturbed pastureland.
Underlying Deposits	Local Level	Low	The development has been designed to utilise the existing site topography as far as possible (231960-ORS-ZZ-00-DR-AR-200), minimising the disturbance to the subsoil to achieve the desired site levels. Where possible drift deposits will remain on site and be utilised as infill material. The underlying till deposit is predominantly a till derived from limestones. The development site is located across a GSI designated Flat to Undulating Lowland which is characterised by gentle slopes, making it fully suitable for all forms of agricultural machinery operation without topographic constraints.
Bed Rock Geology	Regional Level	Moderate	The underlying bedrock is characterised as well-bedded, fine-grained, weakly laminated, and bioturbated argillaceous limestone, alternating with dark grey to black calcareous mudstone. Karst features have not been recorded within the site vicinity nor within the wider region. The Site lands are primarily designated as having moderate groundwater vulnerability, with a shift to high vulnerability along the northern boundary. The Lucan Formation encompasses the wider study area and further.

Construction Phase

The construction phase is likely to yield the most potential impacts on the surrounding land, soil & geology. Potential construction phase impacts are considered in detail in **Section 7.5.3** of the EIA – Main Report and summarized in **Table NTS 7.3** overleaf.

RECEIVED 18/11/2025

Table NTS 7.3: Construction Phase Effects (Unmitigated)

Receptor	Potential Environmental Effects	Quality	Significance	Duration
Topsoil	Topsoil Removal	<i>Negative</i>	<i>Moderate</i>	<i>Reversible</i>
	Gas Pipeline	<i>Negative</i>	<i>Slight</i>	<i>Temporary</i>
Underlying Deposits/ Subsoil	Construction of Built Structures	<i>Negative</i>	<i>Moderate</i>	<i>Long-term</i>
	Excavation/ Subsoil Removal	<i>Negative</i>	<i>Moderate</i>	<i>Permanent</i>
	Central Rainwater Harvesting Tank and Attenuation Pond	<i>Negative/ Neutral</i>	<i>Moderate</i>	<i>Permanent</i>
	Contaminated Soils	<i>Negative</i>	<i>Significant</i>	<i>Temporary</i>
	Gas Pipeline	<i>Negative</i>	<i>Slight</i>	<i>Temporary</i>
Bed Rock Geology	Excavation of Bedrock	<i>Negative</i>	<i>Significant</i>	<i>Permanent</i>

Operational Phase

The operational phase effects anticipated and considered throughout the lifetime of the operation of the facility are considered in detail in **Section 7.5.4** of the EIAR – Main Report and summarized in **Table NTS 7.4** below.

Table NTS 7.4: Operational Phase Effects (Unmitigated)

Receptor	Potential Environmental Effects	Quality	Significance	Duration
Topsoil	Nutrient Leaks	<i>Negative</i>	<i>Slight</i>	<i>Short-term</i>
	Land Spreading of Digestate	<i>Positive</i>	<i>Slight</i>	<i>Long-term</i>
	Attenuation Pond	<i>Neutral</i>	<i>Moderate</i>	<i>Permanent</i>
Bed Rock Geology	Hydrocarbon Contamination	<i>Negative</i>	<i>Moderate/ Significant</i>	<i>Long-term</i>

7.3 Mitigation Measures

Construction Phase

General Mitigation Measures

A summary of all mitigation measures for the construction phase to ensure maximum protection of land, soil & geology receptors are listed below:

- Site preparation and construction must be confined to the Proposed Development only and it must adhere to all the mitigation measures outlined in this Chapter. Work areas should be kept to the minimum area required to carry out the proposed works and this area should be clearly marked out in advance of the proposed works.
- Prior to the commencement of developments on site, the PSCS/ ECoW will ensure that contractors will be made aware of the sensitive receptors identified in this chapter and the associated mitigation factors. A signed statement saying that they have taken on board the mitigation measures contained herein should be presented to the local authority along with the Notice of Commencement.
- A wheel wash/ power wash facility will be established at the site-setup stage of construction to limit the translocation of sediment onto the local road network.
- A best practice measure in reducing the risk of the translocation of invasive species all machinery initially arriving to site will be inspected. Any dirty equipment will be refused

RECEIVED: 18/11/2025

entry to site.

- All construction waste will be removed from site by a registered contractor to a registered site. Evidence of the movement and safe disposal of the construction waste will be retained and presented to the Local Authority upon request. Removal of the construction waste will occur as soon as possible after construction works.
- The following Guideline documents should be adhered to:
 - Construction Industry Research and Information Association (CIRIA) (2005) Environmental Good Practice on Site (C692).
 - Construction Industry Research and Information Association (2001) Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532).
 - Construction Industry Research and Information Association (2000) Environmental Handbook for Building and Civil Engineering Projects (C512).
 - Environmental Protection Agency (2015) List of Waste and Determining if Waste is Hazardous or Non-Hazardous.
 - Environment Agency et al. (2015) Guidance on the Classification and Assessment of Waste, Technical Guidance WM3.

Topsoil Removal

- Silt fencing and interceptor trench to be installed along the eastern extents of the site
- Excavated topsoil will be stockpiled in an area abounded by silt fencing to contain/ reduce any sediment run-off during times of inclement weather.
- Driving machinery on topsoil stockpiles is not advised as it damages the soil structure, reduces porosity, and subsequent percolation rates, and can result in 'smearing' of the soil surface, which prevents water infiltration into the soil.
- Any excess topsoil will be removed from site and disposed of appropriately.
- Stockpiling and slight compaction of stockpiles to minimise both hydraulic and climatic erosion.
- Running stockpiles in the direction of prevailing wind to minimise windborne erosion rates, SW-NE. (EPA, 2013).
- Construction of silt fences around topsoil stockpiles to contain sediment run-off.
- Minimise the export of topsoil off site by incorporating in the final landscape design.
- Minimise handling and tracking of material to maintain optimum soil structure.
- Landscaping to take place as soon as possible to reduce exposure of subsoil and topsoil stockpiles.
- Works will be avoided during periods of extended rainfall.
- All topsoil generated from site works should be stored within the Proposed Development until it is required for landscaping. It must not be stored outside the Proposed Development boundaries, and it must not be used for the infilling of any area outside of the Proposed Development. If there is more topsoil than is needed for landscaping, it must be removed from site by a registered contractor for appropriate use elsewhere. The end location of the topsoil must be identified and records presented to the local authority if requested.

Excavation

- Excavation work will be conducted in stages to minimise the exposure of unprotected soil, subsoil and bedrock.
- Where possible excavated subsoil material will be reworked and used on site.
- A geotechnical investigation of the site will be required in order to assess the potential of the underlying soil, subsoil and bedrock for reuse.

- Stockpiling material in appropriate locations, away from water sources, with a silt fence surrounding it to reduce the rate of run-off from hydraulic conditions.
- Light compaction of stockpiles to minimise the rate of erosion from climatic methods.
- Stockpile heights should be kept to a minimum to ensure stockpile stability and minimise wind borne erosion.
- Excavations will be postponed in high rainfall conditions to reduce the risk of excavation collapse and erosion to soil and subsoil profiles.
- If extreme weather conditions are forecast high sediment stockpiles will be covered to minimise erosion.
- Excavations to be backfilled as soon as possible to prevent any infiltration of contaminants to the subsurface and bedrock.
- All temporary excavations will be conducted in a safe manner to ensure sidewall stability and prevent collapse of excavations. Mobile shoring equipment will be utilised to this end where required.
- All long-term soil stockpiles are to be planted with a vegetative cover to bind the soil and improve slope stability.
- Engineered retaining walls are to be installed where required to ensure stability of contiguous and Proposed Development topography.
- Excavated soil will be subject to continuous assessment by a competent Ecological Clerk of Works (ECoW) both prior to and during excavation activities to identify any potential contamination. All soils will be batched, documented, and stored separately to facilitate their subsequent management as a Soil & Stone By-product in compliance with Article 27. Suitable material will be incorporated into landscape fill on-site, while any surplus soil not conforming to the Article 27 requirements shall be removed from site by a licensed and qualified hauler for deposition at a licensed landfill facility.

Soil Compaction

- Construction of a hardcore gravel access road on and around the site.
- Confine site traffic to designated routes.
- Minimise traffic flows on site and establish a construction stage parking compound.
- Avoid the use of oversized machinery when and where possible.
- Prevent movement of vehicles on site during and after periods of rainfall.
- Driving machinery on topsoil stockpiles will be avoided as it damages the soil structure, reduces porosity, and subsequent percolation rates, and can result in 'smearing' of the soil surface, which prevents water infiltration

Run-Off

- As a standard best practice measure a silt fencing will be erected along the eastern and south extents of the Proposed Development site to limit accidental discharge of sediments into the adjacent existing drain which runs to the Ballinure River. The fencing is to be made of a permeable filter fabric (Hy-Tex Terrastop Premium silt fence, or similar), with the footing of the fencing to be buried into the ground and the visible fencing to be ca. 0.5m high.
- An interceptor trench will be installed in front of the silt fence.
- The silt fence will be visually inspected daily to ensure that they remain functional throughout the construction of the Proposed Development. Maintenance of the fences will be carried out regularly. Fences will be inspected thoroughly after periods of heavy rainfall.
- Excavated and/or imported material will be stockpiled and silt fencing will be constructed around stockpile locations to contain/ reduce any sediment run-off during

times of inclement weather.

- Compacting of stockpiles will reduce the rate of airborne and hydraulic erosion.
- Stockpile areas for sands and gravel should be kept to minimum size, well away from storm water drains and gullies leading off-site.
- Silt Fences to be erected where excavation works are required in close proximity to water features and along depressions in land where there's increased surface water flow rates.
- Harmful materials such as fuels, oils, greases, paints and hydraulic fluids must be stored in bunded compounds well away from storm water drains and gullies. Refuelling of machinery should be carried out using drip trays.
- A temporary drainage system will be established complete with a settlement pond to remove contaminants from run-off, prior to discharge.
- Temporary staff welfare facilities will be installed on site at the pre-commencement stage. These will include toilet facilities. All foul discharges from welfare facilities will be collected in a septic storage tank. This tank will be regularly emptied, and the contents disposed of at a registered facility.

Concrete

- Concrete Washout Skip: Chutes of concrete trucks are only to be washed out into an impermeable lined (polythene) skip. The washout water is to be treated prior to discharge.
- The concrete washout skip is to be located to the east of the site, where the overburden is greater.
- Excavations lined with an impermeable liner are not permitted as concrete washout bays.
- Large excess loads of concrete are to be returned to the supplier or poured into concrete block moulds (Betonblock or similar design) in order to minimise waste and reduce the risk of contaminants leaching into the surrounding environment.
- Best practice in bulk-liquid concrete management should be employed on site addressing pouring and handling, secure shuttering, adequate curing times etc.
- Where concrete shuttering is used, measures will be put in place to prevent against shutter failure and control storage, handling and disposal of shutter oils.
- Activities which result in the creation of cement dust will be controlled by dampening down the areas.
- Raw and uncured waste concrete will be disposed of by removal from the site.

Construction Contaminants

- Fuels, oils and other environmental deleterious chemicals are to be stored in a bunded well-ventilated chemical stores.
- Use of such chemicals and fuels is to be contained to bunded areas, where possible.
- Fuel bowsers to be located in bunded areas which can cater for 110% of the primary vessel capacity.
- Any spills or leaks to the soil is to be immediately contained and the soil in question is to be removed by a licensed contractor and disposed of in a registered facility.
- Oil spill containment kits are to be situated near areas of potential spills.
- Regular inspections carried out on plant and machinery for leaks and general condition.
- Use of ready-mixed supply of wet cement products.
- Scheduling cement pours for dry days.
- Maintenance and repair works will be carried out at least 10m from any collection of surface water.

- No refuelling will be undertaken within 50m of the Ballinure River, from any of drain channel to it, and from any subject Flood Zone limit.
- Ancillary machinery equipment such as hoses, pipes and fittings which contain hydrocarbons will be stored within a bund or drip tray.
- Any repair works required on machinery involving fuel and oil control will be carried out offsite where practical, if not possible then repairs will be undertaken on a clean hardcore area of site. Unless unavoidable, repair works carried out in the field where machinery is
- operational will use spill trays and absorbent materials to prevent release of contaminants to the ground.
- Daily checks prior to start-up of plant and machinery will minimise the risk of breakdown and associated contamination risks for on-site repairs. Daily pre-start checks will be undertaken and records maintained. A clean site policy and diligent housekeeping will also reduce the potential of hydrocarbon release on-site.

Importation of Contaminated Materials

- All material will be sourced and transported by registered suppliers.
- All materials will be inspected prior to acceptance on site.
- Any deliveries found to be contaminated will be refused access to deposit on site. Any contaminated materials accidentally deposited on site will be removed immediately from site. If this is not possible then it will be stored in a “quarantine zone”.
- The quarantine zone is to be lined with an impermeable liner which the material will be stored on. A cover will be placed over the liner to avoid hydraulic run-off of contaminated materials. The quarantine zone is to be fenced off and surrounded by silt fencing, as a secondary containment measure.

Excavation of Contaminated Soils

- All excavated materials will be visually assessed for contamination. Any contaminated material detected will be sent for analysis to a suitable environmental laboratory and subsequently quantified, segregated and transported for disposal by a licenced contractor.

Operational Phase

A summary of all mitigation measures for the operational phase to ensure maximum protection of land, soil & geology receptors are listed below:

General Mitigation Measures

- An Environmental Operating Plan (EOP) will be prepared and implemented
- The proposed facility will operate under an Industrial Emissions Licence (IEL)
- Emissions Limit Values for all emissions including surface water
- Monitoring requirements for surface waters
- Resource use and energy efficiency
- Waste management control and documentation
- Storage and transfer of substances
- Facility management
- Accident prevention and emergency response including fire water retention
- Operational Controls

Uncontrolled Releases and Spillage of Biobased Fertiliser and Feedstocks

- Dedicated hard standing for off-loading areas, with a minimum separation distance from adjacent water courses.
- Use of spill kits, bunded pallets and secondary containment units, as appropriate.
- All bunds sized to contain 110% of the volume of the primary storage vessel.
- Environmental Management Plan (EMP) to include site specific standard operating procedures pertaining to waste management and emergency response.
- There will be no intentional discharge of untreated storm water to surface or ground waters during the operational phase. All stormwater discharges from site will be via the attenuation pond with all areas, with the exception of the roofs, being directed through Class 1 petrol/oil interceptors before passing through the attenuation pond prior to discharge.
- The Digestion Tanks and Digestate Storage tanks will be located within a bunded location to the northeast of the site; this will act as a secondary containment in the event of loss of tank contents.
- All primary pipelines and bunded structures will be inspected and integrity tested prior to handover from the appointed construction contractor. All works will be installed to Construction Quality Assurance (CQA) plan

Land Spreading of Biobased Fertiliser

- In order to avoid any reductions in water quality within the catchment as a whole, all biobased fertilisers must be used in accordance with S.I. 113 of 2022 European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2022).
- The spreading of the biobased fertiliser on the customer farms must be done in accordance with the specific Nutrient Management Plan for that farm.
- Application of biobased fertiliser to be conducted in compliance with the Nitrates Action Programme (e.g. prohibited periods and nitrogen application rates).
- All biobased fertiliser is to be pasteurised prior to removal from the Proposed Development to comply with Regulation (EU) 142/2011 on Animal By-Products in Organic Fertilisers.

Decommissioning Phase

A Closure, Restoration and Aftercare Management Plan (CRAMP) will be developed as a condition of the industrial emission licences and in compliance with the Guidance to Licensees on Surrender, Cessation and Closure of Licensed Sites set by the EPA (2012).

7.4 Residual Impacts

Construction Phase

A summary of the predicted impacts associated with the construction phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual impacts are summarised in **Table 7.16** in Chapter 7 of the EIAR – Main Report.

The overall impact anticipated by the construction phase of the project following the implementation of suitable mitigation measures is considered to be **neutral to negative, slight to moderate** and **temporary to permanent**.

RECEIVED: 10/17/2025

Operational Phase

A summary of the predicted impacts associated with the operational phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual impacts are summarised in **Table 7.17** in Chapter 7 of the EIAR – Main Report.

The overall impact anticipated by the operational phase of the project following the implementation of suitable mitigation measures is considered to be **positive to neutral, imperceptible to moderate, and temporary to permanent.**

8 Hydrology & Hydrogeology

ORS conducted an assessment of the likely effects of the proposed development on the hydrological and hydrogeological environment (collectively known as the water environment) within the proposed development site and the wider region.

The proposed development site is situated in the townland of Glenloughaun, Co. Galway.

The objectives of this chapter (Chapter 8 - Hydrology & Hydrogeology) are:

- To provide a baseline assessment of the receiving water environment in terms of surface water (hydrological) and groundwater (hydrogeological) receptors.
- To identify any potential negative effects posed by the construction and operational phases of the Proposed Development.
- To propose suitable mitigation measures to prevent or reduce the significance of the negative effects identified.
- To consider any significant residual effects of cumulative effects posed by the Proposed Development.

8.1 Receiving Environment

The following aspects relating to hydrology & hydrogeology were assessed:

- Topography
- Drift Geology
- Regional Bedrock Geology
- Local Bedrock Geology
- Regional Hydrology
- Local Hydrology
- Protected Areas
- Flood Risk
- Water Quality
- Historic land use
- Regional & Local Hydrogeology

Sensitivity was classed as moderate to high. Key receptors include:

- Local Hydrology: River Ballinure and its small (undesigned) tributaries surrounding the site.
- Protected Areas: River Suck Callows SPA, Middle Shannon Callows SPA and River Shannon Callows SAC (downstream receptors).
- Local Hydrogeology: Aughrim Groundwater Body – Locally Important Aquifer Moderately Productive only in Local Zones (LI) & Clontuskert Sand and Gravel Aquifer – Locally Important Gravel Aquifer.

8.1.1 Local Hydrology

The proposed development site, located in the townland of Glenloughaun, Co. Galway, lies within sub-catchment 26D_3 of the Upper Shannon (Suck) Catchment, also referred to as the Suck_SC_100 sub-catchment.

The River Ballinure is situated approximately 125 m south of the site boundary and flows eastwards for approximately 7.4 km before merging with the River Suck, which continues east and eventually joins the River Shannon around 15 km downstream of the site.

RECEIVED 18/11/2025

The site is bordered to the south by an existing drainage ditch, which forms part of the Kellysgrove Drainage District (DD) Scheme. This ditch functions solely as a drainage feature, flowing southeast until its outfall into the River Ballinure.

According to the Arterial Drainage Scheme (ADS) mapping, the proposed site is not located in close proximity to any ADS channels or benefitted lands. The nearest ADS channel, associated with the Killimor/Cappagh Scheme, lies more than 5 km from the site and is not hydrologically connected to it.

With regard to Drainage District Schemes, the southeastern portion of the proposed site falls within the benefitted lands of the Kellysgrove Drainage District Scheme and as previously stated, a designated drainage channel (DD Channel ID: 1717) runs along the southern boundary of the site.

8.1.2 Protected Areas

The closest protected site is the Glenloughaun Esker SAC, which is located ca. 740m west of the site (upstream) and is not hydrologically connected to the site. There are no additional designated sites within 2km of the site.

Taking into consideration the 'Source-Pathway-Receptor' model, the closest waterbody is the River Ballinure located around 125m south of the Proposed Development. The drainage ditches on the site flow into the River Ballinure ca. 135m southeast of the site. Before the Ballinure River joins the River Suck, it flows into the River Suck Callows SPA, ca. 5.4km from the proposed development site. The River Suck then flows for a further 6.3km east before discharging into the River Shannon. The Middle Shannon Callows SPA and River Shannon Callows SAC are also located at this point. Two no. NHAs are also hydrologically connected via this route; Suck River Callows NHA and River Shannon Callow NHA.

8.1.3 Local Hydrogeology

The subject site lies above the Aughrim Groundwater Body, a Locally Important bedrock aquifer, classified as generally Moderately Productive only in Local Zones (LI). A Locally Important Gravel Aquifer, the Clontuskert Sand & Gravel Aquifer, is distant ca. 900 m to the east.

According to the GSI database, no groundwater wells are recorded within the boundaries of the proposed site. One borehole is potentially located within 2 km of the Proposed Development (approximately 1.9 km to the southeast); however, its recorded location has an accuracy margin of ± 1 km. Detailed information regarding this borehole is presented in **Table 8.11** (Chapter 8 - EIAR Main Report).

According to additional GSI mapping, no karst features are recorded within the boundaries of the Proposed Development site or within a 2 km radius of it. Furthermore, no Source Protection Areas (SPAs) are located downstream of the site within a distance that could be affected by the Proposed Development. Two Group Water Scheme (GWS) Zone of Contribution (ZOC) areas are hydrologically connected to the site via surface water; however, both are situated upstream and are therefore not considered at risk from the development.

8.1.4 Site-Specific Ground Investigations

Ground investigation works were carried out by an ORS environmental scientist for the Proposed Development at Glenloughaun on 14th July 2025, key information and findings are as follows:

RECEIVED: 18/10/2025

- Six trial pits (TP-01 to TP-06) were excavated across the site, to depths ranging from approximately 2.1 m to 3.5 m below ground level (bgl).
- No bedrock was encountered in any of the trial pits.
- Groundwater was observed at approximately 2.1 mbgl in TP-04 and at 3.5 mbgl in TP-05.
- The soils mainly consisted of loose sandy or silty materials with moderate to high gravel content and some rounded cobbles.
- Some unstable ground was encountered, with soils prone to collapsing during excavation.
- The trial pits generally remained dry throughout, suggesting good natural drainage across much of the site.
- TP-05 contained made ground, including small fragments of plastic and sheeting material.
- TP-06 revealed a soft, dark grey clay layer that differed from the other soil profiles encountered on site.
- The findings suggest that the south-eastern part of the site may contain alluvial (river-deposited) soils and could form part of the natural floodplain of the River Ballinure. The dark grey, soft clay indicates prolonged wet conditions, likely due to a high groundwater table or occasional flooding from the river.

8.1.5 Site Vulnerability

Desktop and field investigations indicate that the site overlies a Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones (LI). The Groundwater Vulnerability of the site is classified as ‘Moderate’ based off GSI mapping.

The groundwater protection response matrix (**LI/M & LI/H**) assigns the site a vulnerability rating of "**R1**," indicating that the development location is *acceptable with respect to groundwater protection*.

The desktop study indicates a subsoil depth of over 10 m across most of the area, based on the subsoil type and indicative groundwater vulnerability mapping. Along the northern boundary, subsoil depth is likely to range between 3–5 m. No bedrock was encountered during the site investigation, which comprised the excavation of six trial pits to a maximum depth of 3.5 m bgl.

The proposed facility’s operation is not expected to have any adverse effects on the underlying aquifer. However, additional trial pits are recommended before work begins, particularly in the southwestern portion of the site to confirm the water table level and at the north of the proposed bunded area, where a small portion of the site has been assigned a high groundwater vulnerability.

No land spreading will occur on site. the Proposed Development will not have any detrimental impact on the underlying aquifer or more importantly any wells in the area. The farms of the customer farmers have been identified. All farmers will use the biobased fertiliser on land that has an agronomic requirement for fertiliser.

8.2 Assessment of Impacts

8.2.1 Receptor Sensitivity

The sensitivity of the receptors identified during the study of hydrological and hydrogeological features within the vicinity of the site are summarised in **Table NTS 8.1** overleaf:

RECEIVED: 18/11/2025

Table NTS 8.1: Receptor Sensitivity

Receptor	Receptor Importance	Receptor Sensitivity	Rationale
<p>Groundwater Aughrim Groundwater Body & Clontuskert Sand and Gravel Aquifer</p>	<p>Locally Important</p>	<p>Medium</p>	<p>The subject site is located above the Aughrim Groundwater Body, classified as a Locally Important Aquifer - Generally Moderately Productive only in Local Zones (LI). A Locally Important Gravel Aquifer, the Clontuskert, is distant ca. 900 m to the east. This classification reflects local hydrogeological importance. According to the GSI map viewer, groundwater vulnerability across the site is rated as "Moderate", except for a limited area along the northern boundary identified as high vulnerability.</p> <p>Trial pits excavated to a depth of 3.5 mbgl did not encounter bedrock. Groundwater was observed at 2.1 m bgl in TP-04 and at 3.5 m bgl in TP-05. The soil profile was generally dry throughout the trial pits, indicating good natural drainage characteristics across much of the site. The exception being in the southeastern portion of the site where subsoil consisted of soft, dark grey, pure clay was observed. This suggests alluvial deposits are likely to extend into the south-eastern portion of the site. This area likely functions as a floodplain of the River Ballinure. The dark grey colour and soft consistency of the clay subsoil suggest prolonged saturation, consistent with a persistently high groundwater table.</p> <p>Based on the response matrix (Table 8.15), the site is classified as "R1 Acceptable, subject to normal good practice," confirming that the proposed development is considered suitable in terms of groundwater protection.</p>
<p>Surface Water Rivers Ballinure_010 and Ballinure_020</p>	<p>Local Level</p>	<p>High</p>	<p>The Rivers Ballinure_010 and Ballinure_020 currently hold a "Good" and "Poor" status under the Water Framework Directive (WFD) 2016–2021 assessment, respectively. The Ballinure_020 are considered to be at risk, while the Ballinure_010 is currently under review. These waterbodies have exhibited a gradual decline in water quality along its course. Upstream monitoring stations show Q-values indicative of good ecological status and low pollution levels, whereas downstream results reflect increasing pressures, likely linked to agricultural activity and nutrient enrichment, resulting in moderate pollution and reduced biological integrity.</p> <p>Hydrological pathway exists to the River Suck Callows SPA, River Shannon Callows SAC and Middle Shannon Callows SPA, areas protected under EU legislation. Significant effects from the Proposed Development are anticipated, in the absence of mitigation measures.</p>

8.2.2 Construction Phase

The construction phase is likely to yield the most potential impacts on the surrounding hydrology and hydrogeology. Potential construction phase impacts are considered in detail in

RECEIVED: 18/11/2025

Section 8.5.3 of EIAR – Main Report and summarised in **Table NTS 8.2**.

Table NTS 8.2: Construction Phase Effects (Unmitigated)

Receptor	Potential Environmental Effects	Quality	Significance	Duration
Groundwater Aughrim Groundwater Body & Clontuskert Sand and Gravel Aquifer	Increased Run-off and Sediment Loading	Negative	Moderate	Temporary
	Accidental Spillages of Harmful Substances	Negative	Significant	Short-Term
	Increased Groundwater Vulnerability	Negative	Significant	Long-Term
	Excavation of Bedrock Aquifer	Negative	Significant	Long-Term
	Excavation of Contaminated Soils	Negative	Moderate	Temporary
Surface Water Rivers Ballinure_010 and Ballinure_020	Increased Run-off and Sediment Loading	Negative	Moderate	Temporary
	Accidental Spillages of Harmful Substances	Negative	Significant	Temporary
	Excavation of Contaminated Soils	Negative	Moderate	Temporary
	Increase in Flood Risk to Receiving Catchment	Negative	Significant	Long-Term

8.2.3 Operational Phase

The operational phase effects anticipated and considered throughout the lifetime of the operation of the facility are considered in detail in Section 8.5.4 of EIAR – Main Report and summarised in **Table NTS 8.3**.

Table NTS 8.3: Operational Phase Effects (Unmitigated)

Receptor	Potential Environmental Effects	Quality	Significance	Duration
Groundwater Aughrim Groundwater Body & Clontuskert Sand and Gravel Aquifer	Contaminated Run-off	Negative	Moderate	Temporary
	Foul Water	Negative	Moderate to Significant	Temporary
	Increased Groundwater Vulnerability	Negative	Significant	Long-term
	Uncontrolled Releases & Spillage of Digestate and Feedstocks	Negative	Slight to Moderate	Temporary
	Fire and Resultant Firewater	Negative	Moderate	Temporary
	Landspreading of Biobased Fertiliser	Negative	Slight	Temporary
	Attenuation Tank & Pond	Negative	Moderate	Long-Term
Surface Water	Contaminated Run-off	Negative	Moderate to Significant	Temporary

RECEIVED: 18/11/2025

Receptor	Potential Environmental Effects	Quality	Significance	Duration
Rivers Ballinure_010 and Ballinure_020	Foul Water	Negative	Moderate to Significant	Temporary
	On-Site Flooding	Negative	Moderate	Temporary
	Increase in Flood Risk to Receiving Catchment	Negative	Significant	Long-Term
	Uncontrolled Releases & Spillage of Digestate and Feedstocks	Negative	Slight to Moderate	Temporary
	Fire and Resultant Firewater	Negative	Slight to Moderate	Temporary
	Landspreading of Biobased Fertiliser	Negative	Slight	Temporary
	Attenuation Tank & Pond	Neutral	Moderate	Long-Term

8.3 Mitigation Measures

8.3.1 Construction Phase

A Construction Environmental Management Plan (CEMP) will be prepared and implemented by the main contractor during the construction phase. This is a practical document which will include detailed procedures to address the main potential effects on surface water and groundwater.

A summary of all mitigation measures for the construction phase to ensure maximum protection of groundwater and surface water receptors is listed below:

Increased Run-off and Sediment Loading

- Keep stockpiles to a minimum size and away from the water drains.
- Cover stockpiles during high winds or wet weather to prevent erosion and dust.
- Avoid earthworks and heavy plant movement during periods of extensive rainfall.
- Landscaping and reinstatement to be carried out as soon as possible.
- Excavations to be backfilled as soon as possible.
- Excavations to be covered during rainfall.
- Store hazardous fluids in bunded, impermeable compounds located away from drains, gullies, and the southern drainage ditch. Bunds must hold 110% of the primary vessel capacity.
- Fuel bowsers must also be bunded.
- Refuelling is not permitted within 50 m of the Kellysgrove DD Scheme channel and 10 m of any other surface drains.
- Refuelling must not occur in flood-prone (southeastern boundary) or high groundwater vulnerability (along northern boundary) areas.
- Refuelling to be carried out only by trained operatives using drip trays.
- Plant and machinery must use drip trays when parked.
- Spill kits available at all refuelling/storage points and in each plant vehicle.
- Staff trained in spill response.
- Emergency spill procedures must be in place.
- On-site batching is prohibited.

RECEIVED 18/11/2025

- Use pre-cast concrete where possible.
- Any in-situ pours must be carried out in dry days and isolated from drains/watercourses until fully cured.
- No direct discharges containing cement, residues, or chemicals to surface waters.
- Cover manholes and gullies with silt fencing material and/or sandbags to prevent silt entry.
- Use temporary measures during rainfall events to control run-off before the permanent drainage system is in place.
- A temporary drainage system with settlement ponds and oil interceptors will be installed.
- Ponds must be sized and maintained in line with CIRIA SuDS Manual (C753).
- Silt chambers may be blocked off after heavy rain to reduce silt discharge.
- Install silt fencing along the southern and south-eastern perimeters (and elsewhere if needed).
- Use supplementary erosion controls (geotextiles, vegetated buffers) where appropriate.
- Appoint site staff responsible for environmental compliance.
- Carry out regular inspections of sediment controls, plant/machinery condition, and storage areas.
- Keep records of inspections, maintenance, and corrective actions.
- Main contractor must prepare and implement an emergency response plan for accidental sediment release or pollution incidents.

Accidental Spillages of Harmful Substances

- Store hazardous fluids in bunded, impermeable compounds located away from drains, gullies, and the southern drainage ditch. Bunds must hold 110% of the primary vessel capacity.
- Fuel bowsers must also be bunded.
- Refuelling not permitted within 50 m of the Kellysgrove DD Scheme channel and 10 m of any other surface drains.
- Refuelling must not occur in flood-prone (southeastern boundary) or high groundwater vulnerability (along northern boundary) areas.
- Refuelling to be carried out only by trained operatives using drip trays.
- Plant and machinery must use drip trays when parked.
- Spill kits available at all refuelling/storage points and in each plant vehicle.
- Staff trained in spill response.
- Emergency spill procedures must be in place.
- On-site batching is prohibited.
- Use pre-cast concrete where possible.
- Any in-situ pours must be carried out in dry days and isolated from drains/watercourses until fully cured.
- Install impermeable liners beneath soil and material storage areas to contain potential contaminants, particularly if contaminated soil is identified on site.
- Appoint site staff responsible for environmental compliance.
- Carry out regular inspections of plant/machinery condition, and storage areas.
- Keep records of inspections, maintenance, and corrective actions.
- Main contractor must prepare and implement an emergency response plan for accidental sediment release or pollution incidents.

Increased Groundwater Vulnerability/ Excavation of Bedrock Aquifer

- Excavations will be backfilled as soon as practicable to minimise the risk of contaminant infiltration into the subsurface and underlying aquifer.

RECEIVED 18/11/2025

- Landscaping works will be carried out promptly to reduce surface erosion and weathering.
- Baseline groundwater quality monitoring will be conducted prior to the commencement of works.
- Foundation and service designs will account for groundwater pressures and will include attenuation systems where appropriate, ensuring alignment with greenfield runoff rates (Q_{bar}).
- Surface water will be managed using temporary Sustainable Drainage Systems (SuDS) during construction to reduce runoff and support on-site infiltration.
- Pollution prevention measures will be enforced throughout all construction phases to prevent untreated runoff, spills, or other pollutants from entering groundwater or surface waters.
- Additional trial pits are recommended prior to construction along the northern boundary of the bunded area in order to verify the subsoil depth.

Excavation of Contaminated Soils

- A comprehensive site investigation should be undertaken prior to the commencement of construction to fully characterise soil conditions. Should any contamination be identified, a further phase of investigation, including groundwater monitoring, should be undertaken to delineate the extent and nature of contamination.
- Any soils exhibiting evidence of contamination (e.g., staining, odour, or debris) will be segregated, sampled, and tested for classification prior to reuse or disposal.
- Excavated soils from brownfield and greenfield areas shall be kept separately to prevent potential cross-contamination.
- Following removal of the underground tank and soakaway, further sampling of surrounding soils will be conducted to confirm the absence of residual contamination, if deemed necessary.
- Any contaminated material identified will be removed to a licensed waste facility or treated in accordance with regulatory requirements

Increase in Flood Risk to Receiving Catchment

- All discharges will pass through settlement or treatment measures such as ponds, silt fences, or tanks, with release rates restricted so as not to exceed greenfield run-off conditions.
- Outfalls will be fitted with energy-dissipating features to prevent erosion within receiving ditch.
- Diversion channels and bunds will be installed to route water away from sensitive areas, including open excavations, drainage ditches, and the flood-prone southeast portion of the site.
- A discharge strategy will be developed based on predicted flow rates, identifying appropriate discharge points and incorporating settlement or treatment facilities as necessary.
- Where discharge to surface water is proposed, the relevant licensing requirements will be met, including obtaining a Discharge Licence from Galway County Council if required.
- If dewatering systems are necessary, these will be designed and operated in accordance with recognised best practice guidance, such as CIRIA C750.
- Compounds, material storage areas, and fuel bowsers will not be located in the southeastern portion of the site, which is flood-prone and adjacent to the Kellysgrove DD Scheme channel.
- All temporary drainage features will be subject to regular inspection and maintenance to ensure effective operation, with checks carried out especially after rainfall.

RECEIVED: 18/11/2025

- Silt build-up in settlement ponds and tanks will be removed as required to preserve storage capacity.
- The drainage strategy will be reviewed and adapted throughout the construction period to reflect evolving site conditions.
- A flood risk response plan will be prepared, setting out actions and procedures for extreme weather events, including safe evacuation routes for staff and protection of plant and materials.
- Emergency pumps, sandbags, and spill kits will be kept on-site to allow rapid response to storm events or accidental discharges.
- Weather forecasts will be reviewed regularly, and pre-emptive measures will be taken in advance of heavy rainfall.

8.3.2 Operational Phase

A summary of all mitigation measures for the operational phase to ensure maximum protection of groundwater and surface water receptors is listed below:

General Mitigation Measures

An Environmental Management System (EMS) will be prepared and implemented by the operator during the operational phase. This is a practical document which will include detailed procedures to address the main potential effects on surface water and groundwater.

The Proposed Development will operate under an Industrial Emissions Licence (IEL) issued by the Environmental Protection Agency (EPA). The licence will contain several conditions which the operator must remain in compliance with for the entire duration of the facility's lifespan. Typical conditions relating to the protection of water receptors include:

- Site specific trigger levels will be established and agreed with the EPA.
- Monitoring requirements for surface waters
- Resource use and energy efficiency
- Waste management control and documentation
- Storage and transfer of substances
- Facility management
- Accident prevention and emergency response including fire water retention
- Operational Controls

Contaminated Run-off

- Use of biobased fertiliser, which reduces nutrient leaching and eutrophication risk through balanced, slow-release nutrient composition and best-practice land spreading.
- Sealed attenuation structure (1:100-year + 20% CC) and automated penstocks prevent runoff discharge from sump area; SuDS excluded in this area.
- Outlet devices maintain greenfield runoff rate (6.4 l/s); flow chambers fitted with penstocks and silt traps; Class 1 Bypass Separators remove hydrocarbons and fine sediments.
- Catchpit manholes are provided at attenuation inlets to intercept silt and debris and prevent blockages, while linear drainage across the service yard incorporates emptiable sumps to facilitate sediment removal.
- Operational maintenance regime to ensure ongoing system performance.
- Impermeable surface redirect runoff to rainwater harvesting or attenuation underground tanks.

- Structures incorporate impermeable barriers, including geotextile liners where appropriate, and are preceded by petrol interceptors to provide treatment prior to reuse or controlled discharge.
- Separate collection and reuse system prevents cross-contamination with stormwater.
- Tank farm fully bunded per EPA guidance; bunds impermeable, chemically resistant, and sized for 110% tank volume.
- Designated hardstanding for off-loading; bunded pallets, mobile spill kits, and emergency shut-off systems installed.
- Tanks store roof and yard runoff for reuse with overflow and flow control systems to manage discharge.
- Environmental Operating Plan to include SOPs, emergency response procedures, and staff training to ensure effective implementation and maintenance.

Foul Water

- A domestic scale packaged tertiary treatment system (EuroTank TER3) installed to serve staff facilities only (PE7).
- Assessment confirms adequate soil absorption capacity for a percolation area designed in accordance with the EPA Code of Practice (2022).
- Treatment system sized for 550 L/day hydraulic and 400 g BOD/day organic loading, compliant with SR66 discharge standards.
- Includes EuroTank BAF2 secondary treatment and TER3 tertiary percolation unit with 100 m² attenuation layer to ensure high effluent quality.
- System to be installed by qualified personnel and maintained through regular desludging and inspection in line with manufacturer's recommendations.

Increased Groundwater Vulnerability

Engineering and Structural Controls

- Site bunding will be designed in accordance with the EPA IPC Guidance Note on the Storage and Transfer of Materials for Scheduled Activities (EPA, 2004), ensuring high standards of containment and impermeability.
- The entire tank farm will be bunded to contain potential leaks. All bunds will be:
 - Impermeable, constructed of concrete or suitable material with chemical resistance.
 - Sized to hold a minimum of 110% of the volume of the largest single tank within the bunded area or 25% of the total volume stored within the bund.
 - Fitted with sealed sumps to allow for safe inspection and removal of stormwater or spill residues.
- Dedicated hardstanding areas will be provided for vehicle off-loading and chemical handling, with appropriate drainage controls and a minimum setback distance from any nearby surface watercourses, including the Kellysgrove DD channel along the southern boundary.
- Spill prevention and containment measures will include the use of:
 - Bunded pallets and secondary containment units for smaller storage vessels.
 - Mobile spill kits strategically located throughout the site.
 - Clearly marked and regularly inspected emergency shut-off systems.
- Runoff from substantial areas of impermeable surfaces, including roofs and service yards, will be directed to a rainwater harvesting system. These tanks will:
 - Store rainwater for reuse (e.g., for washdown or non-potable applications).
 - Include overflow mechanisms to regulate discharge during heavy rainfall and avoid overloading the system.

- Connect to a properly designed outfall system incorporating flow control structures and filtration, where necessary.
- All proposed below-ground structures will be constructed to be fully impermeable. The rainwater harvesting tanks will comprise reinforced concrete construction.
- The attenuation pond will be designed to be fully impermeable through the use of an appropriate geomembrane or geotextile liner. Protective measures and suitable surrounding materials will be incorporated to ensure structural stability and maintain the integrity of the lining system.

Operational Environmental Management

- A detailed Environmental Operating Plan will be developed and implemented, containing:
 - Site-specific standard operating procedures (SOPs) for material handling, storage, and waste management.
 - A documented emergency response plan for accidental spills, including notification protocols, isolation procedures, and clean-up instructions.
 - Staff training and awareness programmes to ensure proper implementation.

On-Site Flooding

- No construction within Flood Zones A or B; these areas retained as functional floodplain with landscaping only.
- Ground levels and existing drainage channels along the southern and eastern boundaries retained to maintain natural flow paths.
- Essential equipment and infrastructure set above the 1-in-100-year flood level plus climate change allowance.
- Use of flood-resilient materials for ground-level construction.
- Drainage network designed to replicate existing greenfield runoff rates.
- Flow paths for post-development runoff maintained, with controlled discharge to the southern drainage ditch.
- SuDS features incorporated, including:
 - Swales for high-intensity flow conveyance and interception of low-intensity flows.
 - Vegetated buffer strips along the southern boundary to slow and filter runoff.
 - Permeable paving in office car parking areas to promote infiltration and reduce surface runoff.
- Non-return valves, oil interceptors, silt traps, and sealed drainage to prevent pollutant entry to the Kellysgrove DD channel and Ballinure River.
- Attenuation pond and below-ground tanks sized to store runoff for the entire site, including controlled discharge from sump areas.
- Overflow headwalls designed to discharge to hydrobrake manholes.
- Flow control devices installed at outlet manholes to regulate discharge and maintain greenfield runoff rates.
- Penstocks on inlets to facilitate maintenance and slit traps below inlets to capture sediment and prevent blockages.
- Rainwater harvesting tank includes overflow connection to the surface water network to manage excess during high-intensity rainfall and prevent uncontrolled runoff.
- Bunded containment for all hazardous material storage, preferably outside flood-prone areas.
- Raised floor levels for essential equipment above design flood levels.
- A Flood Risk Management and Emergency Response Plan covering extreme rainfall events, safe evacuation routes, and emergency shutdown procedures.

- Regular inspection and maintenance of SuDS, bunds, and drainage infrastructure to ensure continued performance.
- Availability of emergency pumps, spill kits, and mobile barriers to protect critical areas during flood events.

Increase in Flood Risk to Receiving Catchment

Attenuation Facilities

- An underground Pluvial Cube (or similar approved system) will provide storage capacity for a 1 in 100-year storm event, including an allowance for 20% climate change, collecting runoff from the sump area.
- A surface attenuation pond with capacity for a 1 in 100-year pluvial storm event will be constructed in the southeastern portion of the site. This pond will attenuate runoff from the service yard and office catchment. The banks will have a 1:4 gradient to facilitate maintenance and blend with surrounding ground levels.
- An additional 0.25 m freeboard above the top water level in the pond will be included to accommodate the 1% AEP flood extent modelled for the area.
- The attenuation pond will provide the required attenuation volumes for the entire site, including controlled discharge from the sump level.
- Attenuation and rainwater harvesting volumes have been calculated assuming a 95% runoff rate from all impermeable surfaces.

Controlled discharge

- All attenuation facilities will be tanked and discharge through a Hydrobrake at the calculated greenfield runoff rate.
- The existing topographical discharge route to the drainage ditch along the southern boundary will be maintained.
- Infiltration to ground is not proposed as part of this development.
- Flow control devices will be installed at the outlet manholes of both the attenuation tanks and the attenuation pond.
- All flow control manholes will include penstocks on the inlet side to facilitate future maintenance.
- Silt traps will be installed within all flow control chambers below the inlets.
- The site outflow will be restricted to a maximum cumulative discharge rate of 6.4 L/s, calculated in accordance with the IH124 Method (Institute of Hydrology). This ensures the proposed development will not adversely affect flow or flood regimes in the receiving catchment.

Sustainable Drainage Systems (SuDS)

- SuDS features will be integrated across the site in line with best practice guidance from the UK SuDS Manual (CIRIA C753).
- Swales will be incorporated throughout the site to convey runoff during high-intensity rainfall events and to intercept flows during lower-intensity events.
- Permeable paving will be provided within the office car park area. Runoff will infiltrate through the permeable pavement sub-base, which will be linked to a rainwater harvesting tank supplying the office block. Overflow from this tank during high-intensity events will discharge to the surface water network.

Additional Mitigation Measures

- A rainwater harvesting tank will collect water from the office roof and permeable paving areas for non-potable use within the office building (e.g., sanitary facilities).
- Collected rainwater will be treated to provide a supplementary potable water supply for the office.
- A monitoring system will be installed to maintain optimal water levels within the rainwater harvesting tank and ensure continued operational performance.
- Regular inspection and maintenance of all SuDS components, bunds, and drainage infrastructure will be undertaken to preserve design capacity and functionality.

Uncontrolled Releases & Spillage

- Use of spill kits, bunded pallets and secondary containment units, as appropriate.
- All bunds sized to contain 110% of the volume of the primary storage vessel or 25% of the total volume of the substance which could be stored within the bunded area (in compliance with Guidance to storage and Transfer of Materials for Scheduled Activities, EPA 2004)
- EMS to include site specific standard operating procedures pertaining to waste management and emergency response.
- All attenuation facilities will be tanked in order to avoid percolation of contents into the underlying locally important gravel aquifer.
- The entire tank farm area of the Proposed Development will be bunded.
- The Reception Hall, Digestate Treatment building will each be self-bunded.
- All bunds and underground pipelines (foul and process) will be subject to integrity assessments every 3 years by a suitably qualified engineer.
- Ongoing monitoring of stormwater discharge to the drainage ditch along the southern boundary.

Fire and Resultant Water

- Central rainwater harvesting tank to supply the on-site firefighting ring main.
- Dual pump system installed within a standoff manhole chamber to provide reliable firewater pressure and capacity.
- Hydrants strategically located across the site to ensure full coverage and accessibility for fire tenders.
- All below-ground structures (including rainwater harvesting and storage tanks) to be constructed to Eurocode standard (BS EN 1992-3:2006) for water-retaining structures.
- Tanks constructed from reinforced concrete, ensuring full impermeability to prevent leakage or groundwater infiltration.
- Smaller circular tanks supplied as precast watertight units (e.g., Molloy Precast), with larger tanks cast in-situ for enhanced structural integrity.
- All tanks installed on compacted granular bedding in accordance with standard engineering specifications for below-ground concrete structures.
- Facility to operate under an EPA Industrial Emissions Licence (IEL), ensuring compliance with all conditions related to emissions, containment, and environmental protection.
- Firewater Risk Assessment to be undertaken within the first six months of operation to verify firewater containment capacity and ensure appropriate scaling of fire response measures.

Land Spreading of biobased fertiliser

- Nutrient management plans to avoid excess fertiliser application
- Farmers to comply with the Nitrates Action Plan

- “Lay-off” period of 21 days for grazing or harvesting following application
- Biobased fertiliser will be pasteurised in accordance with Regulation (EU) 142/2011 on use of animal by products as organic fertiliser.

Attenuation Tank & Pond

- The attenuation tanks have been sized using Causeway Flow drainage software and considers that the rainwater harvesting tank may be full at the time of a 1:100 year + 20% climate change rainfall event.
- The lower-level sub catchment will discharge to an isolated drainage system in order to contain any potential contaminated water should there be a failure in the digestate tanks. This limits the potential for SuDS based attenuation features and as such the full 1:100 year + 30% climate change volume will be contained below ground in the proposed pluvial cube system. An automated penstock will be provided within the final manhole prior to discharge from the sump level that will be activated in the unlikely event that there is a failure of the digester or digestate tanks.
- Post-attenuation, surface water runoff will be discharged at the greenfield runoff rate calculated for each catchment via means of a Hydrobrake or similar approved flow control device.
- Attenuation and rainwater harvesting volumes have been sized based on a 95% runoff rate from all impermeable surfaces throughout the site.
- All proposed below-ground structures will be constructed to be fully impermeable. The rainwater harvesting tanks will comprise reinforced concrete construction.
- The attenuation pond will be designed to be fully impermeable through the use of an appropriate geomembrane or geotextile liner. Protective measures and suitable surrounding materials will be incorporated to ensure structural stability and maintain the integrity of the lining system.

8.4 Residual Effects

8.4.1 Construction Phase

A summary of the predicted effects associated with the construction phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual effects are summarised in **Table 8.19** in the *Chapter 8 of the EIAR – Main Report*.

The overall impact anticipated during the construction phase of the project following the implementation of suitable mitigation measures is considered to be **neutral to negative, imperceptible to slight, and temporary.**

8.4.2 Operational Phase

A summary of the predicted effects associated with the operational phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual effects are summarised in **Table 8.20** in the *Chapter 8 of the EIAR – Main Report*.

The overall impact anticipated during the operational phase of the project following the implementation of suitable mitigation measures is considered to be **neutral, slight, and short-term to long-term.** There are no uncontrolled emissions anticipated as a result of the Proposed Development.

9 Air, Odour and Climate

ORS conducted an assessment of the likely impact of the proposed development on the air quality, odour and climate within the proposed development site and the wider region.

The proposed development site is situated in the townland of Glenloughaun, Co. Galway.

The objectives of this chapter (Chapter 9 – Air, Odour and Climate) are:

- To provide a baseline assessment of the receiving air environment in terms of air quality receptors.
- To identify any potential negative effects posed by the construction and operational phases of the Proposed Development.
- To propose suitable mitigation measures to prevent or reduce the significance of the negative effects identified.
- To consider any significant residual effects of cumulative effects posed by the Proposed Development.

9.1 Receiving Environment

Site Location and Receptor Identification

A qualitative assessment of construction dust has been undertaken in line with the IAQM 2024 guidance. The study area for this assessment was 250m from the Proposed Development boundary and or within 50m of the roads used by construction vehicles on the public road up to 250m from the site entrance. The first stage is to assess the requirement for an evaluation. The requirement for an assessment is based on distances of human and/or ecological receptors of the site.

Human receptors are largely residential houses located to the North and Southeast of the site. The nearest human and residential receptor to the site is a residential house located approximately 160m North of the proposed site boundary. Dust will be created during the construction of the Proposed Development which may have adverse effects on local sensitive receptors e.g., residents living nearby.

There are 8 sensitive receptors within the 250m buffer zone (4 residential and 4 community), of which 6 are within the 50m trackout buffer (3 residential and 3 community). An assessment of the sensitivity of the locality, using the guidelines as outlined in **Appendix 9.1**, found the overall sensitivity to be low. There are no designated ecological receptors within 50m of the trackout route or site boundary; therefore, impacts from construction dust are not anticipated to adversely affect ecological receptors.

The construction dust assessment study areas and proximate receptors are illustrated in **Figure 9.1 below**.

RECEIVED 18/11/2025

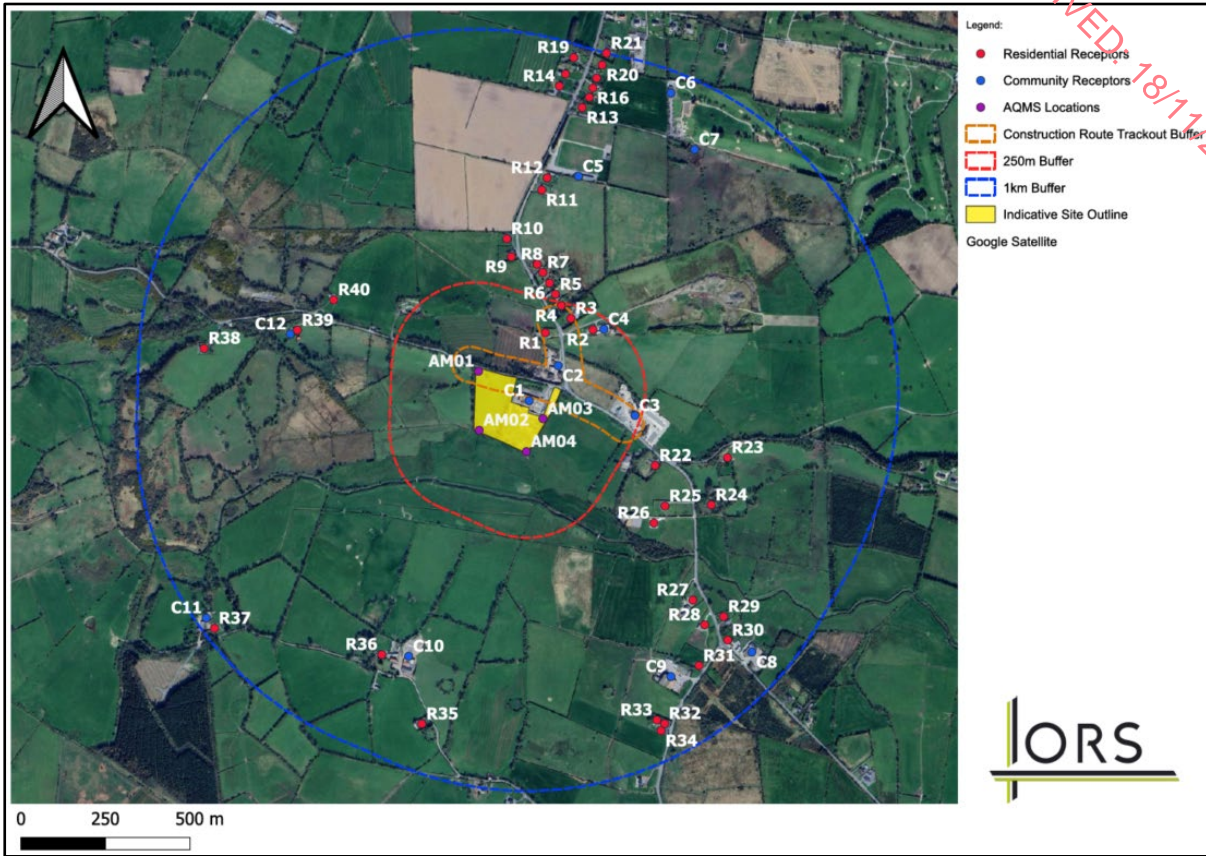


Figure 9.1: Site construction boundary, buffer zones and receptor locations

Air Quality

Air quality monitoring programs are routinely undertaken by the EPA and Local Authorities. The most recent annual report on air quality “Air Quality in Ireland Report 2023” (EPA 2024), details the range and scope of monitoring undertaken throughout Ireland. As part of the implementation of the Framework Directive on Air Quality (1996/62/EC), four air quality zones have been defined in Ireland for air quality management and assessment purposes. Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 23 towns with a population greater than 15,000. Zone D, within which the development site is classified, represents the remainder of the country i.e. rural Ireland, but also includes all towns with a population of less than 15,000.

Onsite monitoring (and subsequent lab analysis as necessary) was carried out for common air pollutants, as listed in the bulleted list below, in order to evaluate background levels for the site. To remain as conservative and robust as possible, data from EPA monitoring stations was also utilised, as per AG4, with the greatest concentration taken as the baseline value i.e. EPA monitoring data was used where the value was higher than onsite monitoring. Onsite results for NH₃ and H₂S were utilised in the absence of data generated from EPA monitoring locations. Data from the Portlaoise monitoring station was utilised for the Carbon Monoxide values and data from the Ballinasloe monitoring station was utilised for the PM_{10/2.5} values. Data from Portlaoise monitoring station was from 26/08/2024-25/09/2024 due to the fact data readings for CO ceased on 25/09/2024. Additionally, Portlaoise is not an accurate representation of the likely CO concentrations at the site due to Portlaoise being an urban centre located within Air Zone C. CO readings from Portlaoise are likely higher than those representative at the proposed site and are therefore conservative. Fieldwork was completed September/October

RECEIVED: 18/11/2025

2024 and consisted of the following elements;

- PM_{2.5} and PM₁₀ Monitoring (EPA Monitoring Station within Zone D)
- NO, NO₂ and NO_x Monitoring
- SO₂ Monitoring
- H₂S Monitoring
- NH₃ Monitoring
- CO Monitoring (EPA Monitoring Station within Zone C)
-

Results can be seen in **Table NTS 9.1** below:

Table NTS 9.1

Compound	Site specific baseline monitoring 11 th Sep 24 to 11 th Oct 24*
Carbon Monoxide 8-hr (Annual Mean) (1 Location) (26/08/2024-25/09/2024)	0.85 (Min 0.57 – Max 1.22) (mg/m ³)
Oxides of Nitrogen (Annual Mean) (4 locations)	Avg. 3.95 (Min 2.4 - Max 4.6) (µg/m ³)
Sulphur Dioxide (Annual Mean) (4 locations)	Avg. < 1.64 (Min/Max < 1.64 (LOD)) (µg/m ³)
Particulate matter as PM ₁₀ (Annual Mean) (1 Location)	Avg. 11.39 (Min 1.25 - Max 38.75) (µg/m ³)
Particulate matter as PM _{2.5} (Annual Mean) (1 Location)	Avg. 7.63 (Min 0.69 – Max 31.39) (µg/m ³)
Ammonia (Annual Mean) (4 locations)	Avg. 8.78 (Min 5.93 - Max 12.04) (µg/m ³)
Hydrogen Sulphide (Annual Mean) (4 locations)	Avg. 0.11 (Min <0.11 (LOD) - Max 0.11) (µg/m ³)

* Average, minimum and maximum values from 4 individual monitoring locations on site are shown. Monitoring was performed for the month of September/October 2024. All analysis was performed in a UKAS certified laboratory for such analytes.

In summary, existing baseline levels of the pollutants based on extensive long-term data from the EPA and field monitoring locations are below ambient air quality limit values in the vicinity of the proposed development. This indicates there is a relatively good level of air quality in the area of the proposed development.

9.2 Effects of the Proposed Development

Operational Effects

Process Emissions

AERMOD has been utilised to evaluate the air quality impact from the planned odour abatement emission source and also the from the two combustion sources positioned onsite i.e. the CHP and biomethane boiler.

There is also the possibility of emissions to air being generated from the planned gas upgrading plant, planned pressure relief valves, digester vents at the site however, due to the nature and / or the infrequent use of these emission sources air dispersion modelling was not required to evaluate the possible impact from these sources. Digester vents contain air only and are used to control the pressure within the gas dome. There is no release of biogas through the digester air vents. Pressure relief valves are not intended for routine use onsite. The PRV are only used in the event of all other gas outlets being simultaneously out of service.

The usage of the emergency flares is envisaged to be infrequent and for times if the gas injection unit is not in operation, or that the CNG compression unit requires maintenance, and the storage of gas has reached maximum capacity. Both Compressor and GIU would need to be down at the same time. The flare will have a capacity of 110% of the estimated maximum

RECEIVED 19/11/2025

hourly biogas produced and will safeguard the secure and complete combustion of biogas where necessary. Flaring of gas is an infrequent occurrence and will only take place as a final option during a period of irregular operation i.e., simultaneous breakdown of multiple gas outlets or maintenance.

AERMOD results give rise to the following conclusions:

The highest annual average predicted levels for each pollutant i.e. considering values across all data years (2016-2020) and receptors (residential and community), have been used to assess the predicted pollutant contribution as a result of the Proposed Development. **Table NTS 9.2** details the approach, with values relating to the following:

- The Process contribution (PC)- the maximum modelled concentration of the substance due to process emissions alone
- Predicted Environmental Concentration (PEC) – that is, the maximum modelled concentration due to process emissions combined with estimated baseline concentrations.
- PC and PEC as a percentage of the objective or guideline.
- In accordance with A3.195 of Part IV of the Environment Act 1995 Environment (Northern Ireland) Order 2002 Part III Local Air Quality Management Technical Guidance LAQM.TG(09) February 2009;
- *“For the assessment of annual mean concentrations, the annual mean contribution of the process can be added to the annual mean estimate for background.”*
- In relation to the predicted short-term peak 1-hr concentrations, twice the background concentration level was added to the predicted environmental concentration (PEC) (UK Environment Agency).

Table NTS 9.2: Summary data outlining predicted pollutant contribution as a result of Proposed Development

Pollutant	Limit Type	Value (µg/m ³)	Baseline (µg/m ³)	Max Level (µg/m ³)	PEC (µg/m ³)	PC of limit (%)	PEC of Limit (%)
Nitrogen Dioxide (NO ₂)	99.8% max 1-hr	200	14.6	22.1	36.7	11.0	18.3
	Annual Avg.	40	7.3	1.47	8.8	3.7	21.9
Carbon Monoxide (CO)	8-hr mean	10,000	0.3	165.9	166.2	1.7	1.7
Odour	98th %tile of 1-Hour	3	0	1.44	1.44	47.9	47.9
Ammonia	Max 1-Hour	2,500	4.2	1.77	5.97	0.007	0.2
	Annual Average	180	2.1	0.049	2.15	0.03	1.2

**The maximum annual average levels for Nitrogen Dioxide and Carbon Monoxide are predicted when the volume flow from the proposed facility is at 75%, rather than a maximum. Full details of the assessment undertaken at 75% volume flow are included in Appendix 9.5.*

It can be seen that the worst case predicted level at any residential locations in the vicinity of the development do not exceed the limit level when considered as a PC or PEC.

It should also be noted that the PC under maximum operations does not exceed 75% of the

RECEIVED: 18/11/2025

ambient air quality standards, based on the maximum emission limits of the stacks.

Nitrogen Deposition

A review has been completed with regard to emissions from the proposed development on critical levels and loads for designated sites within 15 km of site.

Considering criteria as outlined in EPA Industrial Note 1, the PC at all locations is less than 0.3kg.N/ha/yr, and as a result would be considered negligible for the purposes of the Nitrogen assessment.

Considering criteria as outlined in EPA Industrial Note 2, the maximum predicted Nitrogen deposition is significantly <1% at all of the locations assessed, and the Critical Level of Nitrogen is not exceeded at any location.

Traffic

LA105 DMRB guidance gives details for assessing significance of air quality effects of a development in relation to nitrogen dioxide (NO₂) and particulate matter (PM₁₀). **Table NTS 9.3** below describes the corresponding terms used to describe the level of significance from the DMRB in conjunction with EPA EIAR guidance.

Table NTS 9.3: Traffic air quality effects (Operational Stage)

Magnitude of change in annual mean NO ₂ or PM ₁₀ (µg/m ³)	Magnitude (DMRB)	Significance (EPA)
>4 (>10%)	Large	Significant, Very Significant, Profound
>2 (>5%)	Medium	Moderate
>0.4 (>1%)	Small	Slight
<0.4 (<1%)	Negligible	Not significant, Imperceptible

Traffic input data is included in **Appendix 9.3**. The DMRB Screening Method spreadsheet was used to forecast pollution concentrations at a receptor position. A robust and conservative approach was utilized when assuming background concentrations (i.e. 2.8 µg/m³ for NO₂ and 11.39 µg/m³ for PM₁₀ – average values taken from on-site monitoring and EPA Monitoring locations). **Table NTS 9.4** (shown below) shows the results of “Do Minimum” (DM) and “Do Something” scenarios for 2025 assuming (as a worst-case scenario), receptors are 3m away from road links.

Table NTS 9.4: Projected NO₂ and PM₁₀ traffic concentrations for “Do-Something (DS)” and “Do-Minimum (DM)” scenarios, assuming receptors are 3m away from road links

Receptor	NO ₂				PM ₁₀			
	DM (µg/m ³)	DS (µg/m ³)	Change (µg/m ³)	Magnitude	DM (µg/m ³)	DS (µg/m ³)	Change (µg/m ³)	Magnitude
R1	2.81	2.82	0.01	Negligible	11.40	11.40	0.0005	Negligible

Climate

Due to the production of ca. 810-960 Nm³ of biomethane per hour which will be exported and used as an alternative fuel to fossil fuels for regional energy and heat production, the net effect

RECEIVED 26/11/2025

of the Proposed Development during the operational phase will be a slight, positive long-term impact on climate and regional air quality. The (Gas Network Ireland) GNI predict that by achieving a net zero carbon gas network by 2050, at least 18.7 Mt per annum of CO₂ emissions would be saved which equates to circa 31% of Ireland's current emissions.

Construction Effects

Dust

The Proposed Development is deemed large in scale and nature and is classified as such with respect to "Potential for Construction Dust Effects (TII, 2011)" therefore there is the potential for significant dust soiling 100m from the construction source. There are no sensitive receptors (residential receptors) within 50m of the site. There are receptors within the construction traffic trackout route however bulk deposition will have likely occurred within the first 50m (these receptors are 161m, 209m and 243m away from the site).

Therefore, the surrounding area can be classified as low risk with respect to construction dust effects in this regard. Emission effects from planned construction are finite and short-term; mitigation measures (as outlined in **Section 9.6** of the main Air **Chapter 9**) will also be in place through this stage, leading to air quality effects that will temporary, negligible and short-range

Traffic / Emissions

Construction traffic and embodied energy of construction materials are likely to be a possible cause of greenhouse gas emissions because of construction related to the Proposed Development. Construction plant and machinery will lead to CO₂ and NO₂ emissions during construction of the planned development. Due to the period, nature and scale of construction, CO₂ and NO₂ emissions from construction plant, machinery and embodied energy of construction resources will have a short-term and imperceptible impact on climate.

9.3 Mitigation Measures

Construction Phase

Dust

A dust management plan will be created, where site strategy and well known/established industry control procedures will be rigorously enforced. The constant control of fugitive dust will maintain the prevention of significant emissions, instead of an inefficient attempt to manage them once they have been released. The main elements with respect to control of dust will be:

- The design of a site policy on dust and the allocation of the site management responsibilities for dust issues.
- The creation of a documented system for managing site practices regarding dust control.
- The development of a method by which the functionality of the dust minimisation plan can be consistently monitored and assessed; and
- The requirement of effective procedures to handle any complaints.

These procedures will be strictly monitored and assessed continuously throughout the construction stage. In the occurrence of dust nuisance outside the site boundary, activities likely to raise dust would be restricted and adequate procedures applied to resolve the problem before the recommencement of construction operations.

Traffic

Traffic emissions associated with site have been projected as not significant therefore no detailed mitigation/remediation related to air and climate emissions from traffic have been described.

Climate

Various site-specific mitigation methods can be applied throughout the construction stage of the Proposed Development to support emissions reduction. The restriction of on-site or delivery vehicles from leaving engines idling, even over brief periods. Reducing waste of materials due to inadequate timing or over stocking of materials on site will assist to minimise the carbon footprint of the site.

Operational Phase

Odour

The following odour abatement measures have been integrated into the design of the plant:

- The reception hall has been constructed to accommodate multiple trucks to unload at any one time. This will significantly reduce the number of trucks waiting outside of the building and therefore minimising fugitive odour emissions on-site.
- The proposed reception hall will be sealed to prevent fugitive emissions from this building.
- All waste activities at the facility will be carried out within a ventilated building which will be extracted to an odour abatement system using ammonia scrubbing, UV treatment and active carbon filtration to remove odorous compounds. The building will operate under negative pressure with a minimum of 2 air changes per hour. Ventilation pipe work installed in the headspace of the building will be connected to a high-volume medium-pressure blower that will draw off the warm, buoyant building air that will be generated by a combination of emissions from the feedstock materials in the intake area and from fugitive emissions from the movement of the material to the pre-treatment and digesters.
- The main entrances to the reception building will be fitted with rapid response roller shutter doors. A closed-door management strategy will be enforced.
- Treated emissions from the odour control plant in the reception building will be discharged via a 13.0m high stack to enhance dispersion. The proposed location of the odour abatement system emission point within the site footprint was also designed to ensure that the distance between the emission point and the nearest sensitive receptors was maximised, thereby increasing relative dispersion distance.

The following additional mitigation measures will be adopted for the management of the Proposed Development:

- Vehicles exiting the reception building will be subjected to cleaning procedures in accordance with the DAFM Conditions Document in a designated cleaning area located outside of this door.
- Where there is a potential for odours from deliveries of feedstock, these will be delivered in covered or sealed containers.
- Feedstock delivery times will be controlled in order to minimise truck waiting times outside of the reception building and therefore minimising fugitive odour emissions on-site.
- Biobased fertiliser will be stabilised before storage and removal from the site in order to minimise odour generation.

RECEIVED 18/11/2025

- An odour management plan will be prepared for the operational phase of the site to ensure that all odour control methods applied are sufficient and assessed at regular intervals. The plan will also outline a procedure for addressing any odour complaints.

As described previously, the proposed development will be licenced by the EPA under the Industrial Emissions Directive and will therefore need to comply to all associated processes as directed by the IE licence to avoid significant impacts to local odour, climate and air quality.

Process Emissions

The proposed stack height for the CHP has been designed in an adaptive manner to guarantee that an acceptable height has been incorporated into site layout to support effective dispersion of emissions and comply with applicable EU ambient air quality standards at all offsite locations.

As a result of the air dispersion modelling evaluation, mitigation measures designed into site and planned supervision of the proposed AD facility, no supplementary abatement measures are planned for the CHP, flare and biomethane boiler stack during the operational stage of the development.

9.4 Cumulative Effects

Construction Phase

There is potential for cumulative dust effects at adjacent site receptors should the construction stage of the planned development overlap with the construction of any other authorised development within 250m of the site. Dust alleviation measures described in **Section 9.6.1** main Air **Chapter 9** shall be employed during the construction stage of the planned development preventing significant cumulative effects on air quality. Due to suitable mitigation measures in position, any cumulative impacts on air quality and climate linked with the construction stage of the planned development are considered ***short-term and not significant***.

Operational Phase

Cumulative impacts are unlikely, in terms of odour or air quality. Any existing sources of emissions to air have been included by way of background air quality data during the air dispersion modelling phase.

Indirect Impacts

Ammonia emissions to air occurs from slurry and chicken manure spreading with the use of nitrogen fertilisers. Ammonia can create particulate matter in the atmosphere which can have adverse effects on human health.

Ammonia is one of the key air pollutants monitored and reported under National Emissions Ceiling Directive (2016/2284/EU) which was ratified to give effect to the landmark UNECE Gothenburg Protocol under the Convention on Long Range Transboundary Air Pollution in 1999. Under this directive Ireland's ceiling for ammonia is 116 Kt per annum, with an obligation to decrease ammonia emissions to 107.5 Kt by 2030 or by ca. 10%. In 2017 Ireland infringed its ammonia ceiling emitting 123.4 KT of ammonia.

Using slurry/chicken manure as a feedstock for the AD process instead of land spreading will

RECEIVED: 18/11/2025

reduce ammonia emissions to air. Also, the use of digestate as a biobased fertiliser instead of inorganic nitrogen fertiliser will further reduce ammonia emissions.

The digestate produced will meet prescribed standards for digestive quality respiration activity, metals, pathogenic organisms, impurities, organic matter and maturity. Digestate storage tanks will be covered to prevent rainwater ingress and as they will contain spent digestate there will be a lower odour potential from the digested storage tanks. The digestate will be spent by the time it is sent to the digestate storage tanks because of the digestion process; by which time all biomethane will have been extracted. The digestate will also have undergone pasteurisation during the process. Therefore, the potential for odour will have reduced at this stage.

Therefore, the Proposed Development will have a **long-term slight positive** indirect effect on air quality.

9.5 Residual Impacts

According to Environmental Protection Agency guidelines, Residual Impact is described as ‘the degree of environmental change that will occur after the proposed mitigation measures have taken place.’ The mitigation strategy above recommends actions which can be taken to reduce or offset the scale, significance and duration of the impacts on the surrounding odour, air quality or climate.

The purpose of this assessment is to specify mitigation measures where appropriate to minimise the ‘risk factor’ to all aspects of air quality such as to minimize the potential for odours to be generated, air quality limits to be exceeded etc. This ‘risk factor’ is reduced or offset by recommending the implementation of a mitigation strategy in each area of the study. On the implementation of this mitigation strategy, the potential for impact will be lessened.

A site-specific Construction Environmental Management Plan (CEMP) will be devised and implemented throughout the duration of the construction phase. This document will contain all the necessary procedures required to prevent and minimise any environmental risks posed by the project on the surrounding environment.

Construction Phase

A summary of the predicted impacts associated with the construction phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual impacts are summarised in **Table 9.35** of the main Air **Chapter 9**.

The overall impact anticipated by the construction phase of the project following the implementation of suitable mitigation measures is considered to be **negative, imperceptible to moderate, and temporary**.

Operational Phase

A summary of the predicted impacts associated with the operational phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual impacts are summarised in **Table 9.36** of the main Air **Chapter 9**.

There is a slight positive long-term impact at national scale in terms of climate due to the development being self-reliant and giving the grid an alternative to conventional fossil fuels. There is a slight negative long-term impact at local level with regard to vehicle movements associated with the operating plant. The overall impact anticipated by the operational phase of

the project following the implementation of suitable mitigation measures is considered to be **neutral to negative, imperceptible to slight, and temporary to long term.**

RECEIVED: 18/11/2025

10 Noise and Vibration

Enfonic have been commissioned to conduct a noise impact assessment in relation to the proposed Anaerobic Digestion Facility at Glenloughaun, Co. Galway (the Proposed Development).

The methodology adopted for this noise impact assessment is summarised as follows:

- Review of appropriate guidance to identify appropriate noise and vibration criteria for the construction, operational and decommissioning phases;
- Quantify the receiving environment through baseline noise surveys at representative Noise Sensitive Locations (NSLs) surrounding the Proposed Development;
- Undertake predictive calculations to assess the potential effects associated with the construction phase of the Proposed Development;
- Undertake predictive calculations to assess the potential effects associated with the operational phase of the Proposed Development;
- Evaluate the potential noise and vibration effects;
- Specify mitigation measures to reduce, where necessary, the identified potential outward effects relating to noise and vibration from the Proposed Development; and
- Describe the significance of the residual noise and vibration effects associated with the Proposed Development.
- In addition, the following guidelines were considered and consulted for the purposes of this chapter:
 - EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022); and
 - EPA Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), (2003).

10.1 Receiving Environment

Noise Sensitive Locations

A Noise Sensitive Location (NSL) is defined in EPA NG4 as

“any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.”

The study area is defined as any NSL that may be affected by noise from the Proposed Development. A representative sample of the closest NSLs is used in this assessment. Noise levels diminish over distance therefore these locations represent a worst-case evaluation.

Noise levels to the nearest NSLs as a result of operation of the Proposed Development are considered in this assessment with a commensurate reduction in levels at locations further away. The locations assessed are given in **Figure NTS 10.1** below:

RECEIVED 18/11/2025

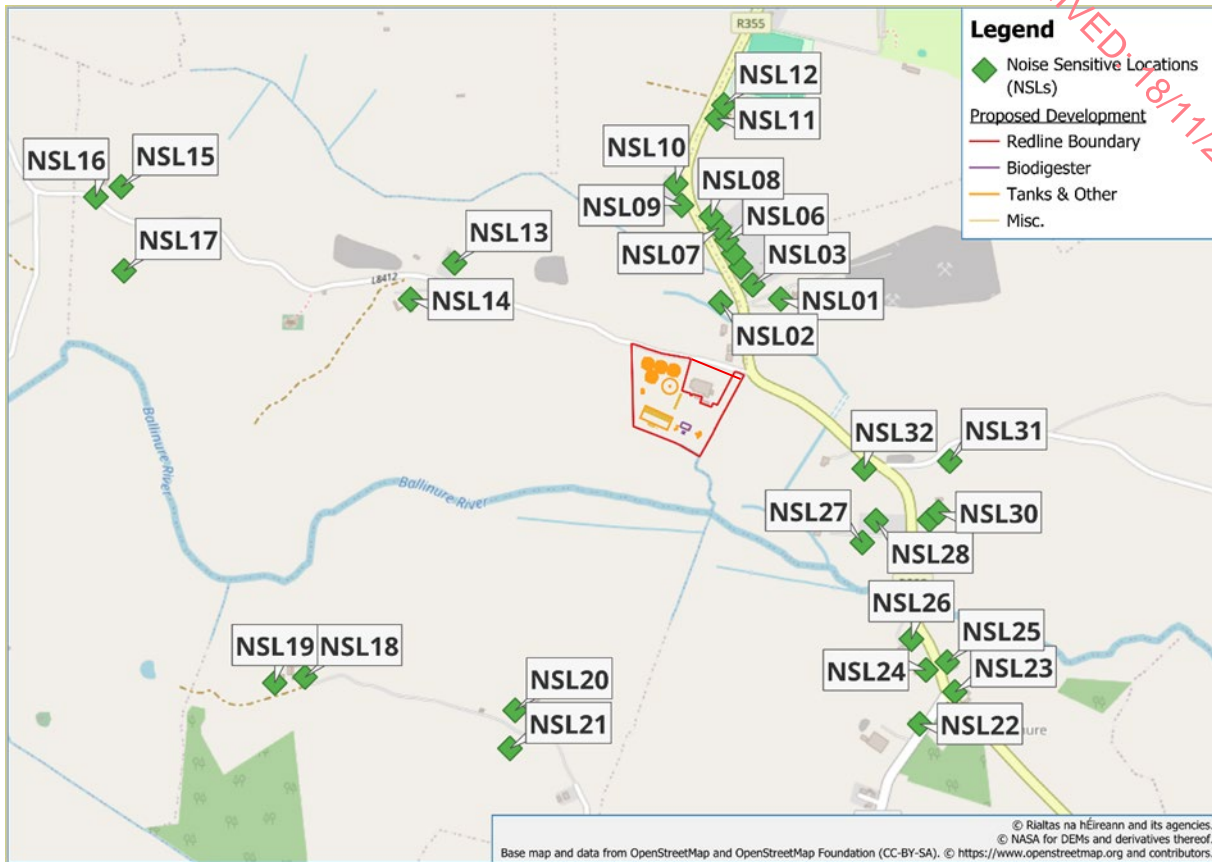


Figure NTS 10.1: Study Area and Noise Sensitive Locations (NSL)

10.2 Background Noise Survey

A noise survey has been conducted at the site in order to quantify the baseline noise levels within the study area. The survey was conducted in general accordance with ISO 1996: 2017: Acoustics - Description, Measurement and Assessment of Environmental Noise and followed the methodology contained in EPA NG4. Specific details are set out below.

Noise Monitoring Locations

Four Noise Measurement Locations (NMLs) were selected to represent the ambient noise conditions at the identified Noise Sensitive Locations.

Measurements from ASL1, ALS2, and ASL3 were used to quantify the daytime noise levels. Monitoring noise levels from NML were used to establish the night-time noise levels.

Noise measurements were taken using class 1 Bruel & Kjaer Type 2250 Sound Level Meters (SLMs). Each meter was calibrated prior to measurements and the sensitivity checked afterwards for any significant drift; none was found. Weather conditions were generally calm and dry throughout the survey period.

Monitoring was conducted between 29-01-2025 and 05-02-2025 and measurements on 29-01-2025. See **Figure NTS 10.2** below:

RECEIVED 18/11/2025

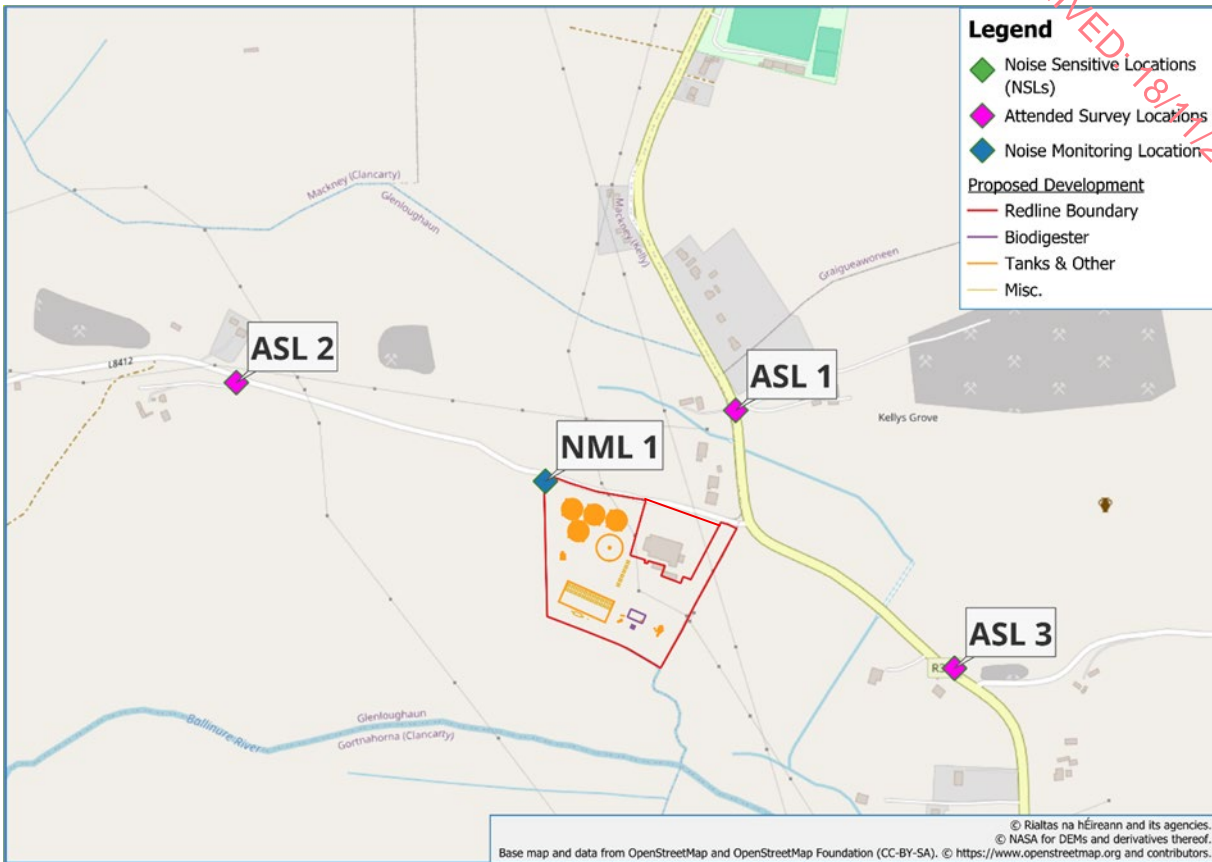


Figure NTS 10.2: Map of noise monitoring locations (NMLs) and site boundary

Survey Results

Day-time Levels

Noise measurements were taken using class 1 Bruel & Kjaer Type 2250 Sound Level Meters (SLMs). Each meter was calibrated prior to measurements and the sensitivity checked afterwards for any significant drift; none was found. Weather conditions were calm and dry throughout the survey.

Two rounds of non-consecutive 15min measurements were taken at the attended locations and the average of the results are used to set the prevailing Background (LA90) Daytime noise levels.

A summary of the Baseline Results can be found in **Table 10.9** (EIAR Chapter 10 – Main report).

The average typical Daytime Background (LA90) noise level is: **43dB**.

Night-time Levels

Night-time noise levels were derived from the unattended noise monitor at the NML1 location shown in Figure 10.2 – a time-history plot of the average Night-time noise levels from here is given in Appendix B.

The typical night-time Background (LA90) noise level is: **34dB**

10.3 Assessment of Impacts

In general, noise impact is a result of the noise levels of the sources, the distance from the source to a receiver, the intervening topography and built environment, the time of day and the existing background noise levels.

The impact assessment considers the construction and operational phases separately.

Do-Nothing Scenario

If the development is not progressed the existing noise environment (as measured in the baseline assessment) in the vicinity of the Proposed Development will remain largely unchanged. Traffic flows on the road network in the area are expected to grow over time with associated increase in noise level.

Construction Phase

The appropriate methodology for the impact assessment of the construction phase is set out in BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1 Noise. The standard sets out sound power levels and LAeq noise levels of plant items normally encountered on construction sites, which in turn enables the prediction of noise levels at selected locations.

An outline CEMP has been submitted in relation to the Proposed Development and will be updated when a definitive construction plan is formalised, to include mitigation outlined in this chapter. As a working initial hypothesis, the impact of assumed typical construction phases of work has been assessed.

Following a review of the baseline noise survey results (Table 10.9 – EIAR main report), the appropriate BS5228 construction noise category is A i.e. 65dB LAeq.

The impact assessment considered the impact of the following potential noise sources from construction phase works at the development:

- Construction Noise
- Construction Traffic
- Construction Vibration
- Extension of the Gas Network Pipeline

10.4 Description of Effects

With respect to the EPA's criteria for description of effects, the potential worst-case effects at the nearest NSLs associated with the above aspects of the construction phase are described **Table NTS 10.1** below:

RECEIVED: 18/11/2025

Table NTS 10.1: Summary of Description of Effects (Construction Phase - Unmitigated).

Aspect	Quality	Significance	Duration
Construction Phase	Negative	Not Significant	Temporary
Construction Traffic	Negative	Not Significant	Temporary

Operational Phase

The facility will operate 24 hours per day, 7 days a week, as Anaerobic Digestion is a continuous biological process. However, feedstock will only be accepted between the hours of 0700 and 1900 Monday to Friday, and 0800 to 1600 on Saturday. There will be no deliveries on Sunday and on Bank Holidays.

The most stringent noise impact assessment is for the Night-time period due to the lower measured Background (LA90) noise level of 36dB compared with the Daytime level of 45dB.

Each of the potential operational noise sources were identified and reference sound power data assigned. The data has been sourced from manufacturers datasheets, noise source databases, and BS 5228-1:2009+A1:2014 standard.

The associated noise sources with the Proposed Development are described in **Table 10.16** (EIAR Chapter 10 – main report).

A computer-based noise propagation model has been prepared to predict the noise levels. **Section 10.6.12** (EIAR Main report) discussed the methodology behind the noise modelling process and presents the results.

The assessment criteria can be summarised as follows:

BS4142 (Daytime)

There are likely to be no significant adverse noise impacts during the daytime period at any of the NSLs, as the predicted levels are at or below the existing Background (LA90) noise levels. The daytime noise levels will be influenced primarily by the combination of delivery vehicles and plant equipment operating at the facility.

BS4142 (Night-time)

There are likely to be no significant adverse noise impacts during the night-time period at any of the NSLs, as the predicted levels are at or below the existing Background (LA90) noise levels. The night-time noise levels will be influenced primarily by plant equipment operating at the facility.

EPA IE License

Operation noise emission levels will satisfy the criteria as set out in the Environmental Protection Agency (EPA) (2016) Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) which should be referenced in the site’s IE license.

Description of Effects

With respect to the EPA’s criteria for description of effects, the potential worst-case effects at the nearest NSLs associated with the proposed development are described in **Table NTS 10.2**

RECEIVED: 18/11/2025

below:

Table NTS 10.2: Summary of Description of Effects (Operational Phase - Unmitigated)

Aspect	Quality	Significance	Duration
Daytime Period	Negative	Imperceptible/Not Significant	Long-term
Night-time Period	Negative	Imperceptible/ Not Significant	Long-term

10.5 Mitigation Measures

Construction Phase

The Construction Environmental Management Plan (CEMP) will deal specifically with management processes and strategic mitigation measures to remove or reduce significant noise and vibration impacts, and cumulative noise and vibration impacts from the construction works. The Plan will also define noise and vibration monitoring and reporting. The CEMP will also include method statements for each phase of the works, the associated specific measures to minimise noise and vibration in so far as is reasonably practicable for the specific works covered by each plan and a detailed appraisal of the resultant construction noise and vibration generated.

The contract documents shall specify that the Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures when deemed necessary to comply with the recommendations of BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction on open sites – Noise. The following list of measures will be implemented, where necessary, to ensure compliance with the relevant construction noise criteria:

- No plant used on site will be permitted to cause an on-going public nuisance due to noise.
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working for the duration of the contract.
- Compressors will be attenuated models, fitted with properly lines and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use.
- Any plant, such as generators or pumps, which is required to operate before 07:00hrs or after 19:00hrs will be surrounded by an acoustic enclosure or portable screen.
- During the construction programme, supervision of the works will include ensuring compliance with the limits detailed in Section 6.2.1 using methods outlined in BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise.
- The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 07:00hrs and 19:00hrs weekdays and between 08:00hrs and 16:00hrs on Saturdays. However, any necessary or emergency out of hours working will be agreed in advance with the local Planning Authority.

Decommissioning Phase

It is anticipated that the decommissioning phase will adopt a similar approach to the construction phase of this assessment including the same noise criteria. To minimise the potential impact on noise sensitive locations, mitigation measures in line with those proposed for the construction phase are proposed.

10.6 Monitoring

Noise and vibration emissions may be monitored by the planning and/or licensing authority as required to ensure compliance with conditions and in the event of complaint.

10.7 Residual Impacts

Construction Phase

The assessment identified that there is potential for elevated noise levels during the construction phase and mitigation measures are prescribed as applicable. However, given the nature of the work there may be occasions where there are residual effects. It is therefore considered that the residual impact will be **slight** and for a **brief period**.

Operational Phase

During the operational phase, the Night-time predicted noise levels may be above the existing baseline noise levels at the limited number of Noise Sensitive Locations close to the facility. Mitigation measures are prescribed as applicable. A new noise source will be introduced into the environment however the noise levels for the vast majority of NSLs are **insignificant**.

11 Landscape and Visual

The landscape and visual impact assessment (LVIA), concerns itself with landscape, landscape values, aesthetic and visual amenity and landscape as a resource which provides society with cultural, economic, and environmental benefits. Landscape has come to be defined according to the European Landscape Convention as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors’.

The assessment is informed by EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, 2022 and the methodology prescribed in the Guidelines for Landscape and Visual Impact Assessment, 3rd edition, 2013 (GLVIA) published by the UK Landscape Institute and the Institute for Environmental Management and Assessment.

Although interlinked, the Landscape Impact and the Visual Impacts are assessed separately and with their own sets of criteria.

Landscape

The effects on landscape are studied with Landscape Character Assessment (LCA) as the guiding principle. This is concerned with the identification of and assessment of the importance of landscape characteristics, landscape quality and the condition of the landscape. According to the Guidelines for Landscape and Visual Impact Assessment (GLVIA)¹, ‘Landscape’ results from the interplay between the physical, natural, and cultural components of our surroundings. Different combinations and spatial distribution of these elements create variations in landscape character. ‘Landscape Character Assessment’ is how landscape is described. It is how we understand the effects of development on the landscape as a resource.

The impact of the development itself is studied as the impact of the proposals and development on the landscape, whilst ‘effect’ describes the changes brought about by these impacts e.g., a change to landscape character.

Visual

Visual assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area’s visual amenity.

11.1 Methodology for Landscape Assessment

The baseline descriptions are required to consider the context of the landscape and views in terms of the proposed location, magnitude and spatial extent of landscape affected as well as current trends in that landscape/view.

The methodology for conducting a Landscape and Visual Impact Assessment (LVIA) is a structured approach designed to evaluate the potential effects of a proposed development on the landscape and visual environment. This comprehensive process involves several key stages, which are outlined below:

¹https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf

² Landscape Institute and the Institute of Environmental Management and Assessment, 2013 Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA)

- Baseline Information
- Thresholds of Magnitude of Change
- Landscape Quality
- Value
- Landscape Sensitivity
- Geographical Extent
- Loss/No Loss of Landscape Elements
- Magnitude of Landscape Change
- Probability of Effects
- Significance of Effects
- Duration of Effects
- Environmental Protection Agency Guidelines
- Methodology for Visual Effects Assessment:
 - Susceptibility of the Visual Receptor to Change
 - Value attached to the view
 - Categories of Viewpoint Sensitivity
- Magnitude of Change to the View
- Significance of Visual Effects
- Mitigation Measures

11.2 Baseline Conditions

The following headings in relation to Landscape and Visual baseline conditions were assessed:

- Ordnance Survey Ireland Historical Maps
- Landscape Associations
- Monuments and Protected Structures
- Galway Development Plan LCA, Landscape Character Area
- Landscape Character Assessment Policy Objectives and GCDP Policy Objectives
- Landscape Units Sensitivity and Value
- Landscape Capacity
- Localised Sensitivity Factors
- Compliance with Landscape Sensitivity Designations
- Other Standards; Agricultural Building Colour
- Views, Prospects and Scenic Routes
- Geological Heritage
- Recreation and Tourism
- Cycling, Walking and Driving Routes
- Natural Heritage
- Trees, Hedgerows and Stone Walls
- Green Infrastructure
- Potential Capacity

The following baseline conditions are deemed to be of notable value to the assessment:

- The area is associated with the Battle of Aughrim. This is examined below in relation to battlefield sites and walking trails.
- There are no historical landscapes designated at the site of the proposed development. The records of protected structures and monuments show there will be no effect from the proposed development on any of the buildings or monuments listed.

- GCDP 2022-2028 landscape character assessment defines the sensitivity ratings attributed to landscape character types as follows;
 - Iconic: Unique landscape with high sensitivity to change
 - **Special: High sensitivity to change**
 - High: Elevated sensitivity to change
 - **Low: Unlikely to be adversely affected**
- The LCA description of the principal characteristics as a level plain of productive grassland containing many settlements and dwellings, match the field survey findings relating to land along the banks of the Ballinure River and surrounding the site away from the esker ridge. The significance description of many areas having local sensitivities – often on account of local amenities or historic sites, match the field survey findings more closely that the Shannon Environs landscape type. The sensitivities as described “open countryside offers frequent extensive panoramic views from local highpoints” also concur with field survey findings relating to the esker.
- The tourism routes and hilltop viewing points in Galway will not be affected by the proposed development. The scenic prospects as listed in the GCDP as well as views were examined in relation to the proposed development. There are no listed scenic routes in the proximity of or focused on the proposed development site.
- Examining the Galway County Development plan and Geological Survey Ireland, there are no listed areas of geological heritage or interest affected by the proposed development from a landscape or intervisibility perspective.
- The recreation and tourism aspect of the proposals overlap with the landscape associations for the proposed development.
- Intervisibility along the trail is examined in the visual section of this report. The necessary protections and retaining of the ridge and roadside vegetation from within the site of the proposed development will shield the way marked trail as it passes near the western side of the site.
- There are no Natura sites (National Parks and Wildlife Service designations) (SPA, SAC, NHA or pNHA) within the boundaries or close to the Proposed Development.
- The hedgerows bordering the site are to be protected and additional hedgerows and tree planting bulk out the buffer zones and reinforce the linkages to and between habitats.
- The landscape masterplan accompanying this application specifies a range of native and naturalised trees and hedgerow materials of differing ages and growth stages which offer immediate habitats and future habitats to a wide range of animals, birds, and insects.
- In general, the landscape master plan that accompanies the proposed development ensures that there will be an increase in biodiversity gain in the context of the Proposed Development.
- A well-designed facility can exist alongside the existing developments namely the Torva facility and Whites Concrete so long as there is good integration with substantial planting as outlined in the landscape masterplan. Local soils are very fertile albeit thin in places. Tree selection development and growth will benefit from enhanced topsoil and careful management of the subsoils. This increases the potential capacity of the site to absorb the development.

Landscape Effects

There are large agricultural units and modern single housing units in the landscape character areas.

RECEIVED 18/11/2025

Tranquillity in the landscape surrounding the site of the proposed development is medium to low and there is no sense of remoteness.

The findings of the field study (Appendix 11.2) and the location of the proposed site adjacent to the esker don't fully concur with the Shannon Environs landscape type and unit as described above. Neither does it fully concur with the description of the Kilcrow Basin landscape unit or the central Galway landscape complex.

Existing development, quarrying and gravel related concrete industry, the existing Torva development at the site and the influence of the busy R355, reduce the landscape sensitivity of the site.

The 'low' sensitivity as ascribed in the landscape character assessment to the Kilcrow Basin, doesn't fully reflect the positive attributes and elements of the landscape either. If, as iterated landscape sensitivity can be examined in the context of landscape value and the landscapes susceptibility to the proposed development, then a **medium** rating for sensitivity is more relevant.

Landscape Value and Landscape Susceptibility

A medium sensitivity landscape would have some distinctive features landscapes and landscape features with few incongruous elements.

The esker, the historical elements in the surrounding landscape and the significance of the geological landscape would concur with this description though to the east of the site there are more incongruous elements than there are to the west.

The landscape has a medium susceptibility to the proposed development and medium tolerance to change

Having regard to the field survey, considering the nature of the proposed development, the intrinsic and inherent values attributed to the landscape a **medium** sensitivity rating for the landscape surrounding the site of the proposed development is appropriate.

The hedgerow system running south is a valued element in its ability to define the landscape spatial pattern and specifically its high value for landscape connection. The eastern hedgerow boundary definition coincides with the Glenloughaun townland boundary. This will be strengthened as per the landscape masterplan accompanying the proposals.

View Effects

The scenic routes and views as listed in the GCDP 2022-2028 are not affected by the proposed development

11.3 Predicted Impacts

Landscape Construction Phase

During the construction process hedgerows will need to be cut back as per the landscape master plan and there will be widening of the access point as discussed above.

There will be removal of the central hedgerow otherwise the field pattern will remain intact.

RECEIVED 18/11/2025

This development will likely be in place for more than 15 years which constitutes a long-term change (15 and 60 years as per the EPA guidelines).

Landscape character will be affected by the change in land use resulting from construction on the site of the Proposed Development. The change experienced to the landscape will be due to the introduction and scale of the proposed biodigester facility and the change to the topography onsite. The geographical extent will be south of the esker and on the boundary of the Shannon Environs and Central Galway Complex landscape character types.

The greater landscape character areas will not be affected in their geographical extent.

The overall quality of the remaining esker ridges, scrub and hedgerows with some commercial forestry southwest of the proposed site, all aid in blending the proposals into the landscape during the construction phase.

The reversibility of the development is not considered for the construction phase.

Landscape Sensitivity: **Medium**

The overall Magnitude of Change will be '**medium**'.

Setting a medium magnitude of change against medium landscape sensitivity gives a significance of effects at the construction phase of the proposed development that is categorised as '**moderate**'.

Landscape Operational Phase

There will be no further change to the landscape form or structures from the construction phase as the facility becomes operational.

Landscape Sensitivity: **Medium**

Magnitude of Change: **Medium**

Setting a medium landscape sensitivity against a low magnitude of change gives a '**moderate**' rating for significance of effects at the operational phase of the proposed development.

Significance of effects: **Moderate**

11.4 Visual Assessment

In conducting the visual assessment for the Proposed Development, issues relating to views and viewpoints were considered including the amount of time over which a view would be experienced, the angle of the view and whether views would be full, partial, or glimpsed. The distance from the Proposed Development was considered and the extent of the area over which the proposed works would be visible. Initially a zone of theoretical visibility or viewshed influenced the areas being considered for intervisibility. A ZTV is computer generated and presents the worst-case scenario and examines intervisibility without the effect of natural land cover, forests, woodlands, trees, buildings, and vegetation.

Topography, vegetation and existing development are considerations in making visual assessments.

RECEIVED 20/11/2025

The area was visited and the most likely visual receptors affected identified. Again, as for the landscape effect, the duration of the visual impact was considered. As per EPA guidelines, duration of effects is categorised as follows.

Short-term Effects: Effects lasting one to seven years, Medium-term Effects: Effects lasting seven to fifteen years, Long-term Effects: Effects lasting fifteen to sixty years, Permanent Effects: Effects lasting over sixty years.

Visual Impact – Construction Phase

The area around Glenloughaun and Kellysgrove was visited on 29th June 2025. The viewpoints selected were also photographed on 5 August 2025 for verified photomontage production. The visual impact assessment is to be read with the 3Dimensional, verified photomontage booklet which accompanies this report (Chapter 11 - EIA Main Report).

There are specific considerations at each viewpoint which are addressed in **Section 11.6.4** (Chapter 11 - EIA Main Report)

The selected viewpoints were assessed, and this is summarised as outlined in **Table NTS 11.1** below:

Table NTS 11.1: Predicted Visual Impacts on Selected Viewpoints Assessed – Construction Phase

Viewpoint No.	Location	Sensitivity	Magnitude of Change	Significance of Effects	Nature of effects
VP1	Glenloughaun	High	Negligible	Slight to Not Significant	Neutral
VP2	Macney (Kelly)	High	Negligible	Slight to Not Significant	Neutral
VP3	Kellysgrove/ Graigawooneen	High	Negligible	Slight to Not Significant	Neutral
VP4	Kellysgrove	High	Negligible	Slight to Not Significant	Neutral
VP5	Gortahorna (Clancarty)	High	Low	Moderate to Slight	Adverse

Visual Impact – Operational Phase

The operational phase of the project will have less impact than at the construction phase. There will be a reduction in construction traffic to the site, and the planting measures will start to envelope the site. There are specific considerations at each viewpoint which are addressed here below. The screening effect of tree and hedgerow growth with effective management is factored in at the operational stage of the proposals.

There are specific considerations at each viewpoint which are addressed in **Section 11.6.5** (Chapter 11 - EIA Main Report).

RECEIVED: 18/11/2025

Table NTS 11.2: Predicted Visual Impacts on Selected Viewpoints Assessed – Operational Phase

Viewpoint No.	Location	Sensitivity	Magnitude of Change	Significance of Effects	Nature of effects
VP1	Glenloughaun	High	Negligible	Slight to Not Significant	Neutral
VP2	Macney (Kelly)	High	Negligible	Slight to Not Significant	Neutral
VP3	Kellysgrove/ Graigawooneen	High	Negligible	Slight to Not Significant	Neutral
VP4	Kellysgrove	High	Negligible	Slight to Not Significant	Neutral
VP5	Gortahorna (Clancarty)	High	Negligible	Slight to Not Significant	Adverse

‘Do Nothing’ Scenario

There will be no difference to the current views or the landscape for a ‘Do Nothing’ scenario. It is likely the site will remain as agricultural land unless the adjacent Torva enterprise expands or sand and gravel extraction is permitted in the future. Hedgerows will likely remain as they are once there is no excavation and there will be no adjustment to the topography unless there are any building expansion and extraction at the site.

Cumulative Impact

The remaining structures in the landscape surrounding the proposed development relate to residences or agricultural buildings and infrastructure. There is too great a difference in the nature of the development between the structures and their position in the landscape to have any cumulative impact when considered alongside the proposed development. The quarrying and extraction industries and concrete manufacturing (e.g. planning ref 96887) which have most existing effect on the landscape at Kellysgrove will combine to have a cumulative impact taken alongside the existing Torva enterprise. The cumulative magnitude of change expected will be **medium** allowing for the landscape measures to soften the change in relation to the concrete operations and the existing Torva facility at the site. With a landscape sensitivity rating of **medium**, the significance of cumulative landscape effects will be **moderate**.

11.5 Mitigation Measures

The following landscape protection and landscape impact mitigation measures should be put in place to avoid, eliminate, or minimise any potential landscape and visual impact associated with the construction of the Proposed Development.

- New hedgerow infill planting to replace previously removed hedgerow or degraded hedgerows as required. This will also reduce the visual impact of the proposed site as well as upholding the spatial definition of the landscape over the life of the project.
- Any area of site subject to soil disturbance is to be repaired, the soil reworked into the site, recontoured and modelled. Matching sod/seed sown as per the species rich recommendations to blend the topography back into the rural landscape.
- All construction materials, fill, gravel, etc to be removed from the site and surrounding fields once the works are complete.

- Earthworks and hedgerow planting to have appropriate water levels to facilitate plant survival in relation to drought or drainage and this to be managed and detailed at the design detail stage prior to construction.
- An irrigation plan to be put in place to allow for establishment of young hedgerow and tree plantings with the irrigation water source to be identified prior to the spring of the first year of planting. A plan to irrigate in hot weather and as required to be put in place especially for the first two years after planting. Tree bags or individual tree watering devices to be employed for individual hedgerow trees where newly planted.
- Hedgerows are to be maintained as thick tall hedgerows with an A shaped profile and laid, trimmed and or rejuvenated as required in the traditional manner. Hedgerow trees are to be maintained as such. Hedgerows are to be maintained as tall hedgerows Tree lines and hedgerows are to be managed to ensure not only is the entire proposed development screened, but it is also managed with pollinator capacity and longevity in mind simultaneously. Tree height is to be maintained.
- During construction phase the hazel and tree stand along the L8412, is to be protected from collapse or damage to the root system by temporarily battering this segment until the final retaining system is put in place. This will protect visual amenity along the Hymany Way during construction and later during operations.
- Hazel is to be coppiced for sight lines as required as opposed to removed and hedgerows where possible are to be transposed to obtain sightlines instead of complete removal.

Avoidance Prevention Reduction and Offsetting

Mitigation is discussed below as a measure of avoidance, prevention, reduction and offsetting of impacts and effects. The positioning of the digestion tanks into the topography along with specified screen planting avoids the proposed structures breaking the skyline. Other measures include;

Disease

- The avoidance of any further Fraxinus excelsior, ash, in any planting will not only protect existing landscape trees from the biologically infectious chalara disease, but it will also protect the local habitats that ash supports for as long as possible, by avoiding this biosecurity risk. Methods of reducing the speed of spread are to be included in the Landscape Management Plan.
- Any plant materials brought on site to be disease free of local provenance, to at a minimum hold all relevant plant passports and preferably be sourced field grown and inspected at source prior to planting. This is to avoid spreading potential infections to local populations. All trees and shrubs will conform to the specification for nursery stock as set out in British Standard 3936 Parts 1 (1992) and 4 (1984). Advanced Nursery stock trees where used in tree planting shall conform to BS 5236. Standards for plant establishment to conform to at a minimum BS 8545:2014 Trees: from nursery to independence in the landscape and BS3998.

Topsoil

- Avoid bringing topsoil on site. Use local soil to make localised repairs. Where additional topsoil is required use from a matching source as local as possible to the Proposed Development. Do not mix topsoil and sub soil during construction. Identify storage area where soils are to be stored separately until they are reworked into the new landscape contours. Do not mix soils. Amelioration to be informed by soil tests. Topsoil is not to be removed from the site.

Invasive Species and Biohazards

- Avoid spreading or bringing invasive plant species onsite in soil or plant materials. Soil and plant material hygiene to be observed and plant, boots, tools, and equipment to be clean before being brought on site. All involved at the construction stage to be made aware of this prior to coming on site.

Invasive Alien Plant Species include;

- Japanese knotweed *Fallopia japonica*
 - Giant knotweed *Fallopia sachalinensis*
 - Bohemian knotweed *Fallopia x bohemica*
 - Himalayan knotweed *Persicaria wallichii*
 - Old man's beard *Clematis vitalba*
 - Winter heliotrope *Petasites fragrans*
 - Garden Yellow Archangel *Lamium galeobdolon ssp argentatum*.
 - Of these, knotweed is most likely to be problematic if introduced on site.
- *Thaumetopoea processionea*, commonly known as the Oak Processionary Moth (OPM) is not to be brought onsite and reported immediately to the Department of Agriculture, Food, and the Marine (DAFM), if identified on or near to the site.
 - *Xylella fastidiosa* also presents a threat to new and existing planting and is to be avoided and reported to DAFM if detected on or near the site.
 - All hedgerows and hedgerow trees which are being retained are to be protected during the construction process with a root protection zone established, prior to the commencement of construction. No root systems to be trenched severed or cut and there is to be no piling of building materials, soil, plant, containers, or any loading material on the protected root zone during construction. All parties involved in the construction process to be made aware of this avoidance measure. No unnecessary damage is to occur to the existing tree and hedgerow complex during construction or afterwards during operations. At the detailed design stage tunnelling is to be preferred over trenching where pipework interacts with existing hedgerow systems in selected areas. This to minimise the impact of pipe works on adjacent hedgerow structures. The root protection zone is to at a minimum be positioned outside the drip line of the hedgerow system. All work to connect pipes near hedgerows is to avoid trenching the root system.
 - Landscape planting and hedgerow management to be overseen by a qualified landscape architect during the construction and operational period as required.

Reinforcing landscape

Any damage to field boundaries received during construction to be repaired in the traditional manner. Low banks for planting trees and hedgerows are to be reinforced where possible. The screening planting and new tree planting will reinforce much of the landscape pattern. Following correct landscape construction and planting, all plant material is to be properly and satisfactorily, irrigated, pruned and given correct amounts of appropriate fertiliser to ensure plant health and vigour.

11.6 Interactions and Cumulative Impact

Other environmental impacts which will interact with landscape and visual impacts in the case of this Proposed Development are Biodiversity and Archaeology under the following headings (see **Section 11.8, Chapter 11**, EIAR Main Report for details):

- Biodiversity and Carbon Absorption
- Geological Impact (Land Soils & Geology)

RECEIVED: 18/11/2025

11.7 Residual Impacts

Once all mitigation measures have been implemented and there is ongoing care provided to the landscape and hedgerows over the life of the project, the Proposed Development will be effectively screened. Other than the impacts already outlined no further are expected.

12 Traffic & Transport

ORS conducted an assessment of the likely impact of the proposed development on the traffic flows and transport infrastructure within the site of the Proposed Development and the wider area.

The proposed development site is situated in the townland of Glenloughaun, Co. Galway.

The objectives of this chapter (Chapter 12 – Traffic & Transport) are to assess:

- The prevailing traffic conditions on the public road network in the vicinity of the Proposed Development that may influence conditions.
- The potential effect on the surrounding road network due to the anticipated traffic generated by the Proposed Development.
- The proposed access arrangements for the Proposed Development.
- Review of committed developments adjacent to the Proposed Development.
- The pedestrian, cyclist and public transport connectivity in the vicinity of the site.
- The parking requirements for the site.

12.1 Receiving Environment

Traffic and transport-related infrastructure considered in relation to the Proposed Development are listed below:

- Site Access
- Car Parking
- Cycle Storage
- Existing Road Network
- Proposed Road Network Improvements
- Existing Traffic Flows
- Committed Developments Traffic Generation
- Future Year Traffic Growth

Site Access

The site is located approximately 3km south of the town of Ballinasloe, Co. Galway, and approximately 22km northeast of Loughrea, Co. Galway. The site access is located ca. 44m west of the L-8412/R355 junction, and vehicles travelling between the site access and the R355 to the east will make use of this junction. The L-8412 is situated in a rural environment. There are no hard shoulders along its length. As the site is located in the vicinity of the R355, it offers connectivity to various locations across the county.

Vehicular access to the site is through an existing priority T-junction off the L-8412 local road to the north of the site. 12No. car parking bays are provided surrounding the office area to the northeast while a circulation area (concrete apron) to the north of the feedstock reception building will be used for articulated lorry turning and manoeuvring.

The proposed access was designed to accommodate the expected HGV traffic and was designed in accordance with the Transport Infrastructure Ireland (TII) publication DN-GEO-03060.

The local road L-8412 is a single lane carriageway of approximately 5m width near the junction

RECEIVED 10/11/2025

with the access road. The road lacks footpaths and cycle lanes, requiring pedestrians and cyclists to share the road with motorised users to access the development. However, given the nature of the development, it is expected that the site will primarily be accessed by private vehicles and lorries.

The development itself will include limited pedestrian facilities and bicycle storage, as it is assumed that a minimal number of pedestrians and cyclists will visit the site. Additionally, there are no footpaths or cycle tracks along the R355 road in the vicinity of the development.

Car Parking

ORS was provided with the expected staffing figures for the development. It is envisaged that approximately 3-5No. staff will be employed at the facility. Based on the number of staff the site will provide sufficient capacity for staff and any visitors.

The site will have ca. 3-5No. staff members on site at the same time. The number of parking spaces provided for staff and visitors of the development is 12No. spaces, located adjacent to the office building, with 1No. being an accessible parking space and 3No. being dedicated EV charging points. The parking spaces provided can be considered sufficient for the expected levels of traffic associated with the site.

Cycle Storage

Due to the nature of the development and the reduced number of staff accessing the site, trips by bicycle are not anticipated. There are currently no bicycle lanes on the R355 and the local roads in the vicinity, and no dedicated means of accessing the site by bicycle.

Despite this, the Proposed Development includes provision for 12No. bicycle parking spaces, in accordance with the standards outlined in the Galway County Development Plan.

Existing Road Network

The Proposed Development plans include provision of vehicular access from the L8412 to the northeast of the site. Arrivals and departures will be via the Regional Road R355, located northeast of the site, and all traffic will utilise the L8412/R355 priority T- junction to/from the proposed site.

The R355 is a two-way flow single carriageway road running in a north-south direction, connecting the site to the M6 Motorway and Ballinasloe in the north and Portumna in the south. The carriageway width varies along its length, measuring approximately 6m at its junction with the L8412. At this location, the R355 features continuous solid white double centreline, indicating no overtaking along this road section, and intermittent yellow edge road markings. The posted speed limit along this section of the R355 is 80 kph.

The L8412 is a single-lane carriageway, approximately 5-6 metres wide, that accommodates two-way traffic that gains access to the Regional Road R355 to the southeast, with an increasing width towards the mouth of the priority junction formed by the L8412 and the R355. At this junction, the road is equipped with road markings, which are essential for guiding vehicle drivers effectively, while a 'STOP' sign is in place.

The junction with the L8412 is a simple priority T-junction, with the minor road intersecting from the left (west) of the R355. Street lighting infrastructure is not available in the immediate vicinity.

RECEIVED 15/11/2025

At the junction with the R355, there are no dedicated right-turn lanes provided for vehicles turning onto the L8412. The surrounding environment is characteristically rural countryside, with mature hedgerows and vegetation lining both sides of the roadway. Agricultural fields extend beyond the boundary vegetation, and scattered residential properties are located in the vicinity. Boundary treatments consist primarily of natural hedgerows supplemented with post-and-wire fencing, creating defined edges to the road corridor. Directional signage is located on the eastern side of the junction, providing wayfinding information for drivers.

There are no footpaths or cycle lanes provided along the R355 and the L8412, in the vicinity of the site access. Additionally, the R355 road does not provide sufficient space for pedestrian or cyclist access to the site without the provision of substantial development of active travel infrastructure in the surrounding area.

Proposed Road Network Improvements

At present, Galway County Council have no improvement schemes on the R355 or the L-8412 Road that would affect the Proposed Development.

Existing Traffic Flows

Automatic Junction Turning Counts (JTCs - The traffic counts were carried out during a 12-hour period from 07:00 AM to 07:00 PM) have been undertaken at the junction on Tuesday 15th July 2025 by a third-party company called IDASO, accompanied by Automatic Traffic Counts (ATCs) and speed surveys carried out between Tuesday 15th July 2025 and Thursday 17th July 2025. Manual Junction Turning Counts were also carried out on Thursday, 4th September 2025, by the ORS team during a 4-hour survey period (07:30-09:30 and 16:30-18:30). The survey was conducted when local schools were fully operational, providing a direct comparison against the July ATC surveys.

The traffic counts have been used to obtain accurate data on the prevailing traffic conditions along the road network in the vicinity of the site and to predict future traffic conditions. The traffic counts encompassed all movements of traffic: pedal cycles, cars, buses, LGVs and HGVs.

The final number of traffic is presented in Passenger Car Unit (PCU). PCU is the impact that a mode of transport has on traffic compared to a single car, e.g., a private car represents 1 PCU whereas an HGV represents 2.3 PCUs

Junction Turning Count (JTC) Results

From the data obtained, it could be observed that, there were 357.3 PCU recorded during the AM peak hour and 434 PCU during the PM peak. The traffic counts indicate very low traffic volumes at the junction, with the majority of vehicles remaining on the R355 during both the morning and evening periods. Only a small percentage of vehicles, less than 30 PCUs of the total traffic along the junction turn onto or from the L8412, during the AM or PM peak period. Additionally, during the AM period, 63% of total traffic travels on the R355 northbound towards Ballinasloe, while in the PM period, the opposite trend was observed, with ca. 63% of the total traffic heading southbound.

Automatic Traffic Counts Results and Speed Survey

Automatic Traffic Counts (ATCs) were undertaken at the junction over a continuous three-day period from Tuesday 15 July 2025 to Thursday 17 July 2025. The counts were carried out using pneumatic tube counters installed at three strategic locations to capture vehicular

RECEIVED: 16/7/2025

volumes and speeds on each approach.

The equivalent 12-hour periods (07:00-19:00) were extracted from the continuous ATC data for each of the three survey days. This extraction process isolated the same temporal window as the JTC survey, enabling direct comparison between the two survey methodologies.

To validate the representativeness of the 12-hour JTCs, a direct comparison was undertaken between the JTC totals and the equivalent 12-hour period data extracted from the ATC datasets for each junction arm.

Overall, the validation results confirm that the 12-hour turning counts provide a representative and technically robust dataset for traffic assessment purposes. The strong correlation across the primary traffic movements on the R355 regional road, combined with acceptable correlation on the local road approach, demonstrates that the JTC survey successfully captured typical traffic conditions at the junction during the survey period.

As part of the Automatic Traffic Count (ATC) surveys, speed data was collected over a continuous three-day period from Tuesday 15 July 2025 to Thursday 17 July 2025. The surveys recorded individual vehicle speeds in both directions at three locations along the R355/L8412 (Glenloughaun Road) corridor. The purpose of the speed survey was to establish prevailing vehicle speeds, identify the 85th percentile speed and assess compliance with the existing speed environment.

The speed surveys indicate that average speeds were generally within the range of 42-54 kph, with 85th percentile speeds between 51-61 kph, broadly consistent with the prevailing speed environment. A small number of vehicles exceeded 70-80 kph, with isolated maximum speeds approaching 87 kph.

Manual Traffic Count Results

Manual Junction Turning Counts were carried out on Wednesday, 3rd September 2025, by the ORS team during a 4-hour survey period (07:30-09:30 and 16:30-18:30). The survey was conducted when local schools were fully operational, providing a direct comparison against the July ATC surveys to ensure traffic volumes were accurately captured under typical weekday conditions with full educational traffic components.

The July counts represent valid traffic conditions during peak summer operational periods. While they may not fully capture school-term traffic volumes, they provide valuable data on seasonal peak conditions and tourism-related traffic demands. The data should be considered alongside September counts to provide a comprehensive understanding of the full range of operational traffic conditions throughout the year, with both datasets offering legitimate insights into different but equally valid traffic scenarios.

To ensure a robust and conservative assessment for junction capacity analysis, a precautionary approach will be adopted that utilises the higher traffic volumes from each respective peak period. Specifically, the manual traffic counts from September (465 PCUs) will be used for morning peak junction analysis, while the July JTC data (434 PCUs) will be employed for evening peak analysis. This methodology ensures that the junction capacity assessment is based on the most demanding traffic conditions observed during each peak period, thereby providing a worst-case scenario analysis that accounts for the highest traffic loads. This approach eliminates any potential underestimation of junction performance and ensures that the road network can accommodate traffic demands under the most challenging operational conditions identified across both survey periods.

RECEIVED: 18/11/2025

Results are summarised in **Table NTS 12.1** below.

Table NTS 12.1: July 2025 Traffic Counts

Junction	AM Peak (PCU)	PM Peak (PCU)
1 – T-Junction L8412/ R355	357.3	434

Committed Developments Traffic Generation

As part of this Traffic Assessment, to assess the existing and expected traffic along the road network in the vicinity of the Proposed Development, the Galway County Council planning website was consulted to include all committed developments in the area.

As per the records available on the Galway County Council planning website, no granted planning applications were identified that will potentially impact the junction analysed.

Additionally, the proposed site is bounded to the north by Torva Ireland Limited, a meat processing and preserving facility which will be sharing the site entrance with the Proposed Development.

Future Year Traffic Growth

The Proposed Development is aimed to be fully constructed and operational in 2027. The assessment of future year traffic growth is based upon central growth forecasts extracted from the TII Publication PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections, published in October 2021. **Table NTS 12.2** displays predicted traffic flows along the site access for the year of the development conclusion, 5-year, 10-year and 15-year after the development conclusion.

Table NTS 12.2: Traffic Flows in Future Design Years (PCUs)

Table NTS 12.3 – Growth Factors for Future Design Years for Co. Galway				
	Counts	Completion	Completion +5	Completion +15
	2025	2027	2032	2042
LGV	1.000	1.052	1.161	1.293
HGV	1.000	1.091	1.294	1.585

12.2 Assessment of Impacts

Construction Phase

Construction traffic associated with the Proposed Development will include:

- Construction personnel accessing the site by private vehicles and vans
- Delivery of materials (here include what type of materials) by vans and HGVs
- Earthworks machinery (excavators, rollers and dumper trucks) transported by HGVs
- HGVs for the export surplus excavated material

It is expected a maximum of 20No. to 30No. construction personnel to be at the site at the same time and the deliveries to be arranged during off-peak hours.

RECEIVED: 18/11/2025

Table NTS 12.3 below shows the expected generated traffic during construction phase.

Table NTS 12.3: Expected Traffic During Construction Phase

Time Range	Arrivals	Departures	Total
08:00-09:00	25	0	25
17:00-18:00	0	25	25

Operational Phase

The operation of a Renewable Biogas Facility involves producing renewable biogas through the decomposition of organic feedstock. The site will be functional 24 hours a day for 7 days a week with staff onsite during normal working hours from 07:00 and 19:00 Monday to Friday, and 07:00 to 16:00 on Saturday. Outside of these hours, the process is monitored remotely. There are no shifts, and it is expected that ca. 3-5 staff members will be present at the premises during normal working hours. The Development will receive an intake of approximately 90,000 tonnes of feedstock per annum for anaerobic digestion. The process will produce a methane-rich biogas, which is converted into renewable energy or upgraded to biomethane which is injected to the natural gas grid, and a nutrient-rich fertiliser known as ‘biobased fertiliser’.

Feedstock will be transported to the Proposed Development using heavy goods vehicles (HGVs), enclosed trailers, and sealed vacuum tankers. The average tonnes per load are assumed to be 28-30 tonnes. It is expected that traffic will be spread out throughout the day in order to minimise traffic issues in the road network. However, in the event of deliveries arriving at the same time, the site will be able to cater for the traffic flows, as the access road and internal road layout of the site can accommodate the expected traffic without generating congestion on the main road.

Table NTS 12.4 illustrates the expected AM and PM traffic flows associated with the Proposed Development during the operational phase.

Table NTS 12.4: Expected AM and PM Traffic Flows

	Arrivals (Vehicles/PCUs)	Departures (Vehicles/PCUs)	Total (Vehicles/PCUs)
AM	19/33	13/26	32/59
PM	13/26	19/33	32/59
Average movements			64/118

The trip rate profile for the Proposed Development has been interpreted from first principles and has been sufficiently loaded to reflect a ‘worst-case scenario’. The trip rates are relevant given the type of development and the type of use. The trips found indicate that the level of traffic activity associated with this type of development is small and will correspond to approximately 3.9% of the AADT observed along the R355 and the junction with the L8412 in the vicinity of the site. The figures derived from the first principles analysis are very robust, as a ‘worst case scenario’, the total daily trips expected from the development are 64.

Regarding the HGV numbers generated from the site, of the 64No. trips associated with the site, 54No. will be composed of heavy vehicles. Traffic counts reveal that during the morning peak, approximately 6% of the traffic on the junction consisted of HGVs, with 4No. heavy vehicles travelling along the L8412. The similar pattern was observed during the PM peak, with 3% of the traffic composing HGVs, and 4No. HGVs along the L8412 local road.

The full Traffic and Transport assessment is outlined in **Section 12.5.2** (Chapter 12 -EIAR Main report)

12.3 Mitigation Measures

Construction Phase

A summary of all mitigation measures for the construction phase to ensure minimum impact on traffic and transport infrastructure is listed below:

- A detailed Traffic Management Plan (TMP), produced in accordance with Chapter 8 of the Traffic Signs Manual, will be finalised and agreed upon with the Local Authority prior to construction works commencement. The following mitigation measures are proposed during the construction phase of the development.
- Appointment of a Construction Project Manager to be responsible for the day-to-day implementation of measures outlined in the TMP
- Identify routes to be used in the delivery and export of materials to the site and routes that shall be avoided by HGVs
- Monitor the condition of the roads throughout the construction period and a truck-mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required
- Access to the site to be monitored at all times by a banksman who will direct traffic safely into the construction site and facilitate the safe navigation of larger construction vehicles.

Operational Phase

The operational phase of the development will generate a maximum of 64No. vehicle movements day, where 54No. are HGVs and 10No. are private vehicles and vans. The additional vehicles will represent a maximum of 13% increase in traffic under a very conservative scenario and will not generate queues and delays along the road network in the vicinity of the site, therefore, no mitigation measure is proposed for the operational phase of the development.

12.4 Residual Impacts

The proposed construction and operational phase of the development will generate a minimal impact on the road network in the vicinity of the site. The proposed mitigation measures will also help reduce or eliminate any potential impact associated with the proposal. The proposal, located off the L8412 Local Road, is located in an 60km/h speed limit zone* and the narrow road width will not give rise to potential hazards, on the other hand, will reduce traffic speeds and increase road safety benefits.

Queuing of vehicles is not anticipated on the L8412 due to the low number of vehicles predicted to enter the site on a daily basis. The proposal will have no negative impact on the overall road network associated with the proposed construction and operational phase of the site.

Overall, it is assessed that the development will have a **neutral, slight and long-term** residual effect.

13 Archaeology & Cultural Heritage

13.1 Site Overview and Archaeological Context

The Proposed Development at Glenloughaun townland in east Galway, roughly 3km south of Ballinasloe. The area is characterised by gently undulating hills and enclosed fields, mainly in use for grazing. To the south and west of Kellysgrove, there are remnants tracts of bogland and marsh. The total area of the site measures ca. 4.0 ha. There are no National Monuments within the immediate vicinity of the proposed development.

There are no NIAH- or RPS-listed structures or demesne lands within 50 m of the site. There are no recorded monuments within 200 m of the subject site. The closest recorded monument (GA087-119----), an enclosure, is located roughly 660 m to the east. The closest RPS/NIAH site is Ballinure Bridge (RPS 3520; NIAH 30408729), which is located roughly 600 m to the south-east of the subject site.

13.2 Cultural Heritage Assessment

The assessment aimed to identify potential impacts on archaeological and cultural heritage resources through a desktop study and field survey, following guidelines from the Department of Housing, Local Government and Heritage, the National Monuments Acts (1930-2005), and the Galway County Development Plan 2022–2028. A field inspection conducted on May 15th, 2025, noted no features of cultural heritage significance.

No significant archaeological or cultural heritage features were found within the proposed development site, and appropriate measures have been taken to ensure minimal impact on the surrounding environment.

13.3 Existing Environment

Archaeological Baseline Data

A comprehensive assessment was conducted to identify potential impacts on archaeological and cultural heritage resources. This included a desktop study, field survey, and archaeological testing, following guidelines from relevant authorities. A field inspection conducted on May 15th, 2025, noted no features of cultural heritage significance.

No significant archaeological or cultural heritage features were found within the proposed development site, and appropriate measures have been taken to ensure minimal impact on the surrounding environment. A suitably qualified archaeologist should be appointed to advise the design team on archaeological matters, liaise with the relevant authorities, and carry out archaeological testing prior to work commencement.

13.4 Site Inspection

A field inspection was conducted on May 15th, 2025, to assess the Proposed Development site and its immediate surroundings. The inspection involved walking the site, noting the terrain type, land usage, and the presence of any features of archaeological or historical significance. Any anomalies observed were investigated to determine their nature and origin. The inspection revealed no features of archaeological significance.

13.5 Archaeological Testing

A suitably qualified archaeologist will be appointed to advise the design team on archaeological matters, liaise with the relevant authorities, prepare an archaeological licence application and method statement prior to the commencement of the works.

Testing will be carried out under licence to the National Monuments Service at the DHLGH. The application for a licence requires a detailed method statement, outlining the procedures to be adopted to excavate, record, and recover material of archaeological interest during such work.

Should archaeological material be uncovered at any location, the feature will be summarily investigated to determine the form, age, nature, depth, and extent of the feature. The feature will be planned, photographed, and recorded to best professional standards and a full report to publishable standard lodged with the licensing section (NMS) and the Planning Section (NMS) and the National Museum of Ireland. Where archaeological material is identified, the developer will make provision for any additional mitigation, which will be agreed in advance with the relevant authorities. The agreed archaeological mitigation (preservation in situ/full excavation) shall take place under licence prior to the commencement of development.

13.6 Potential Effects

Potential Direct Effects

Recorded Archaeological Monuments

The Proposed Development will have no direct physical effect on known archaeological sites and monuments.

Unrecorded Archaeological Monuments or Features

There is a low potential to impact on previously unknown archaeological sites.

Architectural Sites

The Proposed Development will have no direct physical effect on known architectural sites.

'Do Nothing Scenario'

If the Proposed Development were not to proceed, there would be no effect upon the archaeological, architectural, or cultural heritage resource.

Potential Effects on the Setting/Operational Effects

The Proposed Development will not impact the visual amenity of any known archaeological or architectural sites.

13.7 Cumulative Effects

No cumulative impacts have been identified upon the archaeological resource and as such there will be no residual cumulative effects.

RECEIVED: 18/11/2025

13.8 Mitigation Measures and Residual Effects

Nothing of archaeological significance was noted during the fieldwalk. Archaeological testing is recommended prior to commencement of works to confirm absence of archaeological features or implement mitigation measures if features are found.

14 Material Assets

ORS conducted an assessment of the likely impact of the proposed development on the material assets within the site of the Proposed Development and the wider area.

The proposed development site is situated in the townland of Glenloughaun, Co. Galway.

The objectives of this chapter (Chapter 14 – Material Assets) are:

- To provide a baseline assessment of the receiving built services in the vicinity of the Proposed Development.
- To identify any potential negative effects posed by the construction and operational phases of the Proposed Development.
- To propose suitable mitigation measures to prevent or reduce the significance of the negative effects identified.
- To consider any significant residual effects of cumulative effects posed by the Proposed Development.

14.1 Receiving Environment

Material Assets considered in relation to the Proposed Development are listed below:

- Roads Infrastructure
- Foul Water Network
- Surface Water Network
- Public Water Network
- Gas Infrastructure
- Electricity Network
- Telecommunications Network
- Municipal Waste

The following paragraphs provide an overview of the existing receiving environment in relation to Material Assets under the aforementioned headings.

Roads Infrastructure

The proposed development's impact on local roads (the L-8412 and R355) was assessed. A new access T-junction will be built from the existing access road to the L-8412, specifically designed for Heavy Goods Vehicles (HGVs). The development will only add a minimal 60 vehicle trips per day (50 of which are HGVs). Although the HGV increase will cause more road wear, the existing junction has enough capacity and is not expected to have queues or delays

Foul Water Network

There is no existing sewer network. Office wastewater will be treated on-site using a proprietary unit and then sent to a small percolation area, fully complying with environmental rules.

Surface Water Network

A comprehensive Sustainable Drainage System (SuDS) including rainwater harvesting, permeable paving, and an attenuation pond is planned. This will collect and treat surface water,

RECEIVED: 18/11/2025

ensuring it is discharged at the pre-development rate into an existing ditch, preventing flood risk.

Public Water Network

The site won't connect to the public water main. Water will primarily come from harvested rainwater, supplemented by bottled water for the office if needed. The increase in public water demand will be calculated in accordance with Irish Water – Code of Practice for Water Infrastructure.

All public water supply infrastructure shall be designed and constructed in accordance with Irish Water documents “Code of Practice for Water Infrastructure” and “Water Infrastructure Standard Details”.

Gas Infrastructure

Biomethane will be supplied to the existing gas network via the Grid Injection Unit (GIU) and a pipeline connecting the site to the existing medium pressure distribution gas pipeline located to the north of the Proposed Development. The GIU will be owned and operated by Gas Networks Ireland.

All works to the existing and proposed gas pipelines will be carried out by GNI in accordance with *Standard I.S. 328 2021 Gas transmission – Pipelines and pipeline installations*.

Electricity Network

Power will mainly be supplied by the on-site CHP unit and Solar PV, with the national grid only acting as a backup. An ESB substation and transformer will be installed on-site.

Municipal Waste

Assuming a volume of 50l of waste arising per employee per week, it is estimated that weekly waste arisings will equate to approximately 300l per week. The associated mitigation measures to limit their impact are discussed in more detail in the outline Construction Environmental Management Plan (CEMP) that accompanies this application.

Telecommunication Infrastructure

The area has a well-established fibre-optic and broadband network, which will provide high-speed internet and phone connections to the office.

14.2 Assessment of Impacts

Construction Phase

The construction phase is likely to yield the most disturbance to existing material assets in the vicinity of the site. Potential construction phase impacts are considered in detail in Section 14.5.1 of the EIAR – Main Report and summarised in **Table NTS 14.1** below:

RECEIVED: 18/11/2025

Table NTS 14.1: Construction Phase Effects (Unmitigated)

Asset	Potential Environmental Effects	Quality	Significance	Duration
Roads Infrastructure	<p>Increased flow of construction-related traffic.</p> <p>Establishing the pipeline connection to the existing gas network will require the implementation of temporary traffic management measures along the L8142 and R355.</p>	Neutral	Slight	Temporary
Foul Water Network	<p>During the construction phase, welfare facilities for staff will be supplied via portable toilets and waste will be collected and tankered offsite.</p> <p>Generation of foul effluent from welfare facilities requiring on-site management; potential risk of accidental spillage or leakage during handling.</p>	Neutral	Slight	Temporary
Surface Water Network	<p>Contaminated runoff reaches surface water receptors.</p> <p>Spillage of contaminants such as fuels, oils, chemicals, and cement material and subsequent migration into surface water receptors.</p>	Negative	Slight	Temporary
Public Water Network	The Proposed Development will not be connected to the public water network.	Neutral	Slight	Brief
Gas Infrastructure	Disruption to the existing network while establishing a connection.	Negative	Slight	Brief
Electricity Network	<p>Power supply for plant and machinery during the construction phase will be predominantly supplied by generators on-site.</p> <p>There may be a partial disruption to the existing electricity network as connection to the grid via the substation is established.</p>	Negative	Slight	Temporary
Telecommunications	Disruption to the existing network while establishing a connection.	Negative	Slight	Brief
Municipal Waste	<p>The Proposed Development will generate a range of non-hazardous and hazardous waste materials during site excavation and construction.</p> <p>Waste materials will be required to be temporarily stored on-site pending collection by a waste contractor. If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues.</p>	Negative	Slight	Temporary

RECEIVED: 18/11/2025

Operational Phase

The operational phase effects anticipated and considered throughout the lifetime of the operation of the facility are considered in detail in Section 14.5.2 of the EIAR – Main Report and summarised in **Table NTS 14.2** below:

Table NTS 14.2: Operational Phase Effects (Unmitigated)

Asset	Potential Environmental Effects	Quality	Significance	Duration
Roads Infrastructure	<p>A new proposed priority T-junction.</p> <p>No road upgrades or additional interventions are required.</p>	Neutral	Slight	Long-Term
Foul Water Network	<p>Wastewater from welfare facilities and canteens will be treated using a proprietary system as recommended in the Site Suitability Assessment.</p>	Neutral	Imperceptible	Long-Term
Surface Water Network	<p>Establishment of clearly defined work areas which can be monitored and isolated if required, for example, the bunded area.</p> <p>Run-off from the buildings and yards is collected in a sealed pipe network, which will discharge to the stream.</p> <p>Rain falling on the bounded area will be collected in a separate sealed drainage network and discharged to a sump, from which it will be pumped to the surface water drainage system for the remaining areas of the Proposed Development.</p> <p>Run-off from the access road and from the lands uphill of the road will be collected in filter drains; these will allow run-off to discharge to the ground insofar as the permeability of the subsoils allows. Not all run-off will infiltrate into the ground during intense rainfall events, and so this network will also discharge to the surface water drainage system for the remaining areas of the Proposed Development.</p>	Negative	Slight	Long-term

RECEIVED: 18/11/2025

	Leakage/spillage of biobased fertiliser or feedstocks via vehicle movements.			
Public Water Network	Potential contamination of the local aquifer Potential risk to human health. However, the Proposed Development will not be connected to the public water network.	Neutral	Slight	Long-term
Gas Infrastructure	Biomethane will be supplied to the existing gas network via the Grid Injection Unit (GIU) and a pipeline connecting the site to the existing high pressure distribution gas pipeline. The GIU comprises equipment which will ensure that the biomethane is compliant with all necessary standards and regulations before it enters the gas network.	Positive	Significant	Long-Term
Electricity Network	An ESB substation will be constructed and will provide a connection to the national grid, although this source of power will serve only as a backup.	Negative	Slight	Long-Term
Telecommunications	Increased demand on the existing network.	Negative	Slight	Long-Term
Municipal Waste	Increased waste production of ca. 300L per week. Increased demand for waste collection services.	Neutral	Slight	Long-Term

14.3 Mitigation Measures

Construction Phase

A summary of all mitigation measures for the construction phase to ensure maximum protection of material assets is listed below:

Roads Infrastructure

- A detailed Traffic Management Plan (TMP), produced in accordance with Chapter 8 of the Traffic Signs Manual, will be finalised and agreed upon with the Local Authority prior to construction works commencement.
- Appointment of a Construction Project Manager to be responsible for the day-to-day implementation of measures outlined in the TMP
- Identify routes to be used in the delivery and export of materials to the site and routes that shall be avoided by HGVs

- Monitor the condition of the roads throughout the construction period and a truck-mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required
- Access to the site to be monitored at all times by a banksman who will direct traffic safely into the construction site and facilitate the safe navigation of larger construction vehicles.
- Traffic management measures will be implemented on a temporary basis while connections underground services (gas, telecommunications, water) are established.

Foul Water Network

- Excavations to be backfilled as soon as possible to prevent any infiltration of contaminants to the subsurface and the aquifer.
- All foul water infrastructure to be installed in accordance with the relevant industry standards.

Surface Water Network

- Harmful materials such as fuels, oils, greases, paints, and hydraulic fluids must be stored in bunded compounds well away from stormwater drains and gullies. Refuelling of machinery, if unfeasible to be carried out off-site as recommended as a default procedure, should be carried out using drip trays, to contain potential spills and prevent them from entering watercourses.
- Manholes, gullies, and drains receiving surface water runoff from the site and access routes shall be protected using silt fencing material and sandbags. This measure will mitigate the risk of silt and chemical runoff entering the surface water network by establishing a physical barrier to prevent pollutants from migrating into the drainage system.
- Refuelling will not be permitted within 50m of rivers and 10m of surface drains, with the exception of pumps for dewatering purposes, if needed, which are to be stored on portable spill bunds, to minimize the risk of direct contamination of water bodies from refuelling activities.
- Runoff from machine service and concrete/grout mixing areas must not enter stormwater drains and gullies leading off-site, to prevent the discharge of potentially polluting substances into the environment.
- Spill kits shall be available in each item of plant required, to enable immediate cleanup of spills and prevent further contamination.
- No direct discharges to be made to waters where there is potential for cement/ residues/ oils /chemicals in discharges, to avoid direct contamination of water bodies with harmful substances.
- Stockpile areas for sands and gravel should be kept to a minimum size, well away from stormwater drains and gullies leading off-site, to reduce the potential for sediment runoff into watercourses.
- Open excavations to be backfilled immediately following the installation of services etc., to minimize the time soil is exposed to erosion and potential runoff.
- Earthworks and the movement of plant on soil surfaces will be avoided during periods of extensive rainfall to limit silt-laden runoff and damage to soil structure, as saturated soils are more susceptible to erosion and compaction.

RECEIVED
18/11/2025

- Pre-cast concrete should be used wherever possible. When this is not possible, any works using cast-in-place (poured) concrete must be done in the dry and effectively isolated from any flowing water for a sufficient period to ensure no leachate from the concrete, to prevent concrete contaminants from entering water bodies.

Public Water Network

- Excavations to be backfilled as soon as possible to prevent any infiltration of contaminants to the subsurface and the aquifer.
- Consultation with Irish Water be undertaken prior to works on the existing public water network and notification given to local population.

Gas Infrastructure

- All works to the existing and proposed gas pipelines will be carried out by GNI in accordance with Standard I.S. 328 2021 Gas transmission – Pipelines and pipeline installations.

Electricity Network

- Consultation with ESB and Dial-Before-You-Dig platforms prior to works on the existing electricity network.
- Implement best practice measures when working on electricity lines.
- Inform the public of when works are to be carried out to ensure they are aware of any temporary interruptions in power supply that may occur.

Telecommunications Network

- Consultation with ESB and Dial-Before-You-Dig platforms prior to works on the existing electricity network.
- Implement best practice measures when working on electricity lines.
- Consultation with Eir and Dial-Before-You-Dig platforms prior to works on the existing telecommunications network.
- Implement best practice measures when working on telecommunications lines.
- Inform the public of when works are to be carried out to ensure they are aware of any temporary interruptions in power temporary telecommunications outages that may occur.

Municipal Waste

- Inform staff through toolbox talks/training etc on the relevance and importance of correct waste segregation and management.
- Ensure waste receptacles available for the different identified waste streams to ensure proper and efficient segregation of waste onsite.
- Install signage to promote and encourage proper waste segregation, recycling etc.
- Ensure bins/skips are not allowed to overflow to prevent litter build-up onsite.
- Ensure all bins have lids and skips are covered when be removed offsite to prevent littering elsewhere.

- Ensure waste is collected by a registered vendor and disposed of at a facility licenced to take said waste.
- Maintain good waste records onsite to ensure all is accounted for.
- Concrete Washout Skip: Chutes of concrete trucks are only to be washed out into an impermeable lined (polythene) skip. The washout water is to be treated prior to discharge.
- The concrete washout skip is to be located to the east of the site, where the overburden is greater.
- Excavations lined with an impermeable liner are not permitted as concrete washout bays.
- Large excess loads of concrete are to be returned to the supplier or poured into concrete block modules (Betonblock or similar design) in order to minimise waste and reduce the risk of concrete being dumped throughout site.

Operational Phase

A summary of all mitigation measures for the operational phase to ensure maximum protection of material assets is listed below:

Roads Infrastructure

- The Proposed Development is expected to generate a maximum of 64No. vehicles a day during the operational phase, associated with the delivery of feedstock, the export of digestate and from private cars, therefore, it will increase to a maximum of 13% of the existing traffic along the low trafficked R355 during AM and PM peak periods, which is above the threshold set in Galway Development Plan to produce a detailed Traffic and Transport Assessment (TTA). It should be noted that this represents a very conservative scenario.
- Since the majority of the traffic associated with the site will be composed of Heavy Goods Vehicles (HGV), the junction was modelled in detail, using the TII approved software PICADY (Priority Intersection Capacity and Delay) for the AM and PM peak periods.

Foul Water Network

- A regular schedule of foul infrastructure inspection and maintenance will be carried out over the lifetime of the Proposed Development.
- The onsite WWTP will be subject to regular desludging and maintenance, subject to manufacturer recommendations.

Surface Water Network

- Dedicated hard standing for off-loading areas will be established, with a minimum separation distance from adjacent water courses.
- Use of spill kits, bunded pallets and secondary containment units, as appropriate.
- All bunds sized to contain 110% of the volume of the primary storage vessel.
- All bunds and pipelines (foul & process) will be subject to integrity assessments every 3 years by a suitably qualified engineer.
- Surface water drainage features onsite will undergo routine inspection and maintenance to ensure absence of blockages or leaks.

RECEIVED
20/11/2025

- The site will be subject to annual inspections from the EPA which will assess compliance with conditions outlined in the IEL. Surface water outflows from the site will be assessed as part of these inspections to ensure emissions from the site are compliant with the license.

Public Water Network

- Wash water, such as wash water, will be supplied from rainwater harvesting or from treated process water. This water will undergo UV treatment prior to use and storage.

Gas Infrastructure

- An Environmental Management System (EMS) will be prepared and implemented by the facility management company during the operational phase. This is a practical document will include detailed procedures to address the things like water and energy usage, waste management etc.
- The GUI and gas connection pipeline will be installed and maintained by Gas Networks Ireland. All works to the existing and proposed gas pipelines will be carried out by GNI in accordance with Standard I.S. 328 2021 Gas transmission – Pipelines and pipeline installations.

Electricity Network

- Utilisation of power from the public grid will serve only as a backup. Power usage for the Proposed Development under normal operating conditions will be supplied by CHP and solar PV array onsite.

Telecommunications Network

No mitigation measures are proposed for the operational phase of the Proposed Development. The onsite office/canteen/staff welfare facility will require a constant telecommunications connection meaning a slight negative impact to the existing network is unavoidable.

Municipal Waste

- Inform staff through toolbox talks/training etc on the relevance and importance of correct waste segregation and management.
- Ensure waste receptacles available for the different identified waste streams to ensure proper and efficient segregation of waste onsite.
- Install signage to promote and encourage proper waste segregation, recycling etc.
- Ensure bins/skips are not allowed to overflow to prevent litter build-up onsite.
- Ensure all bins have lids and skips are covered when be removed offsite to prevent littering elsewhere.
- Ensure waste is collected by a registered vendor and disposed of at a facility licenced to take said waste.
- Maintain good waste records onsite to ensure all waste is accounted for.

RECEIVED: 18/11/2025

Residual Impacts

Construction Phase

A site-specific Construction Environmental Management Plan (CEMP) will be devised and implemented throughout the duration of the construction phase. This document will contain all the necessary procedures required to prevent and minimise any environmental risks posed by the project to the surrounding environment.

A summary of the predicted impacts associated with the construction phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual impacts are summarised in **Table 14.3** in Chapter 14 of the EIAR – Main Report.

The overall impact anticipated by the construction phase of the project following the implementation of suitable mitigation measures is considered to be **negligible to neutral, imperceptible to slight, and brief to temporary**.

Operational Phase

A summary of the predicted impacts associated with the operational phase in terms of quality, significance, and duration, along with the proposed mitigation measures and resulting residual impacts are summarised in **Table 14.4** in Chapter 8 of the EIAR – Main Report.

The overall impact anticipated by the operational phase of the project following the implementation of suitable mitigation measures is considered to be **negligible to positive, slight to significant, and long term**.

15 Interaction Between Effects on Different Factors

15.1 Introduction

In an Environmental Impact Assessment Report (EIAR), the interactions between chapters are crucial for providing a comprehensive understanding of how different environmental factors influence each other.

Each environmental topic chapter of this EIAR includes a dedicated section on interactions with other relevant factors. This approach is considered to meet with the requirements of applicable EU and Irish law. The likely interactions between one topic and another have been discussed under each topic chapter by the relevant specialist consultant. ORS ensured collaboration among specialist consultants to address the likely interactions between effects predicted from the proposed development. This ensured that appropriate mitigation measures were incorporated into the design process.

This section on interactions identifies the potential of unplanned but potential interactions that could occur during construction and operation of the proposed development. **Table 15.1** below identifies where it is predicated, that interactions could occur.

RECEIVED: 18/11/2025

Table 15.1: Matrix summarising potential interactions noted between factors

Interaction	Biodiversity	Pop. & Human Health	Lands, Soils, Geology	Hydrology & Hydrogeology	Air, Odour, Climate	Noise & Vibration	Landscape & Visual	Traffic & Transport	Archaeology & Cultural Heritage	Material Assets
Biodiversity	N/A	✓	✓	✓	✓	✓	✓	X	X	X
Population & Human Health	✓	N/A	✓	✓	✓	✓	✓	✓	X	✓
Lands, Soils & Geology	✓	✓	N/A	✓	X	X	✓	X	X	X
Hydrology & Hydrogeology	✓	✓	✓	N/A	X	X	X	X	X	✓
Air, Odour & Climate	✓	✓	X	X	N/A	X	X	✓	X	X
Noise & Vibration	✓	✓	X	X	X	N/A	X	✓	X	X
Landscape & Visual	✓	✓	✓	X	X	X	N/A	X	X	X
Traffic & Transport	X	✓	X	X	✓	✓	X	N/A	X	✓
Archaeology & Cultural Heritage	X	X	X	X	X	X	X	X	N/A	X
Material Assets	X	✓	✓	X	X	X	X	✓	X	N/A

✓ Interaction
 X No interaction

16 Schedule of Mitigation

16.1 Introduction

This EIAR has assessed the impacts and resulting effects likely to occur as a result of the Proposed Development on the aspects of the receiving environment, grouped under the following headings:

- Population & Human Health
- Biodiversity
- Lands, Soils & Geology
- Hydrology & Hydrogeology
- Air, Odour & Climate
- Noise & Vibration
- Landscape & Visual
- Traffic & Transportation
- Archaeology & Cultural Heritage
- Material Assets

Annex IV(7) of the EIA Directive, as amended, requires that the EIAR should include ‘a description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases”.

The Proposed Development will be constructed and operated in a manner that will ensure that the potential impacts on the receiving environment are avoided where possible. Where impacts or potential impacts have been identified, mitigation measures have been proposed to reduce the significance.

This Chapter of the EIAR collates and summarises the mitigation and monitoring measures detailed in **Chapter 5.0** to **Chapter 14.0**.

Mitigation and monitoring measures proposed during the construction phase are outlined in **Chapter 16** and the **Construction Environmental Management Plan (CEMP)** which accompanies this planning application. The main contractor appointed to construct the development will be obliged to carry out the programme of works in strict accordance with the CEMP, thus minimising the effects of the construction phase on the local environmental receptors. The local authority will be responsible for enforcing the conditions of the CEMP.

Mitigation and monitoring measures proposed during the operational phase are outline in **Chapter 16**. The site will be operated under an Industrial Emissions Licence and will be regulated by the Environmental Protection Agency (EPA), Department of Agriculture, Food and the Marine (DAFM) and the Local Authority (Galway County Council).

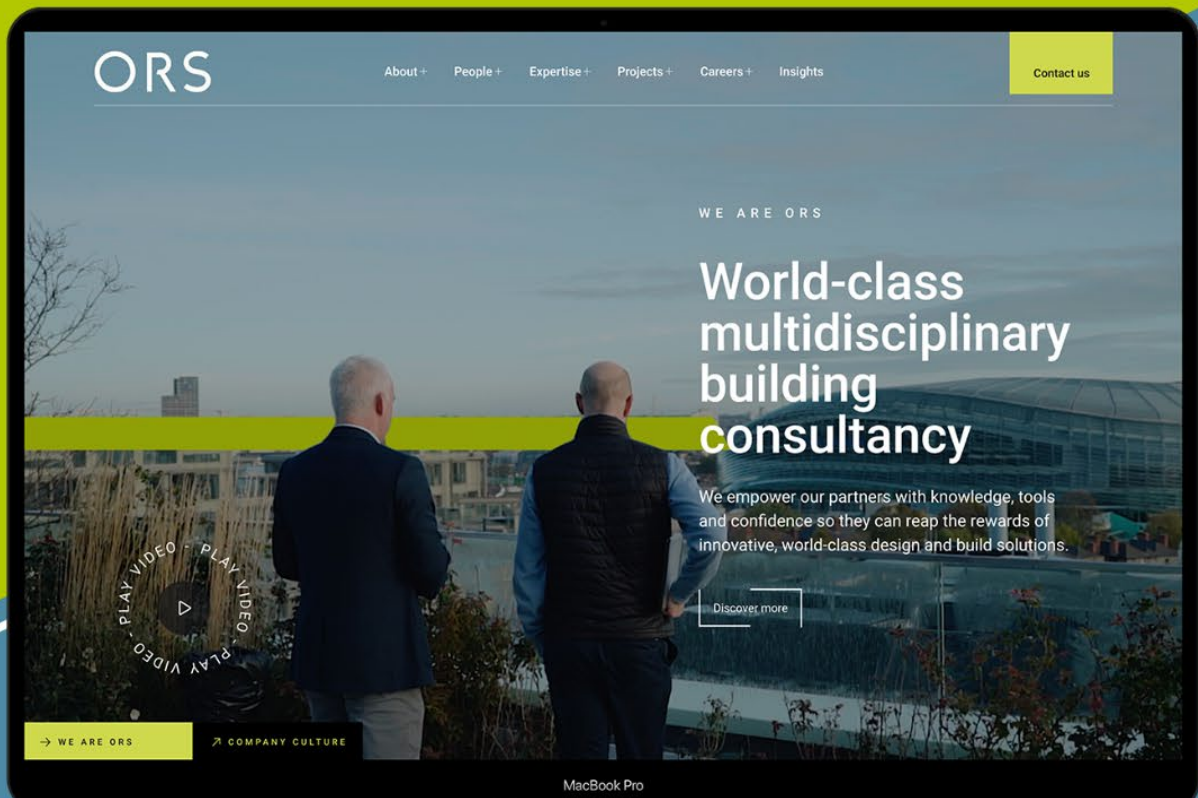
ORS

Multidisciplinary Building Consultancy





Access more information on our services and expertise by visiting our brand-new website.


Click here




Find Us Nationwide, on LinkedIn or on Youtube  


 Block A,
Marlinstown Business Park,
Mullingar, Co. Westmeath,
Ireland, N91 W5NN

 Suite: G04, Iconic Offices,
Harmony Row,
Dublin 2, Co. Dublin,
Ireland, D02 H270

 Level One, Block B,
Galway Technology Park,
Parkmore, Co. Galway,
Ireland, H91 A2WD

 Office 2, Donegal Town,
Enterprise Centre, Lurganboy,
Donegal Town, Co. Donegal,
Ireland, F94 KT35

 Office 4, Spencer House,
High Road, Letterkenny,
Co. Donegal,
Ireland, F92 PX8N

 NSQ2,
Navigation Square,
Albert Quay, Cork
Ireland, T12 W351