

3 Consideration of Alternatives

3.1 Introduction

The purpose of this chapter is to describe the reasonable alternatives considered by the developer during the design and pre-application phases of the Proposed Development and to outline the main reasons for selecting the preferred option, taking into account the likely effects on the environment.

3.2 Legislative Context

Annex IV (2) of the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) requires that an EIAR includes consideration of reasonable alternatives which are relevant to the project and its specific characteristics. The EIAR must contain:

“...a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.”

Schedule 6 of the Planning and Development Regulations 2001 (as amended) sets out the information to be contained in an EIAR. Part 1(d) of Schedule 6 requires that the following be included:

“A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment.”

In accordance with the EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022), different types of alternatives may be considered at several stages during the project development process. As environmental issues emerge during the preparation of the EIAR, alternative locations or designs may need to be considered at an early stage, while alternative mitigation options may be examined later in the process.

The EPA Guidelines (EPA, 2022) state:

“The objective is for the developer to present a representative range of the practicable alternatives considered. The alternatives should be described with ‘an indication of the main reasons for selecting the chosen option’. It is generally sufficient to provide a broad description of each main alternative, and the key issues associated with each, showing how environmental considerations were taken into account when deciding on the selected option. A detailed assessment (or ‘mini-EIA’) of each alternative is not required.”

The consideration and examination of alternatives for the Proposed Development, including the “do-nothing” scenario, is set out in the following sections.

3.3 Methodology

The EU Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU) (EU, 2017) outlines the requirements of the EIA Directive in relation to reasonable alternatives. It states that, in order to address the assessment of reasonable alternatives, the developer should provide:

- *A description of the reasonable alternatives studied.*

- *An indication of the main reasons for selecting the chosen option with regards to their environmental impacts.*

The EU Guidance (EU, 2017) further notes that reasonable alternatives “*must be relevant to the proposed project and its specific characteristics, and resources should only be spent assessing these alternatives*”. It also acknowledges that:

“The selection of alternatives is limited in terms of feasibility. On the one hand, an alternative should not be ruled out simply because it would cause inconvenience or cost to the Developer. At the same time, if an alternative is very expensive or technically or legally difficult, it would be unreasonable to consider it to be a feasible alternative”.

The current EPA ‘Guidelines on the information to be contained in Environmental Impact Assessment Reports’ (EPA, 2022) state that “*It is generally sufficient to provide a broad description of each main alternative, and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option. A detailed assessment (or ‘miniEIA’) of each alternative is not required.*”

Having regard to the legislative and guidance requirements summarised above, this chapter addresses alternatives under the following headings:

- Do Nothing Scenario.
- Alternative Locations.
- Alternative Designs and Layouts and
- Alternative Technical Configurations.

3.4 Consideration of Alternatives

3.4.1 Do Nothing Scenario

Article IV, Part 3 of the EIA Directive states that the description of reasonable alternatives studied by the developer should include “*an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.*” This is referred to as the ‘Do Nothing’ scenario.

EU guidance (EU, 2017) states that the assessment should involve the assessment of “*an outline of what is likely to happen to the environment should the Project not be implemented – the so-called ‘do nothing’ scenario.*”

Under the do-nothing scenario, the Anaerobic Digestion facility would not be developed and there would be no change to existing land-use practices. The site would be expected to remain in use for agricultural grazing.

Ireland’s Climate Action and Low Carbon Development (Amendment) Act 2021 commits the State to a legally binding pathway to net-zero greenhouse gas emissions by no later than 2050, and to a 51% reduction in emissions by 2030 (relative to 2018). Indigenously produced biomethane is expected to play a significant role in enabling this transition, by displacing fossil natural gas in hard-to-decarbonise sectors such as high-temperature process heat, while also contributing to the decarbonisation of County Galway’s agriculture sector. Under the do-nothing scenario, the opportunity to harness a portion of County Galway’s bioenergy resource to produce biomethane for injection to the national gas grid would be foregone.

The Galway County Development Plan recognises the importance of indigenous biomethane production. *“The Gas network plays a key role as part of the supporting infrastructure for renewable energy developments. Gas will play an important part of Ireland’s energy economy for the foreseeable future. Even with a clear move towards renewable energy in the growing electricity sector, Ireland is likely to rely on natural gas for about one-third of electricity generation in 2030 to support the transition to a low carbon economy. By this date, Ireland will be reliant on imported gas or gas generated from innovations in indigenous gas manufacturing”.*

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Galway County Council recognises the important role played by the rural area in the county’s social and economic fabric. Galway is one of the most rural counties in Ireland, with almost 78% of the population living in rural areas. Agriculture remains the single most important contributor to the economic and social viability of these areas, even though the economic character of rural communities is no longer synonymous with agriculture alone.

Using 2018 as the baseline year, Galway County Council’s Draft Climate Action Plan 2024–2029 identifies agriculture as accounting for 44% of County Galway’s total greenhouse gas emissions, equating to approximately 1,343,000 tCO₂e per year. National sectoral targets require a 25% reduction in agricultural emissions by 2030, which, for County Galway, corresponds to a reduction of approximately 335,750 tCO₂e from agriculture by 2030. The Proposed Development is estimated to reduce County Galway’s CO₂ emissions by approximately 7,680 tCO₂e per year, equivalent to around 2.3% of the county’s required 25% reduction in emissions from agriculture. Under the do-nothing scenario, this contribution would not be realised.

The majority of agricultural manures and slurries for the Proposed Development will be sourced from agricultural operators within a 30 km radius of the site. Under the do-nothing scenario, these agricultural wastes would not be treated locally through the AD process. Unpasteurised manures and slurries would continue to be applied directly to land at existing volumes, supplemented by the ongoing use of chemical fertilisers. The associated methane (CH₄) emissions would not be captured through anaerobic digestion, and existing traffic movements associated with the transport of manures and slurries from source farms to landspreading areas would remain unchanged.

The Proposed Development will provide important employment during the construction stage. The construction phase will also generate secondary and indirect “spin-off” benefits for ancillary support services in the surrounding area, such as retail and hospitality, as well as wider benefits for building supply companies and professional and technical service providers. These beneficial impacts on economic activity will be largely temporary but will contribute to the overall viability of the construction sector and related services over the construction period.

During operation, the Anaerobic Digestion facility will provide direct, long-term employment on site while also supporting existing employment on surrounding farms through secure feedstock supply arrangements. Further indirect employment will arise as a result of induced spending by employees and ongoing haulage and service requirements, including local businesses providing subsistence and hauliers transporting materials to and from the facility. Overall, the Proposed Development will be of considerable benefit to the area in terms of employment and economic activity, resulting in a positive, medium-term impact that is significant in the context of its rural location.

In total, the Proposed Development is expected to support in the region of 45 jobs in the wider area, comprising approximately 5–8 full-time positions at the biogas facility, 14 positions within the applicant’s operational team and approximately 25 local contractor roles. Under the do-

nothing scenario, the opportunity to generate this direct and indirect local employment would be lost. This would represent a missed opportunity to increase employment in the area generally and to support the rural employment objectives of the County Development Plan. The overall economic and social benefits that the Proposed Development would bring to the area would not be experienced by the community if the project does not proceed.

The 'Do-Nothing' scenario is discussed in further detail within each EIA technical assessment chapter.

3.4.2 Consideration of Alternative Locations

CycleØ is a leading end-to-end biomethane plant developer that builds, owns and operates plants across Europe, with a dedicated Ireland-based team. With a portfolio of successful biogas/biomethane installations in more than 40 countries globally, the Group is well placed to build and operate this type of development. The Proposed Development is intended to support the Irish Government's ambition to produce 5.7 TWh of indigenously produced biomethane by 2030 and to provide farmers with a long-term solution for the management of slurry, manure and agri-wastes through the production and use of digestate fertiliser. CycleØ has sought to identify and investigate sites suitable for the agri-centric biogas model proposed in the National Biomethane Strategy.

When considering alternative sites, the key considerations for site selection were:

- Grid Connection.
- Proximity to Feedstock Providers and Digestate Receivers.
- Existing land Use.
- Proximity to Sensitive Human Receptors.
- Land Availability.
- Available Land Size.
- Landscape Sensitivity.
- Topography.
- Flood Risk.
- Ecological Designations.
- Archaeological Designations.
- Proximity to watercourses and aquifer.

Grid Connection

A viable biomethane generation scheme should ideally be located in close proximity to existing gas grid infrastructure, in order to minimise the need for new pipeline construction and/or road transport of gas (i.e. to avoid reliance on a virtual pipeline model where possible). As such, grid connection was given a high weighting in the site-selection process.

No sites with direct on-site grid injection potential could be identified within the local area. Therefore, candidate sites within a feasible proximity to the gas grid in the wider Ballinasloe area were preferred over sites located further away from the existing gas network.

Proximity to Feedstock Providers and Digestate Receivers

An agri-centric model is proposed, whereby all feedstocks are sourced from the agricultural sector, including manures and slurries, grass/maize silage, belly grass, and distillery and dairy processing wastes. It is preferable to locate the plant as close as possible to feedstock providers and digestate receivers in order to minimise transport distances and associated

emissions.

Accordingly, preference was given to areas with a higher density of suitable farms (e.g. dairy herds, intensive pig and poultry units) capable of supplying these feedstocks, with the objective of securing approximately 80% of the required feedstock from within 30 km or less of the site.

Existing Land Use

The preferred approach is to locate the development on an existing rural brownfield site where possible (e.g. a disused intensive farm or a surrendered licensed site such as a quarry). However, it has generally been found that such sites are limited in availability and, where they do exist, they tend to be less proximate to feedstock providers and closer to sensitive receptors (for example, on the outskirts of urban areas).

Accordingly, greenfield sites of relatively low biodiversity value were scoped as a reasonable alternative, specifically areas of improved agricultural pastureland, where trees and hedgerows have previously been removed and the land has been subject to fertiliser application.

Proximity to Sensitive Receptors

The preferred approach is to locate the development as far as reasonably practicable from sensitive human receptors (such as dwellings, schools and community facilities), while also ensuring adequate access to the regional and local road network.

As set out in the relevant EIAR chapters, the Proposed Development incorporates specific design and operational measures to mitigate potential off-site impacts relating to noise, odour, fugitive gas emissions and air quality, irrespective of the precise distance to receptors.

Land Availability

Preference was given to sites that could be secured on a long-term basis, either through purchase or lease. Sites where landowners were willing, in principle, to enter into a long-term lease or sale agreement (subject to the granting of planning permission) were therefore prioritised in the site-selection process.

Available Land Size

Sites with an overall area greater than approximately 4 ha were preferred, as this facilitates an optimal site layout, including adequate turning and manoeuvring space for vehicles, provision of more extensive landscaping to enhance biodiversity, and effective visual screening that is sympathetic to the local landscape character.

Landscape Sensitivity

The preferred approach is to locate the development in areas of medium to low landscape sensitivity, i.e. landscapes with the capacity to accommodate additional development without giving rise to significant adverse effects on their overall character or appearance, having regard to localised sensitivity factors.

Accordingly, greater weighting was given to sites located at a greater distance from sensitive landscapes, such as designated scenic routes and protected viewpoints.

Topography

The preferred topography is relatively flat and level rather than undulating. This minimises the need for cut-and-fill, reduces the extent of soil excavation and landscaping required, and thereby limits disturbance to the land.

In addition, siting the development in low-lying areas generally reduces its prominence in the landscape and helps to minimise potential impacts on local visual amenity.

Flood Risk

Sites with no or low level of flood risk were preferred. Sites with some degree of flood risk were only considered acceptable where appropriate mitigation measures could be incorporated into the design and layout. Areas classified as Flood Zone C were preferred.

Ecological Designations

Sites with further proximity from and no hydrological connectivity to designated ecological sites i.e. SACs, SPAs and NHAs, were prioritised.

Archaeological Designations

Sites with known archaeological designations were discounted at the site-selection stage.

In all cases, irrespective of whether any recorded archaeology is present, an archaeological assessment will be carried out prior to construction. Should evidence of archaeological features or artefacts be identified, any required archaeological testing or excavation will be undertaken in accordance with National Monuments Service licensing procedures.

Proximity to Water Course and Aquifer

Site selection sought to avoid locations underlain by groundwater with high or extreme vulnerability, regionally important aquifers, and areas with known hydrological connectivity to public water supplies, local private wells or drainage schemes.

Scoring Methodology

The key site-selection criteria described above were each assigned a score from 1 to 3, reflecting how well a given site performed against that criterion. For example, a site located adjacent to an existing gas distribution pipeline was given a score of 3, whereas a site located further from the pipeline, requiring more than 5 km of new connection works, was given a score of 1. Similarly, a site with favourable road conditions (e.g. good access opportunities, adequate sightlines and capacity to accommodate additional HGV traffic) was scored 3, while sites lacking suitable road access or served predominantly by minor local roads were scored 1.

A weighting factor, also in the range 1 to 3, was then applied to each criterion, with higher weightings assigned to aspects considered more critical to the viability of the development (for example, proximity to feedstock providers, which is essential for the successful implementation of the agri-centric model). In some instances, the inclusion of specific design measures reduced the relative importance of a criterion and therefore the weighting applied. For example, the civil design of the Proposed Development allows it to operate independently of public foul drainage and water supply networks and avoids direct interaction with watercourses and groundwater, reducing the weighting attached to these factors at the site-selection stage.

By combining the performance score (1–3) and the weighting (1–3) for each criterion, a 3 × 3

matrix was developed, allowing each site to be evaluated using a weighted total score. This facilitated a transparent comparison of alternative locations and supported the identification of the preferred site.

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		Weighting applied to criteria		
		1	2	3
Criteria*	1	Possible, but requiring significant design measures, potentially not practical.	Possible, but requiring significant design measures.	Possible, but requiring further design measures and/or justification.
	2	Suitable – minimal impact and minor further design measures required.	Suitable – minimal impact and minor further design measures required.	Suitable – minimal impact and minor further design measures required.
	3	Suitable – minimal impact and minor design measures required.	Suitable – minimal impact and minor further design measures required.	Ideal – minimal impact option, optimum design measures.

* Specific criteria are detailed in Table below.

The site-specific selection criteria and basis for the assessment is included in **Table 3.1**.

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Table 3.1: Site-Specific Selection Criteria and Basis for Assessment.

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km or adjacent to site. 		3	
Access to Electricity Grid	<ol style="list-style-type: none"> Greater than 5km, 1-5km. <1km. 		1	
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 80% available >15km. 80% available within 15km. 80% Available within 5 km or adjacent to major source of feedstock. 		3	
Transport Network and Access	<ol style="list-style-type: none"> On local road with predominantly local roads network. On local road but with regional road network within 1-3km of the site. On regional road or less than 1km from Regional Road network. Immediately adjacent to major source of feedstock allowing for transport internally. 		3	
Existing land use	<ol style="list-style-type: none"> Urban or greenfield. Rural Brownfield. Zoned Industrial. 		2	
Proximity to sensitive human receptors	<ol style="list-style-type: none"> Less than 250m. less than 1km. Greater than 1 km. 		3	
Land Availability	<ol style="list-style-type: none"> Not for Sale or Lease. Available for Sale or Lease but financially unviable. Owned or for sale/lease at achievable price. 		3	
Available Land Size	<ol style="list-style-type: none"> 1- 2ha. 2-3ha. Greater than 4ha. 		3	
Landscape Sensitivity	<ol style="list-style-type: none"> Proximate to Sensitive Landscape. Greater than 1km. Greater than 5km. 		2	

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Landscape and Visual Amenity	<ol style="list-style-type: none"> 1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site. 		2	
Topography	<ol style="list-style-type: none"> 1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level. 		2	
Flood Risk	<ol style="list-style-type: none"> 1. In a Flood Risk Zone. 3. Outside Flood Risk Zone. 		3	
Ecological Designations Score	<ol style="list-style-type: none"> 1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites. 		2	
Archaeological Designations Score	<ol style="list-style-type: none"> 1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites. 		1	
Proximity to Suitable Water Course or sewer (for surface water discharge)	<ol style="list-style-type: none"> 1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site. 		3	
Proximity to Drinking Water Source/Aquifer	<ol style="list-style-type: none"> 1. Less than 250m. 2. Less than 1km. 3. Greater than 1km 		1	
Total Ranked Score				

Seven alternative site locations within County Galway were assessed against the criteria outlined above, with the site at Glenloughaun achieving the highest overall score. The site-specific selection criteria and basis for assessment for each candidate site are presented in **Appendix 3.1**.

The rationale for identifying the Glenloughaun site as the preferred location for the Proposed Development is discussed in the following sections.

3.4.2.1 Transport Network and Access

The Proposed Development site is located in the townland of Glenloughaun, approximately 3 km south of Ballinasloe, Co. Galway, and approximately 22 km north-east of Loughrea, Co. Galway.

The site lies to the south of Glenloughaun Road (L-8412) and approximately 40 m west of its junction with the R355 regional road. The Proposed Development will be accessed via Glenloughaun Road, with a short new access road constructed to connect the site to the existing HGV-compatible entrance serving the adjacent quarry. This arrangement provides direct access to the R355 and, in turn, good connectivity to the wider regional and national road network.

By contrast, a number of the alternative sites either lacked any practicable access (e.g. enclosed agricultural fields) or were not located in close proximity to regional roads, resulting in lower scores under the transport and access criteria.

3.4.2.2 Proximity to Feedstock Supply and Biobased Fertiliser Receivers

The Proposed Development has been designed to accept and treat up to 90,000 tonnes per annum of predominantly locally sourced agricultural manures and slurries, distillery and dairy processing residues, and crop-based feedstocks. The geographical distribution of these feedstock suppliers and biobased fertiliser receivers is illustrated in **Figure 3.1**. Of the 50 confirmed sources, 36 (72%) are located within a 15 km radius of the site, and all 50 (100%) are located within a 30 km radius.

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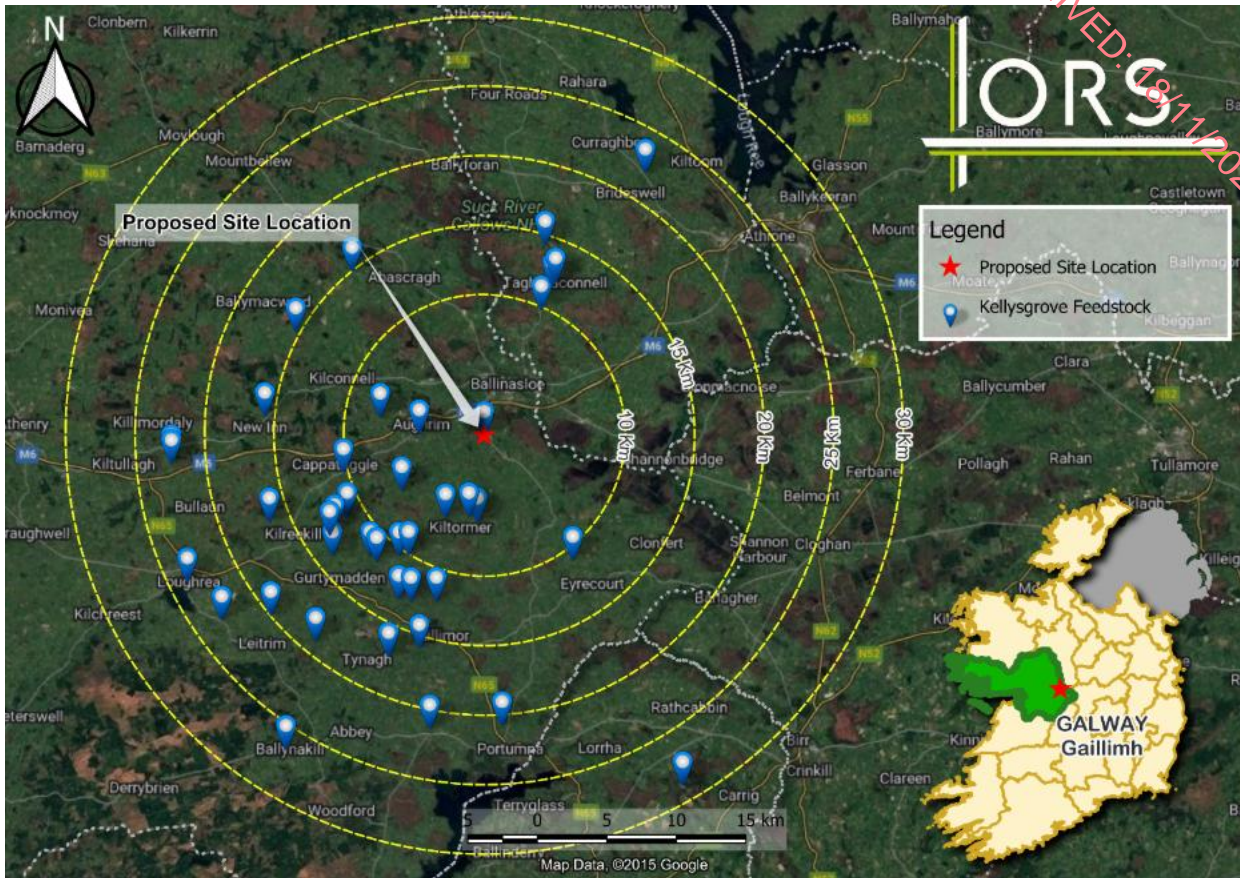


Figure 3.1: Feedstock Suppliers and Digestate Receivers.

3.4.2.3 Proximity to the Existing Gas Network

Proximity to the existing gas network was a key consideration when assessing alternative locations. A direct grid connection is required to enable renewable biomethane produced on site to be injected into the national gas network and thereby displace fossil fuel use.

The nearest existing gas infrastructure to the Proposed Development is a medium-pressure distribution pipeline, located approximately 3.1 km north of the site. A dedicated pipeline will therefore be constructed to connect the facility to the national gas grid. Compared with the other locations considered, the Glenloughaun site was identified as the most viable option in terms of minimising disruption during the construction of this grid connection.

The location of the existing gas pipeline infrastructure in the vicinity of the site is shown in Figure 3.2.

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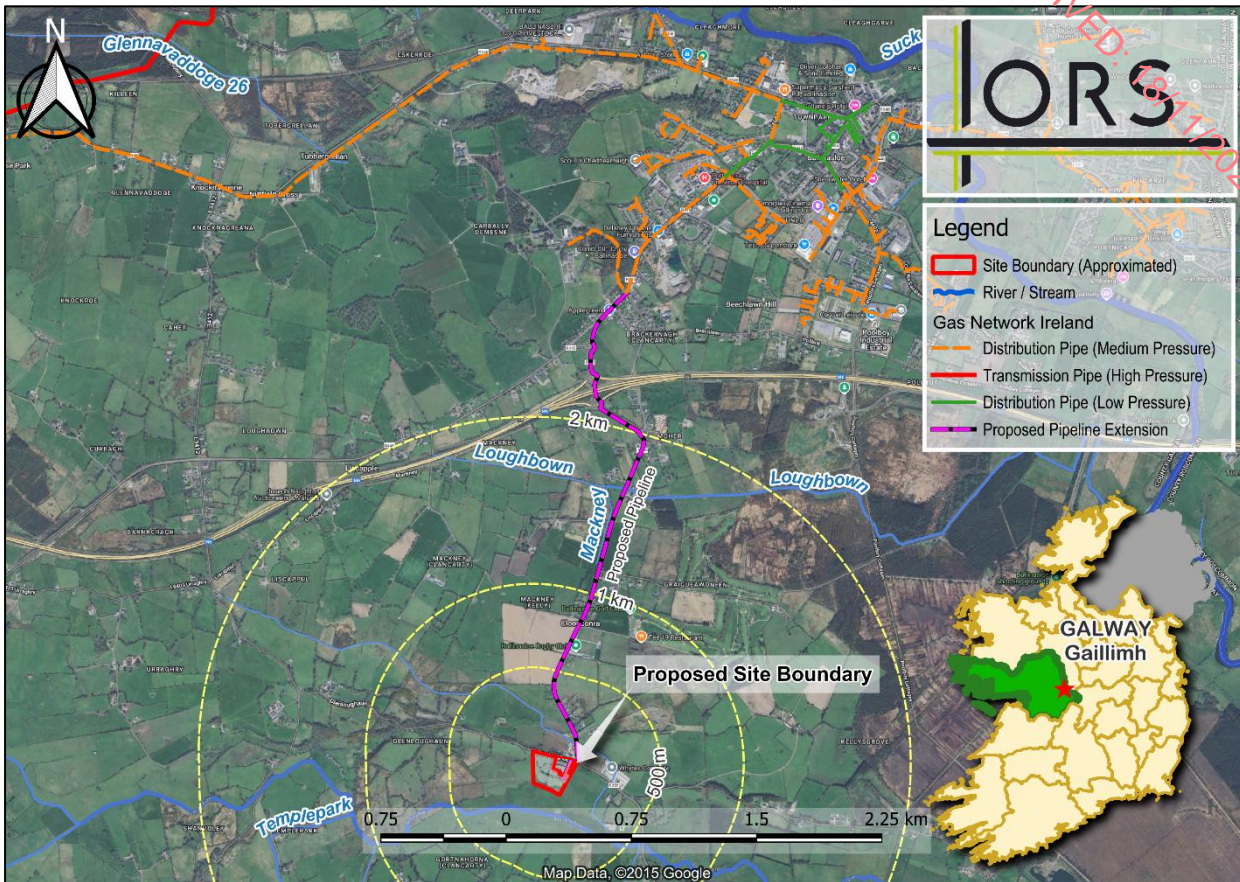


Figure 3.2: Local Existing Gas Network (Source: Gas Networks Ireland).

The other site locations considered were either not available for purchase or lease or were located at significantly greater distances (up to approximately 10 km) from the existing national gas network. In such cases, providing a direct connection point via a Grid Injection Unit (GIU) would not have been technically or economically viable.

3.4.2.4 Proximity to Sensitive Environmental Receptors and Designated Sites

The Proposed Development site is not located within, or immediately adjacent to, any site designated as a Special Area of Conservation (SAC) or Special Protection Area (SPA) under the EU Habitats or Birds Directives.

The closest Natura 2000 site is Glenloughaun Esker SAC, located approximately 740 m west of the Proposed Development. Ecological assessment of the site identified the potential for significant effects on Glenloughaun Esker SAC and its qualifying interests (notably orchid-rich habitats). Potential effects could arise during both the construction and operational phases, primarily via airborne emissions and associated ammonia/nitrogen deposition.

Although the development site lies outside the physical boundaries of these designated Natura 2000 sites, a potential surface water pathway exists via the Ballinure River. The site is hydrologically connected to the Ballinure River through field drainage ditches along the eastern and southern boundaries. The Ballinure River is located approximately 130 m south of the Proposed Development and flows for around 6.6 km eastwards before joining the River Suck. Along this flow path, the River Suck Callows SPA is reached at approximately 5.4 km

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downstream of the site. The River Suck then flows a further 6.3 km eastwards before discharging into the River Shannon, a total of approximately 12.8 km downstream of the site, where the Middle Shannon Callows SPA and River Shannon Callows SAC are located.

Accordingly, a Natura Impact Statement (NIS) has been prepared, setting out mitigation measures for both the construction and operational phases to ensure that no adverse effects on the integrity of these Natura 2000 sites arise, including measures to prevent deterioration of water quality in downstream SACs and SPAs.

3.4.2.5 Landscape and Visual Impact

Although the site is not within a designated landscape, the recreational and amenity use of the surrounding rural area was carefully considered as part of the landscape and visual assessment (see Chapter 11 for further detail). A series of viewpoints was selected in all directions, and each was assessed in terms of receptor sensitivity and the likely magnitude of change arising from the Proposed Development.

The Glenloughaun site was preferred to several of the alternative locations due to its relatively low-lying position in the landscape and its proximity to existing development, including established industrial and infrastructural uses in the area, which are already integrated into the overall landscape pattern. This context indicates a landscape character where additional development, when appropriately sited and well-integrated through design and mitigation, can be accommodated without giving rise to significant adverse effects.

By contrast, several of the alternative sites were located on higher ground and were more visually prominent in medium- and long-range views, thereby offering less potential for effective screening and landscape integration and resulting in higher predicted landscape and visual effects.

3.4.2.6 Flood Risk

A preliminary flood risk assessment was undertaken for all candidate sites. Some sites were found to have a high degree of flood risk, while others had no identified flood risk but did not meet other critical siting criteria.

The Site-Specific Flood Risk Assessment (SSFRA) has determined that the majority of the Proposed Development site lies within Flood Zone C; therefore, no specific flood risk mitigation measures are required for most of the site area. However, the southern and south-eastern parts of the site are located within Flood Zones A and B. Careful consideration has been given to the design and layout of the Proposed Development, and appropriate flood mitigation measures have been incorporated to ensure that the development will not increase flood risk on-site or at downstream receptors.

The proposed development has been assessed against the Justification Test and is deemed to satisfy its requirements. The development will not alter the existing local flow regime, exacerbate flood risk elsewhere or compromise water quality, owing to the careful design of the site levels and associated surface-water drainage infrastructure.

A Site-Specific Flood Risk Assessment accompanies the planning application (Document Ref: **231960-ORS-XX-XX-RP-EN-13d-011**)

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3.4.3 Consideration of Alternative Design and Site Layout

The design of the Proposed Development has been an informed and iterative process from the outset, involving close collaboration between design, engineering, planning, environmental, hydrological, geotechnical, archaeological, landscape and traffic specialists. The design process has also taken account of comments received from relevant statutory and non-statutory consultees, as outlined in **Chapter 1: Introduction**.

Throughout the preparation of the EIAR, the layout of the Proposed Development has been revised and refined to reflect the findings of site investigations and baseline environmental assessments. This iterative process has resulted in the evolution of the scheme from the initial concept layout (**Figure 3.3**) to the final site layout now proposed.

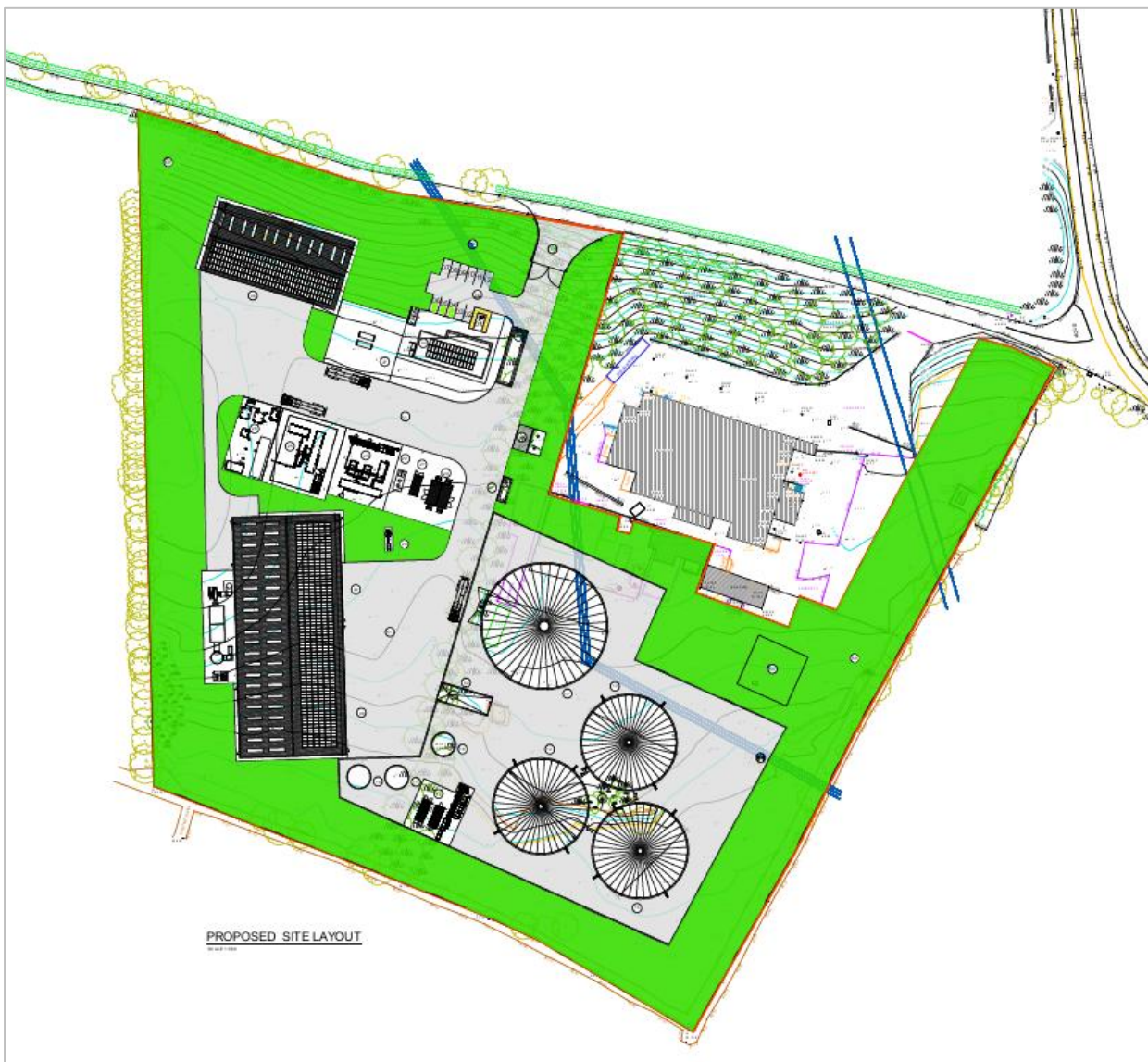


Figure 3.3: Concept Site Layout (Drawing No: 231960-ORS-ZZ-00-DR-AR-200).

Layout selection was an iterative process, with the objective of identifying a suitable layout that:

- Optimised the existing topography of the site to minimise excavation works.

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- Optimised the existing topography of the site to minimise potential visual impacts on the local landscape.
- Optimised the layout of plant machinery on site to minimise impact of noise, odour on sensitive receptors i.e. applying distance and screening from buildings to ensure noise and odour levels are negligible of site.
- Met the design and operational requirements of DAFM guidance document CN11: Conditions for approval and operation of Biogas Plants transforming Animal By-Products and derived products in Ireland.
- Met the design and operational requirements of the EPA Industrial Emissions licensing.

The design of emissions stacks was considered throughout the design and planning process. Air dispersion modelling undertaken as part of the Air and Odour impact Assessment detailed in **Chapter 8: Air, Odour & Climate Change** informed the suitable height of the 1 No. CHP stack, 1 no. Biomethane Boiler stack and 1 No. Odour Treatment stack.

The concept site layout (**Figure 3.3**) was revised to provide a shared access with the existing industrial facility. The layout has been carefully developed to create additional space along the northern, southern, eastern and western boundaries of the Proposed Development for landscaping and visual screening. The silage clamp was relocated to the western part of the site to provide sufficient space for HGV movements and manoeuvring. A landscape plan has been prepared and accompanies this application (Document Ref: 25/CO/ORS/KG/M/00).

The landscape plan (**Figure 3.4**) provides short-, medium- and long-term buffering and has been specifically developed to assist in integrating the Proposed Development into its surroundings. Native planting is proposed along all site boundaries. No existing hedgerows will be removed at the site entrance; any new hedgerow planting will be set back from the road and will comprise a mix of native species. The new hedgerow will also be continued within the site to enhance biodiversity, strengthen ecological connectivity and increase the overall buffering effect. Relocation of certain buildings and structures within the layout has allowed additional planting to be incorporated into the final landscape proposals.

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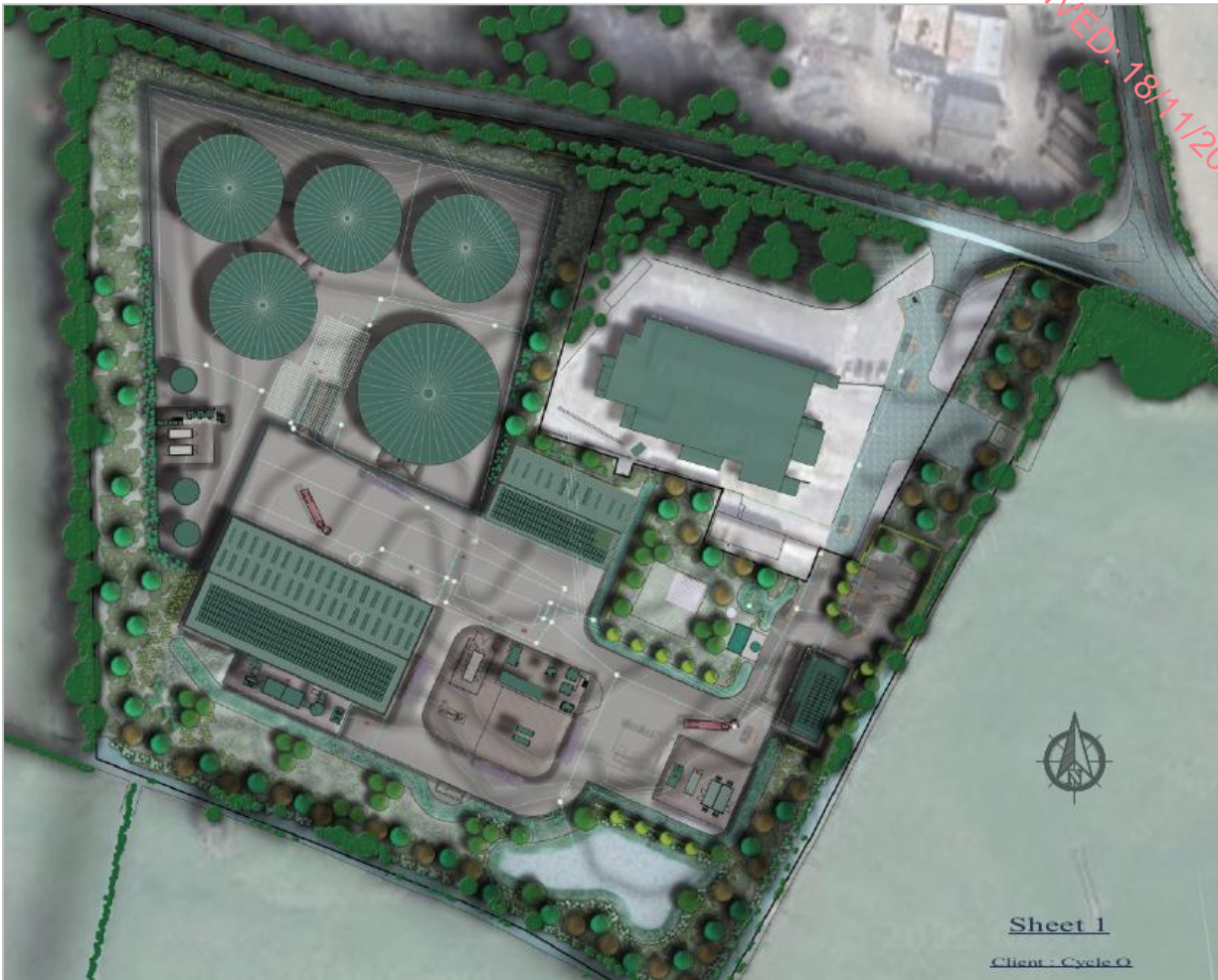


Figure 3.4: Extract from Landscape Plan (Document Ref: 25/CO/ORS/KG/M/001)

3.4.4 Consideration of Alternative Technical Configurations

Alternative technical configurations were considered as part of the design process for the Proposed Development.

There are several process configurations around which anaerobic digestion (AD) systems can be designed. Key factors considered in selecting the preferred configuration included:

- whether the process operates on a batch or continuous feed basis;
- whether it is a dry or wet AD system;
- whether it employs a single-stage or multi-stage digestion process; and
- whether the anaerobic digester is operated under mesophilic or thermophilic temperature conditions.

These technical options were assessed with regard to feedstock characteristics, process stability and efficiency, energy recovery, regulatory requirements, and environmental performance, before arriving at the preferred configuration described in the following sections.

3.4.4.1 Process Configuration

A batch-flow system involves a single addition of feedstock to the digester at the start of the process. Once the feedstock has been loaded, the digester is sealed for the duration of the retention period and no further material is added. This configuration was ruled out for the Proposed Development as it is considered unsuitable given the characteristics and volumes of the locally available feedstocks (agricultural manures and slurries, food processing residues and crop-based materials).

In contrast, Continuously Stirred Tank Reactor (CSTR) systems operate with feedstock added either continuously or in regular batches, with an equivalent volume of digestate displaced as new material enters the digester. For the Proposed Development, a multi-stage CSTR anaerobic digestion system has been selected, providing primary and secondary digestion in appropriately sized digester tanks.

Compared with single-stage systems, multi-stage CSTR configurations offer greater process stability, improved energy efficiency and better control of key process parameters such as temperature, mixing and substrate concentration. Because CSTR systems are fed on a continuous or near-continuous basis, they support steady-state operation and more consistent biogas production rates.

3.4.4.2 Operating Temperature

It is proposed to operate the AD process within the mesophilic temperature range (approximately 30–40°C). Mesophilic digestion systems are generally more stable than thermophilic systems (50–60°C), as a wider diversity of bacteria can grow at mesophilic temperatures and these bacterial communities tend to be more robust and adaptable to changing environmental conditions.

Thermophilic digestion offers the advantage of faster reaction rates compared with mesophilic digestion, resulting in shorter retention times. However, thermophilic systems require significantly more energy to maintain the higher operating temperatures. This additional heat demand would increase the volume of biomethane required to be used on site as fuel for the CHP engine and boiler, thereby reducing the overall volume of biomethane available for export to the national gas network.

On balance, thermophilic digestion was considered inconsistent with the sustainability objectives of the Proposed Development, as it would reduce the net contribution of the facility to the displacement of fossil fuels. Mesophilic operation was therefore selected as the preferred option.

3.4.4.3 Biogas Uses Considered

Biomethane

A number of options were considered for the utilisation of the biomethane produced from the AD process, including:

- on-site generation of electricity and heat using a Combined Heat and Power (CHP) plant; and
- injection of biomethane into the existing gas network for industrial, commercial and residential

use.

The Proposed Development is designed to adopt both of these options. Electricity and heat are required to support the AD process and upgrade biogas to biomethane; on-site generation using a CHP plant is therefore incorporated to ensure that the facility can be largely self-sufficient in terms of its electrical and thermal energy demands.

The Irish Government has committed to supporting the delivery of up to 5.7 TWh of indigenously produced biomethane by 2030. The National Biomethane Strategy, published by the Department of the Environment, Climate and Communications and the Department of Agriculture, Food and the Marine on 28 May 2024, sets out how this target will be achieved as part of the agreed sectoral emissions ceilings.

Given the proximity of the Proposed Development to the existing gas network, the preferred option is to construct a dedicated gas pipeline to the existing network and inject biomethane into the grid for industrial, commercial and residential use. The nearest existing gas infrastructure to the proposed facility is a medium-pressure distribution pipeline, located approximately 3.1 km north of the site. A dedicated pipeline will therefore be constructed to connect the facility to the national gas grid, enabling the direct injection of biomethane. A separate distribution gas connection to the Proposed Development will be delivered by Gas Networks Ireland (GNI) under a separate consenting process, and this connection is considered within this EIAR.

Biomethane supplied to the existing gas network in this manner will directly substitute for fossil natural gas in a range of applications, including high-temperature process heat, electricity generation and transport. The biomethane produced by the Proposed Development will therefore contribute directly to the national target of 5.7 TWh of indigenously produced biomethane by 2030.

In addition, direct injection into the gas network is more efficient in greenhouse gas (GHG) terms than a virtual pipeline model, as it avoids the additional fuel use and traffic associated with transporting compressed gas by road.

Biogenic CO₂

A CO₂ liquefaction system is included as part of the Proposed Development. The biogenic CO₂ separated during the biogas upgrading process will be captured and liquefied, allowing it to be purified and reused rather than released to atmosphere.

3.4.4.4 Best Available Techniques (BAT)

The processes outlined in Chapter 2: Project Description were selected following a thorough review of Best Available Techniques (BAT), site conditions and applicable regulatory requirements. The following BAT documents were considered:

- Best Available Techniques (BAT) for Waste Treatment – Commission Implementing Decision (CID);
- Best Available Techniques (BAT) Reference Document for the Animal By-Products and/or Edible Co-Products Industries;
- Best Available Techniques (BAT) Reference Document for Energy Efficiency; and
- Best Available Techniques (BAT) Reference Document for Emissions from Storage.

The techniques and technologies adopted for the Proposed Development are industry-standard, support the effective implementation of emission control measures and are well-established and proven within the sector.

3.5 Conclusion

This chapter has examined the practicable alternatives considered during the design and pre-application phases of the Proposed Development, in accordance with the requirements of the EIA Directive (2011/92/EU as amended by 2014/52/EU) and relevant EPA guidance. A structured methodology was adopted to ensure that all reasonable alternatives were assessed with regard to their likely environmental effects.

Alternative sites within County Galway were considered but found to be unsuitable for two primary reasons. Firstly, there was uncertainty regarding the availability of sufficient agricultural feedstock, in part because some potential suppliers were already committed to existing or proposed biogas projects. Secondly, the distances required to transport feedstocks from their source locations to several of the alternative sites would have resulted in significantly higher HGV movements than for the Glenloughaun site. This would, in turn, have led to increased greenhouse gas emissions and greater traffic impacts, contrary to the overall sustainability objectives of the Proposed Development.

The Glenloughaun site is considered appropriate for the proposed biomethane facility for a number of reasons. It comprises a partially brownfield, currently underutilised site located immediately adjacent to the R355 regional road, providing suitable access for HGV traffic associated with feedstock delivery and digestate export while minimising potential impacts on the local road network. The presence of existing industrial and commercial facilities in the area (including Torva Limited and the Whytes Concrete Plant) supports the site's suitability and is consistent with the established land-use character. The local topography and surrounding vegetation provide opportunities for effective screening, limiting visual impacts and enabling the development to be integrated into the receiving landscape.

In addition, a suitable connection point to the existing gas network is located at a feasible distance from the site, allowing the efficient export of upgraded biomethane to the national gas grid. This facilitates direct displacement of fossil natural gas and supports the achievement of national climate and energy targets, including the Government's ambition for 5.7 TWh of indigenously produced biomethane by 2030.

The site is located in a rural area outside any designated or zoned settlement boundary. There are no alternative lands within or adjoining the reasonable search area that are both suitable and available for this type of rural enterprise. The Proposed Development is functionally linked to its rural catchment, relying on local agricultural feedstocks and requiring proximity to existing farm infrastructure and associated transport routes.

The site selection process considered multiple alternative locations. Within the county, there is limited availability of comparable sites that are: (i) close to sufficient feedstock supply; (ii) at an appropriate distance from sensitive receptors; and (iii) within feasible reach of the gas network. The Glenloughaun site represents the most sustainable, technically viable and economically deliverable option identified within the search area, and does so without consuming large tracts of undeveloped land or conflicting with the objectives of the Galway County Development Plan. The proposed AD facility will help meet existing and future gas demand in the county, while managing agricultural waste streams in a circular-economy model that provides farmers with

sustainable alternatives for the treatment and reuse of manures, slurries and agri-wastes.

Detailed consideration has also been given to the “do-nothing” scenario, which would forgo the significant environmental, economic and social benefits associated with the Proposed Development, including reductions in greenhouse gas emissions, improved management of agricultural residues and the creation of direct and indirect employment in a rural area.

Finally, the chapter has described the alternative designs, layouts and technical configurations considered, and the use of a transparent scoring matrix to compare candidate sites against defined criteria. The rationale for the selected option demonstrates that environmental considerations have been integrated into the decision-making process and that the Glenloughaun site represents the most appropriate location for the Proposed Development when considered in planning, technical and environmental terms.

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Appendix 3.1

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1. Proposed Site-Site-Specific Selection Criteria and Assessment: Proposed Development Site-Glenloughaun, Co. Galway.

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> 1. Greater than 5km. 2. 1-5km. 3. <1km or adjacent to site. 	2	3	6
Access to Electricity Grid	<ol style="list-style-type: none"> 1. Greater than 5km. 2. 1-5km. 3. <1km. 	2	1	2
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 1. 80% available >15km. 2. 80% available within 15km. 3. 80% Available within 5 km or adjacent to major source of feedstock. 	2	3	6
Transport Network and Access	<ol style="list-style-type: none"> 1. On local road with predominantly local roads network. 2. On local road but with regional road network within 1-3km of the site. 3. On regional road or less than 1km from Regional Road network. 4. Immediately adjacent to major source of feedstock allowing for transport internally. 	3	3	9
Existing land use	<ol style="list-style-type: none"> 1. Urban or greenfield. 2. Rural Brownfield. 3. Zoned Industrial. 	2	2	4
Proximity to sensitive human receptors	<ol style="list-style-type: none"> 1. Less than 250m. 2. less than 1km. 3. Greater than 1 km. 	2	3	6
Land Availability	<ol style="list-style-type: none"> 1. Not for Sale or Lease. 2. Available for Sale or Lease but financially unviable. 3. Owned or for sale/lease at achievable price. 	3	3	9
Available Land Size	<ol style="list-style-type: none"> 1. 1- 2ha. 2. 2-3ha. 3. Greater than 4ha. 	2	3	6

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Landscape Sensitivity	1. Proximate to Sensitive Landscape. 2. Greater than 1km. 3. Greater than 5km.	3	2	6
Landscape and Visual Amenity	1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site.	2	2	4
Topography	1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level.	2	2	4
Flood Risk	1. In a Flood Risk Zone. 3. Outside Flood Risk Zone.	1	3	3
Ecological Designations Score	1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites.	1	2	2
Archaeological Designations Score	1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites.	1	1	1
Proximity to Suitable Water Course or sewer (for surface water discharge)	1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site.	3	3	9
Proximity to Drinking Water Source/Aquifer	1. Less than 250m. 2. Less than 1km. 3. Greater than 1km.	3	1	3
Total Ranked Score				80

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2. Site-Specific Selection Criteria and Assessment: Garbally Demesne, Co. Galway

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km or adjacent to site. 	2	3	6
Access to Electricity Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km. 	2	1	2
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 80% available >15km. 80% available within 15km. 80% Available within 5 km or adjacent to major source of feedstock. 	1	3	3
Transport Network and Access	<ol style="list-style-type: none"> On local road with predominantly local roads network. On local road but with regional road network within 1-3km of the site. On regional road or less than 1km from Regional Road network. Immediately adjacent to major source of feedstock allowing for transport internally. 	3	3	9
Existing land use	<ol style="list-style-type: none"> Urban or greenfield. Rural Brownfield. Zoned Industrial. 	1	2	2
Proximity to sensitive human receptors	<ol style="list-style-type: none"> Less than 250m. less than 1km. Greater than 1 km. 	1	3	3
Land Availability	<ol style="list-style-type: none"> Not for Sale or Lease. Available for Sale or Lease but financially unviable. Owned or for sale/lease at achievable price. 	2	3	6
Available Land Size	<ol style="list-style-type: none"> 1- 2ha. 2-3ha. Greater than 4ha. 	2	3	6

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Landscape Sensitivity	1. Proximate to Sensitive Landscape. 2. Greater than 1km. 3. Greater than 5km.	2	2	4
Landscape and Visual Amenity	1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site.	2	2	4
Topography	1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level.	3	2	6
Flood Risk	1. In a Flood Risk Zone. 3. Outside Flood Risk Zone.	3	3	9
Ecological Designations Score	1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites.	1	3	3
Archaeological Designations Score	1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites.	1	1	1
Proximity to Suitable Water Course or sewer (for surface water discharge)	1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site.	3	3	9
Proximity to Drinking Water Source/Aquifer	1. Less than 250m. 2. Less than 1km. 3. Greater than 1km.	3	1	3
Total Ranked Score				76

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3. Site-Specific Selection Criteria and Assessment: Pollboy, Ballinasloe Co. Galway

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km or adjacent to site. 	2	3	6
Access to Electricity Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km. 	2	1	2
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 80% available >15km. 80% available within 15km. 80% Available within 5 km or adjacent to major source of feedstock. 	1	3	3
Transport Network and Access	<ol style="list-style-type: none"> On local road with predominantly local roads network. On local road but with regional road network within 1-3km of the site. On regional road or less than 1km from Regional Road network. Immediately adjacent to major source of feedstock allowing for transport internally. 	3	3	9
Existing land use	<ol style="list-style-type: none"> Urban or greenfield. Rural Brownfield. Zoned Industrial. 	3	2	6
Proximity to sensitive human receptors	<ol style="list-style-type: none"> Less than 250m. less than 1km. Greater than 1 km. 	1	3	3
Land Availability	<ol style="list-style-type: none"> Not for Sale or Lease. Available for Sale or Lease but financially unviable. Owned or for sale/lease at achievable price. 	2	3	6
Available Land Size	<ol style="list-style-type: none"> 1- 2ha. 2-3ha. Greater than 4ha. 	2	3	6

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Landscape Sensitivity	1. Proximate to Sensitive Landscape. 2. Greater than 1km. 3. Greater than 5km.	2	2	4
Landscape and Visual Amenity	1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site.	2	2	4
Topography	1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level.	3	2	6
Flood Risk	1. In a Flood Risk Zone. 3. Outside Flood Risk Zone.	3	3	9
Ecological Designations Score	1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites.	2	2	4
Archaeological Designations Score	1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites.	2	1	2
Proximity to Suitable Water Course or sewer (for surface water discharge)	1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site.	1	3	3
Proximity to Drinking Water Source/Aquifer	1. Less than 250m. 2. Less than 1km. 3. Greater than 1km.	3	1	1
Total Ranked Score				76

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4. Site-Specific Selection Criteria and Assessment: Perssepark, Aughrim, Co. Galway

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km or adjacent to site. 	3	3	9
Access to Electricity Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km. 	2	1	2
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 80% available >15km. 80% available within 15km. 80% Available within 5 km or adjacent to major source of feedstock. 	1	3	3
Transport Network and Access	<ol style="list-style-type: none"> On local road with predominantly local roads network. On local road but with regional road network within 1-3km of the site. On regional road or less than 1km from Regional Road network. Immediately adjacent to major source of feedstock allowing for transport internally. 	3	3	9
Existing land use	<ol style="list-style-type: none"> Urban or greenfield. Rural Brownfield. Zoned Industrial. 	1	2	2
Proximity to sensitive human receptors	<ol style="list-style-type: none"> Less than 250m. less than 1km. Greater than 1 km. 	1	3	3
Land Availability	<ol style="list-style-type: none"> Not for Sale or Lease. Available for Sale or Lease but financially unviable. Owned or for sale/lease at achievable price. 	2	3	6
Available Land Size	<ol style="list-style-type: none"> 1- 2ha. 2-3ha. Greater than 4ha. 	2	3	6

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Landscape Sensitivity	1. Proximate to Sensitive Landscape. 2. Greater than 1km. 3. Greater than 5km.	1	2	2
Landscape and Visual Amenity	1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site.	2	2	4
Topography	1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level.	3	2	6
Flood Risk	1. In a Flood Risk Zone. 3. Outside Flood Risk Zone.	1	3	3
Ecological Designations Score	1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites.	2	2	4
Archaeological Designations Score	1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites.	1	1	1
Proximity to Suitable Water Course or sewer (for surface water discharge)	1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site.	2	3	6
Proximity to Drinking Water Source/Aquifer	1. Less than 250m. 2. Less than 1km. 3. Greater than 1km.	3	1	3
Total Ranked Score				69

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5. Site-Specific Selection Criteria and Assessment: Ballyeighter, Co. Galway

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km or adjacent to site. 	1	3	3
Access to Electricity Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km. 	2	1	2
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 80% available >15km. 80% available within 15km. 80% Available within 5 km or adjacent to major source of feedstock. 	1	3	3
Transport Network and Access	<ol style="list-style-type: none"> On local road with predominantly local roads network. On local road but with regional road network within 1-3km of the site. On regional road or less than 1km from Regional Road network. Immediately adjacent to major source of feedstock allowing for transport internally. 	2	3	6
Existing land use	<ol style="list-style-type: none"> Urban or greenfield. Rural Brownfield. Zoned Industrial. 	1	2	2
Proximity to sensitive human receptors	<ol style="list-style-type: none"> Less than 250m. less than 1km. Greater than 1 km. 	2	3	6
Land Availability	<ol style="list-style-type: none"> Not for Sale or Lease. Available for Sale or Lease but financially unviable. Owned or for sale/lease at achievable price. 	2	3	6
Available Land Size	<ol style="list-style-type: none"> 1- 2ha. 2-3ha. Greater than 4ha. 	3	3	9

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Landscape Sensitivity	1. Proximate to Sensitive Landscape. 2. Greater than 1km. 3. Greater than 5km.	1	2	2
Landscape and Visual Amenity	1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site.	2	2	4
Topography	1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level.	3	2	6
Flood Risk	1. In a Flood Risk Zone. 3. Outside Flood Risk Zone.	1	3	3
Ecological Designations Score	1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites.	1	2	2
Archaeological Designations Score	1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites.	1	1	1
Proximity to Suitable Water Course or sewer (for surface water discharge)	1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site.	3	3	9
Proximity to Drinking Water Source/Aquifer	1. Less than 250m. 2. Less than 1km. 3. Greater than 1km.	3	1	3
Total Ranked Score				67

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6. Site-Specific Selection Criteria and Assessment: Lawrencetown, Co. Galway.

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> 1. Greater than 5km. 2. 1-5km. 3. <1km or adjacent to site. 	1	3	3
Access to Electricity Grid	<ol style="list-style-type: none"> 1. Greater than 5km. 2. 1-5km. 3. <1km. 	2	1	2
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 1. 80% available >15km. 2. 80% available within 15km. 3. 80% Available within 5 km or adjacent to major source of feedstock. 	1	3	3
Transport Network and Access	<ol style="list-style-type: none"> 1. On local road with predominantly local roads network. 2. On local road but with regional road network within 1-3km of the site. 3. On regional road or less than 1km from Regional Road network. 4. Immediately adjacent to major source of feedstock allowing for transport internally. 	2	3	6
Existing land use	<ol style="list-style-type: none"> 1. Urban or greenfield. 2. Rural Brownfield. 3. Zoned Industrial. 	1	2	2
Proximity to sensitive human receptors	<ol style="list-style-type: none"> 1. Less than 250m. 2. less than 1km. 3. Greater than 1 km. 	1	3	3
Land Availability	<ol style="list-style-type: none"> 1. Not for Sale or Lease. 2. Available for Sale or Lease but financially unviable. 3. Owned or for sale/lease at achievable price. 	2	3	6
Available Land Size	<ol style="list-style-type: none"> 1. 1- 2ha. 2. 2-3ha. 3. Greater than 4ha. 	3	3	9

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Landscape Sensitivity	1. Proximate to Sensitive Landscape. 2. Greater than 1km. 3. Greater than 5km.	2	2	4
Landscape and Visual Amenity	1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site.	2	2	4
Topography	1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level.	3	2	6
Flood Risk	1. In a Flood Risk Zone. 3. Outside Flood Risk Zone.	3	3	9
Ecological Designations Score	1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites.	2	2	4
Archaeological Designations Score	1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites.	1	1	1
Proximity to Suitable Water Course or sewer (for surface water discharge)	1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site.	2	3	6
Proximity to Drinking Water Source/Aquifer	1. Less than 250m. 2. Less than 1km. 3. Greater than 1km.	3	1	3
Total Ranked Score				71

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7. Site-Specific Selection Criteria and Assessment: Kilcommadan, Aughrim, Ballinasloe, Co. Galway, H53V962.

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km or adjacent to site. 	1	3	3
Access to Electricity Grid	<ol style="list-style-type: none"> Greater than 5km. 1-5km. <1km. 	2	1	2
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 80% available >15km. 80% available within 15km. 80% Available within 5 km or adjacent to major source of feedstock. 	1	3	3
Transport Network and Access	<ol style="list-style-type: none"> On local road with predominantly local roads network. On local road but with regional road network within 1-3km of the site. On regional road or less than 1km from Regional Road network. Immediately adjacent to major source of feedstock allowing for transport internally. 	2	3	6
Existing land use	<ol style="list-style-type: none"> Urban or greenfield. Rural Brownfield. Zoned Industrial. 	1	2	2
Proximity to sensitive human receptors	<ol style="list-style-type: none"> Less than 250m. less than 1km. Greater than 1 km. 	1	3	3
Land Availability	<ol style="list-style-type: none"> Not for Sale or Lease. Available for Sale or Lease but financially unviable. Owned or for sale/lease at achievable price. 	2	3	6
Available Land Size	<ol style="list-style-type: none"> 1- 2ha. 2-3ha. Greater than 4ha. 	3	3	9

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Landscape Sensitivity	1. Proximate to Sensitive Landscape. 2. Greater than 1km. 3. Greater than 5km.	2	2	4
Landscape and Visual Amenity	1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site.	2	2	4
Topography	1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level.	3	2	6
Flood Risk	1. In a Flood Risk Zone. 3. Outside Flood Risk Zone.	3	3	9
Ecological Designations Score	1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites.	2	2	4
Archaeological Designations Score	1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites.	1	1	1
Proximity to Suitable Water Course or sewer (for surface water discharge)	1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site.	2	3	6
Proximity to Drinking Water Source/Aquifer	1. Less than 250m. 2. Less than 1km. 3. Greater than 1km.	2	1	2
Total Ranked Score				70

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8. Site-Specific Selection Criteria and Assessment: Kilconnell, Ballinasloe, Co. Galway

Criteria	Scoring	Score	Weighting	Total Score
Access to Gas Grid	<ol style="list-style-type: none"> 1. Greater than 5km. 2. 1-5km. 3. <1km or adjacent to site. 	2	3	6
Access to Electricity Grid	<ol style="list-style-type: none"> 1. Greater than 5km. 2. 1-5km. 3. <1km. 	2	1	2
Proximity to Feedstock Supply/Digestate receivers	<ol style="list-style-type: none"> 1. 80% available >15km. 2. 80% available within 15km. 3. 80% Available within 5 km or adjacent to major source of feedstock. 	1	3	3
Transport Network and Access	<ol style="list-style-type: none"> 1. On local road with predominantly local roads network. 2. On local road but with regional road network within 1-3km of the site. 3. On regional road or less than 1km from Regional Road network. 4. Immediately adjacent to major source of feedstock allowing for transport internally. 	3	3	9
Existing land use	<ol style="list-style-type: none"> 1. Urban or greenfield. 2. Rural Brownfield. 3. Zoned Industrial. 	1	2	2
Proximity to sensitive human receptors	<ol style="list-style-type: none"> 1. Less than 250m. 2. less than 1km. 3. Greater than 1 km. 	1	3	3
Land Availability	<ol style="list-style-type: none"> 1. Not for Sale or Lease. 2. Available for Sale or Lease but financially unviable. 3. Owned or for sale/lease at achievable price. 	2	3	6
Available Land Size	<ol style="list-style-type: none"> 1. 1- 2ha. 2. 2-3ha. 3. Greater than 4ha. 	3	3	9

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Landscape Sensitivity	1. Proximate to Sensitive Landscape. 2. Greater than 1km. 3. Greater than 5km.	2	2	4
Landscape and Visual Amenity	1. Site is elevated or exposed. 2. Site has existing cover and partial views. 3. Site is hidden and with little or no receptors overlooking the site.	2	2	4
Topography	1. Undulating or severe level changes. 2. Moderate level changes that can be engineered out. 3. Relatively flat and level.	3	2	6
Flood Risk	1. In a Flood Risk Zone. 3. Outside Flood Risk Zone.	3	3	9
Ecological Designations Score	1. Adjacent to designated site. 2. >1km from designated sites. 3. >5km from designated sites.	2	2	4
Archaeological Designations Score	1. Adjacent to archaeology sites. 2. >1km from archaeology sites. 3. >5km from archaeology sites.	1	1	1
Proximity to Suitable Water Course or sewer (for surface water discharge)	1. Greater than 1km. 2. Less than 1km. 3. Immediately adjacent or on site.	2	3	6
Proximity to Drinking Water Source/Aquifer	1. Less than 250m. 2. Less than 1km. 3. Greater than 1km.	2	1	2
Total Ranked Score				76