



Clare County Development Plan 2022-2028

Clare County Council

Gas Networks Ireland Response

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Contents

Contents	2
1 Introduction	3
2 Consultation Questions	3
2.1 Population and Housing	3
2.2 Rural Development	4
2.3 Transport and Infrastructure	5
2.4 Climate Change, Renewable Energy and Environment	5
3 Conclusion	8

1 Introduction

Gas Networks Ireland (GNI) welcomes the opportunity to respond to the 'Clare County Development Plan 2022-2028' consultation. GNI is involved in two initiatives which can benefit Clare from both an economic and environmental perspective.

- Development of renewable gas¹ injection infrastructure.
- Development of Compressed Natural Gas (CNG²) infrastructure for gas in transport.

GNI owns, operates, builds and maintains the gas network in Ireland and ensures the safe and reliable delivery of gas to its customers. The company is responsible for transporting natural gas through over 14,500km of pipeline networks. The gas network supplies energy to over 700,000 customers, including businesses, domestic users and power stations. GNI believes that gas and the gas network are integral to Ireland's energy system and future.

2 Consultation Questions

GNI has reviewed the Clare County Development Plan 2022 – 2028 Issues Paper and has focused on the questions where GNI can provide relevant input. GNI has included responses to questions from the following sections:

- Population and Housing
- Rural Development
- Transport and Infrastructure
- Climate Change, Renewable Energy and Environment

2.1 Population and Housing

How can we encourage innovation and new types of houses which deliver on peoples' preferences, in a sustainable manner?

Renewable gas should be considered as a way of decarbonising the domestic heat sector. GNI's parent company, Ervia, commissioned KPMG to develop and evaluate scenarios for decarbonisation of the one million Irish residential homes currently connected to, or within proximity to the existing gas network. The study³ concluded that renewable gas is the lowest cost option to decarbonise the domestic heat sector. Furthermore, the need for deep retrofits to convert properties to a BER rating for electric heat pumps to work effectively, is avoided. This could be a relevant consideration for the Council when evaluating the options for decarbonising council housing stock.

¹ Renewable Gas: <https://www.gasnetworks.ie/corporate/company/our-commitment/environment/renewable-gas/>

² Compressed Natural Gas (CNG) is a fuel used in the transport sector which reduces transport emissions.

³ KPMG, Decarbonising Domestic Heating in Ireland: <http://www.ervia.ie/decarbonising-domestic-he/KPMG-Irish-Gas-Pathways-Report.pdf>

How should we protect environmentally sensitive areas of the county?

GNI is cognisant of the natural environment. Transportation of gas is unobtrusive, and attention is taken to minimise the impact on local flora and fauna. GNI is committed to biodiversity and archaeology through the minimisation of the environmental impact of any construction and development activities. This involves a partnership approach with environmental and heritage groups on all construction projects, as well as employing engineers and environmental specialists to carry out environmental assessments at the planning and construction phases of developments. GNI returns all land to its original state following construction.

2.2 Rural Development

How do you think the County Development Plan can support sustainable agriculture and other rural based enterprises such as forestry and renewable energy?

Policies supporting the establishment of anaerobic digestion (AD) plants to produce renewable gas would bring employment and revenue to rural communities. Renewable gas produced by AD is a clean, renewable and carbon neutral fuel that can be used in heat, transport and electricity production. It is identical in function to natural gas so the existing network can be used, and gas customers do not need to change their boilers or gas-powered appliances. The production of indigenous renewable gas in Ireland enhances security of supply and supports the circular economy and sustainable agriculture.

The Teagasc report, Nitrogen Value and Greenhouse Gas Footprint of Digestate from Anaerobic Digestors⁴, states that AD offers several potential benefits which include import substitution and greenhouse gas mitigation in addition to offering an alternative enterprise for farmers. This project has shown that the waste material from the anaerobic digestion process, digestate, can be used as an effective nitrogen fertiliser on grassland with a low environmental impact, particularly when compared to traditional fertilisers. The availability of such a product from the anaerobic digestion process represents an additional benefit.

The AD process converts carbon in the feedstock to methane and other compounds which can subsequently be combusted to generate heat and electricity. This conversion process is carried out by bacteria which convert more complex carbon compounds into simpler compounds. This process also releases nutrient elements previously bound up in complex organic compounds and thus unavailable for plant uptake when material such as slurry is used as a fertiliser. Thus, the AD process not only produces a nutrient rich waste material which can be used as a fertiliser but nutrient availability in the waste material is higher than in the original feedstock. In cases where grass is used as a feedstock, digestate from the AD can be returned to the grassland as a fertiliser thus completing the cycle in a sustainable manner.

The recently published EU Strategy to reduce methane emissions explicitly identifies the role that AD can play in reducing emissions from agriculture. In the EU, agriculture is the biggest contributor to manmade methane emissions, accounting for 53% of all emissions, followed by 26% from waste and 19% from energy. Within agriculture itself, most of these emissions come from livestock itself with enteric

⁴ <https://www.teagasc.ie/media/website/publications/2011/5819-Anaerobic-Digestors.pdf>

fermentation accounting for around 80% of all methane emissions, with close to 20% coming from manure management.

2.3 Transport and Infrastructure

How can we best promote and support a modal shift towards more sustainable modes of transport?

CNG provides a lower carbon alternative to diesel for heavy goods vehicles (HGVs) and buses. Even though HGVs made up just 4% of registered⁵ vehicles nationally in 2018, SEAI estimates indicate that they produced 14% of total transport emissions. Decarbonisation of HGVs and buses is particularly challenging as electricity is currently not a viable alternative to diesel. CNG has the potential to address these transport emissions with reduced carbon emissions relative to diesel. When the production of renewable gas is increased on the gas network, and this gas is utilised by CNG vehicles as bio-CNG, carbon neutral transport can be achieved. In addition to reduced carbon emissions, CNG also provides improved air quality with less particulate matter, Nitrogen Oxide and Sulphur Dioxide relative to diesel. Encouraging HGV operators to switch from diesel to CNG and bio-CNG would make for a more sustainable transport sector in County Clare.

The development of CNG is supported by the 'Regional Spatial and Economic Strategy for the Southern Region' (RSES for the Southern Region)⁶ which has an objective to "support investment in the sustainable development of CNG refuelling stations aligned with the TEN-T corridors as a renewable technology for servicing public service vehicles and commercial fleets" in RPO 93. The RSES for the Southern Region also supports 'investment in developing renewable gas and provision of CNG refuelling infrastructure which will help reduce the Green House Gas emissions in both the agriculture and transport sectors' as part of RPO 225.

GNI suggests that the Transport and Infrastructure section of the Development Plan includes wording to support CNG infrastructure as follows:

"Compressed Natural Gas (CNG) Infrastructure

The development of CNG Infrastructure will enable fuel switching from diesel to CNG for heavy goods vehicles (HGVs). This will lead to a reduction in carbon emissions along with air quality benefits for vehicles currently using diesel. There will be a presumption in favour of applications for CNG infrastructure provided planning and environmental criteria are satisfied."

2.4 Climate Change, Renewable Energy and Environment

What renewable energy do you consider most efficient?

Renewable gas is an efficient source of renewable energy which is produced through the utilisation of waste and other feedstocks in AD. AD plants⁷ can utilise a wide variety of feedstocks ranging from food

⁵ In calculating this figure SEAI include all goods vehicles over 2 tonnes.

⁶ Southern RSES: https://www.southernassembly.ie/uploads/general-files/Regional_Spatial_Economic_Strategy_for_the_Southern_Region_LOW_RES.pdf

⁷ SEAI, 2017 Assessment of Costs and Benefits of Biogas and Biomethane

wastes, to animal slurries to specifically grown energy crops such as grass silage, breaking them down to produce biogas, a mixture of methane (CH₄) and carbon dioxide (CO₂). This biogas can be combusted in boilers to produce heat, or in combined heat and power plant (typically) gas engines to provide both heat and electricity. Alternatively, the biogas can undergo further upgrading to remove the CO₂, to produce an almost pure stream of biomethane. This biomethane can then be injected into the gas network at appropriate points and be transported along with the natural gas to all gas consumers.

How can the County Development Plan tailor its policies on renewable energy to support industry but also protect the landscapes, amenity and ecology?

The County Development Plan could include policies that promote renewable energy production that also contributes to the circular economy, for example, AD from waste materials. As outlined in the EU methane strategy⁸, through the anaerobic digestion process non-recyclable human and agricultural waste (i.e. manure) and residue streams can be utilised to produce biogas. As well as this, waste from material from the AD process, known as digestate, can be used as an effective nitrogen fertiliser on grassland with a low environmental impact. Digestate from the anaerobic digester can be returned to the grassland as a fertiliser thus completing the cycle. This is one of the key benefits of AD.

Renewable gas was first introduced to the Irish gas grid through an injection point in County Kildare, supplied by Green Generation, in August 2019. A recent deal between Tesco⁹ Ireland and Green Generation sees Tesco supplying 6,400 tonnes of food waste per annum to Green Generation for conversion to renewable gas. This renewable gas is injected into the gas network at the Kildare injection point. In turn Tesco is purchasing this renewable gas and using it to supply six Tesco stores. This results in carbon savings of 1,200 tonnes per year for Tesco and supports the circular economy.

How can the County Development Plan facilitate the transition to a low carbon society?

To successfully transition to a low carbon society, economic and environmental benefits are key. The plan should provide examples of how low carbon policies can directly impact society. Below are examples of where the gas network can be used to transition to a low carbon society.

Renewable Gas:

The development of renewable gas production in the region will provide significant economic benefits to the local agriculture sector and rural economy. AD plants located in rural areas will provide additional revenue sources for these communities, from the sale of feedstocks for the AD plants, bio-fertiliser and renewable gas. The SEAI¹⁰ estimate that stimulating a renewable gas industry in Ireland could contribute directly to over 5,000 jobs during plant construction and over 3,000 jobs in plant operations. With ongoing uncertainty regarding agricultural exports to the UK, post Brexit supplementary income streams for farming are important. Also, agricultural sector emissions are reduced as the AD process captures greenhouse gases that would otherwise be released to the atmosphere.

⁸ https://ec.europa.eu/energy/sites/ener/files/eu_methane_strategy.pdf

⁹ Irish Times – Tesco to cut emissions by converting waste food from Irish stores to gas:
<https://www.irishtimes.com/business/energy-and-resources/tesco-to-cut-emissions-by-converting-waste-food-from-irish-stores-to-gas-1.4271907>

¹⁰ SEAI, 2017 Assessment of Costs and Benefits of Biogas and Biomethane

The development of renewable gas is supported by the 'Regional Spatial and Economic Strategy for the Southern Region' (RSES for the Southern Region) which has an objective to develop "new low carbon heat sources" in the region including renewable gas heat technologies as set out in RPO 105¹¹. In RPO 225, the RSES supports the promotion of "renewable gas leading to carbon emission reduction in agriculture, industry, heating and transport as well as sustainable local employment opportunities" and it also supports "the transition of the gas network to a carbon neutral gas network by 2050 which will drive Ireland and the region to becoming a low carbon society".

GNI suggests that the Climate Change, Renewable Energy and Environment section of the new County Development Plan includes a section with wording supporting renewable gas as follows:

"Renewable Gas

There is potential to produce renewable gas from Anaerobic Digestion of organic wastes and residues of the agriculture sector and from domestic/commercial food waste.

Renewable gas is carbon neutral and identical in function to natural gas so the existing network can be used, and gas customers do not need to change their boilers or gas-powered appliances.

There will be a presumption in favour of applications for anaerobic digestion plants provided planning and environmental criteria are satisfied."

Industry:

Natural gas can help companies with large energy requirements to significantly lower their carbon emissions by switching from heavy fuel oil and coal. Converting to gas also allows these companies the opportunity to use renewable gas without any further changes to their boilers or gas-powered appliances. This gives companies an avenue to become carbon neutral which will help to retain jobs in the area.

Transport:

The refuelling times of CNG vehicles are as fast as diesel and petrol with similar travel ranges. As CNG stations are connected directly to the natural gas grid, it is always on and always available. The rollout of a network of CNG refuelling facilities has commenced with 14 fast fill CNG stations being installed across the Core TEN-T road network via a project called the Causeway Study that is supported by the European Commission through the CEF Transport Fund and by the Commission for Regulation of Utilities (CRU). Two of these stations are already operational, including one at Dublin Port. This project helps support the 'National Policy Framework: Alternative Fuels Infrastructure for Transport in Ireland (2017 to 2030)', which sets out a target network of 70 CNG refuelling stations by 2025¹². This document also forecasts Alternative Fuelled Vehicles for 2025 and 2030 i.e. 4,050 CNG commercial vehicles in Ireland by 2025, growing to 6,050 CNG commercial vehicles by 2030. Under the Causeway Study, GNI also offered a publicly available fund to support the purchase of CNG vehicles by commercial operators which has been fully subscribed.

¹¹ Southern RSES - RPO 105 - RPO 225: https://www.southernassembly.ie/uploads/general-files/Regional_Spatial_Economic_Strategy_for_the_Southern_Region_LOW_RES.pdf

¹² National Policy Framework: Alternative Fuels Infrastructure for Transport in Ireland (2017-2030) <https://assets.gov.ie/26377/3075c29a37b84b10acae95da89d756ea.PDF>

Following the completion of planned CNG stations under the Causeway Study, a further 21 public CNG refuelling stations will be built under a project called Green Connect. This project will also include CNG mobile refuelling units for backup, additional renewable gas injection facilities and a CNG vehicle grant scheme to encourage fleet operators to switch to CNG vehicles. In 2018, GNI received approval for €11.6m of EU funding under the CEF Transport Fund for the Green Connect project.

3 Conclusion

GNI asks that the Council considers the above response in relation to the Development Plan for 2022 - 2028. The gas network is a transporter of relatively low carbon energy and is adapting to climate change with significant potential for mitigation measures to prevent carbon emissions. GNI asks that the Council considers the role that renewable gas and CNG in transport can play in reducing carbon emissions in the region and their contribution to providing economic benefits to the local economy. Council support for anaerobic digestion plants, CNG refuelling stations and renewable gas injection points would help establish these technologies in the region and contribute to the transition to a low carbon economy in the County.

GNI would welcome the opportunity to discuss this response in more detail and can provide further information on any of the topics discussed.