



**Gas
Networks
Ireland**

**Department of Housing, Planning and
Local Government**

**Ireland 2040: National Planning
Framework**

Gas Networks Ireland Response

10th November 2017

Introduction

Gas Networks Ireland (GNI) welcomes the publication of the Draft National Planning Framework (NPF) and the opportunity to comment on the document. GNI recognises the amount of work that has gone into the NPF document by the Department of Housing, Planning and Local Government and other Government departments.

GNI owns, operates, builds and maintains the gas network in Ireland and ensures the safe and reliable delivery of gas to its customers. It was incorporated on the 13th of January 2015 as a fully owned subsidiary of Ervia (formally known as Bord Gáis Éireann). GNI is responsible for the safe, reliable and efficient transportation of Ireland's gas demand (representing 30% of Ireland's primary energy) through the state-owned natural gas network. The gas network has been developed since gas was established in the late 1970's and the network today consists of over 11,000 km of distribution pipelines and almost 2,500 km of transmission pipelines. GNI is working to continually advance the utilisation of the gas network for the benefit of Ireland.

GNI's response focuses on the following areas which are expanded in the table below. GNI would like to see its recommendations reflected in the three Regional Plans and the Local Authority Plans that will implement the objectives of the NPF after its publication.

NPF Chapter	GNI Recommendation
Chapter 4: Planning for Diverse Rural Places	The NPF should support policies that facilitate renewable gas leading to carbon emission reduction in agriculture, industry, heating and transport as well as sustainable local employment opportunities.
Chapter 7: Working with Our Neighbours	National Policy Objective 49 should be expanded to include the security of Ireland's gas supply. New public transport routes between large urban areas in Ireland and Northern Ireland provides an opportunity to use CNG powered buses which have lower emissions, noise levels and fuel costs than diesel equivalents.
Chapter 8: Realising Our Sustainable Future	GNI recommends that Ireland should adapt and champion a set of hard targets for renewable gas. GNI has a stated objective of facilitating 20% renewable gas on its network by 2030. Renewable gas will help Ireland reach its emission reduction targets as well as having many circular economy benefits. The use of compressed natural gas (CNG) in transport must be supported as it will result in improved air quality and create a pathway for renewable gas in transport.
Chapter 9: Implementation and Investment	CNG should be considered as the fuel of choice for buses and heavy goods vehicles. Renewable gas should be included in the section on Transition to Sustainable Energy. Effective waste management should include separation of waste to allow organic waste to be used for renewable gas production.

Chapter 4: Planning for Diverse Rural Places

GNI is supportive of planning and investment in rural areas to support job creation. There is a real opportunity to use Ireland's rural resources to reduce our green house gas (GHG) emissions and to sustain local employment.

National Policy Objective 20

Enhance the competitiveness of rural areas by supporting innovation in rural economic development and enterprise through the sustainable diversification of the rural economy into new sectors and in particular those with a low or zero carbon output.

GNI is supportive of National Policy Objective (NPO) 20 and is strongly in favour of innovation in rural areas. There is an opportunity for farms and rural areas to diversify into energy production through the use of farm waste to create biogas which can be upgraded to biomethane and injected into the gas network as a renewable gas. The agricultural sector has high levels of GHG emissions with limited avenues for decarbonisation. The use of farm wastes to produce biogas is a way of addressing these GHG emissions and creating an energy source with a low or zero carbon output.

National Policy Objective 21

Facilitate the development of the rural economy through supporting a sustainable and economically efficient agricultural and food sector, together with forestry, fishing and aquaculture and diversification into alternative on-farm and off-farm activities, while at the same time noting the importance of maintaining and protecting the natural landscape and built heritage which are vital to rural tourism.

GNI is particularly supportive of NPO 21. The development of a renewable gas industry will support a sustainable and economically efficient agricultural and food sector. Both food waste and agricultural wastes can be converted to biogas via anaerobic digestion. This will allow farmers to diversify into an alternative on-farm activity that produces a valuable fuel source while addressing agricultural GHG emissions. The biogas that is produced on farm can be used as a fuel source on the farm or can be injected into the gas network. Renewable gas is an extremely flexible and efficient fuel that can be fully accommodated into the existing gas network which provides the rural bioeconomy with access to over 650,000 industrial, commercial, and residential customers. Renewable gas can be used by the agri-food and beverage industries which have very high thermal energy demands that can only be effectively supplied with gas energy. There is also significant demand for renewable gas as a heating and transport fuel from industry. GNI is committed to integrating indigenous renewable gas production and grid injection, to facilitate and secure access to carbon neutral renewable gas for a large consumer base with thermal heat demand. This will also be critical in attracting new manufacturing companies to Ireland as these industries typically rely on secure thermal energy supply and increasingly require sustainable energy as a pre-requisite in choosing where to locate in Europe.

Chapter 7: Working with Our Neighbours

Working with our neighbours is an important part of the NPF and GNI is supportive of coordination of investment in infrastructure.

National Policy Objective 49

Strengthen all-island energy infrastructure and interconnection capacity to enhance security of electricity supply.

GNI is particularly supportive of NPO 49, however, it needs to be expanded to include gas. The gas interconnector system is made up of an onshore system in Scotland and two high pressure gas interconnectors that come to shore just north of Dublin. The interconnector system has transported 93% of Ireland's natural gas demand in recent years, prior to gas flowing from the Corrib gas field. Northern Ireland (NI) owns and operates a pipeline (the SNIP¹) that is connected to the onshore Scotland section of the Irish interconnector system and relies heavily on this connection for its supply of natural gas. In addition, NI has a pipeline of over 150km in length that runs from Dublin into the North which provides security of supply as an alternative route for gas to NI. The Isle of Man (IOM) is also supplied natural gas via Ireland's second sub-sea interconnector (IC2). There is a significant interdependency between the electricity and gas systems in Ireland, with almost 50% of Ireland's electricity generated by gas fired power plants. GNI believes that the security of gas supply is as important, if not more important than the security of Ireland's electrical interconnection for the security of electricity supply.

GNI believes that the UK's decision to leave the EU may pose some potential risks from an energy perspective but is committed to working with industry partners to ensure that there will be little or no impact on the operation of the gas network, particularly in terms of security of supply. The NPF should support this commitment and ensure that interconnection of gas is included in the NPOs.

National Policy Objective 48

Support enhanced public transport connectivity between large urban areas in Ireland and Northern Ireland.

GNI is also supportive of NPO 48. Opening up new routes connecting Ireland and Northern Ireland provides the perfect opportunity to invest in cleaner and more cost efficient public buses. CNG is the perfect partner for these new bus routes. GNI is actively supporting the development of Compressed Natural Gas (CNG) for use in transport vehicles. The rollout of a network of CNG refuelling facilities has already commenced with planned stations on the TEN-T road network between Dublin and Belfast. Initially using natural gas, CNG vehicles will see a reduction in CO₂ emission of up to 22% compared with their diesel counterparts and a significant reduction in other tailpipe emissions, such as nitrogen oxide, sulphur dioxide and particulate matter. As the production of renewable gas is scaled up and used in transport as bio-CNG, even greater lifecycle CO₂ emission reductions can be achieved.

CNG is a proven, mature technology for public service vehicles and commercial fleets. In addition reducing CO₂, CNG also results in savings of 70% less Nitrogen Oxide, 80% less Sulphur Dioxide and 99% less particulate matter when compared to diesel. It also offers a fuel cost saving of up to 35% over diesel for commercial users. Buses and commercial fleets are used for longer journeys, carry larger loads, and tend to be in use on a continuous basis. These factors make the rapid refuelling time and convenience of CNG ideal for this market.

¹ Scotland Northern Ireland Pipeline (SNIP)

National Policy Objective 50

Develop a stable, innovative and secure digital communications and services infrastructure on an island basis.

GNI is supportive of NPO 50. Aurora Telecom, a division of GNI, is Ireland's leading backhaul dark fibre service provider. Aurora Telecom owns and operates extensive metropolitan and national backhaul fibre network. The interregional network links Dublin to Galway via Athlone and Mullingar and to Cork City via Ennis, Shannon and Limerick. The national network also extends into Co. Mayo. We are continuing to invest in our state-of-the-art national fibre network with a ambitious project linking from Cork to Dublin via Waterford and Carlow. When completed, this will provide our customers with a fully resilient national network, with the lowest latency in the market.

As part of Ervia a multi utility organisation Aurora can collaborate with GNI and Irish Water to provide a combined build approach to maximise efficiency on builds and reduce costs, enabling further geographic development of the Aurora network. We are engaging with GNI and Irish Water on an ongoing basis to identify areas where we can implement this strategy. These networks can help support broadband backhaul, which enables broadband services to reach communities.

The network is the most modern, carrier grade, backhaul dark fibre network in Ireland and has been constructed using the latest fibre optic technology. It delivers superior performance and provides a reliable and secure base layer for carriers and enterprise to deliver their connectivity solutions. The construction of Aurora's fibre infrastructure along with the gas utility infrastructure makes the network more secure than other network infrastructures. Aurora uses the same fibre grade (G652D) and the same manufacturer throughout the network which provides the lowest possible attenuation per splice joint, this has allowed us to secure national backhaul business due to our best in class optical budgets.

Aurora's core value proposition is about providing carrier class, bespoke, scalable, high-speed solutions for carriers, supporting their shift to dedicated, un-metered, scalable fibre networks. It is also about providing unmatched security and capacity for businesses, enabling them to construct all connectivity and communications needs at a fixed cost.

Chapter 8: Realising Our Sustainable Future

GNI believes that realising our sustainable future is an essential part of the NPF.

National Policy Objective 55

Support the circular and bio economy through greater efficiency in renewable resources and land management and by reducing the rate of land use change from urban sprawl and new development.

GNI is supportive of NPO 55 and committed to supporting the development of Ireland's bioeconomy by promoting the production of indigenous renewable gas and decarbonising the gas network. GNI is working with many stakeholders to foster the development of renewable gas in Ireland, with the stated objective of facilitating 20% renewable gas in its gas network by 2030. Grass can be grown on poor quality land as a source for renewable gas through anaerobic digestion. The use of agricultural material such as manure, slurry and other animal and organic wastes for biogas production has, in view of the high GHG saving potential, significant environmental advantages in terms of heat and power production and its use as a biofuel. Many biogas feedstocks are located at or close to the gas network making it relatively easy for biogas to be produced, upgraded and injected into the network. The production of biogas is an excellent way for the agricultural sector to address its emission levels, create employment in rural areas and develop a new source of revenue.

GNI would like to highlight some circular economy benefits that can be achieved by supporting renewable gas:

- sustainable processing of wastes/residues,
- production of bio-fertilizer,
- the improvement in soil, water and air quality,
- the production of indigenous, clean, efficient, versatile and sustainable energy,
- providing carbon neutral and secure energy supply for bio-industries,
- high premium carbon credentials for the bioeconomy industries and their products.

Cross sectoral representation is critical to supporting and responding to developments in the bioeconomy. GNI wishes to actively participate in supporting this endeavour.

GNI recommends that the bioeconomy strategy / policy for Ireland should adapt and champion a set of hard targets and not just aspirations. Hard targets should include the renewable gas target for 2030 and other key industry / sectoral targets. As well as facilitating decarbonisation of the agri-sector supply chain, renewable gas is a cost-effective and indigenous carbon neutral fuel that can displace imported fuel/energy for heat, transport and electricity generation.

National Policy Objective 57

Promote renewable energy generation at appropriate locations within the built and natural environment to meet objectives towards a low carbon economy by 2050.

GNI is supportive of NPO 57 which is particularly relevant for renewable gas. Rural areas can play a larger role in energy generation with the production of renewable gas on farms and in rural areas. Anaerobic digesters are unobtrusive and blend in with other farm buildings in the natural environment. There is significant potential for agri-based anaerobic digestion to form part of Ireland's strategic energy resources and contribute to the circular and bioeconomy.

National Policy Objective 61

Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, green infrastructure planning and innovative design solutions.

GNI is supportive of NPO 61 and is actively supporting the development of CNG for use in transport vehicles. The rollout of a network of CNG refuelling facilities has already commenced. This will provide an alternative to diesel for trucks, buses and vans and will reduce Ireland's reliance on imported oil. Initially using natural gas, CNG vehicles will see a reduction in CO₂ emission of up to 22% compared with their diesel counterparts and a significant reduction in other tailpipe emissions, such as nitrogen oxide, sulphur dioxide and particulate matter. As the production of renewable gas is scaled up and used in transport as bio-CNG, even greater lifecycle CO₂ emission reductions can be achieved.

National Policy Objective 62

Promote the pro-active management of noise where it would have significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans.

As well as a large reduction in emissions, CNG vehicles also decrease noise pollution by having a smoother and more silent engine performance compared to diesel engines.

Chapter 9: Implementation and Investment

GNI welcomes the inclusion of the following National Strategic Outcomes:

- Sustainable Mobility
- A Strong Digital Economy
- Transition to Sustainable Energy
- Sustainable Management of Water and other Environmental Resources

Sustainable Transport:

GNI welcomes the intention to strengthen public transport connectivity between cities and large growth towns in Ireland and Northern Ireland. With fast refuelling time and similar performance to diesel engines, CNG is the perfect partner for these new bus routes. CNG buses greatly reduce GHG emissions, particulate matter and fuel costs compared with their diesel counterparts. As the production of renewable gas is scaled up and used in transport as bio-CNG, even greater lifecycle CO₂ emission reductions can be achieved.

A Strong Digital Economy:

GNI notes the reference to the National Broadband Plan and would like to highlight that Aurora Telecom, a division of GNI, is Ireland's leading backhaul dark fibre service provider. As mentioned earlier in this document, Aurora owns and operates an extensive national backhaul fibre network across Ireland. Aurora's Dublin Metropolitan Area Network has one of the most extensive dark fibre network footprints in Dublin. Aurora owns and operates its own cable and fibre infrastructure which has enabled it to build true network resilience through its network's ring topologies. The Aurora network links the city's commercial centre with all business parks on the periphery of the city. It also provides network interconnection with all key data centres in the capital and with all available local, national and global carriers.

The Aurora network in Ireland is of the highest quality with best-in-class security, resilience, performance and latency. It is particularly suitable for high capacity data transportation and international connectivity. This makes it the perfect solution for the fibre requirements of carriers, data centres and multi-national enterprises. In addition, it ensures dedicated, un-metered and completely secure, high-speed fibre connectivity for corporations in Ireland.

Our Dublin MAN provides network interconnection with key data centres and with all available local, national and global carriers. By closing our National network, and providing a fully resilient national ring we can provide additional security to our customers. This then allows us to backhaul traffic from the landing sites of submarine cables and provide diverse routing. With connectivity between our main data centres and our links off the island we can provide a stronger digital economy.

Transition to Sustainable Energy:

GNI notes and welcomes the inclusion of carbon capture and storage. In addition to the electricity network, renewable gas should also be included in this section. There are extensive sources of biogas (agricultural, waste water etc.) available in Ireland, with some biogas feed stocks either on or very close to the gas network. Biogas can be upgraded to biomethane, which is a form of renewable gas, and injected directly into the gas network. This can occur where the network is close to the source of renewable gas, or the renewable gas can be collected and centrally injected into the gas network. Renewable gas provides diversity of supply, enhancing energy security and increasing the penetration

of renewables. Renewable gas also complements natural gas and provides a self-sustaining, clean, green and reliable source of energy.

GNI is currently working on a renewable gas injection facility project with Green Generation Ltd. to enable renewable gas to be injected into the gas network by late 2017/early 2018. Furthermore, GNI is working with many stakeholders to foster the development of renewable gas in Ireland, with the stated objective of facilitating 20% renewable gas in our network by 2030. In a recent report, SEAI have given a breakdown of how this may be achievable². The development of Power to Gas, which converts excess intermittent renewable energy, such as wind or solar energy, into gas through electrolysis and methanation will also provide a sustainable source of renewable gas into the future.

Sustainable Management of Water and other Environmental Resources

GNI welcomes the inclusion of 'Effective Waste Management'. GNI suggests that unprocessed municipal waste should be banned from export due to the high organic content in much of the residual waste which is currently exported. The organic content in a residual bin can be as high as 75% for a commercial premises with a 3 bin collection system. This suggests that source separation of waste needs to be improved. Source separation of waste could be incentivised by having a lower pay by weight cost associated with brown bin collections. This would encourage source separation of waste making this valuable resource available for renewable gas production.

Conclusion

In conclusion, Gas Networks Ireland welcomes the Draft National Planning Framework (NPF) and recognises the work has gone into creating the document but is concerned that the document focuses primarily on electricity when referring to energy. The national policy objective about strengthening all-island energy infrastructure and interconnection capacity to enhance security of electricity supply omits any reference to the security of gas supply. Gas Networks Ireland is currently undertaking a European funded project to strengthen the security of supply of its interconnection system. This security of gas supply project is considered to be a European Project of Common Interest.

In general, Gas Networks Ireland is concerned that the plan for addressing climate change in Ireland tends to be too narrowly focused on electrification and renewable electricity. While GNI recognises that wind energy makes a great contribution to Ireland's renewable energy targets, there are also other types of renewable energy available which should be supported. The transport and heat sectors need to be decarbonised and this will require different solutions and a mix of renewable energy technologies. By developing a renewable gas industry, Ireland can tackle emissions from electricity, transport and heating while supporting indigenous renewable gas producers which benefits rural Ireland. Renewable gas can play a significant role in meeting the national policy objectives set out in the Draft National Planning Framework.

Gas Networks Ireland welcomes the inclusion of Carbon Capture and Storage (CCS) in the draft NPF. Natural gas is the cleanest fuel source for providing conventional electricity generation and CCS has a significant role to play in decarbonising electricity generation and reducing industrial emissions. GNI is developing a CCS Project which has the capacity to reduce emissions from electricity generation by

² SEAI: Bioenergy Supply in Ireland 2015-2035, Appendix 6, Enhanced Supply
https://www.seai.ie/Publications/Renewables_Publications_/Bioenergy/Bioenergy-Supply-in-Ireland-2015-2035.pdf

more than 40% in the medium term, and thereby make a significant contribution to achieving a low carbon economy in Ireland.

Gas Networks Ireland would welcome the opportunity to engage with the Department of Housing, Planning and Local Government, and other government departments, on the National Planning Framework.