Department of Housing, Planning and Local Government

Ireland 2040: National Planning Framework

Gas Networks Ireland Response

31st March 2017

Introduction

Gas Networks Ireland (GNI) welcomes the opportunity to respond to the consultation on Ireland 2040: The National Planning Framework published by the Department of Housing, Planning and Local Government. GNI was incorporated on the 13th of January 2015 as a fully owned subsidiary of Ervia (formally known as Bord Gáis Éireann). GNI owns, operates, builds and maintains the gas network in Ireland and ensures the safe and reliable delivery of gas to its customers. GNI is working to continually advance the utilisation of the gas network for the benefit of Ireland. It is a progressive, trusted and responsible gas infrastructure company with a strong customer focus and commercial ethos that contributes to Ireland's social and economic progress.

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 network today consists of over 11,000 km of distribution pipelines and almost 2,500 km of transmission pipeline. The gas network has been developed since gas was established in the late 1970's, with network investment of over €2.8 billion to meet the demands of the Irish economy. The gas network supplys energy to 14 power stations, more than 23,000 multi-nationals and businesses and over 647,000 homes. GNI has demonstrated foresight and prudence in building an efficient gas network with sufficient capacity to meet the gas demands of a modern Ireland competing in the global economy.

Ireland is currently behind on meeting its targets for renewable energy which could result in referral to the European Court of Justice, with significant fines and sanctions likely. Heating and transport account for 69% of Ireland's energy-related CO_2 emissions due to the dependence of these sectors on oil as their primary fuel source (98% in transport and 44% in heating). The Government's White Paper1 recognises the need to reduce our carbon footprint by replacing the use of oil with natural gas:

"non-renewable energy sources will make a significant – though progressively smaller – contribution to our energy mix over the course of the energy transition. In the short to medium-term, driven by carbon pricing, the mix of non-renewables will shift away from more carbon-intensive fuels, like peat and coal, to lower-carbon fuels like natural gas." Furthermore, GNI is committed to decarbonising the gas network and is working with many stakeholders to foster the development of renewable gas in Ireland. Renewable gas is a clean, sustainable, carbon neutral fuel and can be produced by anaerobic digestion, gasification and power to gas technologies. 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 also a form of renewable gas and injected directly into the gas network where the network is close to the source of biomethane, or can be collected and centrally injected to the gas network. Renewable gas provides diversity of supply, enhancing energy security and increasing penetration of renewables. Renewable gas also complements natural gas and provides a self-sustaining, clean, green and reliable source of energy. GNI believes that 20% of the gas in the network can be renewable gas by 2030.

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. 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 CO_2 emission of up to 22% compared with their diesel counterparts and a significant reduction in other tailpipe emissions, such as nitrogen

[1] White Paper – Ireland's Transition to a Low Carbon Energy Future 2015-2030

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 CO_2 emission reductions can be achieved.

Chapter 3: People's Health and Well-Being

3. Are there key priorities the NPF can identify to ensure better or improved health and wellbeing of people and places in Ireland?

There are two key priorities relating to the use of CNG in transport and the production and use of renewable gas that GNI believes would ensure better or improved health and wellbeing for people and places in Ireland.

i. If diesel vehicles, particularly HGV's, LGV's and buses, are transitioned to CNG considerable benefits can be achieved with regardd to air quality. CNG provides a reduction in CO_2 emissions of up to 22% compared with diesel and it also delivers significant reductions in other tailpipe emissions, such as nitrogen oxide, sulphur dioxide and particulate matter as well as significant noise reduction.
ii. The production and use of biogas which can be upgraded to a renewable natural gas and injected into the gas network has many benefits and gives customers access to renewable gas which is carbon neutral. Access to renewable gas in the gas network will allow many industries and homes to decarbonise in a convenient way and at a low cost which has benefits for the environment. In addition, renewable gas can be used in transport which facilitates a greater reduction in emissions and leads to better air quality and a better environment overall.

Chapter 4: A Place-Making Strategy

16. How can the NPF capture (in a national, strategic policy context) the range and quality of resources that exist in rural areas that could be leveraged to support national economic growth, climate action objectives and the development of local communities?

There is an opportunity for biogas production in rural areas through the use of farm waste to create biogas which can be upgraded and injected into the gas network as a renewable gas. The agricultural sector has high levels of green house gas (GHG) emissions with limited avenues for decarbonisation. The use of farm wastes to produce biogas is a way of addressing these emissions and creating a useful source of energy. 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. Gas Networks Ireland believes that the NPF should support policies that facilitate biogas production, the upgrading of biogas to bio-methane and the injection of bio-methane into the gas grid as a safe and secure means of transporting renewable gas.

17. What are the solutions to maintaining population in those rural areas where decline has been experienced?

Local employment is key to mainting population in rural areas. A renewable gas industry will provide substantial rural employment opportunities, not only in the production of renewable gas, but also in attracting new companies who wish to reduce their carbon emissions. There is significant demand for renewable gas as a heating and transport fuel from industry. In addition, the circular economy benefits will also deliver a major decarbonisation benefit for Agriculture and 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. Policies that support biogas production can help to maintain populations in rural areas that have experienced declining populations.

Chapter 5: Ireland's Unique Environment – Sustainability

31. How can the NPF help to ensure we get a sustainable balance between catering for a growing population and avoiding or addressing environmental pressures?

Avoiding or addressing environmental pressures could be achieved in part by focusing on the efficient use of brown waste e.g. the creation of renewable gas which can displace existing fossil fuels. If the NPF promotes the development of a renewable gas sector in Ireland it will provide for more efficient and sustainable elimination of waste through the production of renewable gas which is a renewable energy source.

32. How do we plan for growth in such a way that supports a transition to a low carbon and climate resilient economy and what planning policy measures are needed to achieve this?

In order to transition to a low carbon and climate resilient economy Ireland must look at different sources of renewable energy. A lot of progress has been made with wind energy and greening the electricity grid but there is a huge opportunity to green the gas grid which will give customers more choice for switching to low carbon options. Greening the gas grid through the use of renewable gas also helps create a climate resilient economy as renewable gas can be produced from indigenous sources including food and farm waste. For the most part the infrastructure to transport renewable gas is already in place with the current gas grid. All that is required for the gas network is the installation of a number of renewable gas injection facilities.

The rollout of a network of CNG refuelling facilities has already commenced. CNG vehicles will see a reduction in CO_2 emission of up to 22% compared with their diesel counterparts and 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 CO_2 emission reductions can be achieved.

33. 'What strategic energy infrastructure is needed to support the economy and society and realise the transformation of Ireland's energy system to meet climate change and energy obligations and in what areas should it be located?

i. GNI believes that CNG refuelling infrastructure is an immediate priority to decarbonise the transport sector.
ii. In the short to medium term, an important infrastructure priority is the installation of renewable gas injection points to facilitate the injection of renewable gas into the gas network to allow decarbonisation of both the heat and transport sectors.

iii. In the longer term, investment in power-to-gas[2] and carbon capture and storage (CCS)[3] will help both the electricity and gas networks to decarbonise further.

34. Are there any other national environmental issues that you think should be included within the NPF and that are within the remit of planning policy?

Supporting the installation of CNG refuelling stations will help to reduce harmful diesel emissions which have a negative impact on air quality and noise pollution in Ireland. Policies that support the installation of CNG refuelling stations would contribute to addressing air quality issues.

36. What measures should be implemented in order to safeguard our landscapes, seascapes and heritage and ensure that Ireland continues to be an attractive place to live, visit and work?

Policy should ensure that the waste resources that we have are used properly. All organic waste should be directed to anaerobic digestors to produce biogas. This would ensure that organic waste resources are not used in incinerators so that the opportunity to create renewable gas from it is not lost.

Chapter 6: Equipping Ireland for Future Development – Infrastructure

38. What do we need to do to make best use of existing infrastructure?

The interdependency between the gas and electricity networks should be recognised with a focus on maximising efficient utilisation of both networks. Ireland has considerable existing energy infrastructure which needs to be utilised properly before investing in large new infrastructure projects. The Irish gas grid is an infrastructure asset that is worth circa €2.8 billion that is capable of playing a central role in Ireland's low carbon economy. By supporting policies that increase connections to the gas network, particularly those consumers that are currently using oil or coal, considerable GHG emission reductions can be achieved. As the availablilty of renewable gas increases more gas customers will be able to decarbonise quickly and conveniently without needing to change their heating equipment. Increased use of gas fired generation instead of coal and peat power generation would help to reduce harmful emissions.

39. How can we ensure that the provision of infrastructure can be planned to match future demand and how can the NPF reflect this?

An understanding of the likely future demand and the ability of different parts of the energy system to meet the different types of demand is important. The energy system as a whole needs to be considered to ensure that the right infrastructure is in place to meet future demand. Policy should reflect the fact that Ireland's future energy needs are likely to come from a number of sources. It is important to have a diversified approach that uses existing infrastructure efficiently. Having a long

[2] Power-to-Gas can convert excess electricity from wind farms into green hydrogen (or synthetic methane) for heat and other uses such as transport.

[3] Using Steam Methane Reformers (SMRs), natural gas can be spilt into hydrogen and CO2. The hydrogen can then be pumped into the gas distribution network to provide carbon free fuel for heating, industry and transport. The CO2 is transported and stored permanently underground via Carbon Capture and Storage (CCS) technology. The use of CCS therefore allows clean dispatchable inertia from gas.

term plan that considers the efficient use of the whole energy network would ensure that future demand could be matched to the provision of infrastructure.

40. How can capital spending on new infrastructure be sequenced in a way that is affordable and equitable, while taking account of Ireland's Climate Change obligations?

A long term plan for the whole energy system and future infrastructure needs would be beneficial for planning reasons. Consideration should be given to the prioritisation of infrastructure Investments that can meet climate change obligations in a timely manner. Policy should support a long term commitment to the gas grid which can increasingly provide renewable energy to customers. Investments can be phased over a longer time period to avoid investment spikes and tariff volatility.