



Department of the Taoiseach

**Discussion document for the
preparation of a National Policy
Statement on the Bioeconomy**

Gas Networks Ireland Response

15th September 2017

Introduction & Summary:

Gas Networks Ireland (GNI) welcomes the opportunity to respond to the consultation on developing Ireland's Bioeconomy to inform a policy for smart, sustainable and inclusive growth. The key points in this response include GNI's commitment to support 20% renewable gas by 2030, representing a significant diversification opportunity for rural agri-businesses (farms) throughout Ireland. Renewable gas is an extremely flexible and efficient fuel that can be fully accommodated in our existing gas network and gives this new rural bioeconomy industry access to over 650,000 industrial, commercial, and residential customers. This volume of renewable gas can be used in multiple sectors, for example, it would represent the least cost solution to de-carbonise all of the gas residential sector, with clean and fully dispatchable on demand energy for heating and cooking. Alternatively it can be used by the bioeconomy industries and agri-food and beverage industries which have very high thermal energy demands that can only be effectively supplied with gas energy.

GNI's support for renewable gas will be instrumental to ensuring competitive energy market for manufacturing industries and is key to attracting and retaining foreign direct investment and for Ireland to be competitive in the export markets. GNI is also committed to supporting the development and rollout of infrastructure for Compressed Natural Gas (CNG) and renewable gas for the public transport and commercial transport sectors. Additional circular economy benefits enabled by GNI's support for renewable gas include;

- 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 recommend 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.

GNI recommend policy development within DAFM and EPA to give more appropriate recognition and incentivisation for use of indigenous bio-fertilizers.

GNI also recommend the establishment or appointment of a single Government Department and Minister to be responsible for delivering the specific National targets for the bioeconomy.

GNI commitment to supporting the development of Ireland's Bioeconomy

GNI is committed to supporting development of Ireland's bioeconomy. A key element of this is GNI's commitment to decarbonising the gas network with indigenously produced renewable gas. 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. 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 (sustainable agricultural resources, agri-food & beverage industry wastes, bio-pharmaceutical wastes, marine algae, etc.) available in Ireland which is recognised as having the highest potential resource for biogas per capita in all of Europe¹. Biogas can be upgraded to biomethane and injected directly into the gas network, or can be collected and centrally injected in regional Gas Entry Hubs.

In August 2017, GNI stakeholder partners launched a strategy to support the National rollout of Gas Entry Hubs which will enable the development of farm based biogas/biomethane and gas collection services, thus providing opportunities for diversification in agri-business and re-invigorate the rural economy. Biomethane provides diversity of supply, enhancing energy security and increasing penetration of renewables. Biogas and biomethane complement natural gas and provide a self-sustaining, clean, green and reliable source of energy. Bioeconomy industries (biopharmaceutical, food, beverage, etc.) are typically very high thermal energy consumers, and renewable gas represents the cleanest and most cost-effective carbon neutral energy to satisfy this demand. These industries also typically have significant challenges in managing volumes of biodegradable wastes and residues, for which the anaerobic digestion facilities being supported by GNI's renewable gas strategy represent the ideal circular economy solution.

Background; Who are Gas Networks Ireland (GNI)

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 supplies

¹The European Commission report from CE Delft in March 2017 highlighted Ireland as having the highest potential per capita in all of Europe for renewable gas, reference: "Optimal use of renewable gas from waste stream, An assessment of the potential of renewable gas from digestion in the EU beyond 2020", https://ec.europa.eu/energy/sites/ener/files/documents/ce_delft_3q84_biorenewable_gas_beyond_2020_final_report.pdf

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.

Response to consultation questions:

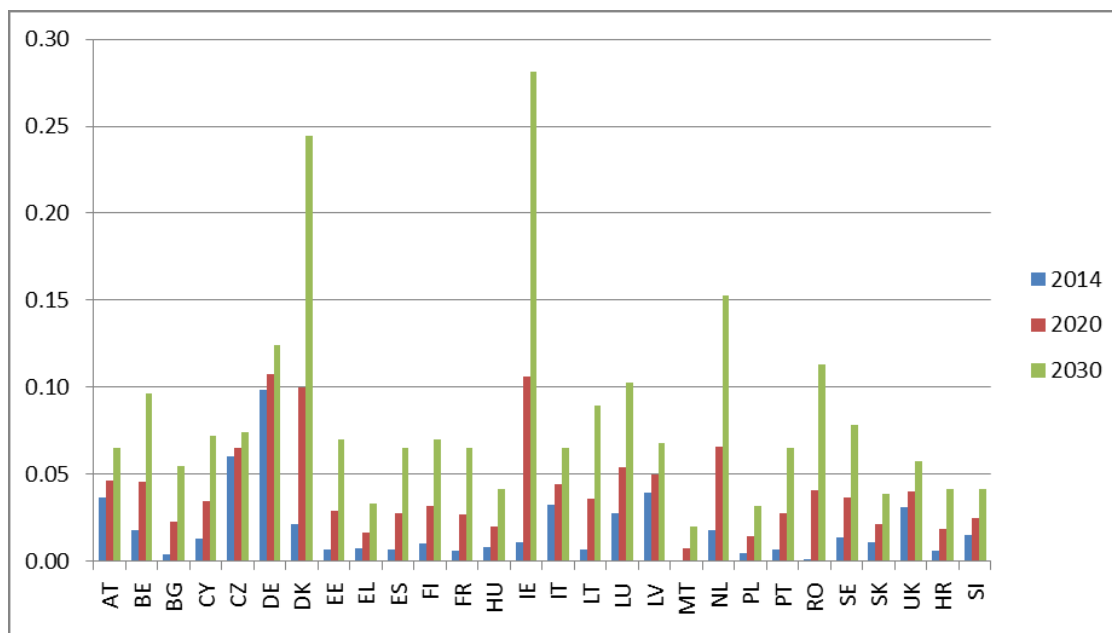
1. Does the broad definition outlined adequately encompass the opportunities presented by the bioeconomy?

GNI support this broad definition however believes that the opportunities should increase energy security of supply in Ireland and the least cost options to decarbonise heating, transport and electricity for the economy should take priority.

2. How can a high-level policy statement on the bioeconomy assist in progressing the development of the priority value chains identified?

GNI recommend that the policy statement should include recognition of Ireland's significant potential to produce sustainable renewable gas and become a net exporter in time. The European Commission report from CE Delft in March 2017 highlighted Ireland as having the highest potential per capita in all of Europe for renewable gas, reference: "Optimal use of renewable gas from waste stream, An assessment of the potential of renewable gas from digestion in the EU beyond 2020",

- https://ec.europa.eu/energy/sites/ener/files/documents/ce_delft_3g84_biorenewable_gas_beyond_2020_final_report.pdf



Growth forecast of renewable gas production per Member State (accelerated growth) in ktoe/1,000 inhabitants

The policy should also include specific targets to be achieved in order to measure progress and not endure fines for missing our 2020 and 2030 climate change targets.

Policy must engender public support for a successful bioeconomy. It should not limit scope of support measures exclusively to sectors/groups that have being selected for active engagement with to date. If policy is perceived as supporting only existing large industry and associated researchers, societal buy in, which is essential for acceptance of outputs from initiatives may not be forthcoming. Equally in context of cascading principle this should not rule out initiatives that are low cost and energy related that may be affordable to local enterprises and/or individuals.

3. What lessons can Ireland take from the European approach, including to the Circular Economy?

The principles of collaboration and cross-sectoral participation can be seen as a critical factor to the bioeconomy success stories across Europe. Realising circular economy benefits can only be achieved with multi-sectoral engagement and policy support/provisions for pilot testing. Special provisions and derogations are required for pilot scale field testing, demonstration, and development. This is critical for potential initiatives such as end of waste, by product development, bio-fertiliser development.

The government should also support Ireland's semi-states and companies working together in accessing EU funds to support circular economy benefits.

GNI would welcome the opportunity to collaborate with other stakeholders on the development of regulatory framework with the DAFM, EPA and other relevant authorities supportive of innovative processes.

4. Given the cross-sector nature of the bioeconomy, how can a national policy statement best support development?

GNI recommend 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 20% 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.

GNI recommend policy supports recognising and encouraging the development of indigenous renewable gas as a key enabler for rural development around the circular economy. Policy supports or obligations for the transition to decarbonised gas in key energy sectors of Heat, Transport, and Power Generation, including high efficiency distributed and autonomous generation with renewable gas. GNI also recommend policy development within DAFM and EPA to give more appropriate recognition and incentivisation for use of indigenous bio-fertilizers.

GNI recommend appointment of a government department and minister with overall responsibility to achieve clearly defined national targets and to support least cost measures to achieve national objectives.

GNI recommend the establishment (or adaption) of a National research competence centre for key bioeconomy areas. Modelling this centre upon the Marine & Renewable Energy Ireland

(MaREI) in Cork is one approach that should be considered. Significant issues exist in transitioning research to product in the context of financial and proactive institutional support of trialling and providing assistance towards establishing market acceptance. In particular the risk carried by entities supporting the early deployment of innovative technologies in the context of Regulatory compliance is a constraint on supporting same. A National research competence centre could address this effectively.

5. *Can we identify a common set of principles, including in particular the application of the cascading principle, which will assist in the development of both the bioeconomy and circular economy?*

GNI recommend the principle of environmental sustainability in full product lifecycle, including the supply chain, waste & residue management, and energy supply. GNI also recommend a market research strategy from the early development phase of any initiative. Extensive state support for initiatives and policies should not be progressed without clear market research demonstrating market demand and commercial value. State support should also consider that the principles consider the projects which deliver the greatest sustainability, most employment, reduce energy imports and the deployment at least cost.

6. *How can a national policy statement support local and regional cooperation around the use of renewable biological resources?*

Local and regional cooperation can be enhanced by early community engagement and buy-in and adoption of a “benefit” sharing models. Models exist in the fields of delivery of wind farms in Denmark and sustainable community power in Wales. Local engagement at a very early stage of all potential stakeholders and participation in developing a clear plan as to how projects might progress and benefits shared would greatly simplify implementation of Bioeconomy initiatives, e.g. supporting the agri-sector to produce biomethane, reducing emissions and increasing economic benefits, to inject into the national gas network.

7. *How can waste policy, including an examination of the definition of waste, best support developments in the bio and wider circular economy?*

GNI recommend:

- Policy development within DAFM and EPA to give more appropriate recognition and incentivisation for use of indigenous bio-fertilizers.
- Derogations from specific requirements of waste legislation for approved pilot trials. Consideration of exemptions should be on a multi-agency basis rather than by a specific regulator such that an holistic perspective on risk and potential benefits is taken.
- Reclassification of processes (and associated waste streams where used in such processes) where a process can be demonstrated to be viable and acceptable will avoid duplication of regulatory process, facilitate rollout of initiatives and significantly decrease sectoral costs.

- Recognition that to avail of opportunities, e.g. remediation or land enhancement projects, significant stockpiles of materials may be required to meet end user demands. This may entail storage of “waste” in excess of six months (currently requiring a licence to do so) to have adequate buffer to avail of opportunities where drip feeding of material is not technically or commercially viable.

8. *How can we stimulate market demand for bioeconomy products? What is in it for the consumer?*

GNI recommend:

- Policy and support measures for the three main energy sectors (Heat, Transport, Electricity Generation) should recognise and incentivise renewable gas supplied to the gas network. For example, Renewable Heat Incentive (RHI), Biofuel Obligation Scheme (BOS), and Renewable Electricity Support scheme for re-powering Central Gas Generation as well as Renewable Gas Distributed Generation.
- General Renewable Energy Policy needs to recognise the higher value and lower net cost of dispatchable renewable energy such as renewable gas. Dispatchable renewable gas energy is available on demand or as a demand response, that can use the inherent energy storage capacity of the gas network, and does not require other backup or supporting infrastructure and energy sources; it is also the highest efficiency fuel for Heat and Combined Heat & Power. Non-dispatchable energy such as intermittent wind and solar require significant additional backup and energy storage infrastructure (and costs). In assessing the cost impact to the taxpayer, the Levelised Cost Of Energy approach used today needs to be expanded to reflect the full net and true cost to the taxpayer / consumer to highlight the net cost benefit of dispatchable energy solutions.
- Policy supports or obligations for the transition to decarbonised gas in key energy sectors of Heat, Transport, and Power Generation, including high efficiency distributed and autonomous generation with renewable gas. Socialisation of the costs to decarbonise must be balanced with competitiveness to prevent distortion of the markets and ensure value for the taxpayer. Ensuring competitive energy market for manufacturing industries is key to attracting and retaining foreign direct investment and for Ireland to be competitive in the export markets.
- GNI recommend a market research strategy from the early development phase of any initiative. Extensive state support for initiatives and policies should not be progressed without clear market research demonstrating market demand and commercial value. Balanced dissemination of credible research and risk is required to inform the market.
- Development of a general awareness on the part of stakeholders of benefits; environmental, economic and societal; arising from Circular economy approach along with identifying tangible short and long term benefits.
- Removal of barriers to the development of worthwhile initiatives, thus increasing potential supply base, product development and ultimately development of the market for such products. Examples in water industry are recovery/struvite/alginate/Aqua Minerals (lime pellets/sludge, aquafer (GW), iron pellets, filters gravel, carbon sludge,

struvite, humic acids.

- Collaboration across sectors and technology competencies is key to avoiding value fragmentation arising from mono-tech approaches.
- Focus on collaborative, integrated and full life-cycle solutions to address national targets for carbon reduction.
- Addressing misconceptions effectively as they are identified through positive messaging via stakeholder engagement using acknowledged experts and active engagement rather than adopting a defensive approach.
- Develop greater awareness of less palatable waste disposal alternatives e.g. landfilling, and incineration.
- Overcoming the “Yuk” factor, by bringing stakeholders close up to products early on.
- Independent quality assurance to develop consumer confidence.

9. What is the most appropriate mechanism to coordinate development and monitor progress?

GNI recommend the establishment (or adaption) of a National research competence centre for key bioeconomy areas. Modelling this centre upon the Marine & Renewable Energy Ireland (MaREI) in Cork is one approach that should be considered. Significant issues exist in transitioning research to product in the context of financial and proactive institutional support of trialling and providing assistance towards establishing market acceptance. In particular the risk carried by entities supporting the early deployment of innovative technologies in the context of Regulatory compliance is a constraint on supporting same. A National research competence centre could address this effectively.

Cross sectoral representation is critical to supporting and responding to developments in the bioeconomy. GNI is committed to supporting the development of Ireland’s bioeconomy and wishes to actively participate in in supporting this endeavour.

10. Are there any other issues to be addressed through a national policy statement?

Recognising the priority value of the water quality and the water sector would be welcomed.