

Gas Networks Ireland's submission to the Commission for Regulation of Utilities Review of Large Energy Users Connection Policy – Consultation

19th March 2024



Executive Summary

Gas Networks Ireland (GNI) welcomes the opportunity to respond to the CRU's consultation in respect of the connection of large energy users to the gas and electricity networks. Gas Networks Ireland fully supports the Government's emissions reduction targets of 51% by 2030 and net zero by 2050, with the near-term targets to be achieved via Sectoral Emissions Ceilings and Carbon Budgets. We believe that the gas network must be utilised if Ireland is to achieve these ambitious targets, and that the gas network can transport increasing volumes of renewable gases over this time horizon.

'Securing Ireland's Gas Supplies' Report¹, published in November 2023, as part of the Energy Security Package, recognises the importance to energy security of indigenous renewable gases such as biomethane and green hydrogen. The report states that such gases will be a critical component in Ireland's future decarbonised energy system, helping us meet our climate targets and carbon budgets, while facilitating further economic growth.

Gas Networks Ireland has provided specific responses to some of the consultation questions within this document, but would also like to summarise the overall position.

1. Irrespective of the source of the demand, **Gas Networks Ireland cannot discriminate between classes of system users, and we are legally obliged to offer capacity in our network to those parties wishing to connect to it, subject to very limited exceptions.** The Gas Act 1976 outlines the requirements regarding third party access to the Gas Networks Ireland System. Section 10 A(2) of the 1976 Act obliges Gas Networks Ireland to offer and enter into an agreement for access, subject to terms and conditions specified in directions issued by the CRU. The obligation to provide third party access unequivocally provides that the system of third-party access must be (i) applicable to all eligible customers, (ii) applied objectively, and (iii) applied without discrimination. The Act was amended to meet the obligations of European law, and in particular, article 32(1) of Directive 2009/73/EC on the Internal Market in Natural Gas, which requires the implementation of a system of third-party access to the transmission and distribution system and which is "*applied objectively and without discrimination between system users*".
2. **Decarbonising all new Large Energy User (LEU) connections, whether they are connecting to the electricity grid, or the gas network, will take time.** The renewable gas market in Ireland is in its development phase, and there are currently no support schemes in place for renewable gas production. However, the introduction of support schemes for renewable gases will enable a swift decarbonisation of new LEUs that want to connect to the gas network. **We support the proposal for a glide path to be set to deliver this ambition** and believe that an appropriate connection policy regime can play a key role in achieving this. Given that the Government's target is for 80% renewable electricity by 2030, we believe a similar timeframe could be set for the renewable gas sector, with a lower initial target, given the nascent nature of the renewable gas sector in Ireland. Gas Networks Ireland believes that such a policy, for example requiring new LEUs connecting to the gas network to have c.10% renewable gas by 2025, rising to c.40% by 2030 is achievable, and would drive investment in new renewable energy infrastructure in Ireland. A trajectory based on an integrated energy system approach could also help LEUs decarbonise over time with, in certain instances, a transition from gas as their primary fuel to electricity, with gas as backup over time.
3. **Indigenously produced biomethane injected into the gas network will enhance Ireland's energy security by replacing imported natural gas.** Therefore, supporting the growth in renewable gas production would be a no regrets investment and LEUs can play a significant role in stimulating this industry. However, maximising biomethane's benefits will require

¹ [c7ca6839-05f5-4d7f-8db9-bbf12f4eba67.pdf \(www.gov.ie\)](https://www.gov.ie/c7ca6839-05f5-4d7f-8db9-bbf12f4eba67.pdf)

urgent action, and additional renewable gas investment and production beyond the Government's 5.7TWh biomethane target by 2030. In its analysis of Ireland's draft Updated National Energy and Climate Plan 2021-2023², the European Commission highlights that Ireland is projected to miss its target of 43% renewables in final energy consumption, highlighting a clear need for urgent action. Gas Networks Ireland's 2023 Biomethane Energy Report³ suggests that the volume of potential renewable gas projects is 14.8TWh. LEUs seeking to connect to the gas or electricity networks can also drive new and additional investments in renewable energy in Ireland, including indigenous renewable gases, and this should be leveraged to stimulate the industry. LEUs have indicated a willingness and an appetite to enter into long-term arrangements with indigenous renewable gas producers, to meet their own net zero ambitions.

4. **Gas Networks Ireland believes that green hydrogen will play a key role in decarbonising our economy, especially post 2030.** To stimulate growth in green hydrogen production, we believe there would be benefits in the medium term in co-locating some large energy users close to each other, where renewable gases would complement other onsite renewable energy sources, including wind and solar. This would provide an opportunity for energy clusters to emerge and, over time, enable a phased transition to green hydrogen within these clusters. Ultimately, these hydrogen clusters would grow into a national hydrogen network, as proposed in the National Hydrogen Strategy⁴.
5. **The Renewable Gas Registry established by Gas Networks Ireland in 2020 can support Ireland's ambitions** in relation to decarbonisation and security of supply, and it should continue to be used as the recognised tracking system for renewable gas credits feeding into the Irish system and purchased by LEUs. Over time, the renewable gas certification scheme should be used to enable the production and consumption (buying and selling) of green hydrogen credits.
6. We believe that interruptible contracts, along with responsive/strategic storage could be a useful intermediate tool to mitigate **peak day** capacity restrictions in the natural gas interconnector system, and also to assist with security of supply. A longer-term sustainable solution to Ireland's energy security demands – such as increased availability of renewable gases and energy (gas) storage - is needed. However, **interruptible contracts for LEUs can play a role in the shorter-term**. Furthermore, the Government has already acknowledged that gas-fired power generation is required beyond 2030. The availability of onsite generation will allow LEUs to be efficiently 'interrupted' from the electrical grid. As renewable gases become available in greater volumes, LEUs would be transferred seamlessly from renewable electricity to renewable gas and vice versa.
7. **The benefits of "decentralising" power generation and moving to a more distributed power architecture in Ireland are significant.** Focussing on energy efficiency is key to reducing energy use and related emissions, with the efficiency of onsite generation through appropriately sized Combined Heat and Power installations reaching up to 90% - 20% to 25% higher than the combined efficiency of heat-only boilers and conventional power stations, thus reducing associated emissions. In addition, reducing the strain on the electrical grid and increasing the number of generators across Ireland can have a significant benefit to the electrical grid, providing flexibility and reducing the reliance on lower efficiency power generation.
8. By taking an **integrated energy system approach, the planning of the electricity, gas, and hydrogen networks** of future decarbonised energy sources for LEUs can be optimised. Optimisation would include identifying the benefit of repurposing existing infrastructure, such

² [Commission Recommendation, Assessment \(SWD\) and Factsheet of the draft updated National Energy and Climate Plan of Ireland - European Commission \(europa.eu\)](#)

³ [biomethane-energy-report.pdf \(gasnetworks.ie\)](#)

⁴ <https://www.gov.ie/en/publication/624ab-national-hydrogen-strategy/>

as natural gas pipelines to hydrogen, as a cost-effective means of transporting renewable energy.

9. **We believe that gas-fired power generators should not be excluded from a review of connection policies** given that decarbonising the power generation sector will be necessary to achieve the Government's policy aim of decarbonising our economy. Over 60% of networked gas is used in power generation. Developing an appropriate policy framework to decarbonise this sector, while supporting its further development, will largely drive the decarbonisation of the gas network. The power generation sector is likely to be one of the largest end-users of renewable gases in a net zero energy system.

Additionally, while we are fully cognisant of the need for new gas-fired power generation plants in Ireland to support economic growth and to underpin the continued growth of renewable generation, the issue of their future connection policy needs to be considered accordingly by the regulator to allow for a continued investment in new gas-fired power plants in the coming period. Given the significant number of new power generation connections to the gas network over the coming years, and the likely peakiness of their demand, a comprehensive review of LEU connection policy would be incomplete without considering this class of customer.

In summary, Gas Networks Ireland believes that energy security and decarbonisation should be key pillars of energy policy, and in that context should shape future connection policies within the confines of the legal framework set by European law. Connection policies should be allied to the delivery of indigenous renewable gases, such as biomethane and green hydrogen, the production of which must be accelerated, at scale.

We would like to see a renewable gas trajectory-based approach being adopted, where new LEUs, as with all connecting parties, are connected in line with our obligations as a Transmission System Operator (TSO), and Ireland's obligations as an EU Member State, but are properly incentivised to progress rapidly to the use of renewable gases. As the electrification of Ireland's energy system continues, demand on the gas network will decrease, placing upward pressure on gas tariffs. LEUs could mitigate this pressure, in addition to providing a development case for additional indigenous renewable energy production in Ireland and enhancing Ireland's energy security of supply.

Consultation questions

Background

Gas Networks Ireland has responded to specific questions in the consultation and numbered them to align with the question numbers as set out in the CRU's consultation document.

Before setting out its specific responses, Gas Networks Ireland notes the following context for its position.

A. Irrespective of the source of the demand, Gas Networks Ireland is obliged to offer capacity in its network to those parties wishing to connect to it in line with the conditions set by the CRU. There are limited grounds on which Gas Networks Ireland can refuse to connect new customers seeking a connection. The framework under which Gas Networks Ireland provides access to its network mandates that the system of third-party access be (1) applicable to all eligible customers; (2) applied objectively; and (3) applied without discrimination.

B. The manner in which the gas network is being used is changing. Gas Networks Ireland's analysis shows that on peak days, contracted capacity will reach the limit of the technical capacity at the Moffat Interconnection Point (IP) in Scotland in the coming years. Our analysis shows that outside of these peaks, there is and will continue to be ample contractual capacity available. This is driven by a number of factors, including the depletion of indigenous sources of gas pushing marginal demand to Moffat, together with a growing peak day demand for gas, in particular arising from the connection of new power stations and other LEUs. Our analysis shows that while annual gas demand will grow over the course of the next few years, it is forecast to begin to level-off and decrease by the end of the decade, in line with national energy policy. However, peak day demand is increasing and by the end of this decade will be in excess of the current peak day demand. As in the electricity market, the peak day may be addressed by responsive/strategic capacity, in this case storage, coupled with demand response/management. It does not necessitate the limitation or refusal of connections in the long term. It is important to recognise that security of supply considerations must be focussed on the use of the most appropriate systems and fuel to balance demand across the gas and electrical systems, i.e. to have the flexibility to use electricity when it is available and renewable and use gas (including renewable gases) when it is not.

C. The partnership between flexible gas-fired power generation and intermittent renewable generation is key to optimising Ireland's renewable energy production into the future. Whilst new power stations form part of the overall Government policy/Climate Action Plan ambitions, other sectors of the economy are also highly dependent on additional or new large-scale gas connections to provide significant volumes of energy for space heating, process steam generation, or highly efficient on-site electricity generation using Combined Heat and Power (CHP) plants. The gas network, especially when transporting increasing volumes of renewable gases, can provide the most efficient source of energy for high heat users for whom electrification is simply not feasible. While the electrification of demand will be efficient for large sectors of the economy, this will not always be the case. Connection policies, as with energy policy generally, must ensure that incentives on gas and electricity networks are aligned to achieve optimal levels of decarbonisation and security of supply, and must not impose incorrect or unintended consequences on either network.

To ensure continued growth in the Irish economy, Gas Networks Ireland believes that the connection policy should encourage cooperation between the gas and electrical TSOs to ensure that each LEU uses a primary fuel most suitable to its location, and also the ability of the respective networks to accommodate it.

Finally, just as the gas network should not be viewed in isolation from the electricity network, consideration must be given to the wider consenting framework when considering the appropriateness of criteria and measures to be applied to connections. LEUs in particular will, at the time of connection, have been subject to assessment by the relevant planning authority for their consistency with sustainable development. To the extent that they are large users of gas, their emissions will generally be regulated by the Environmental Protection Agency (EPA). Connection policy should not seek to replicate and should not seek to empower TSOs to reopen or remake decisions made by other national competent authorities whose role it is to ensure sustainable development in line with environmental goals and emissions standards.

Category of LEU to which this policy applies

Q1. Comments are invited from interested parties on the categories of LEU in electricity and gas to which this policy should apply (e.g. for electricity is DG10, DTS-T is appropriate, should DG6-DG9 be included, should the definition focus on capacity or usage, should a combination of criteria be applied?)

The proposed definition of gas LEU is aligned with Gas Networks Ireland's Connections Policy⁵ (50MW thermal) and aligns with the EU ETS threshold of 50MW thermal, which provides for reporting requirements for these larger consumers of energy. We consider it to be a consistent and pragmatic threshold that is in keeping with policy thresholds. The existing gas usage in Ireland is approx. 57 TWhs, whereby individual users with a connection of in excess of 50MWhs account for c. 71% of the gas demand and as such, we consider that this captures the majority of the energy use.

Irrespective of the source of the demand, as per the Transmission System Operator licence issued by CRU, Gas Networks Ireland is not permitted to discriminate between classes of system users (i.e., between power generation and other large LEUs) and we are obliged to offer capacity in our network to those parties wishing to connect to it. Therefore, we believe that gas-fired power generators should not be excluded from a review of current connection policies. We are fully cognisant of the need for new gas-fired generation plants in Ireland to support economic growth and underpin the continued growth of renewable generation, but this issue needs to be considered accordingly by the regulator to allow for a continued investment in new gas-fired power plants in the coming period.

Q2. Please provide views on whether this proposed policy should apply to capture smaller LEUs in due course, and if so which categories of LEU and on what timeline should this occur. Please provide rationale for any views shared.

Gas Networks Ireland is mindful that a lower threshold in the future may become an administrative burden for smaller energy users, and any prescribed body/entity responsible for checking compliance, however, Gas Networks Ireland fully supports the ambition that smaller LEUs need to be supported to achieve their decarbonisation and strategic objectives in the most appropriate way for them. To improve efficiencies, any new supports should be aligned to the existing energy supports that the Department of Enterprise, Trade and Employment have already made available to SMEs.⁶

⁵ [Gas-Networks-Ireland-Connections-Policy-Documents-Revision-5.0.pdf \(gasnetworks.ie\)](#)

⁶ [Reduce your energy bills and your emissions - DETE \(enterprise.gov.ie\)](#)

Transition period

Q3. Comments are invited from interested parties on the proposed use of a transition period/glide path in relation to (i) the changing requirements at time of connection on the transition to zero real time emissions, and (ii) once connected, the changing requirements as the project transitions closer to real time zero e.g. from non-firm connection to firm connection linked to milestones.

Q4. Please provide views on the proposed timing of different options.

We propose to respond to Q3 & Q4 together.

Gas Networks Ireland fully supports the implementation of a transition period/glide path for those new LEUs seeking to connect to either the electricity grid or gas network, helping Ireland to meet its climate targets and carbon budgets, while facilitating further economic growth in these and other sectors. It is important to note that such a pathway requires the scaling up of the production of renewable gases.

Decarbonising all new LEU connections will take time, particularly in the case of those seeking connections to the gas network, given that the renewable gas market in Ireland is in its infancy and there are currently no support schemes in place for indigenous renewable gas production. When renewable gases are available at the scale required, we believe it may then be appropriate to require all LEUs seeking to connect to the electricity or gas networks, to be net zero emissions at the time of connection, and we believe the gas network will be central to achieving this objective.

The Securing Ireland's Gas Supplies report, published in November 2023 as part of the Energy Security Package, recognises the importance of indigenous renewable gases such as biomethane and green hydrogen. The report states that such gases will be a critical component in Ireland's future decarbonised energy system. Setting a trajectory would map out a clear pathway for the decarbonisation of LEUs and act as a stimulus to the renewable gas industry, thereby de-risking projects and giving certainty to investors. By entering into long-term contracts with producers, the LEU sector can play a key role in Ireland not only meeting, but exceeding its 5.7 TWh 2030 target for biomethane production.

Q5. Should optionality be maintained in allowing a menu of different options to perspective LEUs, with the end net zero emissions target becoming more binding as the glide path advances?

Gas Networks Ireland believes in a technology neutral approach to decarbonising our economy, where new LEUs (and all energy users) can take advantage of the optimum source of energy for their circumstance. The EU introduced an Energy Systems Integration Strategy in 2020, promoting a more efficient and integrated system that links energy sources and infrastructure to support decarbonisation.

Energy clusters should be encouraged to achieve this goal, providing a range of renewable fuel options to meet LEU demand. The establishment of these clusters would allow renewable gases to complement variable renewable energy sources, including wind and solar, and provide for a faster pathway to decarbonisation, as opposed to multiple distinct customer sites.

Q6. Comments are invited on how compliance and enforcement with required provisions can be effectively implemented in the operation of a transition period/glide path approach.

As gas TSO/ Distribution System Operator (DSO), Gas Networks Ireland's expertise lies in the safe operation and maintenance of our national gas network, preparing to facilitate the transportation of increased volumes of decarbonised gases to end users. Given our current role, we do not believe that it is within our remit to define or monitor compliance with a prescribed glide path or its different elements.

However, we do support the leveraging of expertise that already exists in relevant bodies/agencies and encourage the alignment of existing emissions reporting, planning compliance checks, and other processes to ensure a streamlined system is introduced, under the guise of a single entity if practicable. Gas Networks Ireland notes that the EPA is responsible for licensing the emissions of LEUs and is the statutory body specifically imbued with the function of licensing emissions. Furthermore, An Bord Pleanála's statutory functions include carrying out an Environmental Impact Assessment (EIA) in respect of EIA projects, which include energy generation projects. The EIA Directive explicitly requires that the "*energy demand*" of a project and the "*nature and magnitude*" of its GHG emissions be described and quantified during the EIA process.

We believe that the connection policy should not seek to replicate nor seek to empower TSOs to reopen or to remake decisions made by other national competent authorities whose role it is to ensure sustainable development in line with environmental goals and emissions standards.

Measuring performance

Q7. Comments are invited on the approaches used to account for net zero emissions. This could include timestamped GOs or renewable certificates. Please provide reasons and rationale for any views provided.

Gas Networks Ireland supports the use of Guarantees of Origin (GO) to account for net zero emissions. We have been appointed as the Issuing Body for Guarantees of Origin for Renewable Gas (ref: S.I. 350/2022) and GOs issued comply with the relevant provisions of the EU's Renewable Energy Directive (RED II). Timestamping GOs to match production with demand in real-time is not required under EU law at present. As the gas network can play a role in energy storage for natural and renewable gases injected to it, the current 12 and 18-month validity periods for GOs are reasonable. Real-time matching would impose a significant burden on gas grid operators and gas suppliers.

Q8. Should the end target/goal be real time zero emissions? Do respondents have other suggestions as to how this can be demonstrated? Please provide reasons and rationale for any views provided.

Gas Networks Ireland believes that in the case of renewable gas, real-time zero emissions are not applicable, as the gas network is not binary, whereby the gas network has an important role to play in energy storage, storing net zero gases in the future for use at times of low renewable electricity generation. Therefore, we believe that an annual balancing regime would be more appropriate for the gas network.

Q11. Comments are invited on the requirement for indigenous sources of renewable energy e.g. renewable electricity feeding into the Irish system and for gas, secure sufficient renewable gas credits feeding into Irish system.

Gas Networks Ireland fully supports the use of renewable gas GOs feeding into the Irish natural gas system to facilitate the connection of gas demand to the system. The use of these GOs from indigenous renewable gas sources should be incentivised/encouraged, acting as a stimulus to the renewable gas industry, and thereby increasing Ireland's security of energy supply. Incremental obligation rates should be applied, aligned to the trajectory of indigenous renewable gas production. However, until Ireland's renewable gas production levels mature, LEUs that want to compensate for their emissions may need to be able to purchase renewable gas credits from international markets.

Q.13 Comments are invited on whether the electricity and gas measuring and tracking systems should be integrated to help avoid double counting? If so, how might this be achieved?

Gas Networks Ireland recommends that the tracking systems for renewable gas and renewable electricity be closer aligned to each other, incorporating interactions between renewable electricity and green hydrogen, to ensure that double counting of credits does not occur.

Q14. Comments are invited on who should have responsibility for measuring LEUs emissions and emissions abatement performance?

Gas Networks Ireland supports the continued role of the EPA in measuring LEU emissions.

The EPA is responsible for licensing the emissions of LEUs, and is the statutory body specifically imbued with the function of licensing emissions. Furthermore, An Bord Pleanála's statutory functions include carrying out an Environmental Impact Assessment (EIA) in respect of EIA projects, which include energy generation projects. The EIA Directive explicitly requires that the "*energy demand*" of a project and the "*nature and magnitude*" of its GHG emissions be described and quantified during the EIA process.

Location of LEUs

Q15. Should new LEUs be located close to areas of renewable generation and/or storage or within energy parks? Please provide reasons and rationale for any views provided.

In many cases, it will not be feasible for new LEUs to be located 'close to' renewable electricity generation. Onshore wind farms are typically developed in rural, often remote upland areas. An alternative approach, especially in areas with high electrical grid capacity constraints, could be to consider onsite generation from renewable gases. As an example of cooperation between the gas and electricity TSO/DSOs in the Dublin area, where EirGrid has capacity issues, but Gas Networks Ireland does not, onsite generation with gas, coupled with export capability, can help alleviate electricity capacity issues.

Furthermore, we consider there would be benefits in co-locating large energy users with onsite generation in close proximity to provide an opportunity for clusters of these large industrial users to emerge over time, thus enabling a phased transition to green hydrogen within these clusters. The establishment of these clusters could complement other onsite renewable energy sources, including wind and solar in certain circumstances, and provide for a faster pathway to decarbonisation as

opposed to multiple distinct customer sites. In the longer term, linking these clusters into a national hydrogen network will create a resilient hydrogen market in Ireland, and this could be done efficiently by repurposing the existing gas network where feasible, as proposed in the National Hydrogen Strategy.

Q16. What type of measures to facilitate this approach could be introduced to encourage new LEUs to locate close to renewable generation.

Gas Networks Ireland believes the accelerated development of hydrogen clusters would facilitate this approach. The National Hydrogen Strategy states that clusters will emerge in the early 2030s, but Gas Networks Ireland believes this could happen sooner if the correct supports and policies are put in place. We are currently working with a number of partners in the East Cork area to establish a hydrogen cluster involving the development of hydrogen production, transportation and storage. This cluster will act as a real-life test bed for the deployment of hydrogen at scale in Ireland.

Q17. Should there be any exemptions to locational requirements for certain LEUs? How could this be assessed? If so what type of connection conditions/requirements might these require?

As addressed previously, Gas Networks Ireland cannot discriminate between system users, and we are obliged to offer capacity in our network to those parties wishing to connect to it, regardless of where they are located. Where there is insufficient capacity, we are required to provide it in a reasonable timeframe. As the licensed gas network TSO, we have legally binding obligations to connect all new industrial customers wishing to connect to the gas network.

Additionally, we believe the utilisation of onsite generation with gas, including renewable gases would be beneficial in locations where there are capacity constraints on the electricity grid, thereby allowing LEUs to export electricity to the grid.

Gas Networks Ireland believes in a technology neutral approach to decarbonising our economy, where new LEUs (and all energy users) are able to take advantage of the optimum source of energy for their circumstance, and needs. The EU introduced an Energy Systems Integration Strategy in 2020, specifically promoting a more efficient and integrated system that links energy sources and infrastructure to support decarbonisation.

Q19. If locational requirements are introduced, there is a need for better integrated planning of the network, generation, and demand. What are the roles of the System Operators and enterprise agencies in supporting/facilitating this?

Gas Networks Ireland fully supports an integrated energy system. Today, we work closely with other gas and electricity TSOs/DSOs on the island of Ireland on a number of items, including future network planning. We support a continuation of this collaboration to deliver a technology neutral, net zero energy system to support our growing economy.

Non-firm demand connections

Q21. Should non-firm LEU connections be introduced? If so, should these non-firm connections be made on an enduring basis? Please provide reasons and rationale for any views provided.

Given the constraints that exist on the electricity and, to a lesser extent, on the gas network on the peak day, it makes sense to introduce non-firm connection offerings to new LEUs wishing to connect to the electricity or gas network. Such connections could apply until such a time as constraints no longer exist.

Gas Networks Ireland sees the benefit of introducing non-firm capacity products as a temporary security of supply mitigation measure to facilitate the connection of LEUs. Such products would offer capacity which can be restricted under certain conditions when the gas system approaches its capacity limits on a given day. However, we believe that for Ireland to address the core issues of security of supply, as well as decarbonisation, Ireland must invest and further enhance existing network capacity, as well as develop its own indigenous storage capacity.

Q22. If non-firm LEU connections are implemented on a temporary/non-enduring basis what should trigger these connections being made firm? e.g. date(s) specified upfront, linked to certain requirements. Please provide reasons and rationale for any views provided.

It is proposed to limit these non-firm connections to large new connections as these (1) have the greatest impact on the network; and (2) will provide the most substantial and measurable (with hourly metering) mitigation in the event of a capacity shortfall. We consider that this would be consistent with our obligation not to discriminate unfairly between classes of system user when offering third party access to our network.

A non-firm connection would not endure indefinitely; and could be relaxed once the relevant modelling demonstrates that constraints no longer exist. This would provide confidence to those requesting new connections, giving them a pathway to a firm connection, whilst also allowing Gas Networks Ireland to maintain the stable operation of the gas network. The Connection Agreement could outline the basis on which firm capacity is made available where multiple LEUs are awaiting same.

A time-bound or date-specified limit for the expiry of non-firm connections could prove problematic, given the dependency on external factors that could delay the roll out of renewable energy, such as the developments of grids etc.

Q23. If non-firm LEU connections are mandatory in certain parts of the system, should there be any exemptions for certain LEUs? If so what type of connection conditions/requirements might these require?

Irrespective of the source of the demand, Gas Networks Ireland cannot discriminate between classes of system users, and we are obliged to offer capacity in our network to those parties wishing to connect to it, subject to very limited exceptions. The Gas Act 1976 outlines the requirements regarding third party access to the Gas Networks Ireland System. Section 10 A (2) of the 1976 Act obliges Gas Networks Ireland to offer and enter into an agreement for access, subject to terms and conditions specified in directions issued by the CRU. The Act was amended to meet the obligations of European law, and in particular, article 32(1) of Directive 2009/73/EC on the Internal Market in Natural Gas, which requires

the implementation of a system of third-party access to the transmission and distribution system and which is *“applied objectively and without discrimination between system users”*.

Q24. Comments are invited regarding the proportion of the LEU demand that would be connected on a non-firm basis. For example, would a non-firm connection apply to 100% of the connection, or would it apply to smaller portion than this?

Gas Networks Ireland encourages the consideration of non-firm capacity products that could be used as an incentivisation mechanism for LEUs to decarbonise. One proposal would be if an LEU can prove that a certain percentage comes from indigenous renewable gas, such as biomethane or green hydrogen via GOs, this amount should be offered as firm capacity.

This could be done by the LEUs establishing Power Purchase Agreements (PPAs) with indigenous renewable gas producers which would enable the development and growth of the market in Ireland. New connections should be localised accordingly, therefore creating renewable energy industrial clusters which should be designated via the Government’s designation of “go to area” as required under REPOWEREU. This would both reduce the need for interruptible contracts, as well as help decarbonise LEUs and, at the same time, incentivise foreign direct investment (FDI), allowing for the diversification and decentralisation of Ireland’s economy.

Q25. Comments are invited regarding what incentives could be applied to facilitate non-firm LEU connections. Should these incentives recognise the potential locational value of these

Incentives to facilitate non-firm LEU connections could include discounts on network charges. Gas Networks Ireland believes that such discounts could be considered by the CRU as an appropriate incentive for new LEUs.

It is worth noting that any such products would have to be made available across the wider market, and not solely to new LEU connections.

Q26. How should the SOs deploy this flexibility provided by non-firm demand?

System operators would have the right to restrict offtake to non-firm connections under certain circumstances. The conditions associated with interruption must be developed and detailed, including a clear definition of the trigger, or reasons, for interruption, and the duration of the interruption. The interruption of non-firm connections would take place ahead of any security of supply/rationing measures currently set out in the Code of Operations or the Natural Gas Emergency Plan (NGEP). It is not possible to relate a specific entry capacity booking to a specific offtake, however conditions likely result in a consequent reduction in nominations at the Moffat Interconnection Point (IP). Consideration may need to be given to the creation of a rule to ensure this.

The conditions associated with the interruption at an interruptible offtake must take account of whether full or partial interruptions are optimal, i.e. are all new LEUs with interruptible contracts reduced down to give a certain MW figure or are a number of new LEUs with interruptible contracts fully taken off the grid to reach the same figure.

Q27. Should non-firm/flexible electrical connections be provided to islanded LEUs in order to facilitate flexibility between the electrical and gas systems?

Gas Networks Ireland believes the provision of both electrical (firm or non-firm) and gas connections to LEUs will promote a flexible, integrated energy system. We understand 'islanded' LEUs to refer to LEUs connecting to the gas network which have no or a minimal (house load only) connection to the electricity network. 'Islanded' LEUs generally come about as a result of a lack of capacity on the electricity network, and so are a response to electricity connection policy. Although Gas Networks Ireland does not consider it appropriate, nor feasible, to grant or refuse a connection to the gas network based on the availability of capacity in the electricity network, we very much welcome the recognition that incentives on one network increasingly drive behaviour on another, and that electricity and gas connection policies must consider these interactions, and align with climate policy.

On-site generation and storage

Q28. Comments are invited on the use of renewable generation and storage on-site. Should this be used to match LEUs demand on-site or to provide flexibility services to the system? Please provide reasons and rationale for any views provided.

The benefits of "decentralising" power generation and moving to a more distributed power architecture in Ireland are significant. Focussing on energy efficiency is key to reducing energy use and related emissions, with the efficiency of onsite generation through appropriately sized Combined Heat and Power (CHP) installations reaching up to 90%, which is 20% to 25% higher than the combined efficiency of heat-only boilers and conventional power stations, thus reducing associated emissions. In addition, reducing the strain on the electrical grid and increasing the number of generators across Ireland can have a significant benefit to the electrical grid, providing flexibility, and reducing the reliance on lower efficiency traditional power generation.

There are currently 31 LEUs connected to the natural gas network (using the definition contained herein). Many of these benefit significantly from the use of onsite generation to meet their energy demand, in terms of efficiency, emissions, security of supply and operating costs. These facilities generally have high electrical and thermal demand to run their processes and this technology is the best fit when all factors are considered.

From our engagements with LEUs, they are now seeking to switch to renewable gases to further reduce their emissions. All CHP installations currently operating on natural gas can switch to biomethane immediately, while blends of 20% to 30% hydrogen can also be used. By 2030, it is expected that all new CHP units will be hydrogen ready, leading to the opportunity to deliver a fully decarbonised operation in generating both electrical and thermal demand.

Demand flexibility

Q31. What should demand flexibility services provided by new LEUs be used for, system support, decarbonisation, or both? Please provide reasons and rationale for any views provided.

Gas Networks Ireland believes that demand flexibility services provided by new LEUs should be used for both system support and decarbonisation. LEUs can provide significant flexibility to the wider environs/energy users and help to improve security of supply and to accelerate the decarbonisation of the wider energy system. Larger energy users can leverage the existing electrical grid in times of high

renewable penetration (maximising its use), while using onsite generation to lower its demand from the grid in times of low renewable penetration.

The use of onsite generation on the customer site provides for capacity that may be otherwise paid for by the general tariff payer through capacity auctions. In addition, the use of indigenous renewable gases, such as biomethane and hydrogen, ensures that onsite generation can stimulate indigenous renewable gas developments through gas corporate purchase agreements, helping Ireland to create a more resilient energy system, and providing further diversity in employment in rural settings in which low carbon gas projects are typically located.

Q32. Should demand flexibility services be mandatory or voluntary for new LEUs? Please provide reasons and rationale for any views provided?

Gas Networks Ireland understands that it is currently mandatory for LEUs to provide onsite generation capacity equivalent to, or in excess of, its maximum import capacity. Gas Networks Ireland considers that this is a prudent approach by offering the customer diversity in energy supplies, but also offsetting the potential for further thermal generation projects being required by the Single Electricity Market (SEM) to be developed to assure security of supply of the national electrical grid.

Q33. Should LEU connections in certain parts of the network be required to provide demand flexibility services? Is this measure justified?

Gas Networks Ireland believes that by taking an integrated energy system approach to the planning of the electricity, gas and hydrogen networks, future decarbonised energy sources for LEUs can be optimised by:

- Providing a cost-effective solution to maximising the potential of renewables to be integrated into the existing energy system.
- Identifying the benefit of repurposing existing infrastructure, such as natural gas pipelines to hydrogen, as a cost-effective means of transporting renewable energy.
- Providing a clear pathway for LEUs to follow to decarbonise.

Part of this approach may include looking to ensure that LEUs seeking to connect to certain parts of the network, where there are capacity constraints, are incentivised or otherwise to provide demand flexibility services.

Energy efficiency

Q37. Comments are invited from interested parties on the use of waste heat from LEU sites.

The Climate Action Plan 2024 includes a target up to 2.7 TWh of district heating to decarbonise residential and commercial heating by 2030. Gas Networks Ireland believes that waste heat from onsite generation units could be made available to district heating system operators to help Ireland achieve this target. For example, the Tallaght District Heating Scheme utilises waste heat from the local Amazon facility to supply heat to new and existing, South Dublin County Council buildings, in addition to the TU Dublin-Tallaght campus.

Where energy clusters emerge, waste heat could also be utilised by neighbouring LEUs. In practice, for efficiency reasons, this means putting LEUs near heat demand - that could support a clustering rationale, i.e. an LEU that wants chilling alongside an LEU that wants heating.

Q39. Should provisions to use waste heat from new LEUs in suitable locations to feed district heating or other processes be mandatory or voluntary? Please provide reasons and rationale for any views provided.

Gas Networks Ireland welcomes the August 2023 recommendation made by the District Heating Steering Group that a mandate be placed on industrial facilities to supply waste heat (where waste heat is available) to district heating schemes where the total rated energy input is at least 1 MW.

Gas

Q40. Comments are invited from interested parties on the use of biomethane towards decarbonisation of LEU demand. Do respondents have a view on the volume of indigenous biomethane that can be produced annually? Do respondents have a view on the scalability of using biomethane towards the decarbonisation of LEU demand?

The Securing Ireland's Gas Supplies Report, published in November 2023 as part of the Energy Security Package, recognises the importance of indigenous renewable gases, such as biomethane. The report states that such gases will be a critical component in Ireland's future decarbonised energy system. Setting a clear pathway to partial or full decarbonisation of LEUs would act as a stimulus to the renewable gas industry, de-risking projects, and giving certainty to investors. By entering into long-term contracts with producers, the LEU sector can play a key role in Ireland not only meeting, but exceeding its 5.7 TWh 2030 target for biomethane production.

In its analysis of Ireland's draft Updated National Energy and Climate Plan 2021-2023, the European Commission highlights that Ireland is projected to miss its target of 43% renewables in final energy consumption. To remedy this, we believe that urgent action is required to encourage an accelerated rate of renewable gas production. Gas Networks Ireland's 2023 Biomethane Energy Report (based on a Request for Information (RFI) issued to prospective biomethane producers) identified a potential biomethane production of 14.8 TWh. This figure exceeds the Government's 5.7 TWh biomethane production ambition for 2030.

Engagement with prospective biomethane producers in relation to the RFI has very clearly signalled the need for appropriate policy supports to mobilise the industry and provide an appropriate level of investment certainty. We believe that biomethane, and green hydrogen, can play a central role in achieving net zero emissions at the time of connection to the gas network, once the renewable gases are available at the scale required. It is therefore of critical importance that the renewable gas sector in Ireland is scaled up at an accelerated pace.

A fundamental objective of the establishment of an indigenous biomethane industry is to promote and enhance environmental sustainability. The development of a biomethane industry in Ireland will directly contribute to our net zero target, displacing emissions from natural gas, slurry and chemical fertiliser production. Integrating slurry as feedstock to biomethane plants avoids the emissions from slurry storage and spreading and instead captures them for use in energy production – simultaneously supporting farmers in complying with the Nitrates Directive. Digestate, produced as a by-product of the biomethane production process, can be used as a nutrient-rich organic fertiliser and displace chemical fertiliser.

Q42. Comments are invited from interested parties on the use of green hydrogen towards decarbonisation of LEU demand and the timelines in which this might be viable. Please provide reasons and rationale for any views provided.

Gas Networks Ireland believes that green hydrogen can play a key role in decarbonising LEU demand and therefore LEU connections can support, fund and drive production, stimulating growth in the industry. When produced at times when solar and wind energy resources are available or through directly connected to renewable sources, green hydrogen can support the electricity sector by providing a zero carbon dispatchable source of electricity, can be stored for later use and minimising renewable electricity curtailment. The storage potential for hydrogen is particularly beneficial, as it allows renewable energy to be kept not only in large quantities, but also for lengthy periods of time. This means that hydrogen can help improve the flexibility of energy systems not only by balancing out supply and demand, but also by enhancing security of supply. For LEUs with onsite generation, or high heat requirements, green hydrogen can be used as a net zero fuel. The National Hydrogen Strategy forecasts that green hydrogen demand from power generation, integrated energy parks for LEUs, industry and processing, will be within the range of 3.6 TWh – 28.2 TWh.

A recent report produced by AFRY,⁷ as part of the Consultation on the Offshore Renewable Energy (ORE) Future Framework Policy Statement, stated that Ireland has the potential to produce up to 36.32 TWh of hydrogen by 2040 and 93.43 TWh by 2050. To achieve this, Ireland already has significant targets set of 2GWs offshore wind to be in development by 2030 for off-grid uses, such as green hydrogen production. Furthermore, analysis produced for the Climate Action Plan 2023⁸ estimates electricity system curtailment may reach 9.7 TWh by 2030, which could be used for grid connected electrolysis. In the longer term, the Policy Statement on the Framework for Phase Two Offshore Wind Ireland⁹ sets out a vision for 20 GW of offshore wind production by 2040, and at least 37 GW by 2050. This creates the opportunity to significantly increase renewable hydrogen production post 2030.

By taking an integrated energy system approach, the planning of the electricity, gas, and hydrogen networks of future decarbonised energy sources for LEU can be optimised by:

- Providing a cost-effective solution to maximising the potential of renewables to be integrated into the existing energy system.
- Identifying the benefit of repurposing existing infrastructure, such as natural gas pipelines to hydrogen as a cost-effective means of transporting renewable energy.
- Providing a clear pathway for LEUs to follow to decarbonise.

Q43. Comments are invited from interested parties on the renewable gas certification scheme.

Gas Networks Ireland believes that the Renewable Gas Registry established by Gas Networks Ireland in 2020 can support this ambition, and that it should continue to be used as the sole tracking system for renewable gas feeding into the Irish system and purchased by LEUs.

As well as issuing Guarantees of Origin (GOs) to producers of renewable gases, such as biomethane and green hydrogen, which are injecting into the gas network, the Registry tracks the commercial and physical transactions of renewable gases through the entire supply chain, linking their production and consumption. The EPA recognises renewable gases as a zero emissions fuel and the Registry currently plays a role in proving delivery of the renewable gas to Emissions Trading System (ETS) sector customers. SI 350 of 2022 provides a statutory basis for this Registry and appoints Gas Networks Ireland as the official Issuing Body to comply with EU law. It would be important to leverage this

⁷ [PowerPoint Presentation - 6a7097df-13af-4d25-805a-bd84e779fa5c.pdf \(www.gov.ie\)](#)

⁸ [94a5673c-163c-476a-921f-7399cdf3c8f5.pdf \(www.gov.ie\)](#)

⁹ [gov - Policy Statement on the Framework for Phase Two Offshore Wind \(www.gov.ie\)](#)

existing framework and process to track all renewable gases under a singular system/standard, beginning with biomethane, and moving to green hydrogen in time.

As LEUs are one of the highest energy consumers in Ireland, incentivising investment in renewable gas GOs and green certificates by this sector can help Ireland meet the Climate Action Plan targets set for biomethane and green hydrogen production and be an innovative and efficient way of meeting the Climate Action Plan target of 15%-20% demand side flexibility by 2025 by reducing demand on the electricity network during peak hours. This approach can also help achieve the ambitious sectoral emissions ceilings for industry and Ireland's Carbon Budgets more generally.

Q44. Are there other options for decarbonisation of gas demand that should be considered?

The Climate Action Plan (CAP) 2024¹⁰ recognises the potential of Carbon Capture, Utilisation, and Storage (CCUS) to address a portion of unallocated emissions savings in Ireland to 2030 across industry and electricity. The Plan highlights the belief that CCUS will play a significant role in future decarbonisation of the energy sector and industry, with the cement sector being given as an example. Gas Networks Ireland recognises the next steps outlined in the CAP, examining the feasibility and validation of CCUS to develop policy and a regulatory framework in Ireland. In its recent review of Ireland's draft Updated National Energy and Climate Plan 2021-2030, the European Commission has recommended that Ireland identifies the amount of CO₂ emissions that could be captured annually by 2030, including the source and storage capacity.

Q45. Comments are invited on the introduction of non-firm/interruptible gas connections for LEUs (at exit point). Do respondents have a view on whether these non-firm/interruptible connections can help alleviate emissions? Please provide reasons and rationale for any views provided.

There is no evidence that indicates that interruptible capacity connections can help to alleviate emissions. The primary motivation for the introduction of non-firm capacity connections would be to enhance Ireland's security of supply and protect Ireland's existing energy users, especially when the 1-in-50 peak system demand is forecast to reach its highest point across Gas Networks Ireland's Gas Forecast Statement¹¹ horizon in 2024/25 (which equates to 29% growth between 2021/22 and 2024/25, and be 17% higher in 2030/31, relative to 2021/22).

However, Gas Networks Ireland believes non-firm capacity connections could act as an incentive mechanism for large LEUs to decarbonise, as well as act as a stimulus for the development and further growth of Ireland's indigenous renewable gas market.

Assessment criteria

Q48. Comments are invited on how a new LEUs location may inform what criteria it may need to meet.

Gas Networks Ireland believes future planning of industrial zones should be completed in a holistic manner, which includes the availability of critical utility infrastructure. We consider there would be benefits in the medium term in co-locating large energy users in close proximity to provide an opportunity for clusters of these large industrial users to emerge, enabling a phased provision of

¹⁰ [70922dc5-1480-4c2e-830e-295afd0b5356.pdf \(www.gov.ie\)](https://www.gov.ie/publications-and-statements/publication/70922dc5-1480-4c2e-830e-295afd0b5356.pdf)

¹¹ [GNI-2022-Gas-Forecast-Statement.pdf \(gasnetworks.ie\)](https://www.gasnetworks.ie/publications-and-statements/publication/GNI-2022-Gas-Forecast-Statement.pdf)

hydrogen to these clusters. The establishment of these clusters would complement other onsite renewable energy sources, including wind and solar, and provide for a faster pathway to decarbonisation, as opposed to multiple distinct customer sites.

However, it is important to note that Gas Networks Ireland cannot discriminate between system users, and we are obliged to offer capacity in our network to those parties wishing to connect to it. Where there is insufficient capacity, we are required to provide it in a reasonable timeframe. As the licensed gas network TSO, we have legally binding obligations to connect all new industrial customers wishing to connect to the gas network.

Q51. Respondents are welcome to suggest any additional approaches for LEUs to help meet net zero requirements not considered in sections above.

All opportunities to reduce emissions and increase the levels of renewable energy in the mix - including wind, solar, biomethane, green hydrogen etc. - should be explored and accelerated at scale. A technology neutral approach will allow large energy users, existing and new, to chart their decarbonisation journey in an affordable and timely manner, helping Ireland to not only sustainably expand its industrial sector, but also to give fresh impetus to the renewable energy sector. Ireland has significant potential to become a global leader in renewable energy and, in time, to become energy independent and provide significant energy exports, including renewable gases, into Europe.