# Renewable Heat Obligation Consultation

## Gas Networks Ireland Response

29th October 2021

Part of ervia group

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# 1 Introduction & Executive Summary

Gas Networks Ireland welcomes the opportunity to respond to the Department of the Environment, Climate and Communications consultation on the Introduction of a Renewable Heat Obligation.

Gas Networks Ireland owns, operates, builds and maintains the gas network in Ireland and ensures the safe and reliable delivery of gas to its customers. The company is responsible for transporting natural gas through over 14,500km of pipeline networks. The gas network supplies energy to over 706,000 customers, including businesses, domestic users and power stations. The delivery of gas to power stations is critical to the continued delivery of electricity supplies in the country, with over 50% of Ireland's electricity generation coming from gas fired power plants. Gas Networks Ireland believes that gas and the gas network are integral to Ireland's energy system and future.

The key points that Gas Networks Ireland would like to make in relation to the proposed Renewable Heat Obligation are as follows:

- Gas Networks Ireland fully support the introduction of a Renewable Heat Obligation in Ireland.
- Gas Networks Ireland believe that Ireland can sustainably and cost effectively produce volumes of biomethane by 2030 that would support a substantially higher target than that proposed in the consultation document.
- A sustainable, agriculture-led biomethane industry can lead to reduced emissions from the hard to decarbonise agricultural sector.
- Biomethane is fully compatible with the existing Irish gas network and end-user appliances.
- Blending biomethane into the gas network is a more cost-effective way to decarbonise homes already on the gas network when compared to the electrification of heat. (See further: KPMG Report: "Decarbonising Domestic Heating in Ireland, 2018")[1].
- As a basic principle underpinning the scheme, Gas Networks Ireland recommend that those who pay for the renewable heat should get the associated benefit, including companies operating in the Emissions Trading Scheme (ETS).

[1] http://www.ervia.ie/decarbonising-domestic-he/

# 2 Consultation Questions

Throughout this Response, references to RED II relate to:
DIRECTIVE (EU) 2018/2001 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 on the promotion of the use of energy from renewable sources (recast)

References to RED III relate to (as published on 14th July 2021):
DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive (EU) 2018/2001 of the European Parliament and of the Council, Regulation (EU) 2018/1999 of the European Parliament and of the Council and Directive 98/70/EC of the European Parliament and of the Council as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652

**Q1: Do you think that a Renewable Heat Obligation is an appropriate measure to introduce?**

Gas Networks Ireland welcomes the proposed introduction of a Renewable Heat Obligation scheme given the urgency of the climate crisis and the level of climate ambition set out in the 2020 Programme for Government and the recent Low Carbon Development Act 2021. To date, Ireland has struggled to decarbonise the heat sector in comparison to other European Member States (e.g. France and Denmark). As outlined in the Consultation Paper, Ireland currently has 6.3% of its heat sector demand met by renewable fuels, which is the lowest percentage of any Member State and well below the EU average of 22%.This is despite the European Commission identifying Ireland as having the greatest potential per capita to deploy biomethane.[2] In line with the REDII Recast Article 23, and the proposal for REDIII, we believe measures to encourage the deployment of renewable gas solutions such as a Renewable Heat Obligation are appropriate to increase the share of renewable energy in the heating sector.

**Q2: If not, what alternative measures would you consider appropriate to increase the use of renewable energy in the heat sector?**

No Answer

**Q3: Do you agree that the obligation should apply to all non-renewable fossil fuels used for heating as set out above?**

Gas Networks Ireland would be supportive of this obligation applying to all non-renewable fossil fuels used for the heating sector to ensure a level playing field for all heating options is maintained and avoid unintended consequences due to market distortions. As outlined in the Consultation Paper: *"An obligation in the heat sector will incentivise the use of renewable heat while spreading the obligation across all non-renewable fuel types. This spreads the cost impact over all consumers of non-renewable fuels and so does not place the financial burden on one particular sub-sector or area".*

**Q4: It is intended that electricity used for heating purposes and renewable/waste district heating systems would be exempt from this obligation, do you agree with this approach?**

[2] Optimal use of biogas from waste streams [European Commission]
https://ec.europa.eu/energy/sites/ener/files/documents/ce_delft_3g84_biogas_beyond_2020_final_ report.pdf

Gas Networks Ireland agrees with this in principle, as the gross final consumption of electricity from renewable sources is to be separately calculated and reported under REDII.
Gas Networks Ireland wishes to highlight that under RED II (and proposed for RED III), any renewable electricity supplied to heat pumps counts towards a Member State's renewable electricity contributions only, whilst the additional ambient or geothermal energy is counted towards the heating sector's contributions, as laid out in REDII, Article 7, Para 3. This would seem to be consistent with the suggested approach put forward in this Consultation Paper.

**Q5**: **Do you agree that the portion of fossil fuel input used in CHP plants to generate heat would be considered to be part of the obligation?**

CHP is best in class technology reaching efficiencies of up to 90% and thus provides for a renewable energy contribution already by making use of energy that would be otherwise be lost as part of traditional thermal electricity generation methods. These high efficiencies are already recognised with fuel used to power these CHP units being eligible for carbon tax relief.

Gas Networks Ireland feels it is unnecessary to further burden a large proportion of CHP operators who currently fall within the ETS sector, which is the EU's mechanism for enabling the decarbonisation of large, industrial organisations. Further to this, and for those organisations that do not fall into the ETS sector, the Energy Efficiency Directive acts as a suitable mechanism to help drive reductions in $CO_2$ emissions.

**Q6: Are energy suppliers the most appropriate bodies to become the obligated parties in the heat sector?**

Gas Networks Ireland considers energy suppliers to be the most appropriate bodies to become the obligated parties in the heat sector as the end use of the renewable fuel needs to be verified. This approach is consistent with Article 23 of RED II.

**Q7: Is the 400 GWh of energy supplied an appropriate level for a supplier to become obligated?**

As is seen to be the case with transport fuels, a Renewable Heating Fuel, regardless of what type, can be expected to be procured and blended by the wholesale shipping market operators, which would be the same wholesalers that both the larger and smaller retail suppliers will obtain their supply from. It is therefore not a valid barrier for market participants; nor is it a barrier to new market entrants, who are more likely in any event to be leading with renewable fuel suppliers from the outset in this low carbon economy.

Gas Network Ireland understands the Department's preference to ramp the scheme up slowly over time, but it considers 400 GWh/Year not to be a reasonable threshold in any event, as it represents enough fuel to supply 40,000 domestic houses, e.g. equal to the total domestic properties in County Galway and County Sligo combined.

Gas Networks Ireland therefore suggest that the proposed level is too high and that perhaps the Department could consider the removal of the threshold altogether. Provided the commercial and market mechanisms are equitably there for all energy suppliers to secure renewable supplies, there should not be any barrier to entry here or a minimum efficient scale.

**Q8: Do you agree with the 2023 start date for the obligation?**

To support Ireland's ambitions to achieve net-zero emissions by 2050 and more urgently to reduced emissions by 51% by 2030 and given the lead-time required by industry, Gas Networks Ireland support the commencement of the Renewable Heat Obligation at the earliest possible opportunity and are readily available to facilitate the development of further renewable gases entering the gas network.

**Q9: In terms of the obligation rate, do you agree with the proposed initial level of obligation of 0.5%?**

Gas Networks Ireland agrees with the initial level of 0.5% in order to allow the market to prepare and adjust to the required obligation. In saying this, in order to achieve the decarbonisation ambition required, we would be in favour of increasing this level from 2024 to a minimum of 1.1% per annum, as proposed in Article 23, RED II. The proposed amendments for RED III sets this 1.1% target as a binding minimum target for all countries.

As with other renewable energy technologies, to attract the required levels of investment and development needed to achieve Ireland's climate ambitions, it will be important to send clear signals to the market and to industry outlining how these ambitions will be achieved.

**Q10: In terms of ambition for a 2030 target, what level of ambition do you think is appropriate? 3% minimum 5% medium ambition 10% higher ambition Other?**

Given the significant shortfall in Renewable Heat in Ireland as of 2020 relative to the rest of Europe, and in recognising the cost and delivery challenges with deep retrofits, the opportunity to take on a more ambitious objective with Renewable Fuels such as biomethane would seem to be appropriate. Given also the lower overall cost of delivering renewable heat with biomethane, and the wider decarbonisation benefits for the difficult to decarbonise agriculture sector, Gas Networks Ireland would support a higher ambition for 2030.

For context, the proposed amendments for RED III set a 1.1% target as a binding minimum for all EU countries, with an indicative target for Ireland of 2.9% pa (see Appendix 1a of proposed draft RED III[3]).

To ensure the trajectory towards Ireland's 2030 emissions reduction targets is kept on track, Gas Networks Ireland suggest a review period in 2025, which could take into account progression of other measures being deployed to increase the share of renewable heat such as the rollout of heat pumps. The RHO target could be revised based on the progress of these other RES-H technologies.

**Q11: Do you agree with the first obligation period being multiple years 2023-2025 to give the industry time to develop supply lines?**

Gas Networks Ireland agrees that in order to support the sector, lower targets are needed to stimulate initial growth and multiple years may be required to help achieve this. In saying this, in order to achieve the ambition required, we would be in favour of increasing this level from 2024 to a minimum of 1.1% per annum (certainly for biomethane), as proposed in Article 23, RED II. Various studies have demonstrated that there is the potential for enough indigenous biomethane

[3] https://ec.europa.eu/info/law/better-regulation/

supply for the obligation rates set but should this supply be slow to develop, there is an established European market to source from.

**Q12: Once the first period 2023-2025 expires, do you agree with the obligation then becoming an annual obligation?**

Gas Networks Ireland fully supports the proposal for the obligation to become an annual obligation post 2023-2025. Doing so would be aligned with Ireland's Biofuel Obligation Scheme and give some level of certainty to prospective biomethane producers of an enduring market/obligation.

**Q13: Do you agree with suppliers being able to trade credits in order to meet their obligation?**

It is essential that suppliers be allowed the flexibility to trade credits to meet their obligation. This is a feature of the Biofuels Obligation Scheme and allows liquidity in the market to ensure the maximum volumes of renewables are placed in the Irish market.
If such trading is not permitted, it will most likely result in a lower volume of renewables and an increase in Suppliers relying on penalty payments to meet their obligation, thereby not delivering the ultimate objective to increase the penetration of renewable energy sources.
The objective of the obligation should be to maximise the volume of renewables in the market so Ireland can meet its targets in RED. Permitting the trade of certificates will support this objective.

**Q14: Do you agree with allowing 10% carry over of renewable credits to be used in the following year's obligation?**

It will be difficult for Suppliers to forecast accurately in advance the volumes of energy supplied in a year and therefore the amount of credits they need to procure cannot be forecasted accurately. Many Suppliers also have energy trading expertise and will seek to purchase credits in bulk when market prices are favourable. It is essential that there is flexibility to allow a minimum 10% carryover to allow Suppliers flexibility in meeting their obligation.
The Biofuels Obligation Scheme initially allowed a 25% carryover from the previous 2 years. This has been reduced to 15% but the 2-year period still applies.
This feature is also essential to maximise the volume of renewables in the market so Ireland can meet its targets in RED.

**Q15: What are the sustainable energy sources likely to meet the Renewable Heat Obligation at an obligation rate of (i) 3%, (ii) 5%, (iii) 10% by 2030?**

The obligation rates stated equate to 1.6, 3 and 5.5 TWh of current gas demand respectively. Gas Networks Ireland modelling on biomethane demonstrates that these rates could be met by biomethane alone, aside from the other energy sources of which the experts in these areas may wish to comment. A recent study undertaken by KPMG Sustainable Futures and Devenish Nutrition[4] finds that indigenous biomethane from sustainable agricultural sources can be produced in volumes well in excess of a 5.5 TWh target by 2030.

**Q16: Will there be enough sustainable indigenous supply to meet this demand?**

In relation to biomethane only as a heat fuel, Gas Networks Ireland is comfortable that there is potentially enough sustainable indigenous biomethane supply to not only meet the obligation

[4] https://www.gasnetworks.ie/biomethane-sustainability-report-2021.pdf

rates set out, but to exceed these targets. With an upper target of 10% by 2030 equating to 5.5 TWh of heat demand, the latest figures Gas Networks Ireland obtained from the KPMG Sustainable Futures and Devenish Nutrition study is that from mixed species swards and cattle slurry sourced biomethane alone, the potential for indigenous biomethane is 9.5 TWh. In addition, the commercial waste sector has capacity to also supply biomethane.

This data, coupled with other heat fuel source data, indicates a potentially thriving indigenous market, ensuring security of supply and revenue for Ireland.

If it were the case that Ireland could not meet the obligation from indigenous sources, the requirements set out under REDII/III requires that trade between all Member States must be facilitated. This will drive an EU wide competitive market given that all Member States will be required to introduce similar obligations.

**Q17: Do you agree that for renewable fuel delivered directly to a consumer that this will be the point of supply?**

The arrangements for fuels delivered directly to a consumer, such as renewable heating oil, bio-LPG and other bottled bio-gases for example, may not be any different to the arrangements to be implemented for grid injected gas.

For many of these fuels, both the fossil and renewable units are physically mixed in a container or boat at the point of production or transportation at a port in the country of origin. The mass-balancing rules (the accounting and tracking rules) that are applied by the applicable EU Voluntary Schemes ensures that the renewable consignment is tracked separately and allocated to the Supplier so double-counting is prohibited.

For example, an oil supplier who is complying with the RHO and delivering home heating oil will not be able to identify and separate physically the fossil and renewable litres in its tanks and trucks. However, the oil supplier can allocate all its customers the same percentage of renewable oil or allocate different quantities to different customers. The key measure is to ensure the total renewable oil supplied or allocated by each Supplier equals the total credits surrendered by the Supplier in a calendar year, in compliance with the rules of the RHO.

**Q18: Which option to you think should be applied for renewable energy that is indirectly supplied (e.g. via the natural gas grid)?**

The gas market applies a business model where optimal pipeline transportation arrangements result in commercial flows not matching, by definition, the physical ones. Flows are substituted across different parts of the network in order to optimise use of the infrastructure and to avoid unnecessary excess pipeline capacity being built. Gas molecules are not tracked from an entry to an exit point.

Therefore, where a Supplier is using the Gas Networks Ireland gas grid to deliver both natural and renewable gas to end-consumers, it is not possible to physically differentiate between the different molecules. There is not a “point to point” relationship between molecules entered at a given entry point and an offtake/exit point on the network. Gas shippers are incentivised to balance their aggregate entry to the network with their aggregate exit/offtake from the network on a given day.

Where a Supplier has surrendered the required number of credits to meet the requirements of the RHO, then it can be deemed to have met its obligations. No further tracking is required.

In terms of cost recovery and the allocation of renewables to consumers, option B is most likely to be favoured by Suppliers: they can allocate renewable gas to all customers in the same proportion as their overall proportion (the Heat Obligation Rate) and recover the cost of renewables on this basis. All customers pay the cost of the RHO in direct proportion to their overall consumption of total energy.

However, some Suppliers may favour a different approach (option A) where they allocate 100% renewable gas to certain consumers, 100% natural to others and a variety of blends to others; all based on individual customers' willingness to pay a premium for renewable gas.

It is also worth noting that different suppliers have different supplier bases e.g. Supplier A may only supply to industrial and commercial customers, whereas Supplier B may only supply to residential customers. By having this variation of supply pathways in the market, it would be prudent to allow both option A and B, to ensure every supplier can target their customer in the best way. It is really important that the scheme is equitable and that it benefits the purchaser of the renewable energy.

Gas Networks Ireland has established a Renewable Gas Registry to issue certificates to Producers of Renewable Gas and to comply with Articles 19, 29 and 30 of RED II. These certificates allow for title tracking of Renewable Gas injected into the Gas Networks Ireland grid. The Registry processes can be relied upon to ensure compliance with the RHO by gas suppliers in Ireland.

**Q19: Do you think the costs set out above are reflective of likely costs?**

A 2019 report by KPMG "An Integrated Business Case for Biomethane in Ireland[5]" calculated costs of between 9.4c and 8.5c per kWh for a 20 and 40 GWh plant respectively and based on this a figure of 9.0c/kWh was subsequently used for Gas Networks Ireland's GRAZE Gas[6] Cost Benefit Analysis (CBA). Therefore the 12c/kWh cost attributed to agricultural feedstocks appears high. The consultation uses a cost of 10c/kWh in the section on estimating costs per household and this would appear closer to our expectations.

It is important that expectations are set reasonably for potential indigenous producers, as they will need to be competitive with European benchmarks if they are to secure contracts with the industry. As with other renewable energy technologies, costs will likely reduce over time as efficiency and competitiveness deliver savings and cost savings relative to carbon cost will also assist.

**Q20: Are these costs reasonable to impose on consumers?**

The decarbonisation targets set for Ireland will inevitably create costs to assist in the development of renewable sources of energy, with the aspiration that the costs associated with these renewable sources will decline over time. A key factor to consider here is the appropriate mix of decarbonisation measures to seek to reduce the overall costs associated

[5] https://www.renewablegasforum.com/wp-content/uploads/2020/08/RGFI_Executive-Summary-1.pdf
[6] https://www.gasnetworks.ie/corporate/news/active-news-articles/major-step-forward-to-bring-renewable-gas-on-to-gas-network/

with decarbonising Ireland's energy mix. Where possible, the development of renewable solutions using existing infrastructure should be maximised as it avoids other indirect costs such as significant retro-fitting costs associated with a new heating solution being deployed.

Gas Networks Ireland wishes to note that according to a 2018 study conducted by KPMG[7], using biomethane for consumers currently on or close to the gas network is the least cost, least disruptive way to decarbonise their heating needs, costing approximately 1/3rd the price compared to electrification for these consumers. This pathway includes undertaking energy efficiency measures to reduce residential energy demands. It is critically important not only to decarbonise energy supplied but also to improve building efficiency.

Biomethane is the cheapest and at-scale sustainable credible solution which can be used to reduce emissions from up to 686,000 residential homes that currently burn natural gas.

**Q21: Do you agree with the intended position in relation to penalties for non-compliance?**

Gas Networks Ireland is supportive of the intended position in relation to penalties for non-compliance, as this would align with the Biofuels Obligation Scheme. As outlined in the Consultation Paper, *"to ensure compliance, the penalty must be more expensive than the cost of purchasing sustainable renewable heating fuel".*

**Q22: Do you think the proposed obligation poses a significant risk to increased energy poverty?**

Gas Networks Ireland agrees that energy poverty should be a key consideration when reviewing the various strategies available for the decarbonisation of the heating & cooling sector. Gas Networks Ireland would again invite the department to review KPMG's 2018 study, which concludes;

*"Utilising low carbon biomethane within the existing gas network is the lowest cost way of decarbonising heat for homes connected to or in close proximity to the gas network."*

Additionally, we would draw the Department's attention to the criteria outlined in REDII (and also supported in the proposal for RED III), Article 23, Para 4a:
*"Member States may implement the average annual increase referred to in paragraph 1 by means, inter alia, of one or more of the following options:*

*(a) Physical incorporation of renewable energy or waste heat and cold in the energy and energy fuel supplied for heating and cooling; (…)*

*When adopting and implementing the measures referred to in the first subparagraph, Member States shall aim to ensure the accessibility of measures to all consumers, in particular those in low-income or vulnerable households, who would not otherwise possess sufficient up-front capital to benefit."*

**Q23: How best could the impacts on energy poverty be minimised?**

No Answer.

**Q24: Do you agree with the outlined approach for additional support for green hydrogen?**

[7] http://www.ervia.ie/decarbonising-domestic-he/

Gas Networks Ireland is very supportive of green hydrogen and see it as one of the essential fuels needed to fully decarbonise not only the gas network but the entire energy system by 2050. Green hydrogen will have a key role to play in several energy sectors including the decarbonisation of heat. The European Union set out its ambition in its hydrogen strategy to install 40 GW of indigenous green hydrogen production by 2030.[8]Providing additional supports may be required in order to deliver on these ambitions.

However, it is also important that any green hydrogen supported is compliant with the definitions and sustainability criteria set out in the Renewable Energy Directive (REDII 2018)/ draft amendment to the Renewable Energy Directive (REDIII 2021). In this context, support should be provided to both green hydrogen produced from biological and non-biological sources.

**Q25: Do you think that offering multiple credits for green hydrogen in the heat sector might have unintended consequences for supply in other sectors such as transport?**

Gas Networks Ireland, whilst supportive of green hydrogen, would not be supportive of the use of multipliers as a means of providing additional support. Multipliers had previously been applied to certain fuels under the 2018 version of the Renewable Energy Directive. However, in the recent draft amendment to the directive the use of multipliers are being discontinued and replaced with sub-sector targets for specific fuels. This originates from criticism that multipliers were causing the amount of renewables in transport to appear artificially higher than they are in reality[9]. Following this logic, Gas Networks Ireland believe that the use of sub-sector targets, expressed as a percentage of the overall obligation, would be a more appropriate mechanism to provide additional support for fuels such as green hydrogen.

Gas Networks Ireland would also like to note that in line with the Renewable Energy Directive, specific sub-sector targets are being implemented for renewable hydrogen and biomethane produced using feedstocks covered in Annex IX of the directive. Annex IX includes feedstocks such as food waste, grass silage and manures which will be the backbone of the Irish biomethane industry. Given their support at a European level, it may be prudent for Ireland to consider sub-sector targets for these, in addition to green hydrogen, also.

# 3 Conclusion

Gas Networks Ireland welcome this consultation on the proposed Renewable Heat Obligation. Our key points for consideration are that:

The key points that Gas Networks Ireland would like to make in relation to the proposed Renewable Heat Obligation are:

- Gas Networks Ireland fully support the introduction of a Renewable Heat Obligation in Ireland.
- Gas Networks Ireland believe that Ireland can sustainably and cost effectively produce volumes of biomethane by 2030 that would support a substantially higher target than that proposed in the consultation document.

[8] https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf
[9] https://www.euractiv.com/section/biofuels/news/commission-admits-fossil-fuel-share-likely-higher-in-transport-without-multipliers

- A sustainable, agriculture-led biomethane industry can lead to reduced emissions from the hard to decarbonise agricultural sector.
- Biomethane is fully compatible with the existing Irish gas network and end-user appliances.
- Blending biomethane into the gas network is a more cost-effective way to decarbonise homes already on the gas network when compared to the electrification of heat. (KPMG Report: "Decarbonising Domestic Heating in Ireland, 2018")[10].
- As a basic principle underpinning the scheme, Gas Networks Ireland recommend that those that pay for the renewable heat should get the associated benefit, including companies operating in the ETS.

Gas Networks Ireland asks that the Department considers the above comments/suggestions and would welcome the opportunity to discuss this response in more detail.

[10] http://www.ervia.ie/decarbonising-domestic-he/