

Wholesale Electricity and Gas Policy Division
Department of the Environment, Climate and Communications
29-31 Adelaide Road
Dublin 2

Sent via email: energyconsultation@decc.gov.ie

28th October 2022

Re. Review of the security of energy supply of Ireland's electricity and natural gas systems

An Taisce welcomes the opportunity to comment on the review of the security of energy supply of Ireland's electricity and natural gas systems. We wish to make the following submission.

1. Adherence to the Climate Action and Low Carbon Development (Amendment) Act 2021

Adherence to the legal emissions reduction obligations as laid out in the Climate Action and Low Carbon Development (Amendment) Act 2021, Climate Action Plan, carbon budgets and sectoral emissions ceilings must be central to the assessment of mitigation options and to the eventual measures and recommendations introduced on foot of the review and the CEPA expert technical report (hereafter referred to as the expert report). All measures introduced to improve energy security must be aligned with our commitments to decarbonisation and to ending fossil fuel use. Lack of compliance with the Climate Act, the decarbonisation objectives, the carbon budgets and sectoral ceilings will ultimately erode overall energy security.

The data on which the expert report is based also needs to be evaluated against the emissions reduction obligations. Crucially, we note that the forecasting of future gas supply and demand is based on Gas Network Ireland's (GNI) Network Development Plan and EirGrid's All-Island Generation Capacity Statement 2021 – 2030 (see, for example, Section 4 of the consultation document). Yet these have not yet been tested or validated against the legally binding carbon budgets and sectoral emissions ceilings. An Taisce considers it unlikely that these projections will be compatible with the carbon budgets to 2030 and the corresponding sectoral emissions ceilings.

Any new infrastructure proposed to address energy security challenges must be assessed against and align with the requirements of the Climate Act. Emissions related to such infrastructure must be demonstrated to comply with the levels set in the carbon budgets and sectoral ceilings.

An Taisce is a membership-based charity | Join us at www.antaisce.org/membership

An Taisce – The National Trust for Ireland | *Protecting Ireland's heritage, safeguarding its future*

Tailors' Hall, Back Lane, Dublin, D08 X2A3, Ireland | www.antaisce.org | +353 1 707 7076 | info@antaisce.org

Company Limited by Guarantee no. 12469 | Charity CHY4741 | Charity Regulator no. 20006358 | EU Transparency Register no. 473905437651-60

Directors: Philip Kearney (Chair), Trish O'Connell (Vice-Chair),
Stuart McCaul (Secretary), Aoife O'Gorman (Treasurer), Hugh O'Reilly, John Sweeney, Olivia Rogers, Rónán O'Brien

2. Comments on Mitigation Options

2.1 Liquefied Natural Gas and Fracked Gas

It is welcome that the expert report directly ruled out both terrestrial and floating commercial LNG terminals for the following reasons:

- *“Commercial operation is likely to result in the importation of fracked gas to Ireland. This would be in contradiction to the Government’s opposition to the use of natural gas produced from fracking.*
- *The additional energy requirements associated with LNG relative to natural gas supplies (including liquefaction, transport, and re-gasification) mean that the embedded emissions in LNG can exceed that of natural gas.*
- *As storage stocks would be driven by market fundamentals, there would be no guarantee that stored gas volumes would be sufficient to cover a security of supply shock. This risk could be partially mitigated by requiring the LNG facility to hold a minimum volume of LNG in reserve to meet any emergent security of supply risks.”*

It is submitted that this position should be adopted by Government in the finalisation of the review. However, LNG and LNG infrastructure should not be supported in any circumstances. The methane emissions released throughout the supply chain (extraction, processing, transport, etc.) mean that LNG ultimately has no emissions benefit over other fossil fuels such as oil and coal. Crucially, this is the case for LNG derived from conventional gas in addition to LNG derived from fracked gas¹.

We also recommend that a prohibition on the use of fracked gas and the installation of LNG infrastructure (per the Government Policy Statement on the Importation of Fracked Gas) be put on statutory footing.

2.2 Ending Existing Fossil Fuel Exploration Licenses

The expert report has not shortlisted the use of additional gas reserves from existing exploration licences as a mitigation option for the following reasons:

- *Additional domestic production of natural gas above forecasted demand could result in Ireland being locked into a high-gas energy market.*
- *Unknown volume of any potential additional natural gas discoveries.*

This is welcome and should be adopted in the finalisation of the review.

¹ Howarth, R. W. (2015). Methane emissions and climatic warming risk from hydraulic fracturing and shale gas development: implications for policy. *Energy and Emission Control Technologies*, 3, 45-5.

2.3 Biomethane

The expert report includes biomethane or renewable gas in its short list of mitigation options. The production of biomethane through anaerobic digestion (AD), though it may be appropriate in some cases, is not a silver bullet for decarbonising energy production and increasing Ireland's energy security. There is a risk that biogas production may actually lead to further emissions, potentially reducing or even negating its capacity to contribute to decarbonisation

While AD has a place in dealing with residual organic wastes, AD predicated on increased grass or energy crop production for feedstocks has the potential for significant adverse impacts to climate and water quality as a result of the increased levels of nitrogen fertiliser inputs needed to grow the silage. With regard to the use of slurry, intensive cattle farming is also a major emitter of greenhouse gases and cause of water pollution. Any use of slurry for bioenergy production should not be reliant upon or drive further bovine agriculture intensification. We would refer the Department to research by Beausang et. al. (2021) on the sustainability of grass silage and cattle slurry for biogas production.²

We would also highlight that anaerobic digesters suffer from significant fugitive emissions problems via methane leaks - these can be the largest contributor to the carbon footprint of anaerobic digestion facilities. The effect of the leakage of this potent greenhouse gas may greatly reduce or even negate the potential climate benefits of using biogas in place of fossil fuels.³ There is a need for the rapid introduction of a robust methane leak monitoring and regulation regime for AD plants.

The end use of biomethane must also be assessed (assuming its production has been assessed to actually reduce emissions, per the comments above). The mixing of biogas with fossil gas for injection into the grid will exacerbate infrastructural lock-in to fossil fuel use, and the associated energy security risks, in the medium to long term. Supplying biogas to local off-grid industrial users would be a preferable option, provided it is used for electricity generation and is not mixed with fossil gas. Biogas can also be used to power buses and delivery vehicles, having the parallel benefit of reducing air pollution.

² Beausang, C., McDonnell, K., Murphy, F. (2021). Assessing the Environmental Sustainability of Grass Silage and Cattle Slurry for Biogas Production. *Journal of Cleaner Production*. 298. Available from: https://www.researchgate.net/publication/350380683_Assessing_the_Environmental_Sustainability_of_Grass_Silage_and_Cattle_Slurry_for_Biogas_Production

³ Paolini, V., Petracchini, F., Segreto, M., Tomassetti, L., Naja, N., Cecinato, A., 2018. Environmental impact of biogas: A short review of current knowledge. *Journal of Environmental Science and Health, Part A* 53, 899–906. <https://doi.org/10.1080/10934529.2018.1459076>; Grubert, E., 2020. At scale, renewable natural gas systems could be climate intensive: The influence of methane feedstock and leakage rates. *Environ. Res. Lett.* <https://doi.org/10.1088/1748-9326/ab9335>; Liebetrau, J., Reinelt, T., Agostini, A., Linke, B., 2017. Methane emissions from biogas plants. *IEA Bioenergy*; Ebner, J.H., Labatut, R.A., Rankin, M.J., Pronto, J.L., Gooch, C.A., Williamson, A.A., Trabold, T.A., 2015. Lifecycle Greenhouse Gas Analysis of an Anaerobic Codigestion Facility Processing Dairy Manure and Industrial Food Waste. *Environ. Sci. Technol.* 49, 11199–11208. <https://doi.org/10.1021/acs.est.5b01331>; Baldé, H., VanderZaag, A.C., Burt, S.D., Wagner-Riddle, C., Crolla, A., Desjardins, R.L., MacDonald, D.J., 2016. Methane emissions from digestate at an agricultural biogas plant. *Bioresource Technology* 216, 914–922. <https://doi.org/10.1016/j.biortech.2016.06.031>

There are already a significant number of large AD plants going through the planning process. The issues of feedstock impacts, methane leakage and end uses are generally not adequately assessed, if at all in the planning documentation and EIARs. These need to be addressed prior to increased biogas production if it is recommended as an energy security mitigation measure.

2.4 Hydrogen

Green hydrogen is also shorted-listed as a mitigation option. An Taisce would highlight that hydrogen technology is still being developed and has yet to be demonstrated to be viable at scale. The transition of gas infrastructure to green hydrogen use is costly, very complex technically and procedurally and unlikely to occur in Ireland for many years. Therefore, the potential future use of hydrogen is highly uncertain and should not be relied upon, particularly in the medium term. The final decisions on the review should also specify that only green hydrogen is to be considered as other forms of hydrogen production require fossil fuels.

3. Data Centres

The energy demand of data centres represents a very significant threat to energy security in Ireland. Data centres currently consume approximately 14% of Ireland's grid-generated electricity, according to CSO figures. Over the last four years alone, data centre energy demand has increased by approximately 600GWh, enough to power around 140,000 households. The Irish Academy of Engineers and EirGrid have projected that data centres' demand will increase to between 25% and 33% of grid-generated electricity by the end of the decade. However, these projections only account for already contracted capacity and do not account for new data centre projects that are not already contracted for grid connections (already at least 1GW according to EirGrid).

While the technical report and consultation document acknowledge that data centres are "*expected to be the main driver of the projected rise in overall electricity demand*" (Table 3 of the consultation document), it is concerning that there appears to be an underlying assumption in the report that the growth of the data centre sector will continue. The energy security risks posed by data centres require more thorough examination and should be addressed in the review.

It is submitted that the following be included in the recommendations ultimately presented to Government:

- A national review of data centre energy demand is needed, and this should inform a new national policy on the level of future data centre development that can be accommodated in compliance with our national, European and international emissions reduction legal obligations.
- A moratorium on all further data centre development and connections to the grid should be put in place until such a review is complete and policy enacted.

- Any future policy on data centres should require that any new data centre development be powered by on-site renewables or off-site renewables with a dedicated grid connection. The use of on-site gas/fossil fuel-fired power generation should not be permitted.

4. Demand Reduction

We consider that an increased focus on demand reduction is needed in the Government's finalisation of the review, particularly in light of the recognition that large energy users, namely data centres, will be increasing overall demand:

"Electricity demand is expected to increase significantly due to high levels of electricity demand from large energy users such as data centres. Data centres are expected to be the main driver of the projected rise in overall electricity demand."
(Consultation document Table 3: Demand side risks for Electricity and Gas)

5. Energy Security at Community and Household Levels

The finalisation of the review should include a focus on addressing energy security issues at the community and household levels. This is particularly important at present given increasing energy prices and rising levels of energy poverty. Supporting communities and households to increase energy efficiency and transition away from fossil fuel use will bolster wider energy security - the longer homes remain dependent on fossil fuels, the less secure our energy system is as a whole.

We recommend that the following measures be considered in the finalisation of the review:

- Direct outreach to vulnerable households is needed as a matter of priority, as is hands-on support for them before, during and after retrofitting. Plans and supports are needed with regard to alternative housing when homes are being retrofitted.
- The current system is very red tape heavy, and geared towards those with more IT skills and the ability to navigate the multiple levels of paperwork and forms to be filled in. Processes should therefore be streamlined and simplified.
- Funding for local authority retrofitting programmes needs to be rapidly and substantially increased.
- Bans on the installation of fossil fuel boilers in both new and existing buildings should be implemented. The end dates for new installations and servicing for existing fossil fuel boilers need to be clarified quickly. However, it is critical that households, particularly the most vulnerable, are fully supported to complete retrofit well in advance of bans taking effect.
- The removal of the battery grant for solar installations was a retrograde step and should be reversed.
- Community energy programmes should be facilitated and supported.