

I'm writing today to share our second Phoenix Natural Gas Energy Transition Update.

This ongoing series of Energy Transition Updates seeks to inform interested stakeholders we've engaged with over the past months and years about recent Energy Transition developments and the emerging research which is informing our approach to decarbonising the NI Gas Network.

Last month's update focused a great deal on Hydrogen, and often when the decarbonisation of the gas network is mentioned, the resulting discussion has a tendency to focus on the opportunities and challenges associated with utilising Hydrogen. However, it's important – especially in the Northern Irish context - that we recognise that the decarbonisation of the gas network will require the utilisation of both Biomethane and Hydrogen.

But how significant a role can Biomethane play?

In Britain, there is now sufficient Biomethane being injected into the gas network to decarbonise the equivalent gas demand of over 770,000 homes and BEIS have set a [target](#) of meeting 20 TWh/year of gas demand from Biomethane by 2030 – a target nearly three times Northern Ireland's 2020 distribution network demand. However, due to the sheer scale of gas demand in Great Britain, Hydrogen has always been expected to be the predominant means to decarbonise the gas network.

However, unlike Great Britain, Northern Ireland has several significant natural advantages that place it in a prime position to exploit the opportunities associated with Biomethane injection to a much greater extent.

On a per capita basis, Northern Ireland has much lower gas demand than Great Britain. At the same time, we have a comparatively large, livestock-focused, agriculture sector that has the capacity to produce – without displacing food production – very large volumes of biomethane feedstock. It's also a sector which faces significant pressure to identify means to reduce greenhouse gas emissions.

This favourable supply/demand balance points to a significant opportunity to embrace a circular economy approach and invest in Biomethane production to reduce agriculture sector greenhouse gas emissions by capturing methane produced by livestock and using it to decarbonise the regional gas network. Adopting this approach would both support Northern Ireland's Green Growth Strategy and contribute towards the COP26 Global Methane Pledge.

To take advantage of this opportunity, we have much to do. While the gas industry in Great Britain, Ireland and other European countries have been injecting Biomethane into the gas network for some time, Northern Ireland lacks the necessary regulatory framework to accommodate Biomethane in the gas network.

Work to address this is ongoing and is anticipated to be completed by Q2 next year. However, the ability to inject Biomethane is only the first step. Policymakers, industry and wider stakeholders need to work together in the new year to plan how Northern Ireland can best take advantage of its Biomethane resource and not let this opportunity slip away.

Wishing everyone a Merry Christmas... and yes, all I want for Christmas is an NI Energy Strategy.

Best wishes,

Iain Hoy

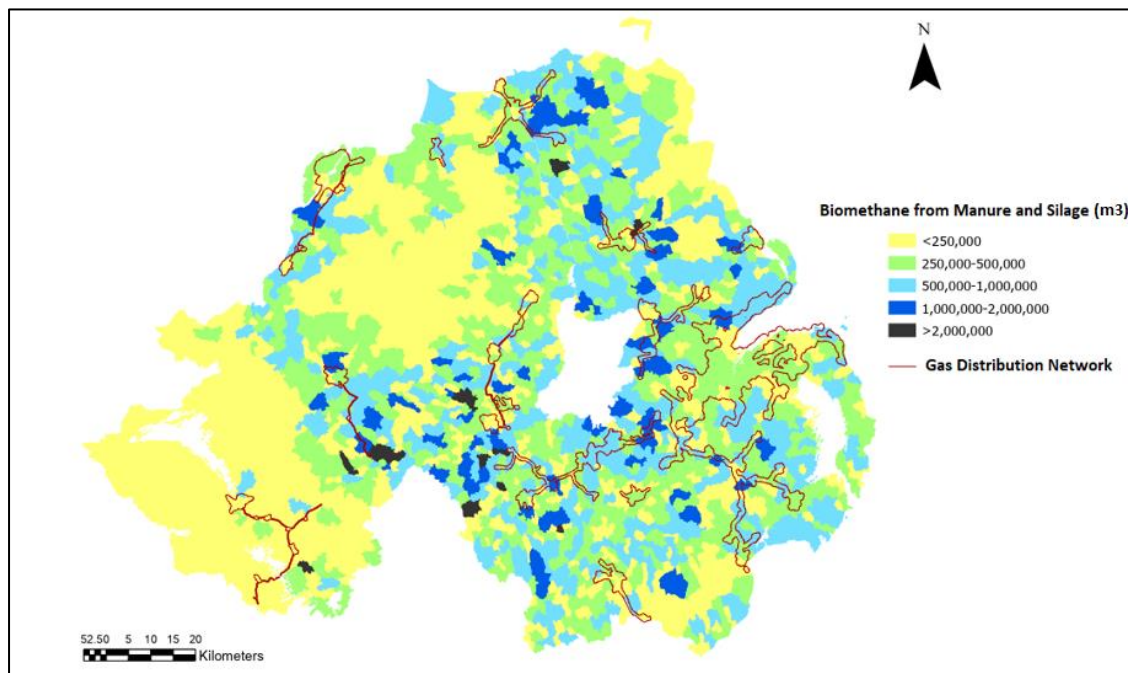
Energy Transition Manager
Phoenix Natural Gas

Assessing the opportunity for NI's agricultural sector to support the decarbonisation of the gas network

Phoenix Natural Gas is participating in a collaborative research project – alongside Phoenix, Queen's University Belfast, Centre for Advanced Sustainable Energy, Agri-AD, Enerchem, AFBI – to quantify the volume of biomethane which could be harnessed from Northern Ireland's comparatively large agriculture sector.

Initial results suggest that Northern Ireland has an opportunity to produce more biomethane from agricultural waste and underutilised grassland than hitherto thought possible – at the uppermost level, sufficient to displace nearly all of Northern Ireland's current distribution network demand. Crucially, most of the feedstock required to produce this level of biomethane is located within 10km of Northern Ireland's Gas Distribution Network – making the task of producing, and then injecting, this considerable biomethane resource, much simpler.

A full report quantifying Northern Ireland's biomethane potential is expected to be finalised by January 2022.



Biomethane's role in decarbonising Britain's gas networks

New data from the Energy Networks Association (ENA) [Green Gas Scoreboard](#) reveals that from a total of 109 Anaerobic Digestion sites, sufficient biomethane is currently produced in Britain to supply over 770,000 homes. This is the equivalent to supplying the total number of households in the UK's second and third largest cities, Birmingham and Leeds, combined – or for a Northern Ireland comparison, double the number of properties currently connected to the NI Gas Network.

The rapid expansion of biomethane production in Britain - from only one site connected to the gas grid in 2011 to 109 today, with 23 further sites in development – demonstrates how rapidly this source of green gas can expand when the opportunity is grasped. With the right policies in place,

there is no reason why Northern Ireland – with its comparatively large agriculture sector - could not quickly follow the example of Britain and other European countries in embracing the benefits associated with injecting biomethane into the gas network.

Exploring the development of a sustainable, agriculture-led biomethane industry in Ireland

The Dowth Farm & Research Facility in Meath, supported by KPMG Sustainable Futures, were recently commissioned by Gas Networks Ireland to produce an [independent report](#) assessing the environmental sustainability of a proposed national agricultural led biomethane industry in Ireland.

The key results from this research were:

- There is sufficient capacity from improved efficiency across land already in agricultural production to produce up to 9.5TWh of biomethane
- The development of a biomethane industry displaces emissions from natural gas, slurry and chemical fertiliser production.
- Integrating slurry as feedstock to AD plants avoids the emissions from slurry storage and spreading and instead captures for use in energy production – simultaneously supporting farmers in complying with the Nitrates Directive.
- Digestate (which is a by-product of the AD process) can be a key ingredient for the production of organic fertilisers, which have the ability to displace chemical fertiliser. This can avoid emissions associated with chemical fertiliser production
- Analysis of the different farming scenarios shows with the adaption of multispecies swards, multiple sustainability actions can be improved on farm, such as increased grass output, while decreasing absolute emissions and improving biodiversity

This important research highlights the many economic and environmental benefits associated with developing sustainable and responsible indigenous biomethane industry.

Which? reviews Hydrogen boilers and appliances at the UK's first 'hydrogen homes'

Which? recently [reviewed](#) the Hydrogen boilers, cookers and appliances in the UK's hydrogen demonstration homes in Gateshead. Which? reviewers found that hydrogen appliances look and (with a few small differences) operate exactly like the natural gas appliances currently installed in the majority of UK homes – offering a decarbonisation option that *“will cause minimal disruption or change in lifestyle.”*

More details

All feedback is very welcome, so if you have any comments, queries or are interested in discussing any of the issues raised in this update then please contact our Energy Transition Manager at iain.hoy@phoenixnaturalgas.com

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