



Northern Ireland's Green Gas Opportunity

The potential to scale up Renewable Natural Gas



Foreward

Northern Ireland has a major opportunity to establish biomethane as a key part of the net zero energy system, producing more of our energy at home while strengthening energy security. We already have an extensive gas network capable of transporting renewable gas at scale, alongside an agricultural and agri-food sector that gives Northern Ireland many of the fundamentals needed to develop a significant indigenous biomethane industry.

Across Europe, biomethane production is expanding rapidly as countries seek to decarbonise gas demand while reducing their dependence on imported fossil fuels. Governments are providing the targets and policy frameworks needed to give producers and investors the confidence to develop projects and build supply chains. Northern Ireland has many of the characteristics needed to develop a strong biomethane sector, but investment will inevitably favour markets where there is a clear route from project development to commercial operation.

As this report highlights, developing the regional biomethane industry can bring new investment into Northern Ireland, support jobs and income across the rural economy and provide a route to reducing emissions from sectors where electrification may not be practical or economic. The gas transmission and distribution infrastructure required to connect production with demand is already in place and, with the appropriate investment, legislative and regulatory support, can facilitate transporting green gas to consumers seeking to decarbonise their gas supply in response to government targets and market pressures.

For an energy system that remains reliant on imports, increasing indigenous production also has strategic value. Greater volumes of biomethane produced from resources within Northern Ireland can displace imported fuel and reduce our exposure to external supply and price volatility. Furthermore, increased biomethane production also presents an opportunity to deliver significant wider socio-economic benefits to Northern Ireland including utilising an expanded biomethane industry to support improved waste-based nutrient management and help address the nutrient challenges faced by waterways and soils across Northern Ireland.

Work undertaken to date by the Northern Ireland gas industry has demonstrated both the level of interest in developing biomethane projects and the scale of the resource available to the region. Converting that interest into production now requires a policy and regulatory environment that can support investment and enable connections to the gas network at the pace required.

Evolve, GNI(UK), Kinecx Energy, Mutual Energy and Phoenix Energy welcome this report from the Green Gas Taskforce.

**Joint statement from
NI Gas Networks**

About the NI Gas Network Operators

Natural gas was first introduced to Northern Ireland via the SNIP (Scotland Northern Ireland Pipeline) in 1996. The network was initially constructed and operated by Phoenix Energy in the Greater Belfast area with further distribution licences granted to Kinecx Energy and Evolve to progressively expand the gas network across the region in 2005 and 2015 respectively. Today, the distribution pipeline network stretches over 6,000 kms.

The distribution network is supported by a large volume transmission network managed by Mutual Energy and GNI (UK) which supplies gas to the individual distribution networks and Northern Ireland's gas-fuelled power stations. In total, the NI Gas Network represents a £1 billion investment which supplies natural gas to consumers in every major urban centre in Northern Ireland.

Over the past 25 years the number of domestic and non-domestic connections has expanded dramatically. By the end of 2025 c.345,000 properties were connected to the gas network – c.40% of all NI homes and businesses – with gas available to c. 525,000 (or over 60% of) properties. With a substantial proportion of homes and businesses still available to be connected to the gas network, significant opportunities remain to extend the benefits of a growing renewable gas supply to new consumers across Northern Ireland. As the operators responsible for transporting gas across Northern Ireland, we are committed to playing our part in developing a biomethane market that strengthens security of supply, supports the transition to net zero and ensures Northern Ireland keeps pace with the progress already being made elsewhere.

About Green Gas Taskforce

The Green Gas Taskforce is a campaign group representing the majority of GB's biomethane generators, shippers and traders, all of the GB gas networks and key sector groups. The Taskforce is campaigning to improve the profile of green gas and improve the policy environment in order to unlock the growth needed to deliver at scale.

The Taskforce has undertaken this report in Northern Ireland to complement its campaign in GB.

What is Biomethane?

Biomethane is a reliable, renewable and ready-now fuel. It is a renewable version of methane, hence being called renewable natural gas in some countries. Biomethane is produced in an oxygen-free environment in domes called anaerobic digesters. Organic matter, such as agricultural waste and residues, known in the industry as feedstock, is broken down in these domes and biomethane is produced, which is then injected into the gas network. Across GB, there are around 140 biomethane plants injecting renewable biomethane into the grid. With the Northern Ireland gas network being one of the newest in Europe, it is already equipped to handle 100% biomethane injections, evidenced by the first connection which took place on the Evolve Network in Dungannon in November 2023.

The Importance of the Northern Irish Gas Grid

Northern Ireland's existing gas network serves a significant number of domestic, commercial and industrial energy consumers. Biomethane therefore offers a potential pathway to decarbonise these users through existing infrastructure, particularly where widespread electrification may be more difficult or costly.

The demand for gas in Northern Ireland across power and distribution to homes and businesses is two and half times the electricity demand, and NI's networks deliver gas to 331,451 homes and 15,011 businesses. The gas network is the necessary prerequisite to deliver biomethane at scale to a broad range of end users at least cost. Over the last four years, the number of users connected to Northern Ireland's gas network has increased.

Year	2015	2023	2024	2025
Number of Gas Connections	214,630	324,706	334,523	344,054

Biomethane is a 'drop-in' fuel - both industrial customers and domestic households supplied with it do not need to change equipment like boilers and other appliances to use it, meaning biomethane offers energy users a seamless transition to cleaner energy.

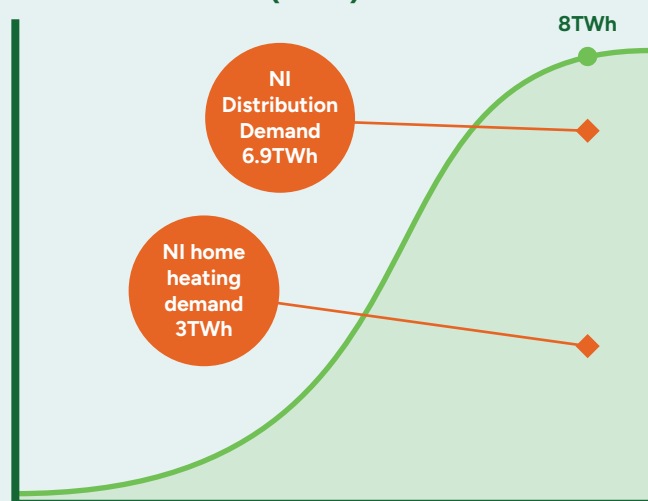
The Potential for Biomethane in Northern Ireland

Independent analysis commissioned by the Green Gas Taskforce concluded that there is sufficient sustainable feedstock in Northern Ireland to generate 8 TWh of biomethane. This analysis is an indication of the potential in Northern Ireland based on the feedstock available, **but the levels of biomethane supply will not be deliverable in the absence of policy support.**

Given Northern Irish gas demand is 10.4 TWh from power generation, and 6.9 TWh from distribution, this means that there is sufficient sustainable feedstock potential to meet almost half of Northern Ireland's existing economy wide gas demand and more than 100% of gas demand from homes and businesses. Importantly, the feedstocks used for this would not negatively impact Northern Irish food production and could increase Northern Ireland's energy security, while decarbonising its gas use. Boosting Northern Irish Green Gas supply also reduces NI's exposure to volatile international gas markets.

One of the largest potential sources of biomethane supply in Northern Ireland comes from the livestock waste. The agriculture industry is a critical sector for the Northern Irish economy, and it employs around 50,000 people.

Biomethane Production Capacity (TWh)



Northern Irish Green Gas Jobs and Economic Benefit

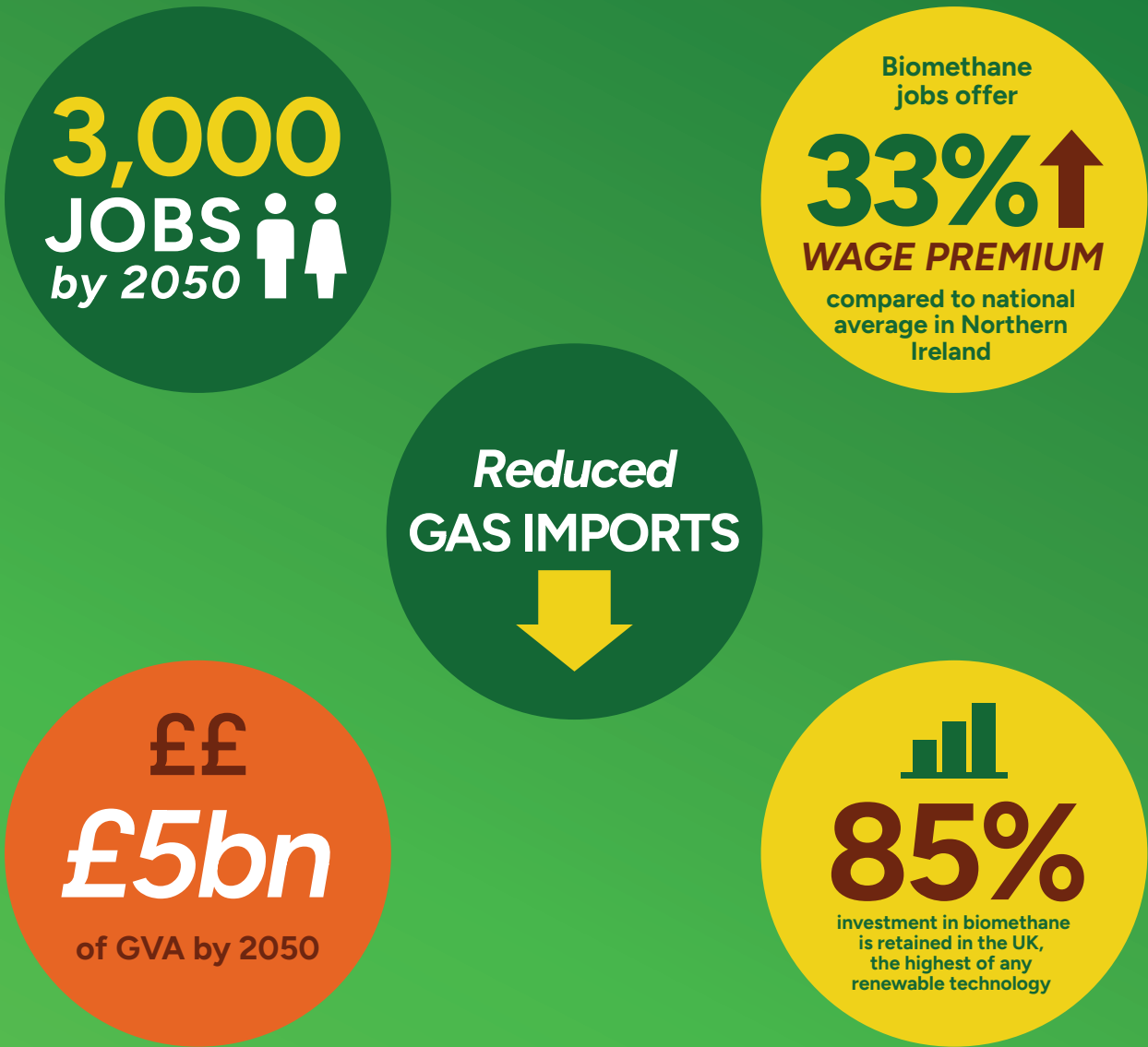
The Taskforce commissioned a study to assess the potential Gross Value Added (GVA) and employment opportunities from a green gas sector that delivers on its potential. The results show that in Northern Ireland the sector could deliver:

- 3,000 jobs by 2050, with wages 33% above the Northern Irish average, providing a wage premium in the sector. These jobs would be outside the big cities, distributing wealth towards Northern Ireland’s rural communities.
- £5 billion of GVA by 2050

Workers required to deliver a larger green gas sector include engineers, construction workers and welders.

The analysis also showed that for every £1 invested in biomethane, 85p stays in the country, reflecting the highest domestic content share of any low carbon or renewable technology. By comparison, 45p in every £1 invested in wind stays in the UK and only 10p in every £1 invested in solar stays in the UK.

In addition to this growth in green gas jobs, the continued use of the gas network in Northern Ireland helps secure the future of the skilled engineers and workers in the sector who live in communities across the country.



The Importance of the Farming Sector to Deliver Biomethane

The Northern Irish farming sector will be critical to deliver a turbocharged green gas sector, as the majority of future feedstock comes from farms. Today, it is estimated that only 2.5% of organic farm waste is used to feed AD plants, making it a huge, untapped resource of green fuel.

Anaerobic digestion not only produces gas but also an additional byproduct known as digestate. Digestate is the remaining organic product left over after all of the methane has been released and captured. Given its nitrogen-rich content, digestate can be processed into valuable biobased fertiliser products that can be utilised instead of imported, carbon-intensive, synthetic fertiliser. Furthermore, vectoring waste towards AD plants supports better nutrient management across NI agriculture, helping reduce ammonia emissions and phosphorus losses to waterways.

By facilitating the processing of farm waste into a valuable biofertiliser (while at the same time producing green energy) a NI biomethane economy will support the long-term environmental sustainability of the £7.3 billion NI Agri-Food industry.



Decarbonising Homes

As noted earlier in this report, there is sufficient sustainable feedstock in Northern Ireland to generate 8 TWh of biomethane.

Economy wide gas demand in Northern Ireland is 17.3 TWh, with 6.9 TWh of this demand coming from gas distribution, providing gas to domestic and commercial sectors, and with home heating demand representing 3 TWh of the 6.9 TWh.

There is sufficient sustainable biomethane feedstock in Northern Ireland to heat and decarbonise the equivalent of two and half times the existing natural gas demand from Northern Irish homes connected to the gas network – and that is before any measures are taken to reduce household gas consumption, such as improved energy efficiency. Biomethane can be used in existing homes and boilers with no change needed to existing equipment, making it a seamless decarbonisation transition.

There is also the potential for biomethane to be used as part of a bio-hybrid heating system, where a home retains the use of its (normally existing) biomethane-fuelled gas boiler and pairs it with a small heat pump. The heat pump, which is used for home heating during milder seasons, reduces household gas demand by at least 70% over a year, while the boiler is used during colder periods and for hot water.

A bio-hybrid system offers the same emissions reductions as a standalone heat pump, while also offering a lower cost solution for households with lower energy efficiency standards. The deployment of a bio-hybrid removes the need for costly upfront energy efficiency upgrades, which can cost between £8,640 and £17,280 depending on the size and condition of the property, the equivalent of four to eight years of typical household savings. According to Northern Irish Government statistics, more than 60% of Northern Irish homes have an EPC rating of D or below.



Decarbonising Industry, Transport and Power

Biomethane can also be used interchangeably with natural gas in other sectors and energy uses.

Biomethane can be used to decarbonise industrial processes which are reliant on gas for high grade heat, such as food production and manufacturing. As with boilers, no change is needed to existing equipment at industrial sites, making its use a cost-effective and disruption-free transition to green energy. Biomethane is often a more cost-effective means of decarbonising industrial processes reliant on gas compared to an electrification alternative, especially for industries which are hard to electrify. Over 15,000 Northern Irish businesses depend on gas for their energy needs, and many are unable to electrify without overcoming huge costs or technical barriers. Hospitals, emergency services and food supply chains require uninterrupted energy, and a poorly managed transition could lead to further offshoring of industry, often to locations with higher carbon emissions than Northern Ireland.

Biomethane is being used today to fuel and decarbonise the Heavy Goods Vehicle (HGV) sector, with around 3,250 biomethane trucks on UK roads today. Analysis commissioned by the Taskforce showed that the total cost of ownership of a 6 by 2 44 tonne biomethane HGV is less than a diesel equivalent today, whilst delivering comparable performance, load capability and sufficient refuelling capacity due to the use of the gas network.

Similarly, as Northern Ireland continues to develop its wind and solar capacity, there will always be a need for dispatchable fuels to supply and balance the electricity grid during still, dark evenings. Biomethane can be used in gas-fired power stations to deliver low-carbon electricity during these periods.

Reducing the Cost of Net Zero

Northern Ireland has set stretching decarbonisation targets, with a goal of achieving a net zero economy. It is imperative that the Northern Irish Government delivers an energy transition that is affordable and achievable. Analysis commissioned by the Green Gas Taskforce concluded that maximising the biomethane opportunity across the UK would cut the cost of net zero by £174 billion, the equivalent of £250 per household, per year. These cost savings come from the removal of the need to build out extra infrastructure, whilst taking advantage of existing infrastructure, such as the Northern Irish Gas Network.

Delivering Greenhouse Gas Removals

As well as producing digestate as a byproduct of anaerobic digestion, the production of biomethane also creates a pure stream of bio-CO₂. This bio-CO₂ is today used in the food and drink sector. However, if combined with Carbon Capture, Utilisation and Storage (CCUS), this bio-CO₂ can deliver a Greenhouse Gas Removal (GGR) solution at much lower cost than other CCUS technologies and be a potential feedstock for e-fuel production.

Biomethane derived bio-CO₂ is the most cost-effective means of putting the 'net' in 'net zero', and delivering emissions reductions at lower cost compared to other decarbonisation pathways. The valorisation of this bio-CO₂ also reduces the cost of the biomethane for consumers.



Policy Asks

To unlock the huge potential and benefits of a thriving Northern Irish biomethane sector, there are several key policy priorities:

- 1 The NI Executive should set a clear, ambitious and deliverable target in the next Programme for Government for indigenous biomethane production, underpinned by a cross-departmental delivery plan.
- 2 Advance at pace the development of a long-term, biomethane support scheme that is investable, competitive, and recognises the wider social and economic value of a regional biomethane economy.
- 3 Create market mechanisms that recognise the wider environmental value of biomethane production, including Greenhouse Gas Removals and the production of sustainable bio-fertilisers.
- 4 The NI Executive should actively encourage the UK Government to rapidly deliver biomethane's zero-rating on the UK Emissions Trading Scheme.
- 5 Create a policy environment in which Northern Ireland's long-term energy policy actively removes market and regulatory barriers to ensure regional gas infrastructure is capable of transporting renewable gas at scale, supporting industrial decarbonisation, energy security, economic growth and the transition to net zero.

References

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