Phoenix Energy Transition Update – October 2022

I'm writing today to share our latest Phoenix 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.

Usually when I write these updates I tend to focus on renewable gas developments occurring outside Northern Ireland. Therefore it's a pleasant change to be able to focus the majority of this update on developments closer to home.

One of those key developments was the very first Phoenix Renewable Gas Conference, *Fuelling the Future*, on 20th October. Reflecting the widespread, and growing interest, in the opportunities associated with renewable gases, nearly 250 delegates registered, and our speakers rose to the occasion to deliver several thought provoking presentations.

One of the highlights was the presentation from Torben Brabo, the Senior Vice President of Energinet – the Danish electricity and gas transmission operator. While Northern Ireland is still feeling its way towards a renewable gas future, Denmark is very much walking the walk with biomethane is currently displacing up to 40% of natural gas consumption. It was therefore fascinating to hear from Torben about how they had come so far so fast and the lessons that could be learned from their experience.

The conference was also an opportunity for the NI Gas Network Operators – Phoenix, firmus energy, SGN Natural Gas, GNI(UK) and Mutual Energy – to share for the first time our high-level *Pathway to Net-Zero*. This consumer focused document outlines the steps we as responsible gas network operators will collectively be taking to transition the NI Gas Network to 100% renewable gases by 2050.

The launch of the Pathway is the first public manifestation of a large body of energy transition workstreams which are already being taken forward collaboratively by the five Gas Network Operators focusing on long-term network planning, preparing for hydrogen blending, and examining how to maximise the potential of biomethane.

As demonstrated by the Danish experience, biomethane is an established technology – there are 20,000 Anaerobic Digestor plants across Europe – and it could play a significant role in helping Northern Ireland reach both its near-term (2030) and long-term (2050) emission targets.

This potential was the subject of the other report launched at the Renewable Gas Conference, the KPMG/Action Renewables *Supporting a renewable gas sector in Northern Ireland* report, which outlines the strategic benefits of developing a biomethane industry in Northern Ireland and explores the potential mechanisms which could be utilised to engender one.

It's really satisfying to see the current levels of enthusiasm and gathering momentum in the renewable gas space in Northern Ireland. However, the 2030 48% reduction emission target is only eight years ahead and we have big challenges to overcome to reach it.

These challenges will only be overcome if we continue to foster a collaborative partnership approach right across the NI energy sector.

As Jonathan said in his closing remarks at the conference, our door is always open.

I hope you find the items below both helpful and informative.

Best wishes,

Iain Hoy

Energy Transition Manager
Phoenix Natural Gas

Northern Ireland Renewable Gas Conference

On Thursday 20th October, Phoenix hosted our first Renewable Gas Conference at the Titanic Hotel Belfast.

With contributions from leading local and international speakers, the 250 delegates at the Renewable Gas Conference learned more about the opportunity to decarbonise the gas network and wider industry with the introduction of renewable gas alternatives such as biomethane and green hydrogen.

Conference delegates heard from the Minster for the Economy, Gordon Lyons MLA, who delivered a keynote address on the potential for Northern Ireland to become leaders in indigenous energy production and the significant role that the modern gas network can play in delivering renewable gas solutions.

Speakers from Queen's University Belfast, Department for Agriculture, Environment and Rural Affairs, Catagen, SGN, B9 Energy, Translink, Renewable NI, the Consumer Council NI, KPMG and John Thompson and Sons Ltd further outlined the opportunity to utilise renewable gases to support the transition to net-zero and positively benefit the whole of society.

To review the slides from the Renewable Gas Conference please click the links below

Slidedeck 1 - NI's Green Energy Ambition

Slidedeck 2 - Tomorrow's Idea Today

Slidedeck 3 - Building Blocks of a decarbonised energy market

NI Gas Network Pathway to Net-Zero

Northern Ireland's five Gas Network Operators have launched their joint plan to fully decarbonise the region's gas network by 2050.

The *Pathway to Net-Zero* charts out how the gas network will transition away from natural gas to renewable alternatives such as Biomethane and Hydrogen to support Northern Ireland's emission targets.

The Pathway to Net-Zero consists of six distinct stages. At each stage, the pathway sets out – at a high level – the expected key developments, the necessary infrastructure requirements and the supporting actions required for the Pathway to succeed.

1. Preparing for the transition (2022-2025) – Strategic planning with an emphasis on regulatory frameworks, research, and consumer stakeholder engagement.
2. First Renewable Gas Connections (2022-2026) – Establishing biomethane and green hydrogen production to facilitate the injection of renewable gas into the network; specific trial projects to confirm delivery.
3. Establishing Supply and Demand (2026-2030) – First hydrogen & biomethane demand clusters emerge as production levels steadily climb. Improved hydrogen and biomethane availability allows other sources of demand – transport, industry, power generation – to begin transitioning to renewable gases.
4. Accelerated Ambition (2030-2040) – Expansion of biomethane and green hydrogen production, supporting significant advances in the decarbonisation of industry, transport, and power generation.
5. Home Stretch (2040-2049) – With hydrogen-ready boilers widely installed in NI homes by this time, this phase focuses on switching users not already benefiting from biomethane to a 100% hydrogen supply.

6. A Zero-Carbon Gas Network (2050) – Natural gas is entirely replaced by green hydrogen and biomethane, offering zero-carbon solutions to residences, services, power, industry and transport sectors.

Welcoming the launch of the Pathway, Economy Minister Gordon Lyons MLA commented: *"I welcome these ambitious proposals to decarbonise the Northern Ireland Gas Network. Encouraging the production of renewable gases will create a significant source of indigenous green energy which will reduce our reliance on importing price volatile fossil fuels. This will ensure that in the delivery of self-sufficiency in affordable renewable energy, we will transform our economy, and the whole of our society will benefit from it."*

The full Pathway to Net-Zero can be found here

Supporting a renewable gas sector in Northern Ireland

KPMG, on behalf of Action Renewables, have produced a report *Supporting a renewable gas sector in Northern Ireland* which outlines the strategic benefits of developing a biomethane industry in Northern Ireland and explores the potential mechanisms which could be utilised to engender one.

The report outlines an ambition to support a renewable gas sector in Northern Ireland with an initial target of 1.4 TWh of gas supply coming from biomethane by 2030 (displacing c.15% of natural gas distribution demand). It also explores what potential financial support mechanisms could be used to bolster the deployment of new indigenous production facilities for biomethane.

While ambitious, the 1.4 TWh target has been suggested as it is broadly in-line with the capacity roll-out profile which was achieved for the existing AD capacity in NI, is well within the feedstock capacity available in NI, and could comfortably be accommodated in the NI Gas Network with limited infrastructure investment.

The research also found that reaching the suggested 1.4 TWh target would result in the creation of 1400 jobs and deliver 6% of the savings required to meet the NI Energy Strategy's goal of reducing energy emissions from 12.6MT to 7MT by 2030.

To read the full report, please click here

Northern Irelands Future Hydrogen Capability and Demand 2022

Matrix, the Northern Ireland Science Industry Panel, has published a new report *Northern Ireland's Future Hydrogen Capability and Demand* developed by Frontier Economics which demonstrates that Northern Ireland is the ideal location to develop a future economy powered by green hydrogen.

The report includes:

- A vision for the green hydrogen economy in Northern Ireland, considering supply, demand and export potentials and an assessment of barriers and enablers that may need to be overcome or enhanced to ensure the sectors development.
- An action plan to overcome these barriers and foster enablers.
- An assessment of potential wider impacts on growth, employment and skills in the green economy.

One of the key near term actions identified by the report as critical to kick start a regional green hydrogen economy is facilitating the option to blend hydrogen into the existing gas network. The gas network provides a potential source of steady demand which can act as a supporting anchor within a future hydrogen economy by ensuring that potential producers have a ready market for their hydrogen.

Other recommendations in the report include:

- Whole-system Planning, an approach comprehensively considering all energy vectors to decide the most efficient balance of energy and optimise infrastructure, therefore minimising the costs of decarbonisation.
- Ensuring Public Funding is available for the sector to bridge the cost gap between green hydrogen and incumbent fossil fuels and reduce the burden of appliance adaptation costs for end-users.
- Implementing a Hydrogen Governance Body to align responsibilities and capabilities of relevant government bodies in driving and implementing the sector's development.
- Ensuring the Hydrogen Catapult identified in the Energy Strategy is established soon ensuring Northern Ireland keeps up pace with global efforts and demand for further progressing hydrogen technologies.

The full report can be found here

Round up of other renewable gas news

UK Government consulting on Hydrogen transport and storage infrastructure support – Covers business model designs, regulatory arrangements, strategic planning and the role of blending

Hello Hydrogen launched – new campaign outlining the benefits of Hydrogen has been launched in Great Britain

Capital Hydrogen Project publishes feasibility study – The study will support the development of a hydrogen network in London, the South East and the East of England.

Manual for National Biomethane Strategies launched - Gas for Climate has compiled a step-by-step manual to support member states in developing and implementing their national strategies.

Hydrogen UK launches Hydrogen Accelerators – Includes a set of recommendations from the 50 strong industry members directed at Government to ensure successful deployment of hydrogen in the UK

Average cost of Hydrogen projected to fall significantly – New analysis suggests the average cost of green hydrogen to fall to $1.50/kg by 2030 as electrolyser capacity ramps up

Delta buying 385 million gallons of green hydrogen-derived sustainable aviation fuel - Supply will come from a new Fischer-Tropsch plant in Louisiana, furnished with an 839 MW electrolyser to supply the hydrogen.

HyNet North West Hydrogen Pipeline - the UK's first large-scale 100% hydrogen pipeline network is currently consulting on its broad route corridor

First green ammonia hub in North-West Europe - Uniper and Vesta have signed a memorandum of understanding to evaluate the feasibility of refurbishing and expanding an existing storage facility in Vlissingen

Hydrogen Projects Database – The International Energy Agency has updated its worldwide database of hydrogen projects

Hydrogen Experience Centre opens in Whitby – Part of the Hydrogen village project, the facility is open for anyone to come ask questions, as well as see two boilers, fires, a hob and other common household appliances all fuelled by 100% hydrogen.

U.S. Department of Energy Announces Winners of Prize encouraging development of novel hydrogen production technologies – new techniques include producing hydrogen from spent oil wells, Electro-Active Hydrogen and an indirectly-heated pyrolytic gasification process

Using scrap metal to produce Hydrogen - US start-up GenHydro says it can manufacture hydrogen from waste aluminium in a zero-carbon process that simultaneously produces clean power

Germany imports first hydrogen shipment - The first official delivery of hydrogen from the United Arab Emirates arrived in Hamburg on 21st October

Hydrogen produces better quality iron - Iron extracted from ore using hydrogen shows better mechanical and ageing properties compared to iron reduced with fossil gas or coke, according to the team behind Sweden's Hybrit green steel initiative.

Four electrolyser gigafactories to be built in France – Part of a €2.1bn state-aid hydrogen push

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

All previous Energy Transition Updates can be found on the Phoenix Energy Transition webpage and our 'Phoenix Meets' series of Energy Transition videos can be found here.

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