

HYDROGEN NI

Hydrogen NI response

Department of the Environment, Climate and Communications' review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems

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1. Background to Hydrogen NI

Hydrogen NI is a not-for-profit membership group established in May 2021 to support the growth of the clean hydrogen economy in Northern Ireland and to provide a voice to industry and organisations with a strong interest in developing a cleaner, greener future through hydrogen. Its current membership includes organisations with expertise in energy generation, manufacturing, energy storage, legal and advisory services, gas networks, planning and public engagement.

Since its creation the group has conducted an extensive programme of direct engagement with a wide variety of decision-makers. This included formally briefing Stormont's Infrastructure Committee and key Ministers and MLAs and shaping policy through consultation responses on key strategic issues in efforts to educate and inform about the benefits a thriving clean hydrogen economy offers Northern Ireland, and how this potential can best be unlocked.

Hydrogen NI believes that clean hydrogen offers significant economic, environmental, and social benefits. As a result of its geography, infrastructure and expertise, Northern Ireland is ideally suited to develop a thriving clean hydrogen economy and to secure a competitive advantage. Benefitting from extensive wind energy resources, a hydrogen-compatible modern gas network and natural storage facilities with the salt caverns at Islandmagee, the region is well placed to develop a vibrant clean hydrogen economy.

Hydrogen NI is working to ensure that the necessary policy and regulatory developments are being progressed to allow Northern Ireland to extract the full benefit from home-grown renewable energy sources which will enhance its security of supply, drive down costs and end reliance on volatile and expensive fossil fuels.

The current crisis throws into increasingly stark relief that an indigenous clean energy supply is necessary to ensure security of supply and protect consumers and the most vulnerable across this Island. Delivering the energy transition and achieving the ambitious decarbonisation goals set, will ensure a clean and secure energy supply. Hydrogen NI remains optimistic that clean hydrogen, along with other innovative renewable technologies, will be a vitally important part of both Northern Ireland and Ireland's energy future.

2. Introduction

Hydrogen NI is responding to this consultation on the basis that Northern Ireland faces many of the same security of supply concerns as Ireland as it works to decarbonise its economy.

NI relies upon upstream gas infrastructure owned and operated by GNI UK - the compressor station at Beattock and the pipeline from Moffat to Twynholm. This critical infrastructure currently supports the importation from GB of most of the natural gas consumed on the island of Ireland. GNI also owns and operates the gas interconnector between Northern Ireland and Ireland, which improves the security of supply of gas to each jurisdiction. In the future these assets are likely to carry hydrogen blends or be repurposed to carry pure hydrogen.

To ensure ongoing robust security of energy supply for the island of Ireland a high degree of policy coordination and collaboration across all relevant jurisdictions is therefore required, including GB.

Ireland and Northern Ireland share a single electricity market (SEM) that operates an all-island capacity mechanism. Development of the new North-South electricity interconnector will significantly increase cross-border transmission capacity which will reduce the zonal constraints currently imposed upon the capacity market. This will further increase the electrical interdependency of the two jurisdictions.

Both jurisdictions will also see significant further integration of renewable generation and require substantial investment in electrolytic green hydrogen production capacity to mitigate renewable curtailment. Similarly, both require access to seasonal hydrogen storage to provide an alternative net zero compliant fuel for dispatchable power generation, which is required to maintain security of electricity supplies when output from renewable generation is low.

Given the general alignment in their energy strategies and the existing co-dependency on a shared energy infrastructure, it would seem sensible to develop all-island solutions to security of supply concerns, an approach that is likely to benefit both jurisdictions and their consumers.

3. The opportunity for hydrogen storage in Northern Ireland

The assessment of underground gas storage provided in the CEPA report accompanying the consultation paper is largely based upon the characteristics of the Kinsale field, but other large-scale gas storage solutions are available, including the fully consented salt cavern natural gas storage project at Islandmagee.¹ This project consists of seven caverns that could provide the island of Ireland with a substantial working gas storage volume of up to 500 million cubic meters by 2030.

A seismic study of the area in fact indicates the local geology could support the development of a further eight caverns, subject to all required consents being secured. If the original seven caverns were initially developed for natural gas storage it would be technically possible to convert them to store hydrogen in the future. Combined with the potential for eight further salt caverns at the location, which could be used to store hydrogen, up to c2.5TWh of hydrogen storage capacity could be delivered.

With intergovernmental collaboration and support the project could therefore significantly improve energy security for the entire island of Ireland, as well as facilitating delivery of the wider decarbonisation goals of both jurisdictions.

4. Key recommendations

The recent geopolitical tensions which have resulted in decreased levels of Russian gas imports to the EU have indicated the need to further improve security of energy supply on the island of Ireland. Further, the commitment to a net zero transition in both jurisdictions has highlighted the need to develop hydrogen as an alternative fuel to natural gas, and as a long-term storage solution for renewable energy.

¹ The project has secured all substantive environmental consents and has a gas storage license from the Northern Ireland's Utility Regulator.

Hydrogen NI therefore recommends that:

- **A formal framework is put in place that facilitates cross-border collaboration on security of energy supply, given the extensive interdependency of the energy systems and the general alignment in approach to decarbonisation in both jurisdictions.**
- **The development of green hydrogen as a renewable gas, and the use of hydrogen in power generation is expedited. While immediate security of supply issues must be dealt with, given the 2050 net zero target, a myopic focus on delivering near-term solutions should be avoided and instead a long-term strategy for a decarbonised energy security developed.**
- **Formal consideration is given to the development of salt-cavern storage of hydrogen at Islandmagee in Northern Ireland to improve all-island energy security, as well as the longer-term decarbonisation objectives of both jurisdictions.**