



APPG on Hydrogen – GMB Union submission

Introduction and summary

GMB, the union for gas industry workers, welcomes the APPG's inquiry.

Within a balanced energy mix, hydrogen represents an essential investment if we are to meet the UK's climate change commitments while also protecting jobs and skills in the UK's gas industry. We believe that the Government should make a positive and strategic commitment to hydrogen.

Hydrogen's potential

Hydrogen holds many potential advantages. It would replicate the flexibility of natural gas which enables the UK to meet volatile and seasonal power demand patterns, the efficiency of the technology is more scalable than alternatives, and hydrogen is easier to store than electricity.

Hydrogen power has many potential and proven applications, from powering vehicles to heating industrial sites and homes. A well-planned transition to hydrogen as the default basis for home and industrial heating could make use of much of the existing gas distribution network, provide continuity in a nation where 85 per cent of households are connected to the gas grid, and utilise the skills of the workforce.

In the short to medium term, production and use of 'blue' hydrogen can be achieved with lower carbon emissions than unblended methane, and blends of up to 20 per cent have been safely achieved in the HyDeploy project without changes to existing appliances.¹ In the long-term, 'green' hydrogen produced via offshore electrolysis has significant potential for exploiting the UK's wind resources to produce a power source which is carbon free with the sole exception of sunk infrastructure costs.

The current position

While we recognise that the Government has funded some research into the development of hydrogen technology, the committed innovation funding of up to £121 million² is deeply inadequate compared to the commitments made by other nations.

Over two hundred thousand homes are already powered and heated by hydrogen in Japan, and this week Germany recently set aside €7 billion to fund its emerging hydrogen strategy.³ The UK is well placed to develop a strong, exporting hydrogen supply chain, but this will require a strategy, investment, and certainty for investors.

Instead, the Government's official position is to allow market forces to establish the most cost-effective means of decarbonisation. GMB believes this is a false economy. It does not take account of the cost of high additional demand on the electricity grid of alternatives (a 20 per cent increase in heat pump penetration would lead to a 14.3 per cent increase in peak demand),⁴ heat pumps' inefficiency at low temperatures and in industrial settings, or the £20 billion plus write-down in value in the gas distribution network if natural gas use was abruptly discontinued.⁵

The Government's agnostic approach delays making a choice at a time when other nations are not hesitating to invest in their industries. At the same time, the reported policy of banning gas boilers in new homes from 2025 is short-sighted; mandating 'hydrogen-ready' boilers would be a more constructive approach.

Workforce and funding

It is important to recognise that the gas industry is an important source of stable, skilled, and (on average) relatively well-paid employment: full-time median earnings are 35 per cent above the average for all occupations.⁶ These jobs must be preserved as part of the UK's economic recovery, and hydrogen is the best energy alternative path for utilising the skills of the existing workforce.

GMB recognises that a fall in costs comparable to that achieved in average renewable prices must be achieved to make hydrogen viable at scale. We believe that this can be achieved with the right political support, and we note that green hydrogen production could be viable in a decade on current trends.⁷

While GMB recognises that significant reductions in the production cost of renewable energy has been achieved, we would strongly encourage scrutiny of existing funding mechanisms on workforce grounds. Despite the billions invested through the Contracts for Difference regime, the 'green jobs revolution' has failed to materialise. In 2014, BIS stated that offshore wind could indirectly support 30,000 jobs by 2020,⁸ but only 6,100 jobs were estimated to be indirectly supported by offshore wind by 2018.⁹ We urge policymakers to enter into discussion with the energy workforce to develop funding models that deliver investment and economic justice.

Recommendations

GMB believes that hydrogen has an important role to play in the UK's recovery and energy future, and we want to play a constructive role in making that happen. Our recommendations to the APPG are as follows:

- The Government should make a strategic decision to back hydrogen as its preferred main means of decarbonising heating.
- Funding should be invested on an at-least comparable basis to Germany and Japan to prevent the UK falling further behind.
- The UK must have a clear plan, based on consultation with industry and workers' representatives, for infrastructure conversion and building a competitive UK supply chain.
- Investment in hydrogen should not replicate funding models for offshore wind that have failed to deliver jobs in the UK.
- Domestic boilers should be required to be 'hydrogen ready' following an appropriate notice period, which could be 2025.

References

- ¹ <https://www.itm-power.com/news/hydeploy-uk-gas-grid-injection-of-hydrogen-in-full-operation>
- ² Answer to Written Parliamentary Question 47436, on Hydrogen: Renewable Energy, 22 May 2020
<https://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2020-05-15/47436/>
- ³ <https://www.dw.com/en/germany-and-hydrogen-7-billion-to-spend-but-no-strategy-yet/a-53719746>
- ⁴ J. Love et al., The addition of heat pump electricity load profiles to GB electricity demand: Evidence from a heat pump field trial, *Applied Energy*, 204 (2017), pp. 332–342.
- ⁵ The combined Regulated Asset Value of the 'big eight' gas distribution networks was £19.8 billion in 2019:
<https://www.sgn.co.uk/sites/default/files/media-entities/documents/2020-03/Moodys-Investors-Service-Southern-Gas-Networks-published-27-February-2020.pdf>
- ⁶ ONS, Annual Survey of Hours and Earnings 2019, Table 16.7a
- ⁷ Glenk and Reichelstein, Economics of converting renewable power to hydrogen, *Nature Energy*, 4 (2019), pp. 216–222.
- ⁸ Answer to Written Parliamentary Question 902151, on Reshoring, 23 January 2014
https://publications.parliament.uk/pa/cm201314/cmhansrd/cm140123/text/140123w0002.htm#140123w0002.htm_wqn70
- ⁹ ONS, Low Carbon and Renewable Energy Economy (LCREE) Survey direct and indirect estimates of employment, UK, 2014 to 2018.