

The UK Hydrogen Strategy: Benefits for the Health Sector

The case for low carbon hydrogen in hospitals and other healthcare facilities, and what the Government is doing to deliver on low carbon hydrogen production.

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With the Climate Change Act 2008 (through the Climate Change Act 2008 (2050 Target Amendment) Order) placing a duty on senior ministers of the UK Government to ensure the UK achieves net zero by 2050, the development and implementation of new forms of low carbon renewable energy, which can assist the UK in achieving its ambitious goals, are ever more important.

In line with the Government's 10 step plan for the "Green Industrial Revolution" released in November 2020, low carbon hydrogen power is one of the methods which the Government, and other bodies such as the Climate Change Committee, feel is critical in the UK's transition to net zero. In February 2021, a Government and industry collaboration produced the Hydrogen Roadmap setting strategic priorities to promote the production of the power and heat necessary to produce hydrogen using renewables and nuclear power. [The Government's Hydrogen Strategy, published in August 2021](#), outlines the Government's plans to ramp up low carbon hydrogen production, storage and use to become a world-leading hydrogen economy.

The case for low carbon hydrogen in hospitals and other healthcare facilities

The Hydrogen Strategy has been eagerly anticipated across the health sector. For example, the Net Zero NHS plan issued in October 2020 confirmed that the running of combined heat and power engines that run entirely on hydrogen should be investigated more as a means of generating energy for the NHS estate. This research is ongoing. In addition, earlier this year, the trialling of the first hydrogen/electric ambulances took place with a prototype zero emission ambulance due to be delivered this autumn for the London Ambulance Service NHS Trust.

However, currently, the hydrogen technology and infrastructure need to be developed. Key issues for hospitals and other healthcare buildings are how and where to store the hydrogen especially on sites where space is at a premium. The investment required to develop the infrastructure is also significant and again, with stretched resources and the well-publicised maintenance backlog across the NHS estate, hydrogen is not a quick and easy solution.

The Government has identified the following as challenges generally that must be overcome:

- the cost of hydrogen relative to existing high carbon fuels is currently more expensive, but likely to reduce as technology improves;
- current hydrogen innovation and technologies needs to be proven before more widely applied;
- there is a great deal of current policy uncertainty in the energy sector regarding hydrogen as an energy source;
- there is a need for the creation of new infrastructure, and the co-ordination of 'supply and demand; and
- the drawing in of new kinds of investment to the industry and low carbon hydrogen production, storage and use.

Broadly, the key challenges facing everyone relate to the technology and infrastructure. A specific issue for the health sector, where a major concern is to ensure energy sources are available 24/7, is that continuity of supply is critical. Another issue relates to the possible

lead in time for constructing the infrastructure and switching from fossil fuels to low carbon energies. More efficient generators are needed now, often, to give assurances that in the future, the switch can be made seamlessly.

What is the Government doing to deliver on future low carbon hydrogen production?

In the Hydrogen Strategy, the Government has set out its approach to develop a low carbon hydrogen sector to deliver 5GW of low carbon hydrogen production capacity by 2030. Key parts of the strategy include the following examples:-

- Continuing to drive research and innovation regarding low carbon hydrogen production and use, as well as reducing social economic and technological barriers including the launch of a £60 million low Carbon Hydrogen Supply 2 Competition to create new solutions for hydrogen supply as the market grows.
- Continuing to work with the £1 billion Carbon Capture and Storage Infrastructure Fund which will support and develop CCUS Infrastructure.
- Developing a Hydrogen Business Model to raise investment through low carbon hydrogen projects which intend to support hydrogen producers with long term revenue to overcome cost challenges faced with producing low carbon hydrogen (especially due to the competitive prices for cheaper fossil fuels).
- Providing up to £240 million through the Net Zero Hydrogen Fund (NZHF) which will include Government co-investment to support low carbon hydrogen production in the lead up to the Government's 2030 5GW goals.
- Ensuring the hydrogen we produce is low carbon, and the Government continues to support low carbon hydrogen production to prevent the risk of a reversal of low carbon energy progress.

It is hoped that the health sector can tap into the NZHF but for now it's early days as research and development testing are underway, the results of which will help inform the Government's decision about the role of hydrogen in heating buildings and powering vehicles to cut carbon emissions.

Conclusion

The Government recently consulted on the NZHF; the consultation ran until 25 October 2021. It asked for organisations involved in the production and development of low hydrogen projects and interested members of the public to determine how the fund should be designed and applied to the advancement of low carbon hydrocarbon projects. With a variety of low carbon hydrogen projects already taking place across the UK in health and other sectors, the health sector and its suppliers are already alive to opportunities that hydrogen may offer.

At Browne Jacobson we are passionate about low carbon energy production and have wide experience across our firm in areas of law which the creation, storage, and marketing of low carbon hydrogen may regard.

Please feel free to contact [Peter Ware](#) or [Alex Kynoch](#) in our Government and Infrastructure team if you have any queries relating to low carbon energy projects regarding procurement, investment, or joint ventures. [Ben Standing](#) in our Public Law, Environment and Planning team can also be contacted regarding any planning or environmental impact queries in relation to low carbon energy projects.

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