

Developing a Hydrogen Economy in North West England

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It is inescapable; global warming, climate change and the quest to reduce our carbon footprint have at last permeated our collective consciousness. We remain indebted to luminaries such as Greta Thunberg and David Attenborough who have helped us grasp the seriousness of the situation by alerting us of the impending disaster to the natural world should we fail to implement immediate remedial action. Fortunately, theirs are no longer the lone voices scrutinising myopic short-termism and inept complicit politics.

COP26, to be held in Glasgow in November 2021, will showcase global measures and initiatives to combat climate change. The UK can unveil its green credentials via projects which include tidal barrages, wind farms, CCUS, and energy-efficient domestic heating. Hydrogen has a crucial role to play in the Government's strategy to be net-zero by 2050, as it can be used to replace natural gas and its combustion does not produce CO₂. Being colourless, odourless and invisible, CO₂ has received less investigation than the emission of particulates. The North West of England produces 40million metric tonnes of CO₂ emissions each year and acknowledges it is part of the global problem. But now the North West is at the vanguard of implementing regional solutions.

The development of a 'hydrogen economy' in the North West is a win-win situation. Not only will we begin to reduce CO₂ emissions by 10 million tonnes per annum, which will have invaluable environmental benefits, but it could also see a £4billion investment by 2030, creating 6,000 to 33,000 jobs—depending on which projections you believe. It is further predicted that the North West hydrogen economy could generate £17billion in G.V.A. A road map to develop these ambitious aspirations is being upgraded to meet a net-zero target.

HyNet is arguably the most high-profile project of its kind in the UK. It has two principal objectives: firstly, to supply hydrogen to large industrial consumers of natural gas which will entail building pipelines, and upgrading plant and fired equipment; and secondly, to capture CO₂ from industry, compress, pipe and store it in the depleted gas fields of the Irish Sea where an estimated 130 million tonnes can be safely contained. The UK government has recently awarded £33 million to HyNet to further develop this project which was supported by a further £39m of private funding from the HyNet consortium.

Investigative works are underway to prove the feasibility of producing and supplying sufficient volumes of Hydrogen to satisfy industrial demand, whilst preparatory work continues in respect of the capture and storage of CO₂. Information about HyNet, which is a collaboration between numerous industrial giants and Cadent in the North West, can be found at <https://hynet.co.uk/>

Central to the development of a Hydrogen economy is the North West Hydrogen Alliance; an inclusive organisation bringing together business, industry, academia and local government to champion and publicise all things hydrogen (www.nwhydrogenalliance.co.uk).

The preparedness for the hydrogen revolution is in part driven by the funding from BEIS. Fuel Switching studies and trials have commenced in which practical assessment will qualify the suitability of hydrogen as an alternative to natural gas. This includes evaluating the introduction of 100% hydrogen into furnaces and fired equipment whilst parallel events have taken place, assessing the effects of blending 20% hydrogen in natural gas for commercial and domestic use. An active member of the North West Hydrogen Alliance, Otto Simon is working at the forefront of technical innovation for the Hydrogen market. Using our extensive experience in gas processing, gas cleaning and managing the process safety standards and requirements, Otto Simon is involved in Fuel Switching at NSG's gas furnace in St Helens. Prior to this, Otto Simon was involved in the HyDeploy project at Keele University, which has been a Cadent led landmark hydrogen blending trial supported by the knowledgeable team from Progressive Energy.

NETZERO North West (<https://netzeronw.co.uk/>) provides a voice for those who advocate a paradigm shift away from venting CO₂ to atmosphere. It calls for investment for new infrastructure necessary to transport and store the by-products. Seldom does a landlord merit praise, but it must be acknowledged that Peel has contributed much to the North West Hydrogen economy. The region is making great efforts to effectuate positive change.

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