



Climate

Policy, Automation, Climate and Ethics (PACE) are at the heart of significant global changes that in turn affect corporate behaviours and governance.

On November 18th 2020, The UK Government announced the Ten Point Plan for achieving Net Zero, sparking the green industrial revolution. The plan demonstrates the significance of hydrogen in achieving net-zero, detailing the production of 50GW by 2030 and ambitions for a hydrogen fuelled industrial sector, transport sector, and domestic heating.

The UK has already made significant strides in achieving net zero. Our carbon emissions have been reduced by 50% since 1990, which has been achieved through de-industrialisation and decarbonisation of electricity, namely through a move to solar and wind powered alternatives. But, electricity only comprises between a quarter to a third of the nation's total energy use. The remaining 50%, comprised of industry, domestic heat, and heavy transport, will be far more difficult to tackle.

The North West Hydrogen Economy

Whilst we await the publication of the UK's national Hydrogen strategy, wheels have already been set in motion for the roll out of hydrogen. HyNet, a hydrogen delivery project in the North West create low carbon hydrogen (blue hydrogen) through an auto thermal reforming system, and plan to supply this blue hydrogen to the hard to reach sectors of the economy in the North West.

HyNet have partnered with Cadent Gas to provide hydrogen to the industrial corridor that lines the Manchester Canal, partnered with Pilkington Glass to supply industry North of Liverpool, and partnered with Inovyn to supply the Cheshire area. Furthermore, Salt Cavern storage in Cheshire will provide a storage facility for their newly produced hydrogen. With investment from private partners and the UK Government, and support from various industrial partners, HyNet have ambitions to displace half of the natural gas in the North West by 2030, at a cost of £2 billion.

In addition, the roll out of hydrogen-supportive infrastructure, the North West facilitates an eco-system for hydrogen innovation, with a number of multi-level government projects ongoing, world class universities and The Fuel Cell Innovation Centre supporting businesses in this space.

The Fuel Cell Innovation Centre are a £4.1 million state of the art laboratory exploring the science of the fuel cell, engaging with local industry, and developing the technology talent of tomorrow. They work with businesses using a technology readiness level approach to develop hydrogen fuelled concepts through R&D and create tangible technologies, essentially allowing businesses to innovate, identify market opportunities and attract investment.

Large regional companies and projects such as HyNet are laying the ground work for significant growth in the Hydrogen market. Growth in this market will be significant as we are starting from a low base, and there is a strong demand within the hard to reach sectors of the economy (industry). Until then, the challenge is a chicken and egg conundrum. People are not purchasing hydrogen fuelled technology because they cannot access hydrogen, hence there is no demand to produce hydrogen, which is a deterrent for investors. This predicament demonstrates why the success of the UK's national hydrogen strategy is so important.

The UK's National Hydrogen Strategy

In order for the roll out of Hydrogen to be successful, the national strategy needs to;

- Establish a clear ambition that will support investment decisions.
- Establish a clear business model that can sufficiently fund the transition, including frameworks and a plan for practical deployment.
- Support ongoing investment in research and development.
- View the big picture of Hydrogen production to Hydrogen usage and everything in between.



Largely speaking, the renewable energy sector remains optimistic for the content of the national strategy, given the emphasis placed on hydrogen in the Ten Point Plan, and the current Ministerial engagement for the role out of Hydrogen, especially given the recent BEIS announcement of a £60 million hydrogen fund and a £240 million net-zero hydrogen fund. Furthermore, there is an element of political positioning at play, as the Government will want to promote their net-zero ambitions on the global stage.

At a regional level, businesses are keen to see different levels of funding established, with larger funds supporting national projects, and regional funds for regional projects. Such distribution of funds would allow greater autonomy in decision making for local businesses, enabling faster innovation to drive products to markets much quicker. Similarly, the funding should underpin regional demand, allowing local authorities to invest in much needed infrastructure to support the transition to net-zero.

Finally, it is important that the national strategy plays to the strengths of the UK – our advanced manufacturing sector and our ability to scale up. We need to scale up our green technologies, particularly those required for hydrogen production and those fuelled by hydrogen. As the Hydrogen market scales up, the cost of hydrogen production will come down, thereby facilitating supply and demand and the roll out of hydrogen across the UK. In turn this will attract inward investment to the UK, bolstering not only the green energy sector, but the wider economy.

Scaling up the Hydrogen Economy

Scaling up the UK hydrogen economy will not be without its challenges. As aforementioned, a key component to attracting investment is to stimulate demand. We should be encouraging conversations about the urgency of climate change and the benefits of renewable energy sources in order to raise awareness and encourage hydrogen-fuelled products to become commodities.

Investment is necessary to roll out hydrogen at scale. In addition to stimulating demand, investors will also be more interested where there is a detailed plan for efficient usage because this will demonstrate government commitment and the longevity of the industry. To date, funding, projects and plans have largely focussed on the production and usage elements, but detailed blueprints and contingency plans for the efficient use of hydrogen, amongst other renewable sources, will provide a clear sense of direction for renewable energy enhancing investor confidence. Thus, it is time to start addressing the small and necessary details required for scaling up.

Another key component to scaling the hydrogen economy is a skilled workforce. At present, traditional education does not provide suitable skills for the hydrogen experts of the future. The Fuel Cell Innovation Centre has developed Europe's first programme of targeted hydrogen education, which has been rolled out across six countries, and is already being used in schools. However, this does not go far enough. At present there are local leaders without Hydrogen expertise making significant decisions relating to the roll out of hydrogen. Furthermore, the Government has high ambitions for 50GW of hydrogen production by 2030. As a result, we urgently need to upskill our existing and future workforce to ensure the hydrogen strategy is a success.

Finally, in order to scale-up the hydrogen economy successfully, the regions need to work in partnership. At present the Government's cluster sequencing programme encourages competition between different regions. However, where regions collaborate there will be a smoother roll out of hydrogen across the UK, ensuring all four corner of the country benefit from the future of green energy.

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