

WHAT CAN THE UK LEARN IN THE GLOBAL RACE FOR HYDROGEN?



All Party Parliamentary Group on
Hydrogen

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| Date | Wednesday 14 th June |
| Time | 16.45-17.30 |
| Venue | Hydrogen for Life Conference, Science Museum |
| Chair | Harry Methley, Senior Counsel, Connect |
| Speakers | <ul style="list-style-type: none">• Eddie Kerr, Economy Department, Northern Ireland• John Langoulant, Agent General for Western Australia in UK and Europe• Jane Toogood, UK Hydrogen Champion• K U Ravindra, Senior General Manager, Bosch India |
| Theme/ Background information | While the UK made positive first steps in hydrogen research, development and rollout, in recent years it has encountered formidable competition. Governments in France, Germany, Australia and the United States have invested heavily in growing their own hydrogen economies. This session examined which nations around the world are currently setting the benchmark in different areas of hydrogen provision, and the policy decisions that would enable the UK to become world-leading once again. |
| Background Information for the Chair | <p>The APPG on Hydrogen is chaired by Alexander Stafford, MP for Rother Valley. The APPG has a total of 17 parliamentary members. It provides a forum for MPs and Peers to engage with leading businesses and organisations to work to enable the UK to meet its decarbonisation targets through the implementation of hydrogen projects and discuss policy options to support these.</p> <p>The APPG's sponsors are Baxi, Bosch, Cadent, EDF, Energy and Utilities Alliance, Equinor, Johnson Matthey, National Grid, Northern Gas Networks, SGN and Shell.</p> |

Harry Methley officially opened the session and asked the panellists for their thoughts on what the UK can learn in the global race for hydrogen.

K U Ravindra introduced Bosch India and their broad areas of interest. India has set targets to become energy independent by 2047 and achieving Net Zero by 2070. Hydrogen is one of the fuels which can ensure India meets its future targets. In 2021, the Indian government launched a National Hydrogen Mission which looks to ensure India is a leading producer and supplier of green hydrogen globally as well as the creation of export opportunities for green hydrogen and its derivatives. The government invested \$150bn into green hydrogen production capacity of at least 5 MMT per annum with an associated renewable energy capacity addition of about 125 GW in the country.

John Langoulant, Agent General for Western Australia (WA) in UK and Europe, is working closely with Western Australia's Investment and Trade Commissioners to attract further investment, promoting trading relationships and representing Western Australia within the UK and European markets. He noted that in comparison to UK and other countries, WA has adopted a longer time frame to transition to hydrogen usage.

He stressed the UK should develop its hydrogen industry but also look for sources of supply which diversify risk to address the current technology and cost issues. The US Inflation Reduction Act (IRA), to the extent that it provides incentive for companies to get involved in the production of hydrogen, will likely be an accelerator for technological development and lead to a significant cost reduction.

Eddie Kerr, Economy Department, Northern Ireland, drew on other countries as examples to identify where Northern Ireland could be a niche enabler. He stressed that Northern Ireland is a small region which cannot compete with other countries, like the US or India. However, Northern Ireland is home to a range of innovative companies and an agile R&D sector.

When asked whether the UK could learn more from abroad in terms of transitioning to hydrogen, **Jane Toogood**, the UK Hydrogen Champion, reminded audience members that hydrogen is needed for three primary reasons: to decarbonise the difficult to decarbonise industrial areas (eg glass and steel industries), as a building block for sustainable fuels, and finally for power balancing. The UK published its hydrogen strategy in August 2021, which set out a timeline to reach net zero by 2050, and at the time she welcomed it. Since then, there has been a political hiatus, coupled with the US IRA and Europe's response to it. As a result, real change in the hydrogen race is occurring globally. She noted that issues with overseas supply chains will likely cause the biggest challenges for the UK – highlighting the current availability issues of electrolyzers.

On the issue of supply chains, **Eddie Kerr** noted this is a key focus for Northern Ireland and a number of companies are looking at where the blockages of key equipment are and they can take to diversify how hydrogen can be produced.

Jane Toogood noted the need to ensure that hydrogen can be traded internationally. Countries across the globe should collectively ensure effective standards are put in place to optimise and de-risk global issues.

Educating and convincing the public of the UK's climate change and net zero targets is a key part of ensuring the Government and hydrogen stakeholders meet the transition targets. **John Langoulant** noted that over recent years, Australia has been educating the population of its policies on climate change and the urgency to address climate issues has been reinforced across all governments in Australia. The federal government has agreed to zero emissions by 2050 and is in the process of closing the country's coal mines whilst transitioning to greater level of renewables in the energy system rather than gas. Mobile apps are available to the population to educate the public about how efficient and carbon reducing the generation of energy in their jurisdiction is.

The Government has said that by 2025, 1% of the consumption of energy will be fuelled by hydrogen, and it is in the process of mixing hydrogen through main transmission pipelines with the objective of having up to at least 10% of those pipelines carrying hydrogen before 2030.

Harry Methley opened the floor for questions. A member of the audience asked what measures the UK should be looking to take in its response to the US Inflation Reduction Act.

Eddie Kerr highlighted the clear link to job creation in the hydrogen sector as a result of the scale of IRA. Whilst he is already seeing the impact of the IRA in Northern Ireland's industry, he stressed his previous point that Northern Ireland cannot compete with the volumes of larger nations, but it would be a positive next step if they can acquire a small portion of investment, collaboration or

company engagement through IRA. He noted that systemic change can be supported by companies in Northern Ireland engaging with the IRA.

Following the passage of IRA, panellists agreed that the US is currently at the forefront of the race, noting that rather than challenging the US, the Government should leverage off the technology development that will come from the US.

Jane Toogood highlighted that sitting back is not an option for the UK. The government has committed to decarbonise by 2050, but needs to ensure long term energy security and has set a clear target for 10 gigawatts by 2030. Given hydrogen is part of the whole energy system, if the government puts in place an integrated plan, we can take advantage of good strategic investment on future infrastructure – creating security and savings benefits over the long term. Research from Guidance found that if the UK planned an overall system, the country could save £38bn of infrastructure costs. When the government is setting up the FSO – ensuring the planning is done to cover electricity, gas and hydrogen, and ideally carbon capture and storage would be a very powerful way to create an ecosystem that is able to play into the hydrogen economy.

A member of the audience asked how the EU's regulatory response to IRA changed the global picture on the rollout of hydrogen?

One of the responses to IRA from Europe has been to consider critical resources. There are some critical metals, for example, that are fundamental to the energy transition. It will be important to recycle those critical resources. There is a need to consider the long-term job creation opportunities and the EU has moved quickly on this considering the difficulty to bring together multiple countries.

A member of the audience asked which nations around the world are setting the highest standards on hydrogen and what can the UK look to learn from?

Jane Toogood and **Eddie Kerr** agreed the UK has set the tightest standard on hydrogen and decarbonisation. However, it is critical international standards are in place to ensure consistency and allows trading between nations. This will prevent different interpretations regarding whether a certain type of carbon capture is appropriate or not.

John Langoulant noted that there are several league tables which rank countries based on current performance, but agreed that the EU, UK and US's response are all heading in the right direction. The standardisation of what constitutes green hydrogen is still an open question globally – this needs clarification. The EU is putting in place a range of laws and regulations in areas such as ESG in terms of what constitutes green hydrogen. The quicker consensus is met is important and investment will be more forthcoming once the regulatory rules are known. There is a realisation occurring that the transition to green hydrogen is going to take longer than was expected at COP26.

A member of the audience asked how the war in Ukraine had impacted the global hydrogen race?

Eddie Kerr highlighted that Northern Ireland is at the end of a long energy supply chain, but the region does have a different regulated price market. The war has readjusted perspective from decarbonisation to energy security and the indigenous creation of fuels and energy. This creates a range of new opportunities. For Northern Ireland this includes delivering self-sufficiency through affordable renewable energy and gives room for price control. There is also a new opportunity around geological storage in NI and how it can support the rest of the UK. The war has subsequently accelerated much of the critical development forward.

John Langoulant noted the war has created one of the biggest oil shocks for over 20 years, and has brought Australia to the front for providing energy to Europe. This has changed people's assessment of risk, and has also made governments realise the need to diversity supply points and the mix of energy sources.

A member of the audience asked if there are countries which exemplify collaborative government and industry initiatives that the UK can learn from?

K U Ravindra drew on the examples from his opening statement and highlighted there has been strong collaboration between government and industry in India over recent years. India's hydrogen and energy industry is working with the Government to meet current targets. Vehicle manufacturers are also collaborating with the Government to realise the hydrogen engine and fuel cell technology. The captive sectors, for instance the cement and fertiliser industries, have already initiated pilot projects.

Jane Toogood noted that UK's hydrogen strategy was created in collaboration between government and industry. Discussion was continuous to ensure the strategy was practical however she stressed the government can provide investors with additional certainty confidence to fund the UK hydrogen industry. Creating a tangible route map is important when providing certainty to investors. The UK has a good history on offshore wind, and the CFD approach has given investors confidence in the past.

A member of the audience asked whether the Energy Bill will support the UK's international competitiveness on hydrogen?

Jane Toogood noted the Bill outlines the mechanisms for Government to support hydrogen projects. Without mechanisms like the Energy Bill and a clear roadmap, it will be more difficult to see the certainty that investors want.

A member of the audience asked India, Australia or Northern Ireland specify in regulations that green hydrogen should be used for the decarbonisation of the shipping and aviation sectors?

K U Ravindra noted the national hydrogen mission is covering the captive and transport sectors in the long run. He has not come across the shipping and aviation long-term solution. **John Langoulant** also highlighted that Australia not focusing on these industries. The regulatory structure around the production of hydrogen is in development by the federal government. Australia is focusing on decarbonising the economy, but would seek to give preference to the shipping fleet.

The final question asked panellists whether the UK should adopt H2I's technology for heavy duty compared to other markets?

Jane Toogood noted that H2I is one of the solutions to decarbonisation. **Eddie Kerr** noted that Northern Ireland has an entire fleet of active hydrogen buses. There are two refuelling points in Belfast, but overall transport plan is relatively agnostic.

John Langoulant added that the application of hydrogen in transport is one of the most important areas in a region like Western Australia. A current plan is in place to put a hydrogen highway through the middle of Western Australia. This will enable HGVs and tourists to drive the length of WA by refuelling on hydrogen. The region is looking to apply similar plans to other sectors, for instance heavy mining – leading to the greater use of hydrogen across the economy.

Harry Methley thanked panellists for their contributions and drew the meeting to a close.