

HYDROGEN AND THE WORKFORCE



All Party Parliamentary Group on
Hydrogen

Minutes

Date	Monday 21 ST November
Time	16:00-17:00
Venue	Jubilee Room, Westminster Hall
Chair	Alexander Stafford MP, Chair of the APPG on Hydrogen
Speakers	<ul style="list-style-type: none">• Jake Tudge, Director of Corporate Affairs, National Grid Gas Transmission & Metering• Charlotte Brumpton-Childs, National Officer for Engineering and Construction, GMB• Matthew Lay, National Officer for Energy, UNISON• Simon Harris, Chief Commercial Officer, Maritime UK• Stephen Barrett, Director of Strategic Accounts, Energy and Utility Skills
Theme and Background information	<p>This session will look at exploring the challenges and opportunities for a future workforce in the hydrogen economy.</p> <p>Topics for discussion include a workforce for the hydrogen economy that is gender-fair, re-skilling and upskilling, and investment in a new workforce.</p>

Alexander Stafford MP opened the meeting and apologised for the delay in starting, due to security delays at the entrance to Parliament. His opening remarks focussed on the need to increase diversity in the hydrogen workforce and spoke of his excitement for hearing the insight that the invited panellists had for the topic. He introduced **Jake Tudge, Director of Corporate Affairs, National Grid Gas Transmission & Metering.**

Jake Tudge said that one of the main things to focus on within the hydrogen workforce is skills and who is actually being upskilled or receiving necessary training to join the workforce. We are seeing recent studies showing 18,000 new jobs could be created in the industry by 2030 that will be focussing on industrial decarbonisation. For hydrogen alone, we are expecting over \$700 billion in investment globally, so we are fighting for talent in the UK as the most skilled jobs will be spread out across the countries that are investing the most in this sector. The gas networks employ 45,000 people and have a reputation for being a mature industry. Our trade body have said that there will be 25,000 new jobs in green gas by 2030 – so we have to train, skill and upskill 25,000 new people in less than a decade. National Grid Gas are prioritising their main project in this space: Project Union. This is expected to create 3000 jobs. It is great that Government have put out a strategy for increased hydrogen jobs, but we are competing with industries talking about billions of jobs rather than hydrogen's millions.

Furthermore, when it comes to repurposing our pipe works, we need to think now about how we change them. In order to secure investment confidence, we need to create hydrogen confidence in both power, heat, transport and many more areas. We need to talk about it more positively and be more honest about the gaps in the roadmap. Looking to Australia, their authorities have worked

with PwC to create great analysis on the gaps in their industry – we can be learning from their example and produce similar research. We also need a diversity of experiences, backgrounds, thought and gender to achieve this. Jake spoke about how he himself was a member of PRIDE in Energy and the need for more of these groups to boost representation and people's comfort entering the energy industry. We do believe that diversity is ultimately what happens when we all invest in growing our hydrogen economy and a sufficient skills base.

Lord Young asked if Jake Tudge saw a role for the blending of hydrogen.

Jake Tudge said that he absolutely did. At an industry level, National Grid Gas are in active conversation with clients about a hydrogen blend and even a longer term 100% hydrogen consumption form of infrastructure. They are trying to create a strategic form of hydrogen infrastructure so that we can have a suitable hydrogen economy.

Lord Naseby asked about the suitability of current housing stock for using hydrogen heating systems.

Jake Tudge said that it is location dependent, housing type dependent and a host of different reasons. He stressed that regardless of housing suitability, we also needed to recognise consumer choice. Houses both need to be adequately built to make the most of innovative heating solutions, whilst also having a range of choices to choose from.

Lord Naseby asked about whether hydrogen technologies were being taught properly in universities.

Jake Tudge said that they absolutely were, citing the Universities of Exeter and Newcastle as examples.

Alexander Stafford MP thanked Jake Tudge for his remarks and handed over to **Charlotte Brumpton-Childs, National Officer for Engineering and Construction, GMB**.

Charlotte Brumpton-Childs opened by saying that when we look at the future of the gas industry, we have to look at the workforce and ensure that workers are at the centre of that conversation. Charlotte introduced herself as the lead coordinator for engineering and also works on new infrastructure projects. The GMB believes that hydrogen is essential for decarbonisation. Having been trained as an electrician at an apprentice level herself, Charlotte said that her experience had shaped her views of how essential workers had to be in shaping the future of the industry's workforce. Hydrogen for home heating is essential, but a lack of certainty from policymakers is slowing us down. One of the key challenges the industry faces is creating and storing a suitable supply of hydrogen from blue, green and yellow hydrogen sources. In terms of home heating, GMB acknowledge that heat pumps are essential but hydrogen is far more suitable for the gas boiler workers that are already skilled in the UK. Looking to Lord Naseby's previous question Charlotte highlighted that Keele University has looked a lot at this. Often when workers are upskilled, many are left behind. The risk of playing up hydrogen risks leaving employees behind – which she encouraged the industry to guard itself against. We need to ensure that workers are listened to and that key changes are not imposed on them but rather that people are listened to. Through focussing on hydrogen boilers over heat pumps, as an example of this done well, we can ensure that skills are merely developed as opposed to changed entirely. We need to give certainty over the future of home heating and we need to learn from the mistakes that have been made in the history about not providing the certainty necessary for the hydrogen transition. She then handed over to **Matthew Lay, National Officer for Energy, UNISON**.

Matthew Lay said that the electricity industry has always been some way ahead in trying to decarbonise heat and energy, which this APPG has done well in encouraging. We could have all the resources in the world, but we need to focus on workers and the workforce that will make the

conversion happen. The chairman of British Gas at the time (when British Gas was a world-leading corporation) said that the conversion to natural gas boilers was the greatest transformation in peacetime that has been seen. 40 million boilers were converted in 18 years alone, but this required a massive investment in skills. Currently, only a third of the workforce in this area are under the age of 30, threatening the longevity of the industry. National Grid estimate that 260,000 new jobs are required across the industry for a genuine hydrogen transition. Matthew spoke of his own engagement with lots of colleagues across Europe and how their progress is motoring ahead in recognising the possibility of hydrogen. The Russian invasion of Ukraine has accelerated British desire in this field, but such desire needs to shift to genuine action and adaptation. The UK needs to follow the progress of their EU counterparts, else we risk losing the race. The UK does not have the longevity of service that we used to have and we no longer attract the best talent – we have to raise the bar if we are to withstand change.

Addressing specific asks of policymakers, Matthew said that he wanted to see leadership. We have to see leadership from the Government rather than leave this change to the private sector to decide which elements are taken forward. There needs to be greater planning, especially around the regulator to ensure that the change to hydrogen is done fairly and with appropriate attention given to workers. We also need a finance package for consumers to want to pay for a boiler change. We have to replicate the same level of support that we had in the first change to natural gas boilers, if not double it. He then handed over to **Simon Harris, Chief Commercial Officer, Maritime UK.**

Simon Harris opened by saying that the hydrogen economy presents a great opportunity for the UK economy. As we have seen in other sectors, such as wind, we can introduce a new fuel into shipping. The practicalities are significant as we move forward, especially as we move forward with regulation. We need a cross-sector approach. It shouldn't be about supply vs demand – we need to stimulate infrastructure and investment on the supply side. It's not going to be easy to decarbonise the sector. In the deep sea environment, we have deep reserves of fuel on board vessels – so we need a fuel that not only can be carried and be efficient in doing so but can also be exported by boat as well. There are lessons for the hydrogen sector to learn so that we account for the natural life time of a ship – currently standing at 25 years. There is not enough hydrogen in the UK at the moment to supply our ships, not least because the storage of hydrogen is more complicated and less dense than diesel or petrol as it requires even more space to be liquified. Regulation ought to be made more straightforward for this innovation to take place. Deep sea ships are significantly difficult to adapt for hydrogen. The marine market is not a continuum, so we need to focus on what we can do quickly, which is what we can control. Each ends of a shipping route can work together to create green corridors. Loading ships and the infrastructure takes a long time, but it lasts far longer than a fleet. We need to not only use hydrogen but create a reservoir for hydrogen that the shipping industry can tap off from. The shipping market will not be strong enough to build sufficient demand. Finally, the public sector runs a large number of vessels, so these vessels need to lead the way if we are to see real innovation in the industry. He then handed over to **Stephen Barrett, Director of Strategic Accounts, Energy and Utility Skills.**

Stephen Barrett said that hydrogen performs a crucial part in the future of energy skills. We have been working hard on understanding what hydrogen in homes could look like through creating a competence framework. We need to make sure that colleges are up to date and we need to make sure that people like National Grid have the workforce that are ready to put solutions in place. In many ways, the solutions exist, but we need the workforce to implement it. There is no evidence to suggest that we could have a full 100% network by 2025 but we are currently looking like we are 10-20 years away, recently cut from 20-30 years. The skills required around hydrogen are possible, but we need to think about who we are training – they have to be young to futureproof our industry. We are active in developing the hydrogen economy. We have been working with BEIS to allow for significant learning in the sector among policymakers. Hydrogen needs to be rolled out and we

cannot halt progress, but we also need to roll it out steadily and in a standardised way to maintain consumer confidence.

Lord Young spoke in agreement with Stephen Barrett, saying that he was right about the number that we need to retrain. At one time, the UK looked at using sails to help shipping boats which can be raised and lowered mechanically. He asked if this was still the case and what we need to do for ships in our canals or remain in-land.

Simon Harris said that it depends on the trading routes. In-land vessels need to refuel, not least because salt water will rot their vehicles quickly. Canals are also often in urban areas with lower emission zones, so they will have to reduce emissions and switch to low-carbon solutions faster than shipping vessels. They could therefore become the prototype for larger ships.

A member from the audience asked if speakers had explicitly asked the government to create a market. He also asked if we could push the supply of hydrogen into the gas grid to then create demand?

Simon Harris said that the answer was dependent on generating hydrogen first. Going to planes and ships where there is no alternative will allow for confidence amongst customers and will also improve the infrastructure. **Jake Tudge** also said that one of the things he was most interested in was hydrogen blending and its introduction to current infrastructure. The real power is in the production of hydrogen. Every molecule of hydrogen going in the gas grid is a molecule less of natural gas that uses the same skills and infrastructure – but until government says that blending can go, this change will not happen. We have to stimulate the production of hydrogen to encourage government to come on board with making appropriate policy changes. **Matthew Lay** then said that if we can get it right, hydrogen will outpower wind. Wind depends on the wind blowing, whilst hydrogen can be year-round. **Jake Tudge** agreed and told the audience that the ESO spent £2 billion on excess wind – we wasted energy that could have been changed into green hydrogen that could be used for the market.

A member from the audience asked whether there was any use in creating hydrogen shipping containers if this was not international standard.

Simon Harris agreed that the challenge is large for deep-sea hydrogen. A big ship will burn 80 tonnes of diesel a day – if we can meet that demand, we will be highly competitive, regardless of whether other ports have the infrastructure in place as we can focus on domestic use first. The regulations of the industry are currently dependent on the IMO and nations won't vote for things that take them out of the economy, so we need to make this an economically viable venture to then encourage international change.

Alexander Stafford MP formally thanked the panellists and closed the meeting.