



**All Party Parliamentary Group on Hydrogen,
Non-Verbatim Minutes – the role of hydrogen in decarbonising heat in homes**

DATE: Tuesday 27 April 2021

TIME: 11:00-12:00

METHOD: Zoom Meeting

CHAIR: Jacob Young MP for Redcar and Chair of the APPG on Hydrogen

SPEAKERS:

Clive Betts, Chair of the Housing, Communities and Local Government Committee

Jeff House, Head of External Affairs, Baxi Heating

Martyn Bridges, Director of Marketing and Technical Support, Worcester Bosch

Daniel Newport, Deputy Director, Head of Heat and Buildings Strategy, BEIS

Chris Train OBE, Energy Networks Association, Green Gas Champion

MINUTES

Jacob Young, MP for Redcar and Chair of the APPG on Hydrogen

Jacob Young welcomed attendees, introduced the topic of the discussion and handed over to Clive Betts MP, Chair of the Housing, Communities and Local Government Committee.

Clive Betts stated that the larger challenge of home decarbonisation was in retrofitting existing homes to run on hydrogen, rather than building new hydrogen-dependent homes from scratch. He stated that there were a number of issues that the Climate Change Citizens Assembly had drawn attention to, and that if we are going to address these major issues, we need a central strategy to tackle carbon emissions in both new and existing homes, for example manufacturers need to create boilers than can be converted to hydrogen. He added that another significant issue is how do we take people with us, with a significant portion of the population still not convinced that climate change is real or a major issue. He added that it is far easier for richer people to go green, for example by buying an electric car - making lower-income homes green means real expenditure from Government, and the Government needs to ensure that lower-income people are not priced out of going green, with education on the issue of decarbonisation being critical to *“taking people with us”*.

Jacob Young thanked Clive Betts and handed over to Jeff House, Head of External Affairs at Baxi Heating.



Jeff House introduced himself and ran through his background briefly, stating that lately hydrogen was a strategic focus for Baxi, with no one-size-fits-all solution and ingrained energy system-level constraints. He noted however that hydrogen is a “*really valuable*” proposition for heating homes, and added that Baxi have developed prototype pure hydrogen boilers that are zero carbon at the point of use, with a series of products currently in development to allow consumer input. He added that Baxi have successfully developed a hydrogen boiler that can be installed the same as a conventional one. He concluded, regarding the Green Industrial Revolution’s targets for hydrogen production, that the target of 5GW of hydrogen production capacity by 2030 can be beaten and improved upon by the renewable energy industry, with other sectors such as transport contributing.

Jacob Young thanked Jeff House and handed over to Martyn Bridges, Director of Marketing and Technical Support at Worcester Bosch.

Martyn Bridges briefly introduced himself and ran through his background in the heat pump industry. He said the main limitation in the use of heat pumps is the amount of space they take up, which can make them difficult to fit in smaller homes. In terms of the price of hydrogen boilers v natural gas boilers, he said that there was “*not much in it - less than £100*”. He stated that Worcester Bosch had developed a prototype hydrogen combination boiler and a systems boiler. Combination boilers make up 80% of boilers in the UK, and produce 30 KW each, Worcester Bosch have delivered 10 of these prototype hydrogen boilers to BEIS, with the boiler design very similar to that of a natural gas boiler. Worcester Bosch have also created a 6-boiler cascade, with 180 KW output in total, that can be scaled up to 480KW to power larger buildings. He stated that Worcester Bosch now employs over 20 engineers solely focused on hydrogen work, with BEIS investment in their hydrogen work being matched “*four or five-fold*” by Worcester Bosch themselves. He stated that Worcester Bosch could have a full suite of appliances ready by 2025 if they had confidence from the government that a hydrogen market was on the way and would probably only need 2-3 years notice.

Jacob Young thanked Martyn Bridges and handed over to Daniel Newport, Deputy Director of Head of Heat and Buildings Strategy at BEIS.

Daniel Newport briefly introduced himself and ran through his background. He stated his confidence that heat pumps would have a significant role and millions would soon be needed, with it being difficult to choose between heat pumps and hydrogen boilers as the most efficient option. He added that the nature of cost is very different between a hydrogen pathway and an electric pathway, with cost of production a significant differentiating factor. He added that the forthcoming Hydrogen Strategy and Heating Strategy will lay out in further detail BEIS’s intended path. He concluded by stating that the middle of this decade will be a critical assessment point in ascertaining the direction of travel on renewable technologies.

Jacob Young thanked Daniel Newport and handed over to Chris Train OBE, Energy Networks Association, Green Gas Champion.

Chris Train introduced himself and ran through his background briefly. He said that net zero needed a systemic approach, and that hydrogen has become fundamental to the UK’s ambition of meeting its net zero targets. He added that utilising the repurposing of the current pipeline network to transport hydrogen rather than natural gas will keep costs down. He added that the area in which he was looking for real ambition from the Government is in delivery. He concluded that industry matching the timescales of the Government’s net zero targets requires real ambition and help from the Government in delivery.



Jacob Young thanked Chris Train and opened the discussion up for questions from parliamentarians.

Robert Goodwill MP asked if blue hydrogen should be seen as a natural stepping stone to a green economy based on green hydrogen or if it's a long-term solution, and further asked if it would be possible to conduct a pilot of an entire local economy based on hydrogen.

Daniel Newport said that the Future Homes Standard would determine the low-carbon technology used in order to prevent an excessive need for retrofitting. Chris Train added that green hydrogen would have to be the long-term solution, and that as more of it is produced, cost will come down,, adding that we have a chance over the next few years to *“really kickstart the hydrogen economy”*.

Lord Caithness asked how economical it is to produce green hydrogen given the extra costs – when does it become net beneficial to the environment?

Chris Train reiterated that cost and efficiency would improve dramatically over the coming years. He gave the example of offshore wind, where the cost of energy now is only a quarter of when it was first introduced.

Hilary Benn MP asked if blue hydrogen production was happening at scale at the moment, and what the advantages of heat pumps were compared to boilers.

Martyn Bridges said that heat pumps were a fairly mature technology, Daniel Newport added that the development of blue hydrogen was critical for decarbonisation, and added that research was continuing into carbon capture and storage technology, though this was not yet operating at the scale desired by BEIS.

Jacob Young thanked speakers and attendees and wrapped up the discussion.