

EGM AND HYDROGEN IN HOMES



All Party Parliamentary Group on
Hydrogen

Minutes

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| Date | Monday 24 th October |
| Time | 16:10-17:00 |
| Venue | Macmillan Room, Portcullis House |
| Chair | Alexander Stafford MP, Chair of the APPG on Hydrogen |
| Speakers | <ul style="list-style-type: none">• Joss Clark, Head of External Affairs, SGN• Mike Foster, CEO of Energy and Utilities Alliance• Paul Honeyman, Head of Product Management, Vaillant• Clare Jackson, CEO of Hydrogen UK |
| Theme and Background information | <p>The Government's Net Zero Strategy commits the United Kingdom to reach net-zero by 2050. Yet an enormous challenge to achieving net-zero lies in how we heat our homes.</p> <p>Warming our homes is responsible for between a quarter and a third of the UK's greenhouse gas emissions, more than 10 times the amount of carbon emissions created by the aviation industry. Around 85% of homes now use gas-fired central heating.</p> <p>Creating a national-scale sustainable heating system remains a large challenge for the public and private sectors. Yet recent reports have suggested that hydrogen could be one of the key replacement for traditional gas boilers in the home.</p> <p>This session will look at what practical steps are needed to decarbonise homes, and the role hydrogen ready boilers could play in this huge challenge.</p> |

An EGM took place prior to the session to elect a new Chair.

Alexander Stafford MP opened the EGM and nominated himself to be elected as Chair of the APPG and Jessica Morden MP to be elected as Officer of the APPG (in absentia), with Ian Mearns MP seconding both nominations.

The election then took place, with parliamentarians present unanimously electing Alexander Stafford MP to become Chair of the APPG and Jessica Morden to become Officer of the APPG.

Parliamentarians present for the EGM were:

- Alexander Stafford MP (Con, Rother Valley)
- Ian Mearns MP (Lab, Gateshead)
- Ian Byrne MP (Lab, Liverpool West Derby)
- Christine Jardine MP (LD, Edinburgh South)
- Lord McNally (LD)

- Lord Truscott (NA)

Alexander Stafford then opened the meeting and welcomed attendees, announcing himself as the new Chair of the Group. His opening remarks focussed on the exciting potential of hydrogen as the future of home heating, but said that it has a large battle ahead. There is work to be done to encourage the correct infrastructure and make hydrogen worthwhile for investment. He introduced **Joss Clark, Head of External Affairs at SGN.**

Joss Clark said that SGN serves 6 million customers across the UK. SGN is part of a group of companies that is working with BEIS to deliver a final decision in 2026 for hydrogen heat and home policies. The work of SGN in this space is focused on heat networks – 25 million individual customers need a zero-carbon boiler in place. They have researched this as part of their wider project of increasing percentage of net zero heat customers by 2024. Part of their rationale is wanting to align all of this up with what customers believe about hydrogen – people want change and net-zero. 75% of customers want to change to net-zero carbon solutions, but only 30% have any intention of doing so. They are also wanting to build enough evidence to go to BEIS in 2026 to show that customers are wanting new change.

When asked what policy changes he would like to see from government, Joss asked for the new government to bring back the Energy Bill. He handed over to **Mike Foster, CEO of the Energies and Utilities Alliance.**

Mike Foster reminded attendees that achieving net zero is non-negotiable and is signed into law – but there is no debate about the challenge we face. Heat pumps, heat networks and hydrogen are our 3 options. All options received 80% levels of support from a citizen's assembly so this is clearly the right way to go. He said that this is where the membership of the EUA is as well – there is a general view emerging that new builds should receive heat pumps or hydrogen boilers as a solution to this ongoing problem. However, one of the challenges for heat pumps is communal buildings as they seem to prioritise older heat networks. He said that we have to accept that our building infrastructure is different to our European neighbours – our Victorian buildings let out heat and are not ready or fit for the future. He reminded attendees of the size of heat pumps and how very few Victorian houses would be able to be retro-fitted due to lack of space. Furthermore, we are having to live with the vast majority of homes not having hot water cylinders – meaning they have to find the space and the cost for these retrofit solutions to be fitted as well.

The Government had a choice to kick the boiler and kick the gas – that's what Hy4Heat was made for. The interesting thing is that up to the trials commencing, it was thought that a hydrogen ready boiler could burn up to a 20% blend of hydrogen. In situ, this can be converted to 100% hydrogen over time. That conversion can take place and be performed by the boiler industry – through limiting the consumer responsibility to change. System transformation has been modelled by the National Grid to be compatible and the Climate Change Committee to be achievable by 2050. The UK housing stock can be replenished with hydrogen-ready boilers if that is the direction the Government go with. However, this has to be the choice and policy of government to give providers the certainty necessary and consumers competitive prices. Retrofit solutions show that hydrogen have a part to play, but this requires real government action. He then handed over to **Paul Honeyman, Head of Product Management, Vaillant.**

Paul Honeyman described Vaillant as 'technology agnostic' and open to a variety of heating pathways to decarbonise home heating. They are part of the SGN and NGN trial looking at blended hydrogen in the natural gas system and have 2 live boilers working on 100% hydrogen. However, he highlighted that the industry has no clarity and transparency from government on what their plan is – currently they work with tens of millions of euros in hydrogen development and are working

to a timescale that is working towards 2026. Yet they can only do this due to certainty provided by mainland Europe, not the UK.

The technology to decarbonise heating is possible. Vaillant are able to create a boiler that can convert 100% methane gas to hydrogen. There are sales possibilities that are possible with hydrogen to make it more attractive to consumers. For example, the biggest harm we see in our industry is carbon monoxide poisoning – which would be removed with the move to hydrogen. 50 floor flats are also not suitable for heat pumps – so hydrogen boilers alongside heat pumps will provide the solution.

He said that whilst hydrogen cannot be the silver bullet, it is a key part of the pathway to decarbonising out homes. He then handed over to **Clare Jackson, CEO of Hydrogen UK**.

Clare Jackson said that the industry and the UK Government has a variety of decarbonisation weapons – but the really important thing is that these are not competing technologies, they are complimentary. We are going to need both of these pathways for heating, both heat pumps and hydrogen boilers – this cannot be a zero-sum game. There are some areas that will need one and not the other and some where we need a combination and heat is one of those areas

Hydrogen UK is pro-heat pumps. However, the reality is not every home is suitable for a heat pump and hydrogen can do the heavy lifting in some of those areas. Furthermore, hydrogen will play a massive role in securing energy resilience and energy security, as it can be produced in the UK and not rely on foreign imports. Hydrogen can be stored in large scale low cost domestic storage that can balance our energy system.

Clare also made a point about hydrogen infrastructure, We currently move 4x more energy in our gas pipes than we do in our energy pylons – we need to convert our gas networks to carry hydrogen instead. This provides a huge economic opportunity presented by hydrogen – there is a real prize on offer for countries that can be leaders rather than followers by converting their gas systems. The UK can be developing technologies here and export them, rather than importing them from elsewhere. The Energy Bill had included some really important legislation around kickstarting boiler changes – if we want to see our projects funded, then we need to see that legislation laid as soon as possible. If we deliver on the Energy Bill, then we will be able to deliver on a world-leading energy sector in the UK.

Lord McNally then opened the floor for questions. **Hillary Benn MP** asked about how we replace boilers at the scale and pace necessary for genuine change and how we ensure storage so that energy is not wasted.

Joss Clarke spoke about SGN's project in Scotland where there are 5 towns that are remote from the gas grid and the electricity network. They service those customers by taking LNG and taking it up to Glasgow by train and then by tanker into those towns. The distance involved for these small communities mean that the economics of adding them to the network does not add up unless we utilise electrolysis through pipeline distribution to reach them. SGN are confident that this is possible but people are worried that the National Grid won't have the correct storage facilities. We have to do something to bring green hydrogen into those homes – if we can prove that is viable then it will be rolled out further. The question on cost to the customer is up for question – the challenging area is the storage of hydrogen (which hasn't been done yet) and how we change the discourse from blue to green hydrogen.

Clare Jackson spoke about how heat pumps are great because they are efficient, but reminded attendees that that is not the whole story. Heat demand is not consistent across the whole year. The efficiency of the technology is not the only factor – we have to look at seasonal variations. Either we build capacity to store enough for peak demand (which we do not currently have) or we build storage into the system.

Furthermore, the hydrogen picture only works if we decrease the price of hydrogen. Hydrogen is where offshore wind was 10 years ago – we are at the beginning of the journey. We are hoping it goes down the same deep cost curve due to the amount of investment going into it. The question of pace for investment is up for question, but whilst we are getting that cost down we need to be showing adequate research into the topic itself.

Mike Foster said that the timetable that Government has currently needs to be met – we need blending from 2023 to create demand. We also need to give a clear signal that there is demand for the industry to grow and invest accordingly. One issue that is not yet resolved is how much hydrogen boilers will cost when we mass-rollout them. However, we know the cost of a heat pump. The support for hydrogen going forward is the progressive way to decarbonise people's homes, especially for those that cannot afford to replace their boilers themselves.

Bill Esterson MP spoke about how hydrogen is part of the Labour Energy Support Plan. He then asked at which stage will hydrogen in homes become scalable? Do we need to prioritise and to what extent? At what stage realistically do we get hydrogen home-ready boilers? Do we need to be planning more strategically?

Clare Jackson said that the vast majority of the hydrogen being produced over the next 10 years will be for industry – this must be done to show that it can be mass produced. We need to be strategic on how we build this up and we have done a lot of thinking about what happens post 2030 to allow businesses to make longer term investment and clarity beyond that. Hydrogen heat is challenging – heat is probably the hardest thing about net-zero to achieve, so we need to address it head on. This will be easier to do once it has been rolled out into transport.

Joss Clarke said that the good news is that the gas distribution network took steel and iron pipes and changed them to plastic, so we actually helped to decarbonise there due to them not degrading in the ground. Once that is done, you won't have to go down to solve joining errors that we used to have. But we need the correct network plans to achieve mass roll out of hydrogen.

A member from the audience asked if anyone on the panel had a target price for green hydrogen. **Clare Jackson** mentioned that the US have aimed for \$1/kW. Whilst she acknowledged that this was ambitious, she said that it was a good target price.

Professor Andrews, University of Leeds asked about boiler standards and whether converting to hydrogen boilers is really possible if most boilers currently do not even meet low carbon standards. **Clare Jackson** replied, saying that low carbon hydrogen standards are important but even an electrolyser connected to the grid would struggle to meet the threshold for low carbon hydrogen standards. What the industry is excited to look further into is how we work with government to ensure that grey and blue hydrogen is therefore not included as 'low carbon' solutions in any legislation, but rather how we improve the standards and research of green hydrogen.

Lord McNally then formally thanked the panellists and closed the meeting.