

ENERGY SECURITY AND THE ROLE OF HYDROGEN SINCE THE WAR IN UKRAINE



All Party Parliamentary Group on
Hydrogen

Date	Monday 24 th April
Time	16:00-17:00
Venue	Macmillan Room, Portcullis House
Chair	Baroness Hooper , Officer of the APPG on Hydrogen
Speakers	<ul style="list-style-type: none">• Roz Bulleid, Research Director, Green Alliance• Mallika Ishwaran, Chief Economist, Shell UK• Jeff House MCIBSE MCIPR, External Affairs and Policy Director, Baxi
Theme/ Background information	A little over a year since the release of the British Energy Security Strategy, this session will discuss how the hydrogen economy has evolved since the beginning of the war in Ukraine and the role it has to play in the UK's future energy security.
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 18 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> <p>The Hydrogen APPG believes that the UK has the potential to become a global leader in low-carbon hydrogen technology, but that the UK must move fast to grasp this opportunity and achieve the maximum economic benefits. The APPG also favours a twin-track approach between blue and green hydrogen, as they believe blue will help in the transition.</p>

Baroness Hooper formally opened the meeting and introduced the topic of 'Energy Security' as one of national importance, as only proven further by the War in Ukraine. She introduced **Roz Bulleid**, Research Director, Green Alliance.

Roz Bulleid introduced the Green Alliance and their broad areas of interest. Their most prominent area of research recently has been in industry – where hydrogen really can be a potential energy source in production, even for the likes of steel and iron, where there's been a missed opportunity by not advancing this already. She urged a note of caution on domestic heating where high costs to the consumer suggest that it is not the best application for hydrogen technology. Instead, she suggested a demand-focussed strategy. She argued that there is a real need for blue hydrogen in

the short and medium term, as long as there is the long vision for its use to transition to green hydrogen. Ukraine has showed a real need for heat and electricity being produced domestically in the UK to increase our independence. Hydrogen will play a key role in this, but that shouldn't come at the cost of the consumer.

Baroness Hooper thanked **Roz Bulleid** and introduced **Mallika Ishwaran, Chief Economist, Shell**.

Mallika Ishwaran introduced herself and her role at Shell. She argued that the role of hydrogen in the UK's energy security should be viewed with a broad lens - we have to be realistic about both the war in Ukraine and the pandemic and their cumulative effects on health, personal and climate security as well. Energy security should be viewed through the lens of competing for domestic energy security and a competition to transform the energy system to improve energy resilience. Both of these angles perceive energy security differently but they both point to the need for greater hydrogen production and consumption. Shell have been studying what can be electrified across the sectors which reaches approximately 50-60% in each sector, but the other 50-40% need an alternative to renewable energy production, especially in times where solar and wind are not commercially viable due to weather forces beyond our control. The solution must be hydrogen. Supply, demand and infrastructure are all interdependent, making it essential that we focus on all three areas at the same time if hydrogen can progress at the necessary pace. Energy security day was a good start, but far more is needed to build out demand and infrastructure.

Baroness Hooper thanked **Mallika Ishwaran** and introduced **Jeff House, External Affairs and Policy Director, BAXI**.

Jeff House introduced himself and Baxi as a key firm offering domestic and commercial heating solutions. Baxi produce appliances that consumers are using day in and day out, making technology reliability the most important factor. There is no single technology that will address our energy insecurity. Energy system constraints, poor housing stock, lack of affordability and consumer choice are all important factors in the UK's consideration for the future of heat. Hydrogen has a key part to play in the wider energy piece. Politicians often discuss poor housing stock, with little impact or emotional response from the public. Once they see that this leads to poor energy efficiency and higher bills, people start to care. This stresses the need for effective solutions - from storing excess wind energy in green hydrogen to hydrogen being used in industry.

Ukraine has showed an unprecedented squeeze on consumers and businesses - everyone has genuine concerns for their energy bills, with people genuinely choosing between heat and eating. Traffic on Baxi's websites are perhaps higher than ever as they see the need for energy efficiency as a means of receiving cheaper bills. Baxi have been running trials in homes and businesses that show when good incentives are there - e.g. longer term discounts in bills - those that are able to afford the upfront cost are really pleased with end results. Member projects across the UK that are trialling the technology, such as the hydrogen villages, have been successful but require more concrete policy for any kind of rollout. Russia cannot help the market grow if want to be a democratic system, so we must develop supportive policy for our domestic heat sector.

Baroness Hooper thanked all the speakers and opened the floor for questions.

A member of the audience asked **Jeff House** about hydrogen-ready boilers and whether we can say there is local support for them given the "mayhem" seen throughout the Whitby hydrogen trial.

Jeff House said that residents in these trials wanted minimum disruption. Hydrogen boilers are less disruptive than the likes of an entirely new heat pump, so its about gathering community support and awareness over time.

A member of the audience asked **Jeff House** about predicted higher gas bills for using a hydrogen-ready boiler.

Jeff House said that we will not see an excess consumption of hydrogen heat in domestic settings, meaning that the excess on bills that has been talked about in the media is fanatical. When wind power first came, it was the most expensive form of energy production by a country mile. Taking those patterns for hydrogen isn't unrealistic – we should have more faith in innovation driving down the price of production over time and therefore consumption too.

Mallika Ishwaran said that we have seen storage costs coming down, demand going up and battery technology being produced, meaning the cost of the entire production supply chain has and will continue to come down. The cost decline of offshore wind has been exemplary - no one saw market disruption coming at the scale it did 10 years ago – so we need to invest now in green hydrogen production if we are to see similar results.

Roz Bulleid disagreed with fellow panellists, stating that it will be cheaper to install heat pumps in the long run – they are 3x more efficient than hydrogen boilers. Unless the hydrogen levy actually targets the consumers in a positive way, hydrogen-ready boilers cannot compete on cost efficiencies.

Baroness Hooper asked what the other things were that were holding the hydrogen industry back and whether we needed to have a wider lens on hydrogen's role in energy security beyond heating.

Mallika Ishwaran said that shipping is a big sector that required further focus because the infrastructure is not there yet, nor is there enough contributions in the planning stage to foresee an appropriate rise in hydrogen in the near future.

Jeff House highlighted the problem of leakage as a genuine concern because of the smaller molecule size of hydrogen - but there are solutions, such as the use of ammonia, which should be considered.

A member of the audience asked about whether they had considered the cost of cabling as opposed to the lower cost of transporting hydrogen and how this could influence the geopolitics of energy security.

Roz Bulleid said that given the lifespan of cabling, this is not a credible argument. Renewables will be able to play more of a role in our energy security over the long term, making the upfront cost of cabling installation cost-efficient over time.

A member of the audience asked about storage and whether the panels were over-simplifying electrification and efficiencies.

Jeff House said that 80% of energy flow is through fossil fuels, heating and gas. Electricity is only 20%. We need to have more of an in-depth discussion on what energy actually is. Look at storage – when the wind doesn't blow, how will we have energy if we are only relying on electricity. Excess wind into green hydrogen which is then stored is the real answer.

Baroness Hooper asked about tidal energy and whether that could be a suitable alternative in areas where hydrogen storage was not possible.

Mallika Ishwaran said that tidal is still not commercially viable and likely won't be in 30 years. Shell is considering North Sea potentials quite significantly, both in the offshore and the CCS spaces. If you can have an integrated plan, there is lots of opportunity.

Lord Taylor said that the lack of consensus and the battle for ideas shown in the discussion is a strength for the industry and shows that there are many strengths for the use of hydrogen as a source of fuel across the sectors. It will be a big reason why those of us looking at hydrogen in Parliament will want to keep the momentum going – Ukrainian War or not.

Baroness Hooper thanked panellists for their contributions and formally closed the meeting.