

Hydrogen Advisory Council

Third Meeting – Summary

15 December 2020

Attendees

Co-Chairs:

Rt Hon Kwasi Kwarteng MP, Minister for Business, Energy and Clean Growth

Sinead Lynch, UK Country Chair, Shell

Council members:

Name	Role	Organisation
Buta Atwal	CEO	Ryse
Paul Bogers	Vice President - Hydrogen	Shell
Baroness Julia Brown	Deputy Chair	Climate Change Committee
Al Cook	Executive Vice President of Global Strategy and Business Development & UK Country Manager	Equinor
Duncan Clark	Head of UK Region	Orsted
Graham Cooley	CEO	ITM Power
Andrew Doyle (did not attend)	Executive Director	Mitsubishi UFJ Financial Group
Richard Halsey	Capabilities Director	Energy Systems Catapult
Dr Susi Wiseman (attending on behalf of Alan James)	Hydrogen and CCS project technical authority	Pale Blue Dot
Jon Maddy	Senior Lecturer	University of South Wales
Peter Mather	UK Head of Country	BP
Jim Mercer (replacing John Panikar)	President UK & Ireland	BOC / Linde
David Parkin	Director	Progressive Energy
Professor Nilay Shah	Director of the Centre for Process Systems Engineering & Head of Chemical Engineering	Imperial College London
Steve Scrimshaw	Vice President	Siemens Energy Limited UK & Ireland
Jane Toogood	Sector Chief Executive, Efficient Natural Resources	Johnson Matthey
Geir Tuft	CEO	Inovyn
Chris Train	'Gas Goes Green' lead	Energy Networks Association
Alistair Phillips-Davies	CEO	SSE
Katharine Palmer	Global Head of Sustainability	Lloyd's Register, Marine & Offshore

Government & Secretariat Observers:

Name	Organisation
Professor Paul Monks	BEIS
Stef Murphy	BEIS
Rita Wadey	BEIS
Will Lochhead	BEIS
Professor Phil Blythe	Department for Transport
James Fleming	EPSRC
Edward Kerr	Northern Irish Government
Margo MacIver	Scottish Government
John Howells	Welsh Government
Joshua Lawrence (<i>attending on behalf on Danny Dunne</i>)	Department for International Trade
Ian Meikle	Innovate UK
Syeda Quader	HMT

1. Introduction and welcome (Sinead Lynch)

Sinead Lynch welcomed new demand-side members to the Hydrogen Advisory Council (HAC) (Geir Tuft, Inovyn; Chris Train, 'Gas Goes Green' project; Alistair Phillips-Davies, SSE and Katharine Palmer Lloyd's Register, Marine and Offshore). Addition of these demand-side members reflects Government's whole system approach to developing a hydrogen economy. Ian Mickle (Innovate UK) was also welcomed as a new observer. Jim Mercer replaces John Panikar from BOC/Linde.

2. Ministerial update (Minister Kwarteng)

Minister Kwarteng noted the significant progress that has been made on hydrogen in the last two months. Notably, the Prime Minister's Ten Point Plan, which committed to an ambition to deliver 5GW low carbon hydrogen production by 2030, a £240m Net Zero Hydrogen Fund, consulting on preferred business models for hydrogen, supporting trialling of hydrogen for heat, and establishing Carbon Capture, Utilisation and Storage in two industrial clusters by the mid-2020s. The Energy White Paper also reaffirmed the Ten Point Plan and the Government's commitment to hydrogen. Minister Kwarteng highlighted that his focus for 2021 will be on delivery of these commitments.

3. Ten Point Plan (Stef Murphy)

Stef Murphy gave further detail on the commitments to hydrogen in the Ten Point Plan and invited questions and comments from the Council.

- Questions were raised on whether the Net Zero Hydrogen Fund would include funding for the research community. BEIS responded that it will ensure collaboration between organisations such as UKRI to avoid duplication of funding. The Hydrogen Strategy will cover research, development, and innovation, and how we are working to coordinate activity.
- Members also asked whether the hydrogen trials would be located near supply or developed in more challenging areas. BEIS responded that the Hydrogen Heating team are working to develop the programme. BEIS also explained that these trials are specifically hydrogen for heating and cooking, while the SuperPlaces concept is more integrated and whole system.

4. Hydrogen Strategy Principles (Rita Wadey)

Rita Wadey presented a draft strategic framework which will guide action in the Hydrogen Strategy, focussing on principles, challenges and outcomes. The principles will help prioritise actions and will inform future policy. Questions were invited on the draft principles, and whether they support achieving 5 GW low carbon hydrogen production by 2030.

Members commented that:

- Incentives may be required to ensure higher efficiencies for CCUS capture rates so that more polluting technologies are not promoted by being more profitable, and government should consider how these subsidies can be removed over time. Government should also consider a longer-term strategy beyond de-risking early-stage investment.
- Government should think carefully about how to coordinate supply and demand, as well as considering storage requirements and production locations. Blending was suggested as a useful way to help balance supply and demand, but it was noted that it would be difficult to initially match both supply and demand exactly.

- Government should focus on jobs and inward investment, encouraging international firms to do R+D in the UK. Members noted the opportunity for the UK to lead on fuel cell manufacturing and decarbonisation of the steel industry.
- Members agreed on the importance of ‘learning by doing’ and the need to support multiple projects in tandem rather than waiting to sequence them. Principles should consider regional and devolved interests, and how to support projects to get off the ground quickly at a local level.

5. Twin Track Approach (Rita Wadey)

Minister Kwarteng set out the UK’s capacity to support both green and blue hydrogen production – this twin track approach will be set out in the Hydrogen Strategy. We will need to build blue capacity now while developing capacity for deployment of green hydrogen in the longer term.

Rita Wadey explained the modelling of the twin track approach, highlighting the need to consider current scale and technology-readiness levels for both green and blue technologies, and to examine the potential switch point between costs of blue and green (though this is not the only factor).

Members commented that:

- The twin track approach is pragmatic and will support technologies to develop in tandem. There are currently significant differences in scale between green and blue. As green scales up, its costs will be driven down, and early comparison with blue should not block its development.
- The development of infrastructure for blue hydrogen now could support green hydrogen in future.
- The twin track approach could be an advantage for the UK, and we should consider how we can become an exporter of hydrogen.
- BEIS agreed on the need to focus on delivering rather than further refinement of targets.

On the 5 GW ambition, members commented that:

- Business models and development of a supply chain are key challenges.
- There is potential to use curtailed wind energy to provide green hydrogen production to support the ambition. Green hydrogen can also be used to support energy storage and could be a potential future export market.
- Government should consider how to use by-product hydrogen to stimulate demand.

6. Business Models (Will Lochhead)

Will Lochhead updated the Council on business models. The business models will aim to support deployment of large and small scale, green and blue hydrogen, and need to support ‘nth of a kind’ deployment projects, supporting supply and demand in tandem. The approach builds on the Frontier Economics work, and there will be a consultation in 2021 on the preferred business model or models.

Members commented that:

- Government funding is needed alongside private investment to offset risks and demonstrate commitment to hydrogen. Need to consider how to close the gap with the cost of natural gas, for example, with Contracts for Difference, and ensure consumers are incentivised.
- Sector specific applications and producer focus are both needed, as well as different mechanisms for small scale projects – small grants or levelling up fund could be useful.

- Supply and demand should be supported in tandem for initial projects, with blending providing an opportunity to support this.
- Transport could be a good first case driver for hydrogen as a sector with a limited counterfactual cost difference.

7. Actions from last meeting (Rita Wadey)

- Rita Wadey gave an update on actions from the last meeting.

8. Closing remarks (Sinead Lynch)

- Sinead Lynch thanked members, noting the date for the next meeting.