

Hydrogen Advisory Council

Fourth Meeting – Summary

08 March 2021

Attendees

Co-Chairs:

Rt Hon Kwasi Kwarteng MP, Secretary of State, Department for Business Energy and Industrial Strategy (BEIS)

Sinead Lynch, UK Country Chair, Shell

Secretariat:

Arup

Council members:

Name	Role	Organisation
Rt Hon Anne-Marie Trevelyan	Minister for Business, Energy and Clean Growth	Department for Business Energy and Industrial Strategy
Buta Atwal	CEO	Ryse
Paul Bogers	Vice President - Hydrogen	Shell
Graham Cooley	CEO	ITM Power
Duncan Clark	Head of UK Region	Orsted
Andrew Doyle	Executive Director	Mitsubishi UFJ Financial Group
Alex Grant replacing Al Cook	UK Country Manager	Equinor
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	Director: Hydrogen Centre	University of South Wales
Chris Manson-Whitton replacing David Parkin	Director	Progressive Energy
Peter Mather	UK Head of Country	BP
Jim Mercer	President UK & Ireland	BOC / Linde
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
Jonathan Brearley	CEO	Ofgem

Government Observers:

Name	Organisation
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Professor Paul Monks	Department for Business Energy and Industrial Strategy - Chief Scientific Adviser
Stef Murphy	Department for Business Energy and Industrial Strategy
Rita Wadey	Department for Business Energy and Industrial Strategy
Will Lochhead	Department for Business Energy and Industrial Strategy
Emma Bulmer	Department for Business Energy and Industrial Strategy
Tasnim Choudhury	Department for Business Energy and Industrial Strategy
Bob Moran	Department for Transport
Professor Phil Blythe	Department for Transport - Chief Scientific Adviser
James Fleming	Engineering and Physical Sciences Research Council
Laura Finney	Engineering and Physical Sciences Research Council
Harsh Pershad	Innovate UK
Ian Meikle	Innovate UK
Edward Kerr	Northern Irish Government
Andrew Hogg	Scottish Government
Margo MacIver	Scottish Government
Professor Ron Loveland	Welsh Government

1. Introduction and welcome (Sinead Lynch (SL))

SL welcomed the group and introduced new members of the Council: Rt Hon Anne-Marie Trevelyan (AMT); Jonathan Brearley, CEO of Ofgem; Alex Grant, Country Manager at Equinor; Chris Manson-Whitton, Progressive Energy.

SL gave a brief industry overview on the progress made since the last Council meeting: first houses with appliances fuelled by hydrogen being built and will open in April; 46 new jobs have been created at Wrightbus; feasibility study to be carried out for a green hydrogen hub at Port of Cromarty Firth; CCUS clusters gathering pace - in January, Essar announced their intention to invest in a facility at Stanlow as part of HyNet, and UKHFCA and the Nuclear Industry Council have published hydrogen roadmaps.

1.1. Ministerial update (Secretary of State, Kwasi Kwarteng (SoS))

SoS outlined that he will continue to co-chair the Council in his new role as Secretary of State and is keen to remain engaged on the hydrogen agenda. SoS outlined his priorities, including delivering net zero and supporting innovation by doubling investment in research & development and making the UK a science superpower. 2021 remains a year of delivery and progress. The Hydrogen Strategy is expected to be published within the first half of the year. Government continues to show support for hydrogen with the recent announcement of the building of the UK's first homes with appliances fuelled entirely by hydrogen, with funding from the government's Hy4Heat innovation programme, Northern Gas Networks and Cadent. Later this year COP26 will provide an opportunity to set out how we intend to support the development of the UK's low carbon hydrogen economy and showcase the work already underway.

AMT delighted to have taken on the role of Minister of State for Business, Energy and Clean Growth, with several key strategies due to be published this year in support of government's net zero agenda.

2. Transport Decarbonisation Plan - update (Bob Moran (BM))

First part of the Transport Decarbonisation Plan (TDP), 'Setting the Challenge' was published in March 2020. The plan recognises the scale of the challenge of decarbonising transport as the largest emitting sector; the need to consider transport as a system rather than in modal silos; and the pathway to 2050 including Carbon Budgets. It sets six strategic priorities to support work with stakeholders to deliver a net zero transport system and sets out the need for a concrete plan to deliver transport decarbonisation.

The second part of the TDP will set out who needs to do what, by when, and how much carbon will be saved. It will consider the additional benefits to the UK in terms of job creation and economic growth, as well as the co-benefits of decarbonisation, such as health benefits and reduced congestion.

Questions and answers were raised on:

- Whether there will be a commitment to a hydrogen bus town. This should be addressed in the National Bus Strategy.
- Whether hydrogen is being considering for rail. Hydrogen and battery trains are being considered and will be covered in the TDP.
- The challenge of aligning the TDP with the wider energy system transformation. DfT is working to ensure work is connected across teams. Have built a good awareness of the required linkages from work on electric vehicles.

- Scope of the zero emission freight competition. The competition will focus on innovation in power train technology (battery electric solutions, electric road solutions, hydrogen fuel cell solutions).
- Incentivisation for use of hydrogen, and its inclusion in the Renewable Transport Fuel Obligation (RTFO). RTFO policy and the intention to consult remains the same.
- How required volumes of hydrogen will be transported. With regards to the freight trial, will need to assess requirements in line with projects.
- The ongoing support for hydrogen in heavy duty transport vehicles and network infrastructure across Europe was noted and it was queried if the UK will connect into such a network. TDP has a domestic focus, but wider international connectivity issues are being considered.

3. Developing a low carbon hydrogen standard (Tasnim Choudhury (TC)/Jo Howes (JH) E4Tech)

TC (BEIS) and JH (E4Tech) introduced work to identify and compare options for a UK standard that defines low carbon hydrogen. E4tech have been appointed to gather evidence on the emissions associated with hydrogen production methods and to consider lessons learnt from comparable approaches and standards both nationally and internationally. JH outlined the work completed to date (reviewing similar standards, commonalities and differences, gaps, model emissions from different hydrogen supply chains). JH shared some preliminary results of the modelling which are subject to change. It is clear there is a wide variation in emissions across the pathways, there is the possibility for negative emissions, there is significant change with time and, the pathway for hydrogen production is important as is a standard.

Questions and answers were raised on:

- Balancing between not hindering project development in the near term but not locking in high carbon projects in the longer term.
- Needing consistency in measuring upstream emissions
- Accounting for emissions from processes with multiple products e.g. chlor-alkali.
- Ensuring incentivisation of the best available technology.

4. Business models update (Will Lochhead (WL))

WL outlined the points being used to guide the approach taken to close the gap between price of low carbon hydrogen and higher carbon alternatives. WL invited questions on the approach taken.

Members commented on:

- The opportunity presented by blending in decoupling production and demand. This is being considered in terms of how demand risk is allocated.
- Pace and alignment of CCUS and hydrogen business models. Hydrogen business models using lessons learned from CCUS business model development, aiming to progress to detailed design next year.
- Using procurement as a driver for demand.
- How large volume, long duration energy storage is considered in the business model.

WL shared the results of analysis produced with Deloitte which is being used to guide consultation. WL introduced the scope of consultation, to take place alongside the publication of the Hydrogen Strategy.

Members commented on:

- Transportation (distribution) of hydrogen.

- Need to consider a mechanism to support the necessary quantities of hydrogen production needed for research and development.
- Need for network interaction in terms of blending and storage.

5. Net Zero Hydrogen Fund update (Emma Bulmer (EB))

EB Introduced the new team which has been established to deliver and manage the Net Zero Hydrogen Fund (NZHF). NZHF announced in November last year, with £240 million funding out to 2025. Team considering what to fund and how the fund will be distributed.

Members commented:

- Fund should support activities to maintain development of hydrogen production facilities and needs to work alongside business models to maintain momentum.
- Support needed to access the required volumes and quantities of hydrogen required.
- Would like to see funding for the UK's first major green hydrogen project.
- The fund needs to align with other energy system funds.

6. Update on R&D&I working group and brochure (Rita Wadey/ Laura Finney (LF)/ Harsh Pershad (HP))

The BEIS Chief Scientific Advisor (CSA) has established a time-limited Hydrogen Innovation working group. Establishment of the Hydrogen Advisory Council Research and Innovation working group will be paused while this is ongoing so as not to overcrowd the landscape.

HP: Aiming to publish a UK Hydrogen Research and Innovation (R&I) Brochure alongside the publication of the Hydrogen Strategy.

The following points were raised in discussion:

- Constraints in development due to research and innovation funding rules which mean that organisations are bounded by the technology readiness level of projects that they can support.

7. Actions from last meeting (Rita Wadey) (postponed from earlier in meeting)

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

8. Closing remarks (Sinead Lynch)

Members noted the working group update paper.

SL and AMT thanked members for attendance and contributions. Next meeting is likely to be in May and will focus on the strategy. Papers to follow.