

Hydrogen Advisory Council

Seventh Meeting – Summary

8 December 2021

Attendees

Co-Chairs:

Rt Hon Greg Hands MP, Minister of State for Energy, Clean Growth and Climate Change (BEIS)

Paro Konar, Director of Industrial Energy, Department for Business, Energy and Industrial Strategy

Council members:

Initial	Name	Role	Organisation
GH	Rt Hon Greg Hands MP	Minister of State for Business, Energy and Clean Growth	Department for Business, Energy and Industrial Strategy
PB	Paul Bogers	Vice President - Hydrogen	Shell
WB	Wouter Bleukx	Hydrogen Business Unit Manager	INOVYN
JC	Jane Cooper	Head of Stakeholder Relations and Regulatory Affairs	Orsted
AD	Andrew Doyle	Executive Director	Mitsubishi UFJ Financial Group
AG	Alex Grant	Executive Vice President of Global Strategy and Business Development & UK Country Manager	Equinor
RH	Richard Halsey	Capabilities Director	Energy Systems Catapult
LK	Louise Kingham	Head of Country, UK	BP
JMa	Jon Maddy	Senior Lecturer	University of South Wales
CMW	Chris Manson-Whitton	Director	Progressive Energy
JMe	Jim Mercer	President UK & Ireland	BOC / Linde
NSh	Professor Nilay Shah	Director of the Centre for Process Systems Engineering & Head of Chemical Engineering	Imperial College London
SS	Steve Scrimshaw	Vice President	Siemens Energy Limited UK & Ireland
JT	Jane Toogood	Sector Chief Executive, Efficient Natural Resources	Johnson Matthey

SW	Dr Susi Wiseman	Hydrogen and CCS project technical authority	Pale Blue Dot
CT	Chris Train	'Gas Goes Green' lead	Energy Networks Association
APD	Alistair Phillips-Davies	CEO	SSE

Government observers:

Initial	Name	Organisation
PK	Paro Konar	Department for Business Energy and Industrial Strategy
RW	Rita Wadey	Department for Business Energy and Industrial Strategy
WL	Will Lochhead	Department for Business Energy and Industrial Strategy
AC	Alison Conboy	Department for Business Energy and Industrial Strategy
EB	Emma Bulmer	Department for Business Energy and Industrial Strategy
NSo	Nicola Soave (<i>deputising for Margo MacIver</i>)	Scottish Government
JH	John Howells	Welsh Government
DH	David Hytch	Innovate UK

Also in attendance, officials from: the Department for Business, Energy and Industrial Strategy; Ministry of Defence; Department for International Trade; Department for Transport and the Engineering and Physical Sciences Research Council.

NB: This is a summary of Council member comments made in an **advisory** capacity. The summary of member comments does not represent government policy or views.

Item 1: Welcome (Paro Konar (PK))

PK welcomed the group, introduced Jane Toogood (**JT**) as the new Council co-chair and explained that Secretary of State (**SoS**) would be unable to attend the meeting and **Minister Hands (MH)** would deputise.

JT remarked upon the momentous year for hydrogen in the UK, with the publication of the UK Hydrogen Strategy. She highlighted that collaboration will be vital to make the most of the opportunities for hydrogen in the UK. Noted that the UK will face international competition but should be able to maintain a leading edge in delivering against the Hydrogen Roadmap. She thanked Council members and looked forward to working with BEIS to implement the Hydrogen Strategy.

Item 2: Ministerial Update (PK)

PK updated on developments across the hydrogen sector since the last Council meeting in the absence of **SoS** and **MH**:

- ITM Power raised £250m to expand their electrolyser manufacturing capacity - aiming for 5GW of hydrogen production capacity by 2024.

- The Green Hydrogen for Scotland Consortium awarded £9.4m through government's Net Zero Innovation Portfolio - supporting Scottish Power's 20MW windfarm and hydrogen production and storage facility.
- BP announced plans to build a large-scale electrolytic hydrogen plant in Teesside, with a capacity of 60MW by 2025 and 500MW by 2030.
- Hydrogen UK, a new trade body which evolved out of the Hydrogen Taskforce, was launched in November.
- The East Coast Hydrogen Programme, led by Equinor, Northern Gas Networks and National Grid, was launched in September, to provide the connecting hydrogen infrastructure between the industrial clusters of Humber and Teesside.

Item 2 Ministerial update (Minister Hands (MH))

- **MH** delighted to cover hydrogen in his Ministerial portfolio - vital in meeting our energy needs and net zero commitments. Strong focus on hydrogen at COP26, with 33 countries signing the Hydrogen Breakthrough.
- Looking forward to seeing more projects which will help us reach our 5GW target. Recently visited Whitelee Wind Farm – great example of combining renewables and hydrogen.

Item 3: Hydrogen Production update

The Head of Production Strategy introduced the consultation on the Low Carbon Hydrogen Standard (LCHS) and gave an overview of the consultation findings:

- Broad agreement on key proposals: setting the LCHS at the point of production; the value of developing the LCHS into a certification scheme, and the value of reporting negative emissions from biomass with CCUS. The government response is expected in early 2022.

The following points were raised in discussion:

- Welcomed setting the LCHS at the point of production, developing a certification scheme, reporting negative emissions, target of 500MW for electrolytic production by 2025, and twin-track approach.
- Questions on:
 - whether 1GW target for CCUS-enabled production by 2023 is in line with the timeline of the cluster sequencing process, and whether any scope for reviewing the 1GW target.
 - government's view on co-produced hydrogen.
 - what analysis has been done to determine the level of carbon intensity at which the low carbon threshold would be set.
 - reports in energy media around twin-track approach.
 - whether the methodology used was a mass-balanced or value-balanced approach.
- BEIS view that 1GW target is a strong signal to Track 1 Clusters, as is intention for further allocation rounds from 2025.

- BEIS currently assessing how co-produced and by-product hydrogen interact with other forms of hydrogen production.
- BEIS working on setting a carbon intensity threshold.
- BEIS is using a robust evidence base and clear methodology to develop the LCHS and is clear that any production route supported will be low carbon.
- BEIS noted that the consultation and accompanying technical report will set out the methodology. Working on creating a tool that developers and producers can use alongside the methodology to look at their production rates and determine how they rate against the LCHS. Will ensure transparency around the data and inputs used to calculate the carbon intensity figure.

Item 4: Net Zero Hydrogen Fund (NZHF) design update

The Head of NZHF policy introduced the consultation for the NZHF:

- Initial analysis of the consultation responses shows broad agreement on NZHF focussing on building projects and unlocking private capital through capital expenditure (CAPEX). Also broad agreement for targeted development expenditure (DEVEX) to stimulate the project pipeline, and strong support for a phased approach to help projects access funding as quickly as possible.
- Noted stakeholder interest in the interaction between the NZHF and the hydrogen business model (HBM).
- NZHF provisionally divided into four strands, with the first two strands set to open in 2022 so projects can access funding as quickly as possible.

The following points were raised in discussion:

- Welcomed targeted DEVEX support for FEED studies. Important to define what FEED includes.
- Broad agreement on four strand approach, and on importance of joining up with HBM.
- Welcomed consideration of network and storage costs through NZHF DEVEX.
- Question on whether there is scope to support network and storage with CAPEX, given there is no existing HBM support.
- Noted importance of directly linking NZHF projects to end use, or risk creating stranded assets. Clarity on linking funded projects to deployment demonstration would be welcomed.
- NZHF CAPEX will cover core production facilities. HBM consultation asks how far HBM should support network and storage infrastructure for initial projects.
- NZHF assessment criteria will evaluate off-takers and end use – important for decarbonisation and economic benefits. Expecting a diverse range of end uses.
- BEIS currently analysing expected hydrogen demand profiles, and ensuring our policy is supporting market development.

Item 5: Sector Development Action Plan update

The Head of the Sector Development team introduced the Sector Development Action Plan (SDAP):

- SDAP to be published in 2022. SDAP will give clarity to investors around profile of investment we need to unlock UK hydrogen economy and UK's exportable strengths.
- Commissioning research which will review hydrogen supply chains, estimating future demand on supply chains and associated economic benefits, and existing capabilities, strengths and weaknesses.
- Strategy commitment to establish an Early Careers Professionals Forum (ECPF). Will learn from similar groups, for example, the CCUS ECPF.

The following points were raised in discussion:

- Members welcomed the SDAP and noted importance of coordination of joining up across government departments.
- Noted difficulties around lengthy permitting and regulations process for projects. Need to think about streamlining this to support supply chains.
- Noted importance of thinking about the whole supply chain and addressing the skills gaps across the supply chain.

Item 6: Call for evidence on enabling or requiring hydrogen-ready industrial boiler equipment

BEIS officials from the Hydrogen for Industry team gave an overview of the call for evidence:

- Expect industry to be largest source of demand for hydrogen by 2030, vital for early development of hydrogen economy.
- Focus on industrial boilers because they could drive around 40-50% of hydrogen demand from industry by 2030, and significant carbon savings with potential to abate 1.3 MtCO₂.
- Will publish CfE before end of year, and a potential consultation on policy options next year.

The following points were made in discussion:

- Questions on:
 - whether use of hydrogen in industrial boilers is the right priority as opposed to e.g., steel manufacturing
 - the intended route to transport hydrogen to the boilers - end users need certainty of supply to make it worth additional costs
 - whether hydrogen-ready is more efficient than retrofit.
- Right priority as it is a significant area of potential demand from one equipment category representing 40-50% of all fuel switching. BEIS using this process to test our analysis and assumptions.
- Conscious of uncertainty for end users. Working to assess hydrogen networks, and transport and storage.
- Members want to see more ambition on challenging area of gas turbines and engines.

- Important to help to facilitate hydrogen supply availability for investment planning decisions.

Item 7: Update on actions and working groups (Rita Wadey (RW))

RW gave overview of actions:

- Jane Toogood appointed as new industry co-chair.
- Review of working groups completed. Moving into implementation phase - establishing Transport and Storage infrastructure working group. Establishing Regulators Forum, in line with Strategy commitment. Forum will assess existing regulatory framework and how it needs to evolve over time.

PK thanked members for their contributions. Next meeting likely to be in March.