



Department for
Business, Energy
& Industrial Strategy

Hydrogen Advisory Council

Sixth Meeting – Summary

6 September 2021

Attendees

Co-Chairs:

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

Stef Murphy, Director, Industrial Energy, BEIS **(SM)**

Council members:

Name	Role	Organisation
Buta Atwal	CEO	Ryze
Paul Bogers	Vice President - Hydrogen	Shell
Baroness Brown	Offshore Wind Sector Champion	
Alex Grant	Executive Vice President of Global Strategy and Business Development & UK Country Manager	Equinor
Duncan Clark	Head of UK Region	Orsted
Graham Cooley [sent apologies]	CEO	ITM Power
Andrew Doyle	Executive Director	Mitsubishi UFJ Financial Group
Richard Halsey	Capabilities Director	Energy Systems Catapult
Susi Wiseman (deputising for Alan James)	Hydrogen and CCS project technical authority	Pale Blue Dot
Jon Maddy	Senior Lecturer	University of South Wales
Louise Kingham	UK Head of Country	BP
Jim Mercer	President UK & Ireland	BOC / Linde
Chris Manson-Whitton	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
Stephen Wheeler (deputising for Alistair Phillips-Davies)	Managing Director	SSE
Katharine Palmer	Global Head of Sustainability	Lloyd's Register, Marine & Offshore
Jonathan Brearley	CEO	Ofgem

Government observers:

Professor Paul Monks (sent apologies)	Chief Scientific Adviser - Department for Business Energy and Industrial Strategy
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
Alex Milward	Department for Business Energy and Industrial Strategy
Professor Phil Blythe	Department for Transport CSA
Bob Moran	Department for Transport
Neil Cosgrove	Office for Investment (Department for International Trade)
Margo MacIver	Scottish Government
Professor Ron Loveland	Welsh Government
John Howells	Welsh Government
Ian Meikle	Innovate UK

Also in attendance, officials from: Department for Business Energy and Industrial Strategy; Department for International Trade; Her Majesty's Treasury 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.

1: Welcome (Stef Murphy (SM); Rita Wadey (RW))

SM welcomed the group. **SM** co-chairing in the interim following Sinead Lynch stepping down as industry co-chair. A new industry co-chair will be appointed ahead of the next meeting. **SM** introduced new Director General, Ben Rimmington, who has taken over from Julian Critchlow, to lead the new BEIS Net Zero Buildings and Industry group.

RW summarised the media reaction to the Hydrogen Strategy publication. Noted broadly positive response from stakeholders, welcoming the announcement as a milestone in the UK's journey towards a net zero transition. Stakeholders welcomed the next steps on the business model, productivity and scale up but noted a lack of increased ambition and specific support on electrolytic hydrogen.

2: Ministerial Update (Secretary of State (SoS))

SoS remarked on the achievement of the development and publication of the Hydrogen Strategy, noting the significant progress made since his time as Energy Minister, and the increased focus on hydrogen over the last two years. **SoS** thanked the Council for their support in developing the Strategy and noted the importance of the UK COP presidency, and of the role of hydrogen in reaching our ambitious decarbonisation targets.

SM welcomed questions. The following points were raised in discussion:

- Strategy welcomed, particularly its focus on delivery. There has been a corresponding increase in interest from industry in recent months.

- Challenge to deliver on the scale of ambition. Important to have industrial clusters across the country driving 2025 ambitions and driving things forward after COP26.

SoS intends that Hydrogen Strategy should give a strong sense of direction for industry, stakeholders, and investors on government's net zero agenda. Now need to deliver on the investment proposition to further attract capital and incentivise the market.

Item 3: Hydrogen Strategy Publication: BEIS officials

The BEIS head of hydrogen strategy gave an overview of the Strategy:

- Focus on establishing, developing, and scaling up a hydrogen economy in 2020s to deliver our 5GW low carbon hydrogen production capacity ambition by 2030, and to position hydrogen to support government to meet Carbon Budget 6 (CB6) and net zero commitments in the longer term, as well as maximising economic benefits to the UK.
- Focus now on design and delivery of Net Zero Hydrogen Fund (NZHF), business model (BM), networks and storage, demand, as well as public engagement. Net Zero Strategy ahead of COP26 will set out more detail on hydrogen's role in the wider energy system up to 2050 and the delivery of CB6 in the mid-2030s. BEIS intends to provide regular updates to the market on our policy development.

Officials welcomed questions from the Council. The following points were raised:

- All members welcomed the Strategy and its commitments.
- Industry concern around timely support for 'green' hydrogen: important to get projects off the ground and keep pace with other countries.
- Will see lots of debates on 'blue' and 'green', therefore need robust, up-to-date standards, and transparency. A 'green' only strategy is risky and could put strain on the critical materials supply chain.
- Further consideration needed on integration of the hydrogen economy with the wider energy system. 'Blue' hydrogen can support early scale up, particularly in industrial clusters, and will enable 'green' technologies to 'plug in' because infrastructure will be in place.
- Consultations on hydrogen business model (HBM) and low carbon hydrogen standard (LCHS) can address market concerns around deployment at scale, including need for transparency of data and methodology behind 'blue' projects.
- Strategy powerful in demonstrating UK's direction on hydrogen on international level. Should consider mechanisms like EU 'Fit for 55' package to commit industries to switch from 'grey' hydrogen.
- Focus now should be on infrastructure and storage – including in HBM. Potential future challenges in the planning process around infrastructure change and storage at scale. Difficult for consumers to wait until 2025 to have the infrastructure and hydrogen production in place to have the volumes of hydrogen they need.
- Challenged to establish HBM earlier in 2022 to meet production targets.
- Need to build public understanding on hydrogen. Acceptability is a delivery risk and could slow down pace on delivering Strategy.

Item 4: Hydrogen Strategy publication: Hydrogen Business Model consultation

BEIS officials provided an overview of the hydrogen business model (HBM) consultation document published alongside the strategy.

- HBM key to our strategy to deliver hydrogen decarbonisation ambitions, and to unlock private sector investment in hydrogen projects, to help scale up production demands.

- It will provide revenue support to address the barriers to hydrogen uptake, including higher operational costs of production, and that low carbon hydrogen is not currently cost competitive with most fossil fuels.
- Key proposals of our minded-to position on the HBM and other design features:
 - Revenue support to hydrogen producers introducing a single UK-wide HBM applicable to all types and scales of low carbon hydrogen production facilities, for new production facilities that meet the upcoming LCHS.
 - Eligibility allowing producers to supply a range of end use sectors.
 - Delivery mechanism through a private law contract between hydrogen producers and a government counterparty - similar contractual approach to support for renewable electricity generation through the Contract for Difference (CfD).

Officials welcomed questions from the Council. The following points were raised:

- Questions on:
 - whether the reference price will be gas plus carbon price.
 - how the HBM will incentivise the highest carbon capture rates.
 - whether the HBM will be open to exports in future.
 - whether BEIS has considered incentivising the whole value chain together.
- Consider how 'blue' and 'green' hydrogen fit into one variable premium support mechanism.
- Concern around sliding scale of support - need to test this with the financing market.
- Contracts starting in 2022 rather than 2023 would be welcome.
- Consider the hydrogen end use merit order.
- Consider longevity of support measure schemes so that they are not applied project by project.

Officials explained decision that the carbon price is unlikely to be sufficient in the near term to close the cost gap and incentivise end users to replace fossil fuels, nor to address the other risks and barriers associated with early hydrogen production projects.

Government will not support export volumes through the HBM currently but would not prevent projects receiving support from exporting some of their volumes outside the UK. However, those exported volumes would not be supported by the HBM, because we want to stimulate domestic production.

On the model incentivising electrolytic hydrogen production, BEIS will continue to discuss further with stakeholders. Confident that adjustments can be made to the model to accommodate the economics and specificities of different technologies.

On end users and incentivising the whole value chain, the current model is intended to incentivise production and end use by making production cost competitive with fossil fuels. Producers will also provide a price incentive for end users to switch through their HBM support.

We are consulting on whether costs related to point-to-point distribution and small-scale storage can be covered in the HBM.

Item 5: Hydrogen Strategy publication: Net Zero Hydrogen Fund & Low Carbon Hydrogen Standard (LCHS)

BEIS officials gave an overview of the NZHF consultation:

- £240m fund launching in early 2022 for commercial deployment of low carbon hydrogen production between 2022-25. Consultation document based on feedback from stakeholders; findings will be used to finalise NZHF design.
- Working closely with HBM team on the interaction between NZHF and HBM. Anticipate that NZHF will target construction of new production facilities and provide financial boost required for projects to move forward.
- Propose NZHF should be open to multiple production technologies with focus on projects that can be deployed in 2020s to contribute to our 5GW ambition; propose grant funding on a co-funded basis with private sector.
- Consultation sets out core eligibility and assessment criteria to ensure projects are new, meet the LCHS, and are based in the UK. Anticipate we will fund and deliver on a UK wide basis.

The BEIS head of hydrogen production strategy gave an overview of the LCHS consultation:

- LCHS aims to ensure new low carbon hydrogen production makes direct contribution to our carbon reduction targets. LCHS will be used to assess eligibility for government funding for NZHF and HBM and could be used to develop certification scheme to underpin production and trade in low carbon hydrogen – consultation seeks views on this.
- LCHS seeks to balance need to not overburden industry and encourage project pipeline whilst also ensuring value for money and carbon savings.

Officials welcomed questions from the Council. The following points were raised:

- Comments that LCHS should be stringent, transparent and scientifically based.
- Consider if LCHS should be changed over time. Could be linked to HBM.
- Question on whether power purchase agreement (PPA) for ‘green’ qualify for additionality criteria.
- Question if there is a set allocation for capital and development parts of the fund.

Officials noted that we are inviting views on PPA agreements through the consultation and conducting further analysis.

Officials have not set a defined amount for NZHF capital and development projects; it will be a competitive fund. Consultation will inform us of project need.

Item 6: Council and working group review update

SM noted that due to time, a more comprehensive update will be provided by correspondence on the Council and working group review.

RW updated on actions from previous meetings.

Item 7: Closing remarks

SM noted that the next Council meeting will be in December.