Department for
Business, Energy
& Industrial Strategy

Electrolytic Hydrogen Working Group Meeting

Hydrogen Business Model and Hydrogen Production teams

10 June 2022

Note: The content in the following slides does not represent BEIS policy, but provides ideas for discussion

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Agenda

	Item	Time	Lead
1	**Welcome**	11:00 - 11:05	Alison Conboy
2	**HBM/ NZHF Electrolytic Allocation: Market Engagement feedback**	11:05 – 11:35	Ahsan Chowdrey Jacqueline Gomes
3	**HBM policy development**	11:35 – 11:55	Neil Atterbury Carolyn Campbell
4	**AOB and close**	11:55 – 12:00	Alison Conboy

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Meeting etiquette

Please can you:

- ✓ Turn off your video when not speaking
- ✓ Mute your microphone when not speaking
- ✓ Raise questions via the chat function or put your hand up

This meeting will be recorded for BEIS internal use only.

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Competition Timings for BEIS Hydrogen Funds launching 2022 and 2023

	NZIP Proposed Industrial Hydrogen Accelerator (IHA)	NZIP Industrial Fuel Switching (IFS) Phase 2	Industrial Energy Transformation Fund (IETF)	Net Zero Hydrogen Fund (NZHF)		NZHF and Hydrogen Business Model[2]	
				Strand 1	Strand 2	Strand 3 (proposed)	Strand 4
AIM	Demonstrate end-to-end industrial fuel switching to hydrogen to provide evidence on feasibility, cost and performance.	Support development of fuel switching and fuel switch enabling technologies, including hydrogen, for UK industry	Support the development and deployment of technologies that enable businesses to transition to a low carbon future.	Support development of new low carbon hydrogen production to grow the pipeline of projects in the UK.	Support low carbon hydrogen projects to take FID and begin deployment in the early 2020s, kickstarting the hydrogen economy.	Support electrolytic hydrogen projects to take FID and deploy at scale at the earliest opportunity.	Support for CCUS-enabled hydrogen projects. Must be able to connect to Track-1 clusters, as part of cluster sequencing
ACTIVITY	Feasibility and demonstration	Demonstration	Feasibility, FEED and permanent deployment	FEED and post-FEED costs	Permanent deployment	Permanent deployment and operation	
FUNDING	Innovation funding	Innovation funding up to £6m/project	CAPEX grant co-funding, Total grant funding provided is: Feasibility studies, up to £7m Engineering Studies, up to £14m Deep Decarbonisation Deployment, up to £30m	DEVEX grant 50% co-funding for FEED and post-FEED studies, Grant awards of £80k–£15m	CAPEX grant 30% co-funding, Grant awards of £200k–£30m[3]	CAPEX grant co-funding and ongoing revenue support via the hydrogen business model	
MATURITY	Innovation projects	TRL 4-7	TRL 7 +	TRL 7 +			
LOCATION	UK wide	UK wide	Within England, Wales or N. Ireland[1]	UK wide			
SCOPE	End-to-end project	Industry end-use	Industry end-use	Low carbon hydrogen generation		Low carbon hydrogen generation via electrolysis	CCUS-enabled low carbon hydrogen generation
LINK	nzip.hydrogen@beis.gov.uk Industrial Hydrogen Accelerator https://bit.ly/H2NZIP	industry.innovation@beis.gov.uk Industrial Fuel Switching https://bit.ly/IFSH2	ietf@beis.gov.uk Industrial Energy Transformation Fund https://bit.ly/P2IETF	HydrogenProduction@beis.gov.uk Net Zero Hydrogen Fund https://bit.ly/H2NZHF			

[1] Sites based in Scotland can apply for funding from the **£34m Scottish IETF**, run by the Scottish Government

[2] The Hydrogen Business Model is funded by the Industrial Decarbonisation and Hydrogen Revenue Support Scheme (IDHRS).

[3] project may receive revenue support via the Department for Transport's Renewable Transport Fuel Obligation (RTFO) scheme.

HBM/ NZHF Electrolytic Allocation: Market Engagement feedback

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HBM/ NZHF Electrolytic Allocation - recap

Strategic Objectives

- Support projects to deploy at scale at the earliest opportunity, advancing 10GW by 2030 aspiration (2GW in operation/construction by 2025).
- Kickstart the low carbon hydrogen economy across the UK.
- Deliver carbon savings to allow us to stay on track to meet CB5, CB6 and other net zero commitments.
- Ensure the application process is simple and accessible for applicants.
- Ensure the application process is fair and transparent.

Indicative timeline

- Market Engagement exercise: April 2022.
- Launch application window: July 2022.
- Close application window: October 2022.
- Following eligibility check and evaluation, confirm shortlist of projects and commence negotiations: early 2023.
- Sign contracts and award funding: by July 2023.
- Projects in operation: by end of 2025.

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Intended timeline

- We are aiming to finalise internal approvals and launch the first allocation round in early July through the Market Engagement Government Response and Application Guidance document.

- A number of wider hydrogen documents are scheduled to be published in the summer, including:
  - Sector Development Action Plan
  - Hydrogen Strategy Update to Market

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Overview of Market Engagement exercise

- The Market Engagement document was published in April 2022, alongside Government responses to the HBM, NZHF and Low Carbon Hydrogen Standard (LCHS) consultations.

- It sought views on a proposed approach to a joint HBM/NZHF allocation process for electrolytic hydrogen projects, including on proposed eligibility and evaluation criteria, use of portfolio factors and the approach to agreeing an offer of support with shortlisted projects.

- Engagement took place over four weeks from 8 April 2022 to 6 May 2022. We received 39 written responses, as well as holding two workshops attended by over 100 stakeholders.

- We intend to publish a Government response alongside the application guidance document, setting out the finalised details of the first joint allocation round and guidance for projects seeking to participate ahead of the window opening.

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Proposed eligibility criteria

Q1. Do you agree with the proposed eligibility criteria for the first 2022 HBM/ NZHF electrolytic allocation round?	
Yes	51.3%
No	41%
Don't know	7.7%

- Located in the UK
- New build hydrogen production facility
- Electrolytic hydrogen production facility
- TRL 7
- COD by end of 2025
- Minimum capacity of 5MW
- Identified at least one offtaker
- Identified an electrolyser supplier(s)
- Demonstrated access to finance
- Meets the LCHS

Key ME feedback	Proposed response
COD by 2025 could be a barrier to larger projects who need > 2 years from FID to COD, with risk of delays highlighted.	Keep COD by 2025 criterion to kickstart the market and align with 2025 hydrogen ambitions. ➢ However, this will be dependent on signing contracts by July 2023 – if this is delayed due to reasons outside of the applicant's control (e.g. delays to agreeing an offer), BEIS reserves the right to allow COD to be extended upon request. ➢ Proposal for a Target Commissioning Window and Longstop date in HBM contract
Call for clarity on whether 5 - 10MW projects will be eligible, as well as for the threshold to be lower.	Keep 5MW threshold to focus on bringing forward projects larger than 5MW which will achieve scale up.

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Proposed evaluation criteria

Q2. Do you agree with the proposed evaluation criteria for the 2022 HBM/ NZHF electrolytic allocation round?	
Yes	59%
No	31%
Don't know	10%

Deliverability – delivery plan and operational date	30%
Emissions – carbon savings	15%
Cost Considerations – LCOH and robustness of project costs	20%
Economic Benefits – economic growth, jobs, investment, supply chains	20%
Market Development and Learning – growth, innovation and learning opportunities	10%
Additionality of Electricity Source –hydrogen production met by new low carbon generation	5%

Key ME feedback	Proposed response
• **Deliverability is the most important criterion**, with some calling for it to have a higher weighting with a focus on delivery assurance. • Support to **decrease the weighting for Emissions and Economic Benefits** • **Some calls to remove Additionality criterion** as it might be difficult to meet by 2025 with risk of delays due to planning.	Amend weightings: ➢ Deliverability – 35% (+5%) to reflect central objective to kickstart the market. ➢ Emissions – 10% (-5%) as all projects will meet the LCHS. ➢ Economic benefits – 20% ➢ Cost – 20% ➢ Market Development & Learning – 10% ➢ Additionality – 5% to avoid negative impacts on wider decarbonisation and uphold LCHS additionality principles. However, this criterion is not mandatory to apply and has no minimum score. We will also allow projects to provide information on any plans to meet additionality principles beyond 2025.

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Proposed portfolio factors

Q3. Do you agree with the proposed portfolio factors?	
Yes	53.8%
No	10.3%
Don't know	35.9%

Government may consider portfolio factors such as:

- **Location** – to help ensure electrolytic hydrogen production and associated benefits are spread across the UK.
- **Affordability** – to ensure a combination of projects selected are affordable to government, both in terms of their demands on NZHF capital and HBM revenue envelopes.

Government may also consider other factors, such as diversity of offtakers and/or range of project sizes.

Key feedback	Proposed response
• **Some support** for using portfolio factors to ensure some diversity of project archetypes being supported and, particularly, types of offtakers.	• We will only use portfolio factors in limited circumstances if the allocation round is oversubscribed to address an imbalance in the portfolio of projects.
• Calls for **more transparency** around approach.	• Government does not intend to prevent some clustering – the location-based factor may be used in the event of oversubscription to help ensure all/ most projects are not located in a single country or region.
• **Location-based portfolio factor may be restricted by infrastructure**– hydrogen production is likely to be linked to hubs of production with shared infrastructure or end use switching, located close to renewables or consumers.	• We are confirming our intention to consider project size and diversity of end use as portfolio factors, and also expand the list to include diversity of energy input source/ operating model to address excessive risk concentration.

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Proposed approach to Agreeing an Offer

Agreeing a HBM offer

- Pathway 1: concluded by bilateral negotiation.
- Pathway 2: lighter touch, potentially involving a 'sealed bid' process and/or offering a contract with no/minimal negotiation.

Agreeing a CAPEX offer

•We propose setting a maximum grant funding intensity level of up to 20%.

Question	%	Key feedback
Q4. Do you agree with our high-level approach to agreeing a HBM and CAPEX offer?	Yes - 53.9 No - 12.8 Don't know - 33.3	• Preference for bilateral negotiations for initial projects with sealed bids once the market has developed
Q5. Do you think up to 20% CAPEX co-funding alongside HBM support is sufficient to enable electrolytic projects to take FID?	Yes - 15.4 No - 25.7 Don't know - 58.9	• Some said that 20% CAPEX isn't enough – in the EU, 50% co-funding more typical [NB this does not necessarily account for revenue funding] • CAPEX required depends on strike price
Q6/7. For agreeing the HBM offer, would you be in favour of having different pathways or negotiation approaches for projects? Do you have any suggestions on how those pathways or approaches might look? What criteria/ threshold would you use to differentiate?	Yes - 49 No - 25.5 Don't know - 25.5	• Some agreement as timescales for deployment, levels of risk and resource will differ depending on project size • Some suggested bilateral negotiations for big projects, and sealed bids for smaller projects • Mixed views on how to differentiate between the pathways - some in favor of a size threshold, whereas others suggested a scorecard approach or that pathways could be optional. • Most respondents in support of a size threshold suggested 40/50MW

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Proposed approach to Agreeing an Offer: Proposed response

- Having considered the number and makeup of the projects in the pipeline, we propose to retain the right to subdivide the shortlist of projects into two or more groups, each group entering into a separate pathway to Agreeing an Offer: one pathway involving bilateral negotiations with Projects and likely to be a more iterative and resource intensive process; and a second pathway involving a more streamlined bidding process which will likely result in a contract being award sooner.

- We believe this approach will help us meet our strategic objective of enabling projects to deploy at scale at the earliest opportunity, and also manage BEIS resources.

- We may consider several factors when allocating projects to pathways, including e.g. size, deliverability score, and timeline.

- We propose that the maximum grant funding intensity level (CAPEX %) will be set at up to 20%. This does not significantly deviate from EU schemes, and should be considered within the context of the UK funding being a package, with both CAPEX funding and long-term revenue support - taken together, we consider this has the potential to make a competitive offer and support projects in reaching FID.

- When entering the Agreeing an Offer stage, Projects shall have the necessary information to determine with greater confidence the appropriate level of CAPEX grant and strike price required. As the HBM will only allow the inclusion of CAPEX which has not been funded by the CAPEX grant, Projects which have received a CAPEX grant will necessarily have lower Strike Prices than if they had not received a CAPEX grant.

Do you have any feedback on the proposed approach?

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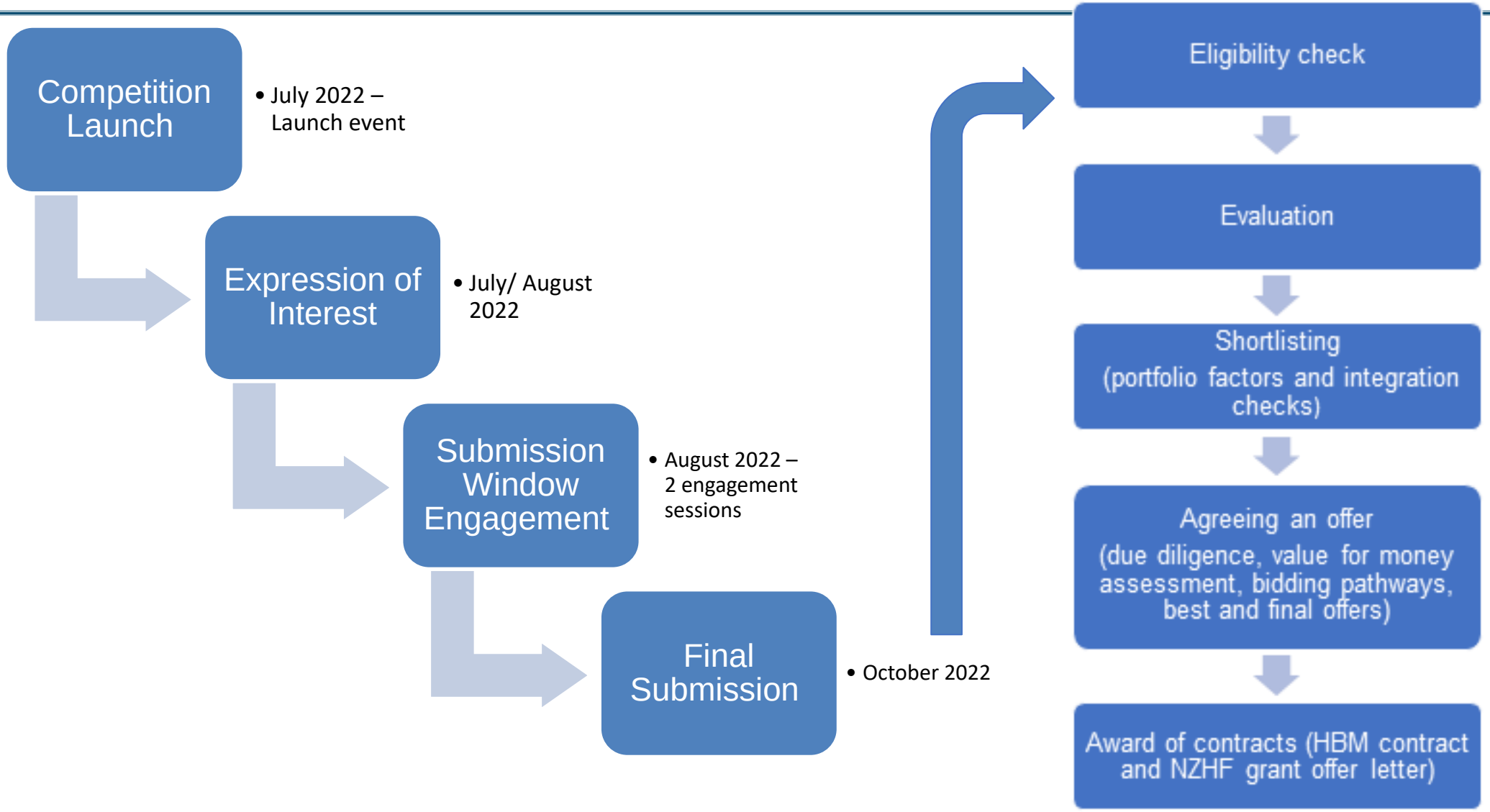
Next Steps



Updates on hydrogen business model development

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Risk-taking intermediaries

Definition: For the purpose of determining eligibility under the Strand 3 guidance, a risk-taking intermediary is defined as a person that purchases hydrogen for the purpose of resale.

Proposed policy position: Exclude sales to risk-taking intermediaries from receiving subsidy (but allow unsubsidised sales).

This position is being proposed to address two key concerns:

1. Auditability/traceability: Risk-taking intermediaries would make it more challenging to monitor the use of hydrogen subsidised through the business model and to enforce the contractual measures regarding restricted and non-qualifying end users.
2. Value for money: We do not consider that allowing such entities to directly benefit from subsidy would represent value for money for the taxpayer in the early hydrogen economy.

It should be noted that, through this position, we are not excluding non-risk-taking intermediaries from playing a role in the market. Non-risk-taking intermediaries may charge a fee to a hydrogen producer or end user for a service (e.g. brokerage or hydrogen storage), but would not take ownership of the hydrogen.

We will consider the need to review this position in future, both for existing contracts and future allocation rounds.

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HBM-RTFO dual participation

We recognise that some projects may be considering revenue support through both the Hydrogen Business Model (HBM) and the Renewable Transport Fuel Obligation (RTFO). We are considering developing arrangements that could support dual participation in both HBM and RTFO.

Benefits of dual participation:

- Allowing producers to diversify revenue streams and reduce volume risk
- Increasing electrolysers' utilisation rate
- Facilitating sales to the transport sector

Enabling dual participation will be subject to:

- Compliance with subsidy control principles
- Alignment with final design of HBM
- Having sufficient time to develop administrative and enforcement processes for the first round of contract

Current thinking on how dual participation could work:

- **Claiming under both schemes for the same volumes** of hydrogen would **not be permitted** to avoid overcompensation and market distortions

- Our preferred option to require producers to **nominate annually a single scheme** (HBM or RTFO) against which **volumes sold to transport users** would be claimed. Producers will be able to continue claiming eligible non-transport volumes under the HBM