Department for
Business, Energy
& Industrial Strategy

Hydrogen Business Model: Stakeholder Forum

Hydrogen Business Model Team
16 June 2022

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

Department for Business, Energy & Industrial Strategy

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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Agenda

	Item	Approx time	Lead
1	**Welcome**	10:00 – 10:05	Will Lochhead
2	**Updates on hydrogen business model development** - Risk-taking intermediaries - HBM-RTFO dual participation	10:05 – 10:50	Neil Atterbury Carolyn Campbell
3	**Future Engagement**	10:50 – 10:55	Carolyn Campbell
4	**AOB and close**	10:55 – 11:00	Will Lochhead

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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

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Future engagement on hydrogen business model

Many thanks to everyone who responded to our questionnaire on future engagement.
Our communication channels for the current phase of work are summarised below.

Communication channel	Open to	Purpose and content
HBM Stakeholder Forum	– All stakeholders with interest in HBM – Starting membership comprises previous HBM Expert Group	– For BEIS to share updates with stakeholders, with opportunity for questions and high level input from stakeholders – Material shared by BEIS will reflect emerging policy thinking, and does not represent agreed government policy – Material can be shared more widely by members (eg by trade associations with their members)
Electrolytic Hydrogen Working Group	– Industry stakeholders with interest in electrolytic hydrogen projects	– For two-way engagement between BEIS and industry on electrolytic hydrogen production and funding policies (including HBM, NZHF and Low Carbon Hydrogen Standard)
HBM Topic Workshops	– Those HBM Stakeholder Forum members who have specific interest in the topic and want to make input to discussion	– For stakeholders to input detailed information and views to support development of HBM – Material shared by BEIS may summarise published information and/or provide additional detail and will be shared with all HBM Stakeholder Forum members (not only those attending workshop)
Roundtables	– Invited stakeholders in a particular interest group, eg NGOs, investors	– For BEIS to discuss topics of interest with particular stakeholder groups – Trade associations may also set up roundtables for members and invite BEIS to participate
Bilateral meetings	– All stakeholders with direct interest in HBM and information to share with BEIS	– For stakeholders to share project-specific or organisation-specific information and views to support development of HBM – Requests for a bilateral meeting should set out agenda and topics to enable BEIS to assess need for meeting and appropriate attendees – BEIS will not discuss ongoing allocation processes
Written input	– All stakeholders	– For stakeholders to send information and views to BEIS to support development of HBM

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Potential topic workshops on hydrogen business model

Please register interest in participating in workshops on the topics below (through form to be circulated) and/or raise other proposals for workshop topics (where you have views to input).

Heads of Terms Item No	Topic
Front end agreement	Volume (MWh) and capacity (MW) metrics to be defined in contract
2.1	Contract term
2.2 to 2.5	Commencement provisions: requirements to be satisfied for Initial Conditions Precedent and Milestone Requirement; appropriate periods for Target Commissioning Window, Milestone Delivery Date & Longstop Date
4.2	Trigger for payment: definition of point of sale
4.5	Reference price
4.8	Price discovery mechanism
4.9	Sliding scale volume support
4.13, 4.14	Qualifying end users; feedstock users and self-consumption
4.18, 4.11	CO2 T&S delays, curtailment and outages; UK ETS free allowances

Annex:
Hydrogen business model overview

Hydrogen business model summary – following consultation

The hydrogen business model is being designed to **incentivise the production and use of low carbon hydrogen,** to deliver the government's ambition of up to 10 GW of low carbon hydrogen production capacity by 2030, subject to affordability and value for money. The business model will provide producers with revenue support to overcome the operating cost gap between low carbon hydrogen and fossil fuels in order to unlock private investment in hydrogen projects.

Adjustments to subsidy

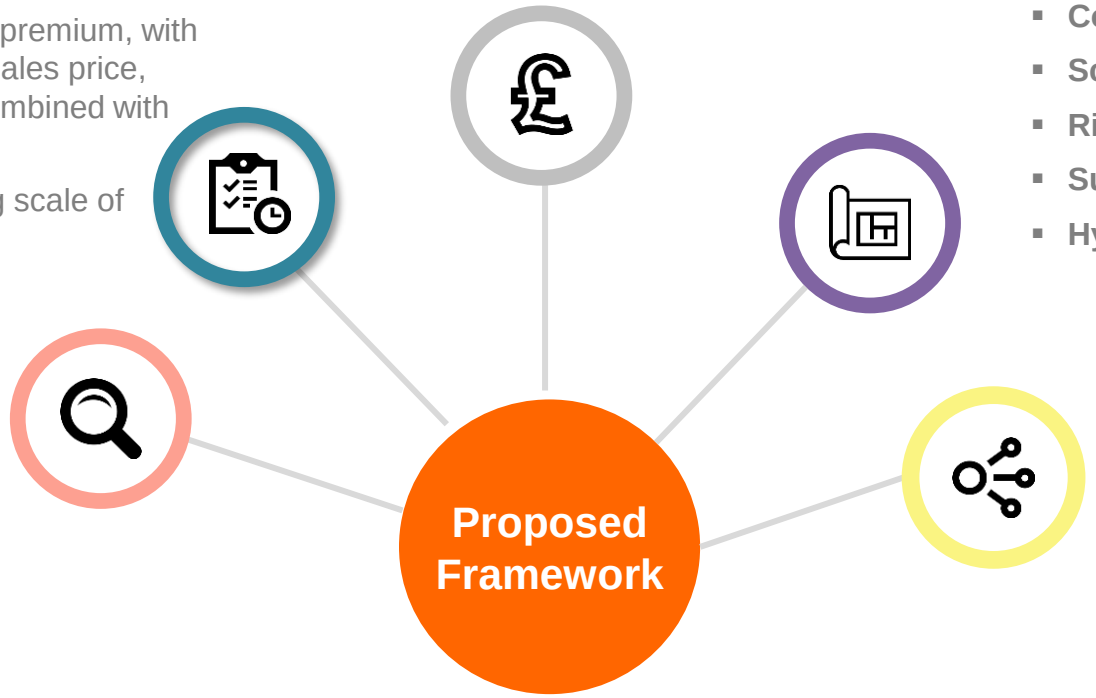
- **Strike price indexation,** vary by cost category
- **Feedstock users and own consumption**, under consideration

Mitigation of two main risks

- Manage **price risk** through variable premium, with reference price based on achieved sales price, with floor at the natural gas price, combined with price discovery mechanism
- Manage **volume risk** through sliding scale of strike price

Additional considerations

- **Contract duration** between 10-15 years
- **Scaling of volumes**, under consideration
- **Risk allocation,** outlined
- **Subsidy cumulation**, under consideration
- **Hydrogen transport and storage**, small-scale



Scope and delivery mechanism

- Applicable on a UK-wide basis
- Producers as recipients of subsidy
- New production that meets the Low Carbon Hydrogen Standard
- Open to range of end users
- Private law contract

Allocation

- **CCUS-enabled**, Phase-2 evaluation ongoing
- **Electrolytic**, market engagement exercise
- Ambition for annual electrolytic allocation rounds
- Price-competitive allocation by 2025 as soon as legislation and market conditions allow

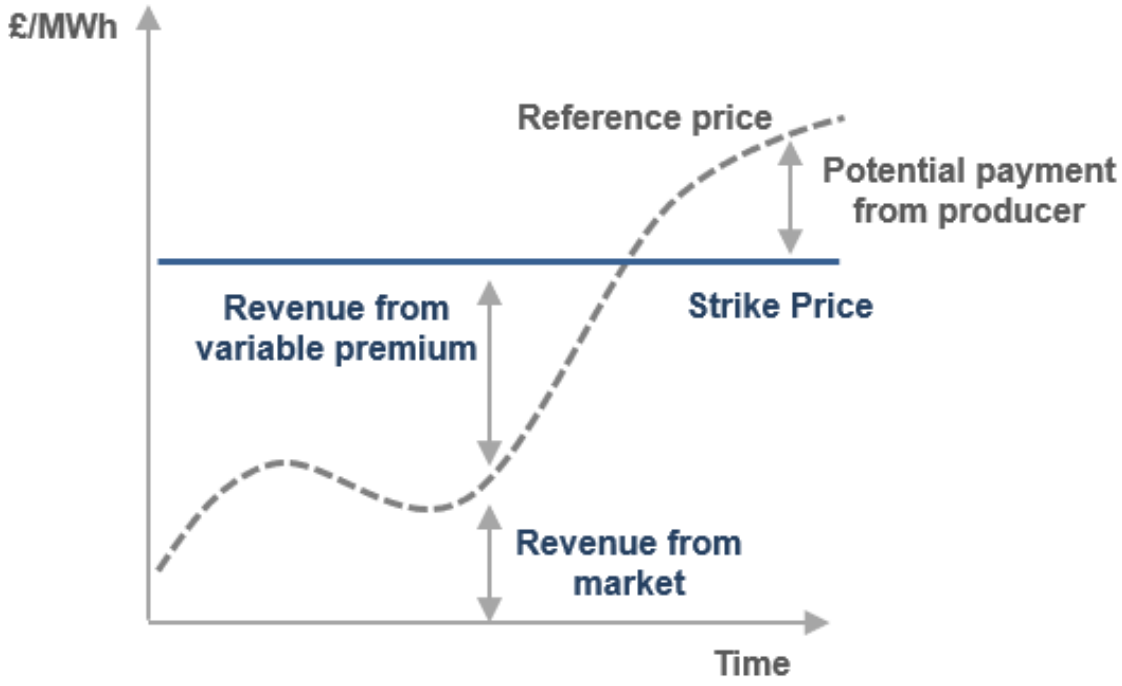
Hydrogen business model payment mechanism – delivering price support via variable premium

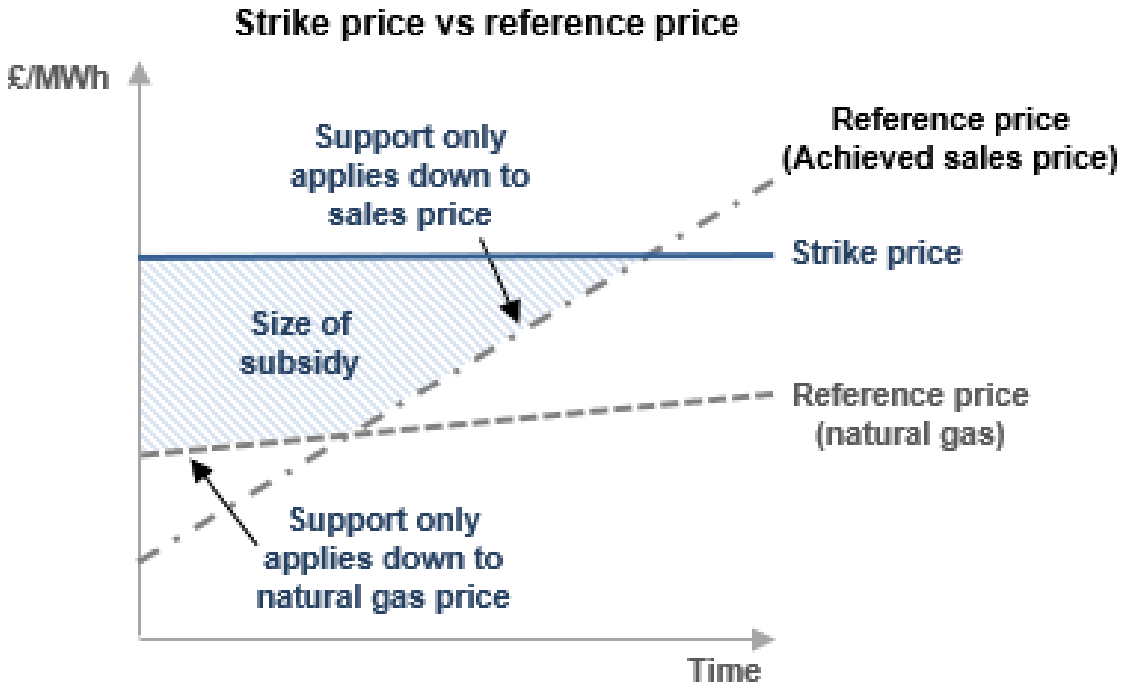
Variable premium manages price risk

- Producer is paid a premium for low carbon hydrogen produced – calculated as the difference between the strike price and the reference price

Reference price is intended to reflect the market price received by the producer for each unit of hydrogen sold

- In the absence of a market benchmark, the reference price is made up of the higher of the natural gas price floor and the achieved sales price, with a price discovery mechanism.
- Intention to integrate market benchmark as soon as possible.



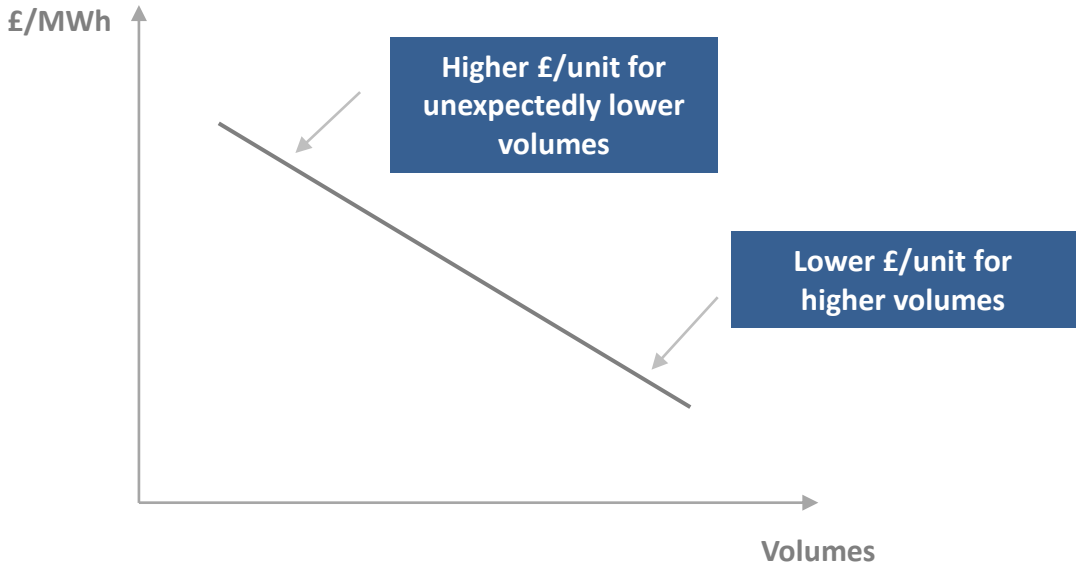


Hydrogen business model payment mechanism – delivering volume support via sliding scale

Sliding scale mitigates volume risk through reprofiling of the strike price

- Provides greater protection at certain points of production in comparison to a flat strike price
- The scale of losses under a sliding scale would be lower in the event that offtake volumes are unexpectedly lower
- This gives investors certainty of the level of revenue they receive from investing in hydrogen
- No volume support for not producing hydrogen

Figure: Illustrative reprofiling of the sliding scale strike price



To note:

- The figure above shows one such profile but we have yet to finalise the profile

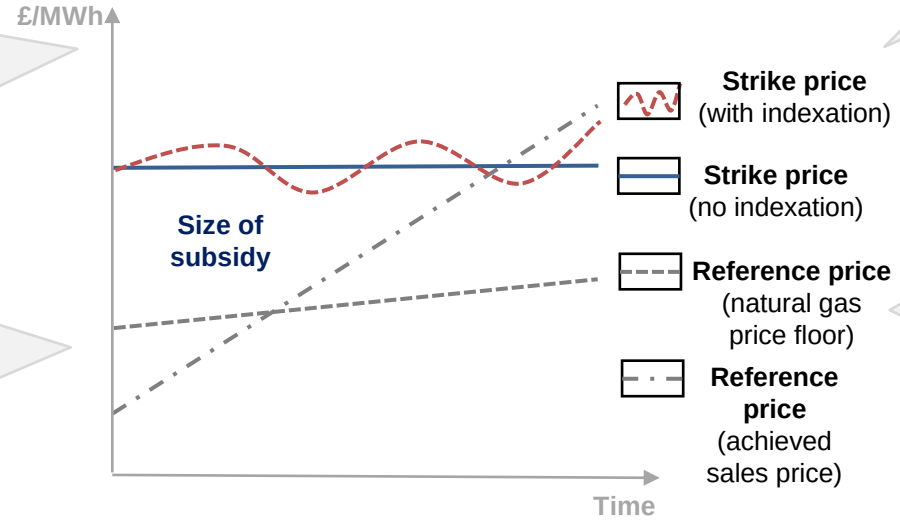
Hydrogen business model payment mechanism – key components

CORE COMPONENTS

STRIKE PRICE: reflects the price the producer needs to achieve to cover their costs of production and return on investment; strike price level and cost components to vary for different production technologies

REFERENCE PRICE: intended to represent the market price received by the producer. For initial projects, reference price is the higher of the producer's achieved sales price and the price floor, which is the lower of the Natural Gas price (NBP Month Ahead) and the Strike Price.

PRICE DISCOVERY: reward for sales above the natural gas price floor to promote price discovery, with potential cap of reward if sales price exceeds a certain threshold (to be determined)



ADJUSTMENTS

SLIDING SCALE OF STRIKE PRICE: higher strike price in response to lower offtake volumes in order to help manage volume risk

INDEXATION OF STRIKE PRICE: intended to provide security of supply to end users, protect producers where production cost change is unmanageable, and HMG from excessive risks and costs.

- *Electrolytic – CPI indexation* for all cost components, including electricity
- *CCUS-enabled – natural gas indexation* for natural gas cost with *CPI indexation* for all other cost components, including electricity

QUALIFYING END USER VOLUMES: consider if adjustments to payment mechanism are needed to accommodate sales to feedstock users, own consumption, and intermediaries