Price Discovery Mechanism

Hydrogen business model stakeholder workshops

16 August 2022

Agenda

Today, we will be discussing:

1. Price Discovery Mechanism

Aims

- Work together with projects, investors and other interested parties to deliver an investable and value for money hydrogen business model
- Stakeholder workshops aim to improve policy development by enabling us to test initial policy thinking with projects and potential investors
- Today we'll go through each agenda item and briefly outline what the issue is, what we're thinking and why
- We'll then invite views from you to understand the issue more as projects and investors

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

The session will be recorded for BEIS internal use only

Hydrogen business model payment mechanism – key components

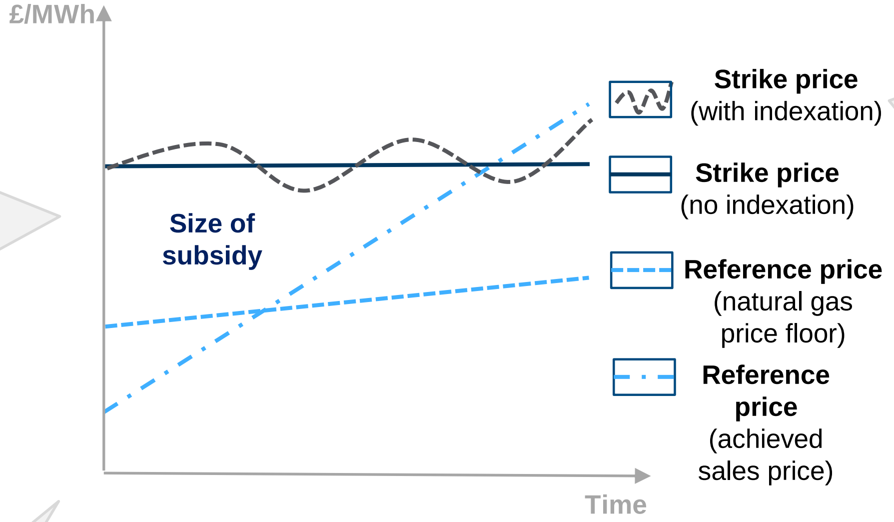
Department for Business, Energy & Industrial Strategy

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 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

Without the price discovery mechanism:

Producer no better off after achieving a higher sales price	– Variable premium is determined by deducting the higher of the achieved sales price and the natural gas price from the Strike Price – As achieved sale price increases above the natural gas price, subsidy decreases – Thus a £1 gain in market revenue is offset by a £1 reduction in variable premium payments, leaving the producer no better off after seeking higher market revenues
Transparency of subsidy terms leads to a reduction in bargaining power	– Structure of the hydrogen business model is a matter of public record – Offtaker therefore knows that producer can sell low carbon hydrogen at the floor
Impact on longer term price development	– Hydrogen price should reflect both the energy price and the decarbonisation value of hydrogen, as well as the achieved technological cost reductions over time

Design Principles for a Price Discovery Mechanism

1 Avoid unnecessary complexity

- The more complex the mechanism, the more challenging it is for the producer to see its benefits to them
- The simpler the mechanism, the higher the potential for under/over reward

2 Restore rather than invert bargaining relationship

- Model currently provides a stronger incentive to seek higher volumes than to seek higher prices
- PDM should strengthen the latter without weakening the former

3 Reward effort

- Reward effort of capturing the non-energy value of hydrogen
- Otherwise, prices may remain sticky at the floor

Solution Outlined in the Indicative Heads of Terms

- The Low Carbon Hydrogen Agreement will include a mechanism that will be designed to aid price discovery.

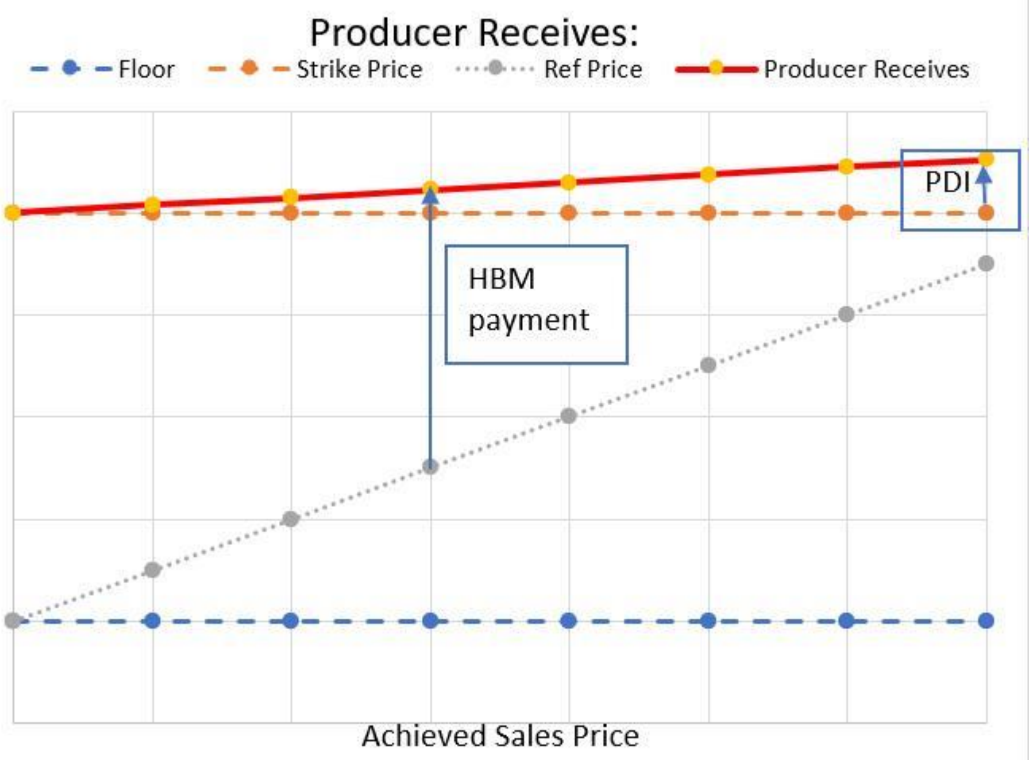
- This mechanism will operate so that **the Producer receives an amount linked to the increment by which the Reference Price exceeds the Price Floor for each unit of hydrogen sold**, with the calculation of this amount to be determined by BEIS.

- Our intention is to promote price discovery and to also incentivise the Producer to seek higher price sales to accelerate the reduction in the Difference Amounts payable by the Hydrogen Counterparty and to encourage investment in hydrogen production on a merchant basis.

Questions for discussion

- What are the costs or activities associated with seeking higher sales prices?
- What do you think the PDM payment should be and why?
- Initial reflections on the policy logic?
- Any other issues we should think through?

Example:



Thank you for joining today's stakeholder workshop

We appreciate that you continue to provide invaluable insight and feedback on the hydrogen business model

Any further questions, please contact one of us directly or use the hydrogen business model inbox

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or

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You can find the Low Carbon Hydrogen Business Model Indicative Heads of Terms on gov.uk here