



THE ASSOCIATION  
FOR RENEWABLE ENERGY  
& CLEAN TECHNOLOGY

27<sup>th</sup> January  
2022

## ***REA Hydrogen Member meeting***



GREEN GAS



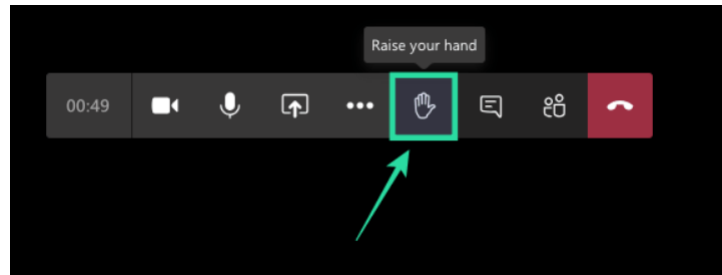
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*Decarbonising the economy*

# Meeting Housekeeping

- All please join as *muted & without video*
- Please note where the *conversation box* should you have any questions or wish to comment, or use the *raise your hand* button



- We will have Q&A sessions during the meeting

The session will be recorded for accurate note taking.

Participants of the meeting will receive a copy of the slides and recording will be available upon request.

## Thank you



# Agenda meeting

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1. Welcome and introduction (William Mezzullo, Centrica and Green Gas Chair)
2. Brief recap of REA position on hydrogen (Kiara Zennaro, REA)
3. Updates on BEIS policy to support hydrogen (Kiara Zennaro, REA)
4. Small scale projects: agreeing a REA's position on the way forward (REA, all)
5. Updates on RTFO and transport policy developments specific to RFNBO hydrogen / bio-hydrogen, RCFs and SAFs (Paul Thompson, REA)
6. ENA's work on hydrogen and blending programme (Thomas Koller, ENA)
7. Hydrogen Gas Market Plan: Hydrogen GoOs (Susannah Ferris, National Grid)
8. Other gas-related updates and supporting low carbon hydrogen injection into the gas grid: policy proposals (Kiara Zennaro, REA and John Baldwin, CNG Services)
9. Member feedback on BEIS consultation on hydrogen ready boilers (industry) (Kiara Zennaro, REA, all)



# How we represent *Hydrogen*



**GreenGas**  
CERTIFICATION SCHEME



Guarantees of Origin



REA 

GREEN GAS



**REA H<sub>2</sub> WORKING GROUP:**  
*Moving the hydrogen agenda forward*

REA  TRANSPORT FUELS

REA  ENERGY STORAGE

REA  SOLAR

REA  WASTE TO ENERGY

REA  INTERNATIONAL 

REA  FINANCE FORUM

*A whole system approach*



## REA members involved in hydrogen include (but are not limited to):

- ITM Power
- JCB
- Centrica
- Octopus energy
- HiiROC
- Supercritical Solutions
- Advanced Biofuels Solutions
- Peel NRE
- Progressive Energy
- Clarke Energy
- Bioenergy Infrastructure Group
- BayoTech
- Airliquide
- CNG Services
- BOC
- Thyson
- Drax
- EQTech
- National Grid ESO
- Cadent Gas
- Northern Gas Network Renewable Power Systems
- Severn Trent Green Power
- Ricardo Energy & Environment
- Renewables Unlimited
- Intelligent Green Energy
- AFRY Management Consulting
- Fitchner Consulting Engineers
- Sweco
- Black and Veatch
- CMS McKenna
- Vinson & Elkins
- BDB Pitmans
- Clarion Solicitors
- Savills
- Eversheds
- Burges Salmon
- Reynolds logistics
- Savills
- Plasco Conversion Technologies
- Suez Recycling & Recovery UK
- Enertecgreen
- Foresight Group
- Lutra
- Heat & Power Services
- Reliagen
- Brown&Co
- Little Oak Energy
- Vitol
- Thames Water



REA  
Hydrogen  
membership



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# REA Green Gas Steering Group to include hydrogen

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## ✓ **Green Gas Forum's Steering Group:**

12 individuals, members of the REA, that provide a steer on where the priorities of the REA should be and how the REA should go about progressing these priorities.

## ✓ Six individuals representing **hydrogen companies** will be **co-opted** in the Steering Group:

- ✓ Call for nominations out to members, deadline 5<sup>th</sup> February
- ✓ Election by members by 18<sup>th</sup> February
- ✓ Separate SG hydrogen discussions
- ✓ Contact [us](#) if you wish to put yourself forward or need any clarification. We need your bio/short blog, plus supporting statement.



# REA position on Hydrogen

REA's **presentation**  
at Hydrogen APPG  
sets out high level  
key policy asks for  
hydrogen.

## Grey hydrogen

- We **do not support**, as significantly polluting in terms of GHG emissions

## Blue hydrogen

- We **support** as a **transition** technology, **if carbon is fully captured, stored or utilised in an application where the carbon is permanently sequestered.**

## Renewable hydrogen

- **Zero** (if from 100% RE) or even **negative emissions** (biohydrogen combined with CCS).
- REA **strongly support** these pathways as they represent truly zero or negative GHG emission forms of hydrogen production.

- ✓ Lots of other colours and shades: pink, turquoise, white, yellow etc.
- ✓ Other pathways e.g. waste plastics to hydrogen
- ✓ **Moving away from colours** - regardless of pathway, **carbon** should be tracked, monitored and fully accounted for and compliant with the relevant standard



# A credible low-carbon hydrogen standard

- *There needs to be a **robust and credible low-carbon hydrogen standard** that underpins development, along with an independent certification scheme*

- ✓ Robust methodology for carbon accounting
- ✓ Trajectory of standard to be aligned to net zero
- ✓ Standard (or financial mechanism) that recognises different levels of GHG emission savings?

 Department for  
Business, Energy  
& Industrial Strategy

Consultation on a UK Low Carbon  
Hydrogen Standard

Closing date: 25 October 2021

August 2021

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## Recent REA engagement with BEIS

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- ✓ Hydrogen Strategy consultations: BEIS consultation workshops and REA Hydrogen member meeting with BEIS officials on 17<sup>th</sup> September
- ✓ [Responses](#) to three consultations published along with Hydrogen Strategy submitted:
  - ✓ Low Carbon Hydrogen Standard
  - ✓ Net Zero Hydrogen Fund
  - ✓ Hydrogen Business Model
- ✓ Participation in roundtables / meetings with BEIS, most recent ones:
  - ✓ BEIS Hydrogen Business Model Expert Group, which met last on 26<sup>th</sup> November 2021 and 17<sup>th</sup> December 2021
  - ✓ BEIS Hydrogen Business Model Electrolytic Allocation Expert Group on 13<sup>th</sup> December 2021. Next dates of expert groups tbc.
  - ✓ REA will continue to join key BEIS meetings, keep members informed and gauge members' feedback in advance where appropriate.



# Consultation responses timeframe

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- ✓ **Low carbon hydrogen standard**, BEIS response expected early in 2022. Stakeholder meeting on electrolytic-hydrogen in early February to test some further thinking on low carbon electricity input and additionality options. REA will join.
- ✓ **Net Zero Hydrogen Fund** expected to launch in early 2022. BEIS will publish a summary of responses to this consultation which will set out detailed scheme design and plans for implementation in due course.



## Designing the Net Zero Hydrogen Fund – Consultation

Closing date: 25 October 2021

August 2021



## Consultation on a UK Low Carbon Hydrogen Standard

Closing date: 25 October 2021

August 2021



# BEIS Hydrogen Business Model

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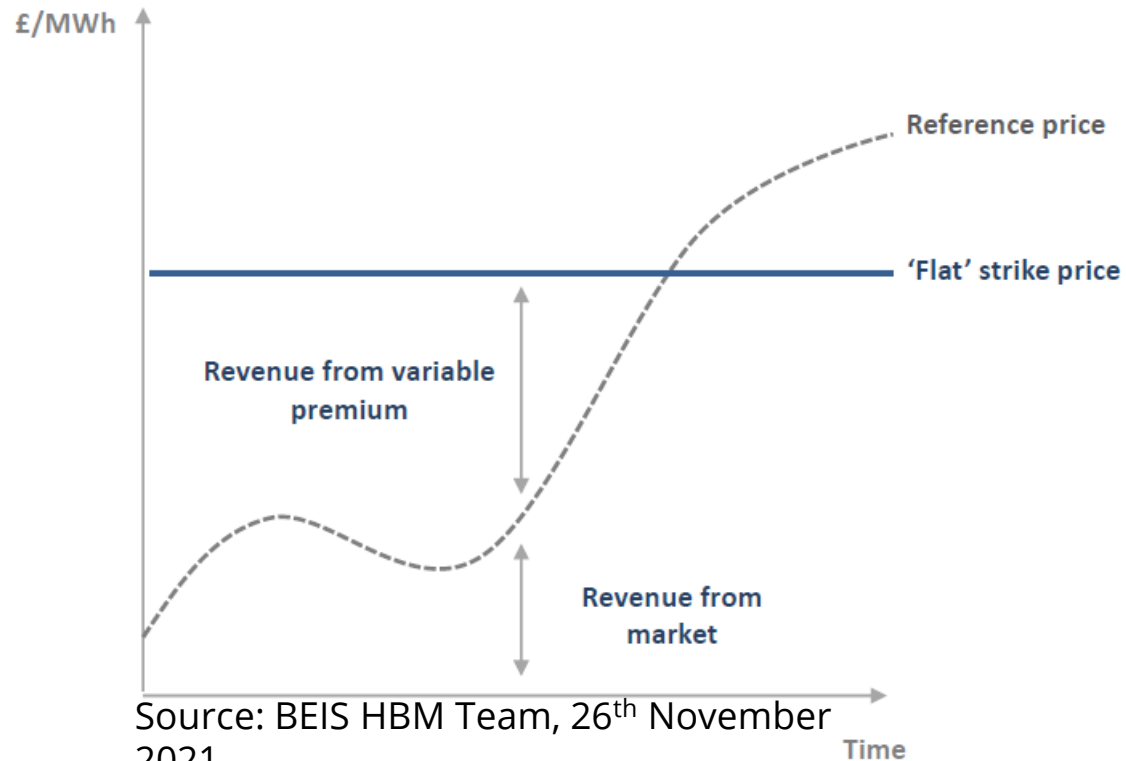
- Consultation closed on 25 October 2021
- 121 written responses received
- BEIS continue to analyse consultation responses to inform policy development
- In parallel progressing options for next-stage model design but said this does not prejudice the outcome of the consultation
- Aim to publish an update in Q1 2022:
  - ✓ Government response to consultation
  - ✓ Indicative Heads of Terms for the business model contract
  - ✓ Further details on the allocation process for electrolytic projects



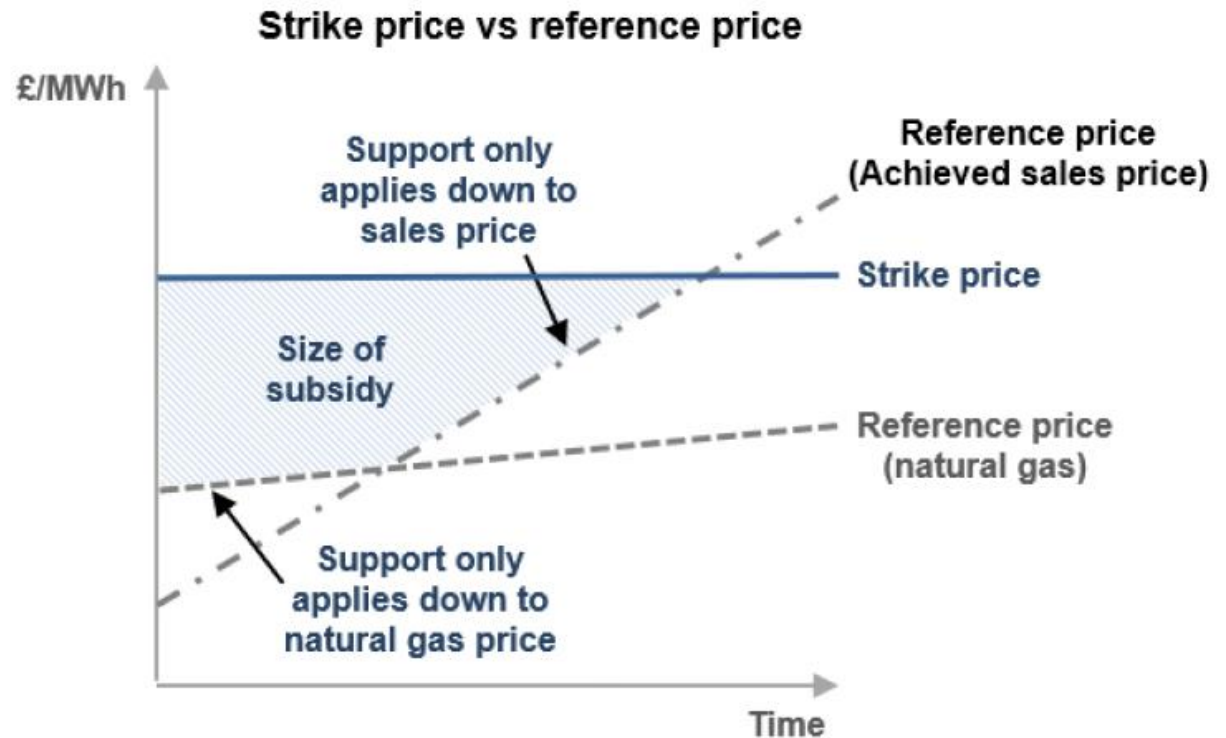
# Variable premium price support (BEIS 'minded to' position)

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- Producer subsidy
- New production that meets 'low carbon hydrogen standard'
- Open to different production technologies and project sizes
- Open to range of end uses
- Private law contract
- Producer is paid a premium – calculated as the difference between a strike and a reference price



# Strike price and reference price



Source: BEIS HBM Team, 17<sup>th</sup> December 2021

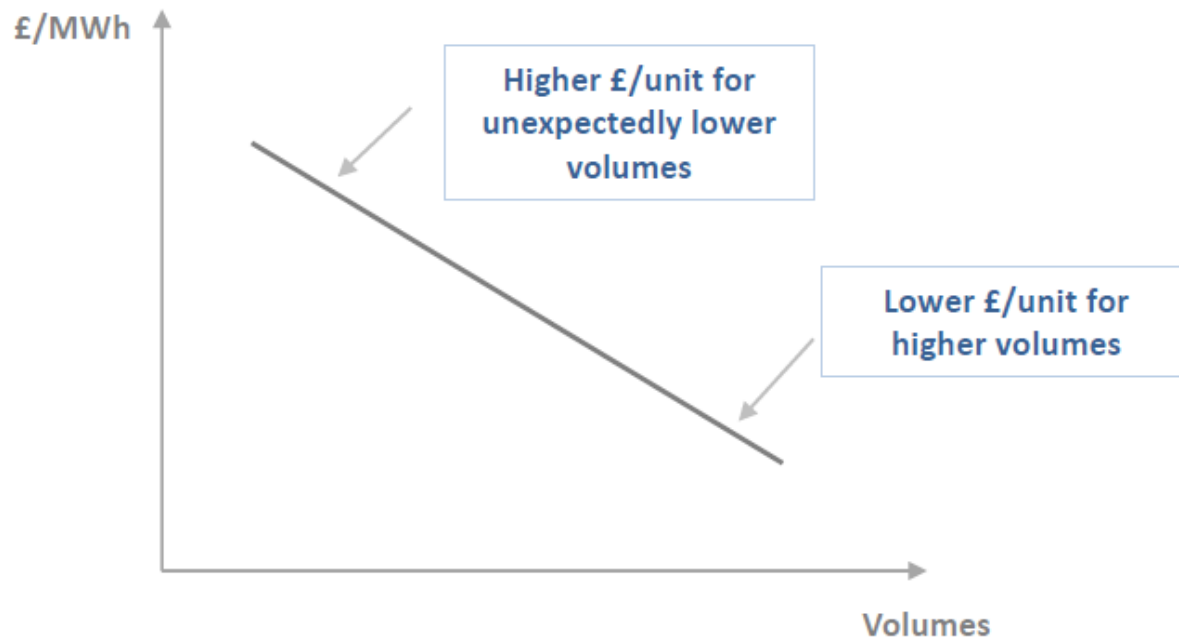
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*Price discovery:* potential contractual measure to incentivise producer to increase achieved sales price.



# Sliding scale strike price

Figure: Illustrative reprofiling of the sliding scale strike price



Source: BEIS HBM Team, 26<sup>th</sup> November 2021

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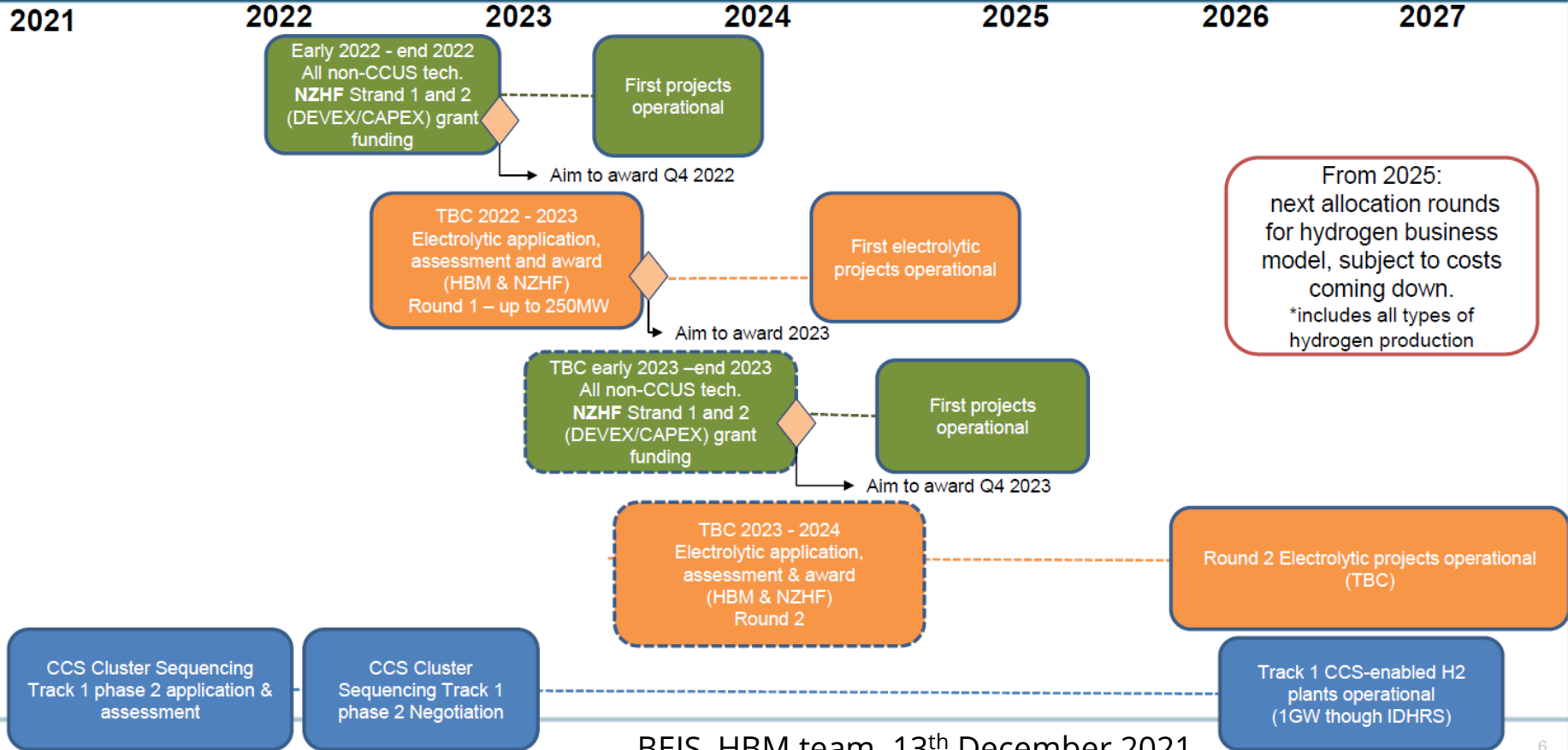


# Allocation timeframes: CCUS and non-CCUS enabled projects



Department for  
Business, Energy  
& Industrial Strategy

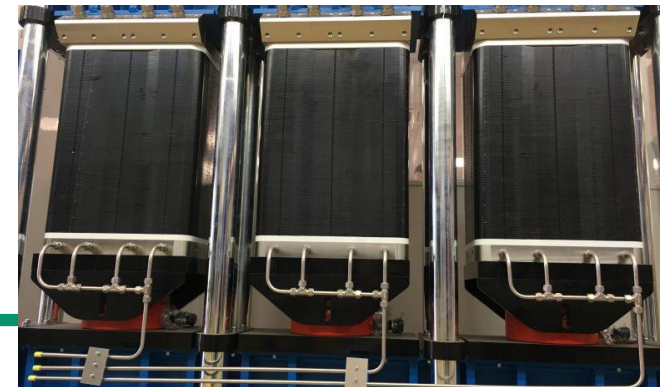
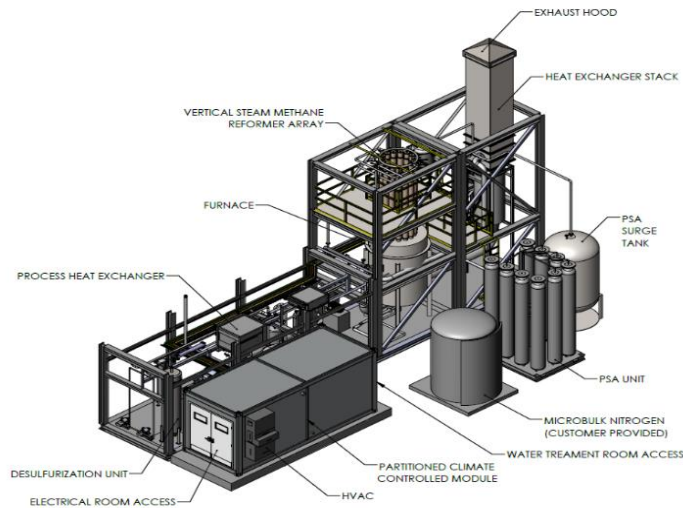
## Provisional strand eligibility and timelines for delivering funding





# Small scale projects

- Still concerned that complexity of contractual approach risks adding market entry barriers for new and smaller players
- Wide range of scales and projects types needed in the UK to build a functioning Hydrogen economy:
  - ✓ Smaller scale, decentralised projects key to kick start the market and can be deployed rapidly
  - ✓ Any Government financial support mechanism (e.g. business models) should target small as well as large-scale.
  - ✓ What do small projects need?





# Some key EU updates



- Still awaiting the EU Delegated Act setting rules for the production of renewable hydrogen from electricity as per article 27 of RED – it should have been published before end of 2021.
- Hydrogen and Decarbonised Gas Package: on 15<sup>th</sup> December 2021 the Commission adopted set of legislative proposals to decarbonise the EU gas market by facilitating the uptake of renewable and low-carbon gases including hydrogen and to ensure energy security for all citizens of Europe.
- EU leaked proposals on New Year's Eve to label gas and nuclear plants as 'green', on the grounds they are 'transitional' activities, on the premise they have emissions below a certain threshold.

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# Other important gas related updates

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- Xoserve launching **Future Billing Methodology** consultation on behalf of Cadent on **31<sup>st</sup> January**, responses by 28<sup>th</sup> February. Register [here](#) for the consultation workshops.
- Ofgem consultation on needs case and efficient costs for the **LTS Futures project proposed by SGN**. Seeking views on our assessment of the needs case, cost allowance and funding approach for this project. Responses are requested by 2<sup>nd</sup> February 2022 – John Baldwin, CNG Services to provide update.
- **Green H<sub>2</sub> injection into the NTS** (John Baldwin, CNG Services)



# Hydrogen injection proposals

- *The REA has been supporting the introduction of a mechanism to encourage **hydrogen injection into the gas grid**, or the adaptation of an existing mechanism:*
  - ✓ Green Gas Support Scheme could be adapted to include injection of low-carbon hydrogen molecules into the grid, help displace natural gas. Mid-scheme review due in 2023.
  - ✓ Inclusion of hydrogen in any long term policy for greening the gas grid that replaces the Green Gas Support Scheme.

*Source:  
ITM Power*



# H<sub>2</sub> ready industrial boiler equipment: call for evidence (1)

BEIS [call for evidence](#) released in December 2021, closing date: 14<sup>th</sup> March 2022. Context:

- Industry likely to be an early source of hydrogen demand in the 2020s
- Industrial boilers could make up 40 – 50% of hydrogen demand for industrial fuel switching by 2030
- Hydrogen-ready boiler equipment that runs on fossil fuels today but is designed for subsequent conversion to hydrogen could be a bridge to enable industry's transition to a low carbon future
- Few sites are taking the preparatory steps needed to enable hydrogen fuel switching in the future, partly due to uncertainty on when or whether they'll be able to access low carbon hydrogen



Enabling or requiring hydrogen-ready industrial boiler equipment

Call for evidence

Closing date: 14 March 2022

December 2021



# H<sub>2</sub> ready industrial boiler equipment: call for evidence (2)



## Enabling or requiring hydrogen-ready industrial boiler equipment

### Call for evidence

Closing date: 14 March 2022

December 2021

- Government could help by enabling or requiring industrial boilers to be hydrogen-ready. Options sets out such as:
  - ✓ Provide info on future cost and availability of hydrogen and on comparison with other low carbon technologies
  - ✓ Provide funds or loans for all or some of the costs of the equipment
  - ✓ Develop a standardised definition of hydrogen-ready boilers which may involve assessment and accreditation via a Government scheme
  - ✓ Requiring new industrial boilers to be hydrogen-ready via a regulatory approach, with exemptions. This could be done setting product standards (obligation placed on equipment manufacturers), environmental permitting (obligation placed on sites).
- How hydrogen-ready should be defined - no standard definition of hydrogen-ready boiler currently
- Whether hydrogen-ready boiler equipment would enable cheaper and faster fuel switching
- The role of the supply chain and how best to maximise the economic opportunities for the UK



# Key questions (3)



## Enabling or requiring hydrogen-ready industrial boiler equipment

### Call for evidence

Closing date: 14 March 2022

December 2021

- How should hydrogen-ready boilers be defined?
- Do you have views on whether government should enable and/or require industrial boiler equipment to be hydrogen-ready?
- Do you have any views on type of regulatory approach?
- Do you have any views on possible exemptions?
- Do you have any views on the potential timing for introducing regulations?
- Do you think the existing supply chain would be able to adapt?
- How much time should be needed between the details of the regulation being provided and any new requirements coming into effect?

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# Funding opportunities

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- Government has committed over £2billion to innovation in areas relating to Net Zero (the [Net Zero Innovation Programme](#)).
- This includes areas from zero emission buses, clean heat schemes to hydrogen, fuel switching and industrial decarbonisation and longer duration energy storage projects.
- IETF Phase 2: Spring 2022 opens to applications on **31 January 2022** and provides up to £60 million of grant funding for the following project types:
  - ✓ studies - feasibility and engineering studies to enable companies to investigate identified energy efficiency and decarbonisation projects prior to making an investment decision
  - ✓ energy efficiency - deployment of technologies to reduce industrial energy consumption
  - ✓ deep decarbonisation - deployment of technologies to achieve industrial emissions savings
- [Briefing webinar](#) on **1 February 2022**. Info [here](#).

A comprehensive list of available funding is available from the REA:

[Link to REA Innovation Support funding opportunities](#)

[REA Industrial decarbonisation grid](#)



# Breakthrough Energy Catalyst

- [Breakthrough Energy Catalyst \(BEC\)](#) is a new programme which is designed to catalyse the development of the commercialisation of new, low carbon technology.
- Organisations can access match funding from the BEC when applying to [hydrogen government funding programmes](#).
- BEC has launched a [UK Request for Proposals \(RfP\)](#) as the mechanism to access their funds.
- It is appreciated that not all projects will be at a suitable stage in their programmes to apply. But, BEC are using a rolling application process providing time for less mature projects to develop their proposals.
- The Government's own programmes will remain unaltered and separate to BEC's RfP process. Projects without BEC funding will still be eligible to apply for UK Government funding programmes.
- BEC will be holding an [informational webinar](#) after the issuance of the RfP to address initial questions on 1st February 2022.





# Thank you

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