International Partnership for Hydrogen and Fuel Cells in the Economy

United Kingdom Update

34th IPHE Steering Committee Meeting

1 – 4 December 2020

Virtual Meeting

Announcements and/or New Initiatives *United Kingdom*

- **January 2020** – HyDeploy project in Keele University fully operational, demonstrating blending up to 20% hydrogen into the private gas network on site
- **February 2020** - Successful Hydrogen Supply (£33m) and Fuel Switching innovation projects (£20m) announced including a range of technologies and applications – includes Hynet, Gigastack, Dolphyn
- **March 2020** - £800m CCUS Infrastructure Fund to establish CCS in two clusters by 2030
- **March 2020** – Published outline of Government Transport Decarbonisation Plan; full Plan expected December
- **April 2020** – Industrial Clusters Mission - share of £1m funding awarded to develop decarbonisation roadmaps
- **July 2020** – Launched Hydrogen Advisory Council (HAC), co-chaired by Minister Kwarteng, to formalise engagement with industry stakeholders.
- **September 2020** – Secretary of State Alok Sharma announced intention to publish first UK Hydrogen Strategy in early 2021
- **October 2020** – Minister Kwarteng spoke for UK at Hydrogen Energy Ministerial
- **November 2020** – PM outlined Government's Ten Point Plan for a Green Industrial Revolution, including driving the growth of low carbon hydrogen. Set out ambition for 5GW low carbon hydrogen production by 2030, supported by a package to include: capital co-funding for low carbon hydrogen production; bringing forward plans, in 2021, for a revenue mechanism to support ongoing costs; support for blending; and plans for 100% hydrogen heating trials

Examples of Lessons Learned and Impact *United Kingdom*

Program initiative, policy, regulation or mandate	Lessons Learned/Outcomes
• GigaStack	• Working with ITM Power to develop Green Hydrogen production through a 100MW electrolyser. • £7.5m Government funding will enable ITM Power to work towards developing a system that uses electricity from Orsted's Hornsea Two offshore wind farms to generate renewable hydrogen for the Phillips 66 Humber Refinery. • When it's constructed, it will be the world's largest.
• HyDeploy & HyDeploy2	• In the first ever live demonstration of hydrogen in homes, HyDeploy is successfully progressing through phase one of its demonstration to blend up to 20% of hydrogen into the normal gas supply. • HyDeploy 2 is currently under development as a larger scale deployment of blended hydrogen in Gateshead.

United Kingdom – Profile November 2020

Status of Deployments

- **Now to end 2021:** Strategy publication; revenue support consultation; extension of innovation support; Low Carbon Hydrogen Fund (LCHF) design and consultation live, and initial funding available
- **Mid 2020s:** First CCUS cluster established. Smaller scale electrolytic H2 projects deployable on a more advanced timeline using LCHF support
- First hydrogen neighbourhood in 2023; hydrogen village by 2025; **hydrogen town by 2030.**

Leading Government Initiatives

- **5GW** of low carbon hydrogen production capacity by 2030, supporting up to **8,000** jobs
- Ambition of **1GW low carbon hydrogen production capacity by 2025**
- Pledged **£500 million** for low carbon hydrogen production across the next decade, including **£240 million** for the **Net Zero Hydrogen Fund** committed out to 2024/25
- Hydrogen confirmed as one of the priority areas for **£1bn Net Zero Innovation Fund**, including production, storage and use.
- Working with industry to complete testing to allow up to **20% blending** of hydrogen into the gas distribution grid **from 2023**

Goals or Focus Areas

- Developing the **UK Hydrogen Strategy**
- 5GW ambition aims to bring forward a combination of **commercial-scale CCUS-enabled 'blue'** hydrogen and **smaller scale electrolytic 'green'** hydrogen projects
- Consulting industry on preferred hydrogen business models.

Current Funding

- **H2 Supply (£33m):** accelerating the development of bulk low carbon H2 supply solutions, including storage
- **HyDeploy (£7.3m) (Ofgem):** Demonstrating the safety case for blending up to 20% H2 into the gas grid
- **Hy4Heat (25m):** Exploring the safety of 100% H2 for heating
- **Storage at Scale (£20m):** Demonstrating innovative large-scale energy storage, including Power-to-X technologies

Thank you

International Partnership
for Hydrogen and Fuel Cells
in the Economy

Highlight to Include in IPHE Newsletter *United Kingdom*

- Last month, the Prime Minister announced his **Ten Point Plan for a Green Industrial Revolution,** which included our ambition for 5GW of low carbon hydrogen production capacity by 2030. Working with industry, this could see the UK benefit from 8,000 jobs across our industrial heartlands and beyond.
- This also included the ambition to publish our **Hydrogen Strategy** in Spring 2021.
- This will be supported by **up to £500 million for low carbon hydrogen production across the decade**, with £240m committed out to 2025. We will also support industry in trialling homes using hydrogen for heating and cooking, starting with a Hydrogen Neighbourhood in 2023, moving to a Hydrogen Village by 2025, with an aim for a Hydrogen Town – equivalent to tens of thousands of homes – before the end of the decade.

Status of Applications and Goals *United Kingdom*

Application	Status (As of Month, Year)	Goal (For Year)
1) H_2 Applications		
a.Energy Storage (e.g. MW, GW of capacity)	Insert number	Insert number
b.Electrolyzers (e.g. MW, GW of capacity)	Insert number	Insert number
c.Other (e.g., Steel, Marine, Fertilizer, etc.)	Insert number	Insert number
2) Transportation		
a.Light Duty Vehicles	Insert number	Insert number
b.Medium and Heavy Duty Vehicles	Insert number	Insert number
c.Buses	Insert number	Insert number
d.Trains	Insert number	Insert number
e.Forklifts	Insert number	Insert number
3) Stationary		
a.Residential	Insert number	Insert number
b.Commercial	Insert number	Insert number
c.Back Up Power	Insert number	Insert number
4) Other (applicable to your country and not covered in the categories listed above)	Insert number	Insert number