Hydrogen Accelerators

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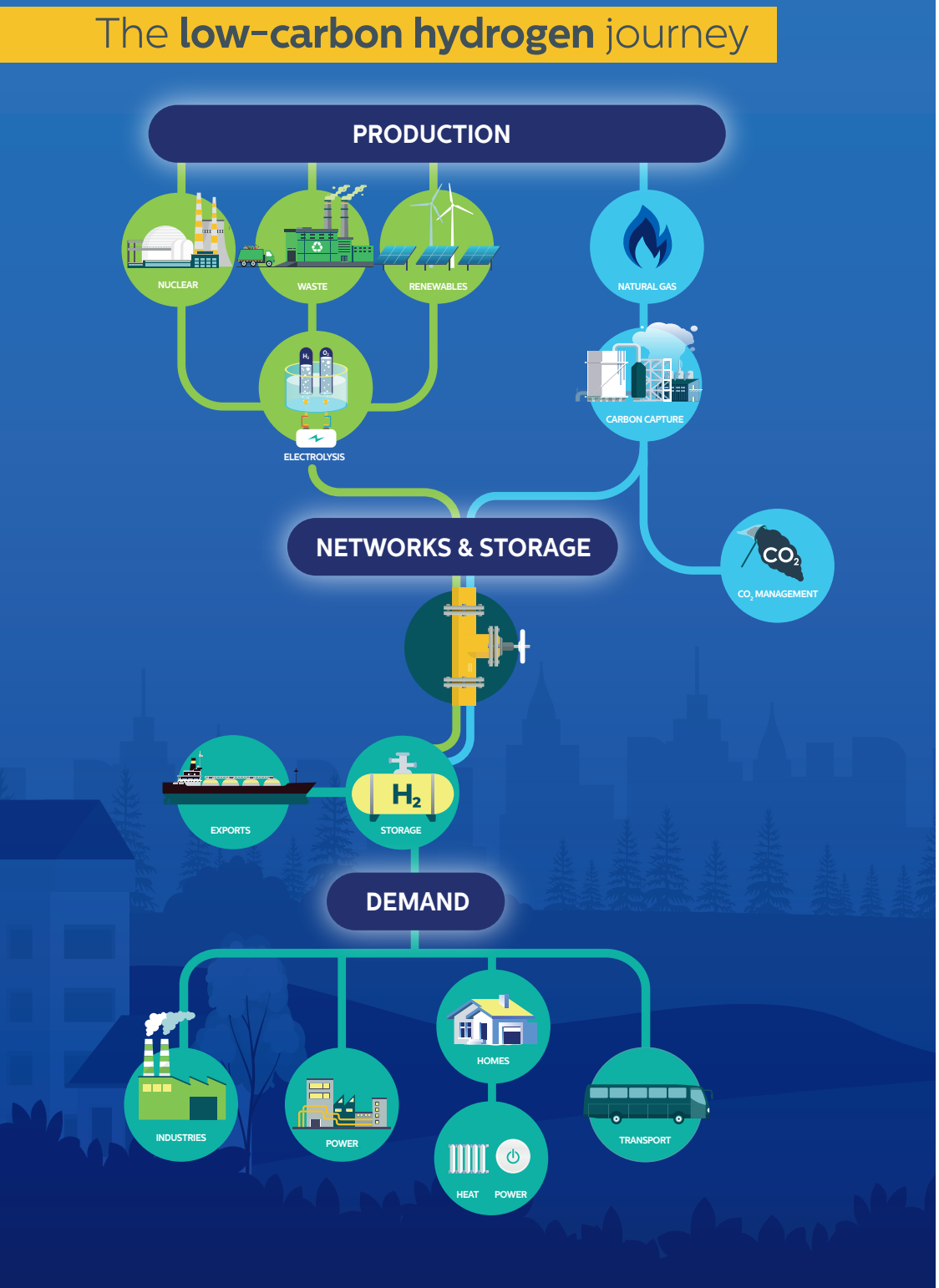


Introducing our Hydrogen Accelerators

Hydrogen offers the UK an unprecedented opportunity to unlock economic growth and clean jobs while delivering on our net zero commitments. However, rapidly accelerating international investment means we will have to move quickly to secure our position in a global market predicted to be worth $2.5tn by 2050.

Hydrogen UK has worked closely with policy makers and Ministers over the past year to develop world-leading hydrogen production business models to unlock hydrogen production at scale.

The Government's recent Energy Security Strategy acknowledged the vital role hydrogen will play in the UK's future energy mix by increasing our production target to 10GW by 2030. However, the industry is growing so quickly that its current production project pipeline already exceeds this target by a third.

To maintain this progress, we should concentrate on supporting not just hydrogen production, but also the wider value chain. Over the coming months we must:

- Scale production rapidly by awarding hydrogen business model contracts to producers by early 2023
- Establish investible market mechanisms to unlock capital investment in low/no regrets and systemically important distribution and storage infrastructure, and update the planning and consents regime to speed up their delivery
- Stimulate demand for hydrogen by developing detailed and distinct policy and regulatory frameworks to create markets in end-use sectors

We have to simultaneously address all three areas to grow hydrogen effectively. Production matching demand, and the two meeting thanks to the distribution network and storage infrastructure. The whole value chain must move forward in step.

This document outlines the detailed steps that industry and Government must take together to accelerate hydrogen's journey in the UK. These accelerators are all contingent on the rapid ratification of the Energy Bill which is essential to industry's ability to deliver. Swift action in these areas will secure the UK's place as a global leader, create new jobs and economic prosperity, and ensure that we deliver net zero cost-effectively.

Hydrogen UK will be publishing a series of papers over the coming six months which will expand upon these accelerators and look in more detail at each area of the value chain.

Accelerating Hydrogen's Potential

Production

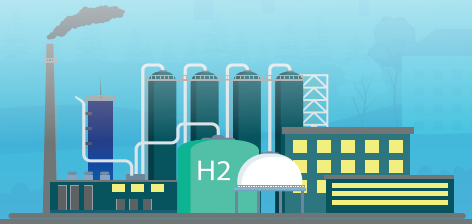
Scale production rapidly by awarding hydrogen business model contracts to producers by early 2023

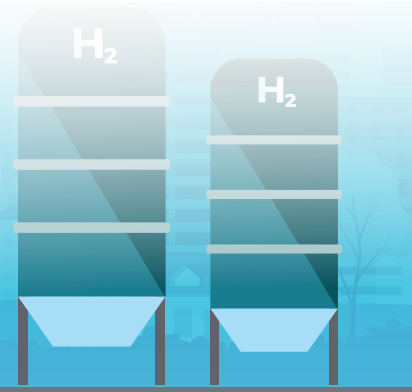
- Provide clarity on the funding envelope available to producers to deliver under the hydrogen business model.
- Increase funding to 750 MW of production in each of the first two Hydrogen Business Model Electrolytic Allocation Rounds. We are currently aware of 1.5GW of green hydrogen production projects that could begin producing by 2025.
- Commit to nominating and notifying preferred bidders for Hydrogen Business Models within six months of the application window closing, giving greater certainty to project finance for developers.
- Allow for flexibility on Commercial Operation Date (COD) timing and focus on deliverability to progress the first-of-a-kind projects needed to bring costs down and meet 2030 production targets.
- Fund all eligible carbon capture projects via the Cluster Sequencing process, where compliance with future carbon budgets and trajectory to net zero is demonstrated. Further details on the process and application window for Track 2 clusters should be released immediately and funding allocated to projects as quickly as possible, this is essential to ensuring investment currently set aside for UK projects, does not go elsewhere.
- Commit to a review of planning framework to accelerate hydrogen deployment, with the potential for a two-tiered approach based on production capacity similar to that for wind projects.
- Commit to a pilot Guarantee of Origin (GoO) scheme with the first hydrogen production projects to test the interoperability with other climate value market mechanisms.
- Consult on the requirements for future rules governing international trade of hydrogen and hydrogen derivatives.

Networks and Storage

Provide links between supply and demand by establishing mechanisms to unlock capital investment in distribution and storage infrastructure.

- Ensure that suitable transportation and storage (T&S) business models are in place no later than 2025 to enable the development of hydrogen networks and storage infrastructure, with early support for low/no regrets and systemically important projects so construction can commence by the end of 2023. Lead times for large scale T&S projects are long and there exists a risk of missing 2030 production targets if investment decisions aren't made early enough.
- Implement measures to speed up delivery of major energy infrastructure through fast-track consents and publish in 2022 updated National Policy Statements for the energy sector.
- Commit to support blending during early stages while production and demand scale up. Blending can deliver enduring benefit in the hydrogen production supply chain.
- Commit as soon as possible to the development of a national network of 100% hydrogen pipelines linking industrial clusters to enable conversion work to commence in 2026.
- Review regulatory frameworks to facilitate the use of hydrogen within the networks. Current regulations do not make provision for the use of hydrogen in gas networks and new codes and regulations must be developed to enable this.
- Coordinate widely across key energy sector stakeholders to define the role of the Future System Operator (FSO) to ensure that both electricity and gas infrastructure are planned together in a whole system approach, and to ensure that components of storage and network infrastructure are developed in tandem and to minimise implementation costs.





Demand

Stimulate demand for hydrogen by developing detailed and distinct policy and regulatory frameworks to create markets in end use sectors.

Heat

- Commit to mandating that all boilers sold from 2026 are hydrogen ready.
- Commit to funding both hydrogen villages to maximise learnings for future roll out. Accelerate the FEED for a hydrogen town by end 2026.
- Set a target for 1,000,000 homes to be heated by hydrogen by 2035.
- Confirm the role of hydrogen for domestic heat by end of 2026, subject to successful trials, and make clear in advance of this the nature of the decision framework and policy decisions that will be taken. Visibility of the decision-making timeline is critical to allow for planning and investment decisions to be made.

Heat and Industry

- Develop a strategy on gas market reform to include the potential for green gas and low carbon hydrogen, and clarify VAT treatment for hydrogen (currently 20% versus 5% for natural gas for non-qualifying use).

Industry

- Explore the use of Carbon Contracts for Difference (CfDs), or other measures to achieve decarbonisation in Industry using hydrogen, and their interaction with other funding support mechanisms to avoid market distortions.
- Introduce carbon border adjustment mechanism (CBAM) or equivalent, with clarity over future carbon pricing regimes.
- Provide support for public procurement schemes for carbon intensive products manufactured using low carbon hydrogen.

Power

- Develop a strategy in early 2023 for hydrogen's role in decarbonising the UK's electricity system by 2035. This should include funding, market reforms and changes to regulation to allow hydrogen to play a role in both capacity and dispatchable power markets.
- Consult on electricity market reform to define the role of the FSO and the changes required for hydrogen to play a role in the decarbonisation of power by 2035.

Transport

- Expand the use of the now-established Low Carbon Hydrogen Standard (LCHS) to enable the use of all forms of low carbon hydrogen, including biogenic, carbon capture enabled and nuclear derived, without additionality requirements, in the production of low carbon fuels for road, rail, maritime and aviation – including through amending the Renewable Transport Fuel Obligation (RTFO).
- Set a target of 200 hydrogen refuelling stations for the UK by 2030, with regional targets for Scotland and Wales. Targets should be set at the Local Authority level.
- Provide short term CAPEX subsidies to support the uptake of hydrogen cars, vans, buses, trucks and trains, stimulating demand for hydrogen in the transport sector.
- The Government has a target of 4,000 zero emission buses by 2025; with the remaining allocation, 1,000 of these should be hydrogen buses. Provide incentives for local authorities who partner with UK hydrogen bus developers for their local transport network.
- Commit to phase out dates for all fossil fuel road and non-road vehicles and machinery.
- Improved investment in research and development (R&D) for hydrogen and hydrogen-derived fuel for maritime and aviation applications.