

*The Tees Transporter Bridge, Middlesbrough, UK*

# UK HYDROGEN WEEK

With the spotlight on hydrogen initiatives around the country, the UK government remains committed to developing the hydrogen economy

The launch of the UK's inaugural Hydrogen Week, which is taking place from 13-19 February, demonstrates the growing momentum around the use of hydrogen to help achieve the country's decarbonisation targets.

It comes in the wake of the UK government's 'Hydrogen Strategy update to the market' report published by the Department of Business, Energy & Industrial Strategy in December last year, in which the government reaffirmed its commitment to developing the UK's hydrogen economy. The UK is aiming to achieve ten gigawatts of low carbon hydrogen production capacity by 2030, with at least half coming from hydrogen produced through electrolysis.

In the Tees Valley, the UK government is working with industry and academia to create the Hydrogen Transport Hub, a 'living lab' designed to help understand hydrogen's role in decarbonising the transport sector through large scale trials across different transport modes and use cases. The first of its kind in the UK, this project is developing production, storage and distribution infrastructure for green hydrogen to supply a network of refuelling stations and support operational trials of hydrogen-powered vehicles including those on road, waterways and aviation.

Energy company BP has also identified the UK's North East region as a place with all the attributes

of a world-class clean energy hub. Here it is proposing to build a new large-scale green hydrogen production facility on Teesside that could deliver up to 500Mwe (megawatt electrical input) of hydrogen production by 2030. Known as HyGreen Teesside, the project is expected to lead the way for large-scale decarbonisation of heavy transport, airports, ports and rail in the UK.

Partnering with cities and businesses as they shape their paths to net zero is a core part of BP's strategy. In Scotland, it has signed an agreement with Aberdeen City Council to deliver a scalable green hydrogen production, storage and distribution facility powered by renewable energy.

The Aberdeen Hydrogen Hub is to be developed in three phases in response to growing demand for hydrogen.



Phase one, which involves the delivery of a green hydrogen production and transport refuelling facility powered by a solar farm, is targeting first production from 2024, delivering over 800 kilograms of green hydrogen per day – enough to fuel 25 buses and a similar number of other fleet vehicles.

Future phases could see production scaled up through further investment to supply larger volumes of green hydrogen for rail, freight and marine, as well as the supply of hydrogen for heat and, potentially, export. This expansion would be enabled by the expected increased availability of local renewable energy sources, including offshore wind.

Aberdeen City Council, which intends to become net zero by 2045, is also working with the city of Kobe, Japan, as part of the H2 Twin Cities initiative, which showcases cities and communities around the world deploying clean hydrogen solutions, with the aim of promoting international partnership by sharing best practices and lessons learned.

Also in Scotland, an Orkney-based demonstration project is creating an integrated low-carbon,

localised energy system by establishing a replicable model of hydrogen production, storage and distribution for heat, power and transport uses. Here, proton exchange membrane (PEM) electrolysers produce hydrogen through electrolysis, using locally generated wind and tidal energy.

## New end-use segment for platinum

There are not many established commodities that offer the prospect of significant growth in demand from a new end-use segment as platinum does through its importance to the hydrogen economy.

The need to decarbonise is more acute than ever and platinum-based PEM technologies will have a significant role to play in the energy transition. While hydrogen-related demand for platinum is relatively small in 2022 and 2023, it is expected to grow substantially through the 2020s and beyond, reaching as much as 35 per cent of total annual platinum demand by 2040.

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