

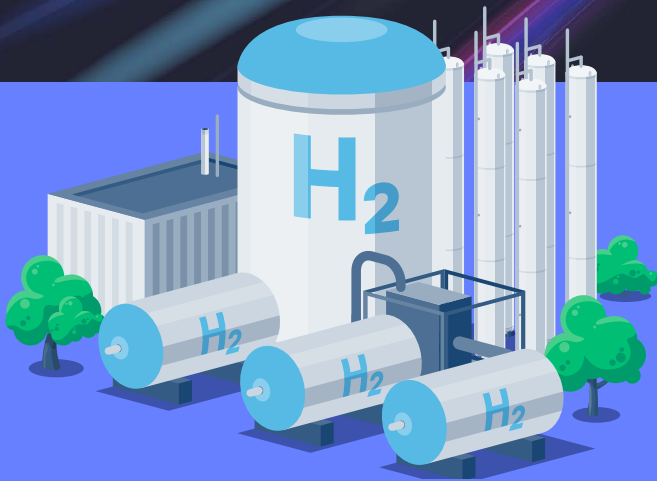
# Hydrogen Hubs: Powering Industrial Ecosystems

## What is a Hydrogen Hub?

A hydrogen hub is a site where hydrogen is produced, stored and distributed from. The UK government is actively promoting the development of hydrogen hubs across the country as part of its strategy to reach net zero emissions by 2050.

These hubs can be useful for many sectors, but offer distinct advantages when developed alongside industrial hubs.

Here's why...



### Decarbonising hard-to-abate sectors

Some industrial processes, like cement and steel manufacturing, are difficult to decarbonise using electricity alone. Hydrogen provides a versatile alternative fuel, which can help these sectors significantly reduce their greenhouse gas emissions. These sectors are crucial to the UK economy, so finding ways to decarbonise them quickly is critical.



### Leveraging existing assets

With industrial hubs having infrastructure such as pipelines and storage tanks already in place, these assets can be adapted for hydrogen use. This dramatically reduces the cost and complexity of building a hydrogen hub from the ground up, ensuring these facilities are deployed cost-effectively across the county. Furthermore, it enables a faster transition to a low-carbon economy.



### Cluster and co-location benefits

Creating hydrogen production facilities within industrial clusters not only minimises transportation and energy losses, but generates opportunities where different industries can use each other's by-products. For instance, excess heat from hydrogen production could be captured and used by nearby factories, improving overall energy efficiency.



### Fuelling industrial giants

Industries like steel, chemicals and refining are incredibly energy-intensive. From melting iron ore at extremely high temperatures in order to shape and treat steel, to heating crude oil to separate it into different fuels, these processes traditionally rely heavily on fossil fuels. Hydrogen offers a promising pathway to decarbonise energy-hungry industries like these.



### Cost-effective economies of scale

Concentrating hydrogen production and consumption within industrial hubs unlocks significant cost gains, through economies of scale. Essentially, as production increases, the cost per unit of hydrogen decreases. This is due to shared infrastructure, optimised production and streamlined supply chains. A concentrated cluster of hydrogen users creates a strong local market too, encouraging investment and driving down prices.



## Skills for a Hydrogen Future

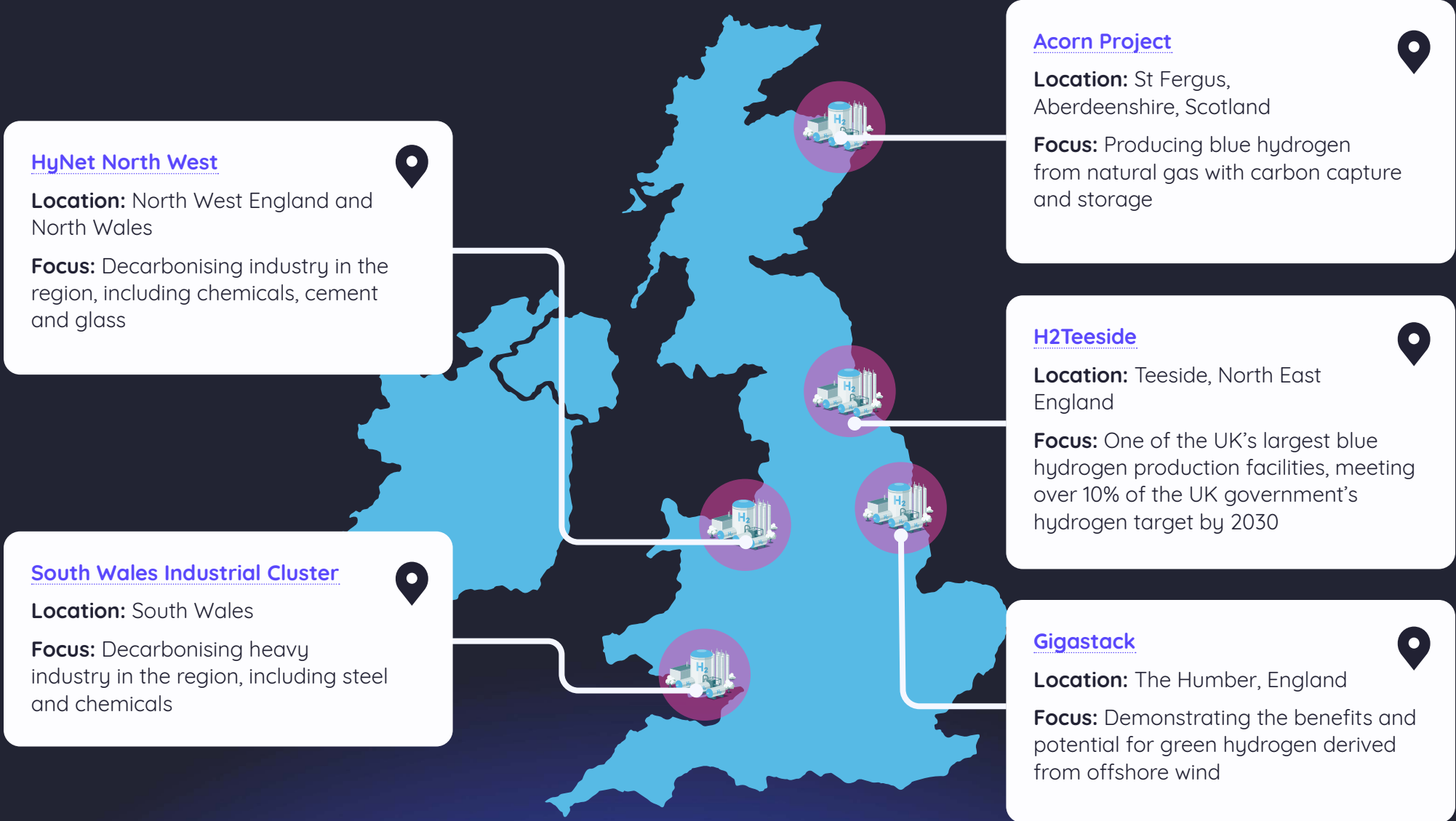
The UK hydrogen sector is projected to create tens of thousands of jobs across the country. But to develop a hydrogen-ready workforce, extra effort and investment in skills and training will be needed. Expertise in areas like electrolysis, fuel cell technology, hydrogen storage and safety protocols will be in demand, and employees in related industries - such as Britain's gas sector - may also require upskilling and retraining. It's also important that new talent is attracted to this growing field.

### Did you know?



A [2024 study by Hydrogen UK](#) estimated over 320,000 jobs by 2030, with many located in industrial hubs.

## Mapping Key Hydrogen Hubs



## Empowering Industrial Ecosystems

Hydrogen hubs are poised to play a vital role in the UK's journey towards net-zero emissions. By providing a clean and versatile energy source, they can help decarbonise heavy industry, create jobs and boost local economies.

As the UK continues to invest in hydrogen technologies and infrastructure, these hubs will become increasingly important for meeting the country's energy needs and securing its position as a leader in the global transition to a sustainable future.

