

CCS and the UK’s gas grid: The story so far

To achieve its net zero targets by 2050, the UK needs innovative technologies to help decarbonise the gas grid. Carbon capture and storage (CCS) is becoming a crucial part of this story, enabling continued use of existing infrastructure while considerably lowering carbon emissions.



What is CCS?

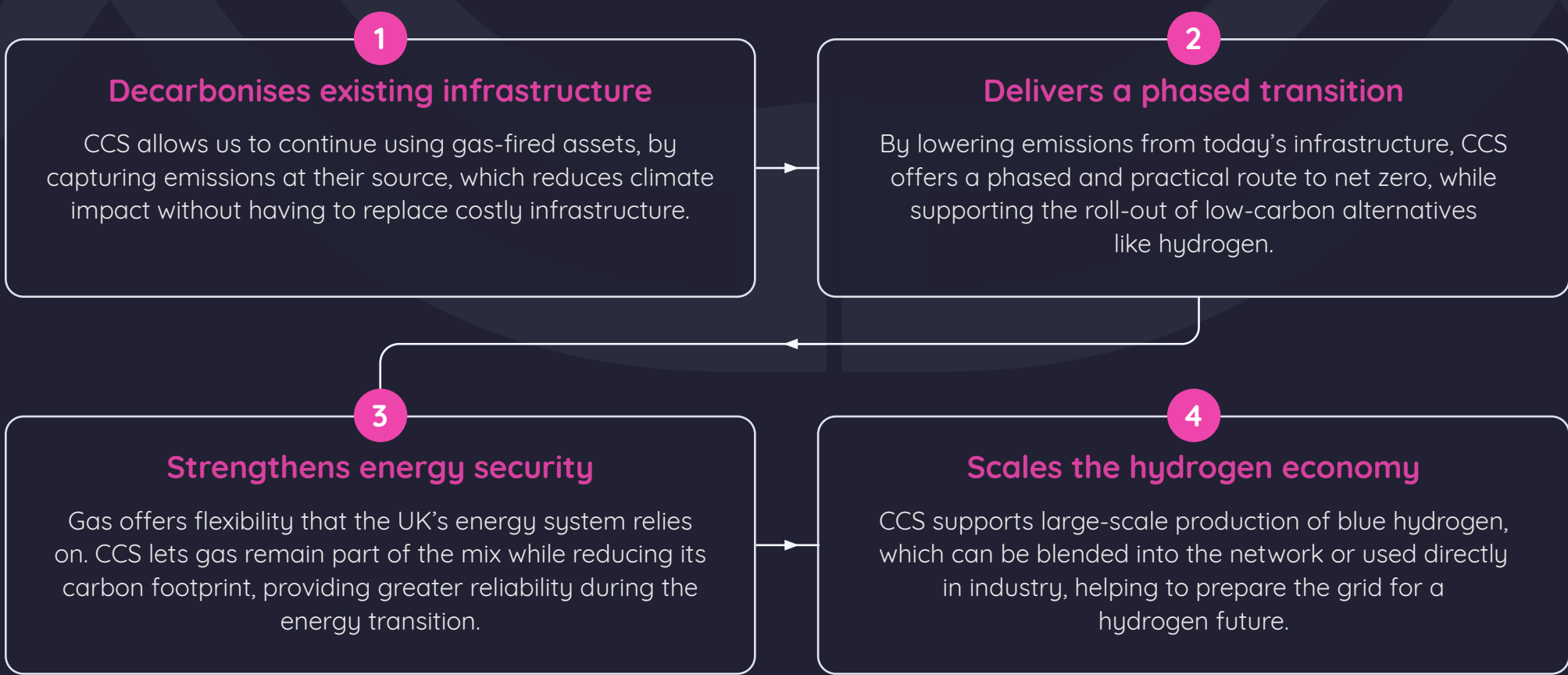
CCS technology stops carbon emissions from reaching the atmosphere, by intercepting them at source. Once captured, CO₂ is safely transported and locked away deep underground in dedicated storage facilities.

CCS could be a vital piece of the decarbonisation jigsaw puzzle. It offers a way to reduce emissions from hard-to-abate industrial sectors. It also underpins the production of blue hydrogen, which is key to adopting CCS more widely.

Blue hydrogen is created using a process called steam reforming, which brings natural gas and heated water together. While this process produces hydrogen, it also generates carbon dioxide. In blue hydrogen production the carbon is then captured through CCS, meaning emissions are significantly lowered compared to grey hydrogen production, where no carbon capture is employed.



4 ways CCS supports the gas grid



HyNet North West

Location: North West England and North Wales.

Focus: Led by the HyNet Alliance, it hopes to decarbonise the region’s major industries, including the food, ceramics, paper, glass and automotive sectors.

Aim: To transform one of the UK’s most energy-intensive areas, reusing depleted reservoirs operated by Eni in Liverpool Bay.

Targets: Removing 10 million tonnes of CO₂ emissions annually after 2030.

Viking

Location: Humber region (onshore) and the Southern Gas Basin in the North Sea (offshore).

Focus: Led by Harbour Energy, with BP as a non-operated partner, Viking is a major CCS project in the UK’s most industrialised and highest-emitting region.

Aim: To provide safe, cost-effective and high-volume storage, while helping the Humber region transition to an area that attracts investments for a low-carbon future.

Targets: To capture, transport and store 15 million tonnes of CO₂ every year by 2035.



Acorn

Location: St Fergus, Aberdeenshire, Scotland.

Focus: Scotland’s only CCS project, a collaboration between Storegga, Shell UK, Harbour Energy and North Sea Midstream Partners.

Aim: To establish vital infrastructure for transporting and permanently storing CO₂ in Scotland, supporting the decarbonisation of the Scottish Cluster.

Targets: By 2030, the Scottish Cluster aims to capture and store between 5 and 10 million tonnes of CO₂ per year.

East Coast Cluster

Location: Teesside and Humberside.

Focus: A collaboration between Northern Endurance Partnership, Net Zero Teesside and Zero Carbon Humber, the East Coast Cluster wants to remove nearly half of the UK’s industrial cluster emissions.

Aim: As well as reducing CO₂ emissions, the Humber and Teesside will benefit from a wealth of green jobs, skills development and supply chain benefits.

Targets: Potential to capture, transport and store up to 27 million tonnes of CO₂ emissions annually by 2030.

The journey continues

The story of CCS and the gas grid in the UK is rapidly unfolding. By strategically investing in pioneering CCS projects and integrating this valuable technology as part of its gas network, the UK is not only reducing emissions but securing its energy future too.

