

THE CCUS HUB PLAYBOOK

A guide for regulators, industrial
emitters and hub developers

STATE OF PLAY



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WHAT IS THE CURRENT STATUS OF CCUS AND CCUS HUBS?

The CCUS project pipeline is growing more robustly than ever, according to the [2021 report from the Global CCS Institute](#). It identifies 27 commercial CCUS facilities operating around the world as of September 2021, with a total capture capacity of about 40 million tonnes of carbon dioxide per year. Capacity in the pipeline, however, has risen by 46% in the first nine months of 2021 and now totals 111 million tonnes per year.

According to the [IEA](#), more than 100 new CCUS facilities were announced in 2021. There are CCUS projects or planned developments in 25 countries around the world, with three-quarters in the US and Europe.

Global capacity under development declined in the early 2010s, in part owing to the financial crisis, but it rebounded in 2018. Growth is accelerating as governments and companies focus on how to implement net zero targets, interest in low carbon hydrogen grows and CCUS hubs open up scalable options for industrial decarbonization.

There are currently around 40 CCUS hubs in development around the world. Over half of these – and the most advanced – are in Europe, where a combination of rising carbon prices and net zero commitments are driving the search for large-scale industrial decarbonization. There is a growing tendency for consolidation and collaboration among these emerging hubs.

In North America, the model has tended to be different, with single source-to-sink projects set up with overcapacity in transport and storage, so that other emitters can feed in later. The 45Q tax credit and low fuel standards in the USA are incentivizing many single point source CCUS projects and these could provide a basis for more hubs in future. A number of Asian countries are looking closely at CCUS hub options, with China planning three new hubs, following the example of the China NorthWest hub.

WHY SHOULD CCUS TAKE OFF NOW AFTER SO LONG?

Governments and businesses are now realizing that climate action is urgent, spurred in part by [recent IPCC reports](#). Ambitious targets, aiming for net-zero and net-negative emissions within a few decades, require solutions for decarbonizing hard-to-abate sectors such as steel, cement and chemicals. CCUS is a ready solution.

In the past, CCUS tended to be viewed primarily as a way to decarbonize power and therefore its cost was seen in relation to renewables – but both governments and businesses are now starting to view its value relative to industrial decarbonization strategies. Policy-makers are realising that carbon capture can be the cheapest way to achieve rapid decarbonization while sustaining an industrial base and jobs. Higher carbon prices, [particularly in Europe](#), are driving emitters to look for new low-carbon strategies. The emergence of CCUS hubs provides

emitters with an affordable way to abate their carbon dioxide emissions.

Policy incentives and regulations for CCUS are maturing, particularly in Europe and North America. Some of the world's biggest financiers are now seeking ethical investments, with environmental, social and governance assets [projected to reach \\$53 trillion by 2025](#).

This new momentum is just beginning to be visible, with the [number of new CCUS projects accelerating](#).

LEARN MORE

- ▶ Carbon capture in 2021: Off and running or another false start?

DOES CCUS FEATURE IN NDCS AND LONG-TERM LOW EMISSIONS STRATEGIES?

Nationally Determined Contributions (NDCs) are non-binding pledges to mitigate climate change, made as part of the Paris Agreement. They include emissions reduction targets for 2030 and some details on how to achieve those targets. As of January 2022, 21 countries (including the EU as one country) mention CCUS specifically as a

decarbonization tool in their NDCs. Australia, Iceland, France, USA, Canada, Malawi, Qatar, China, Saudi Arabia, Bahrain, Kuwait and Japan have so far mentioned CCUS in their most recent updates. CCUS appeared in 24 out of 29 Long Term Low Emissions and Developments Strategies submitted under Article 4 of the Paris Agreement.

Emerging CCUS hubs with OGCI member company involvement (end-2021)

