

GLOBAL STATUS OF CCS 2023

Reaching global climate goals will require a massive scale-up of CCS

- Carbon dioxide is captured from point sources or from the air and permanently stored, making CCS a vital climate mitigation technology.
- The climate science is clear – to limit warming to below 1.5°C and avoid the worst impacts of climate change, we need to curtail our global emissions and reach net zero by mid-century.
- It is also clear from analysis published by the Intergovernmental Panel on Climate Change, the International Energy Agency and many others that it is practically impossible to achieve net-zero emissions targets without CCS alongside all other climate mitigation technologies.



*Global Status of CCS 2023 data is current as of end July 2023



49

MTPA OF CO₂ CAPTURE CAPACITY IN OPERATION

32 Mtpa CO₂ in construction, 280 Mtpa CO₂ in development – total project pipeline capacity is 361 Mtpa CO₂

41

CCS FACILITIES IN OPERATION

26 in construction, 325 in development

198

NEW CCS FACILITIES ADDED TO THE PROJECT PIPELINE SINCE 2022 GLOBAL STATUS OF CCS REPORT

How CCS helps mitigate climate change

Deep decarbonisation of industry including mitigating unavoidable process emissions in the cement, steel, fertiliser and chemical sectors



Clean hydrogen production



Negative emissions through direct air capture and storage or biomass carbon removal and storage



Low-carbon dispatchable power

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CCS has economic and social benefits

- Steel, cement, fertiliser and chemicals are commodities and materials that our modern society relies on to sustain crops and maintain safe and reliable infrastructure. While these key commodities and materials are needed, we cannot live with the emissions produced.
- CCS has extensive social value in communities that rely on these hard-to-abate industries where it protects existing jobs, creates new jobs and delivers a just transition for those communities.
- CCS can help existing high-emissions industries transform into low-carbon opportunities, thereby making sustained contributions to local economies while moving toward net-zero.
- For CCS to be scaled up to the levels required, climate justice and community concerns need to be central and fully integrated into policymaking at the national and international level.

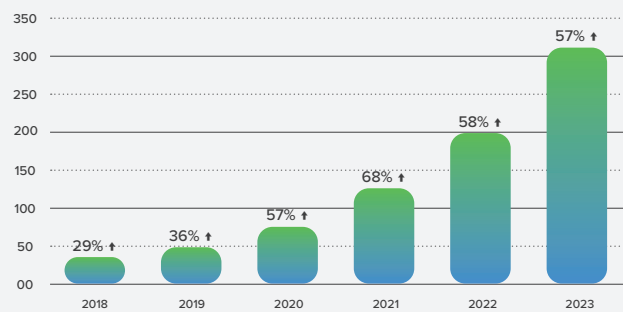
Returns on investment can be attractive

- Strong and decisive policy support has materially improved the business case for CCS projects in leading regions.
- Recent Institute financial analysis documents a financially attractive case for key CCS business models in the US, where government grants and low-cost loans underpin an attractive return on invested capital.
- Supplementing existing production subsidies with long-term incentives such as carbon pricing and emissions reduction mandates would accelerate the corporate decision-making process, de-risk the value chain, and bolster the investment case further – unlocking the capital flows necessary to deploy CCS at scale.

With a global target on the horizon, global ambition on CCS deployment this decade needs to become clearer

SCALING UP THROUGH 2030

- CCS is beginning to scale up. The year-on-year growth of the combined capacity of CCS projects in construction or development has exceeded 50% since 2020.
- Significant policy incentives and targets have been created over the past few years that have driven unprecedented growth in the CCS project pipeline, mostly in North America and Europe.
- Meeting the goals of the Paris Agreement will require a monumental policy effort across all jurisdictions. Policies similar to those driving investment in CCS in North America and Europe will need to become commonplace around the world, including the global south.
- To achieve the rates of deployment needed, ensuring continued growth of the facility development pipeline, efficient progress to final investment decision (FID), and on-time construction and start-up are critical.
- The rate of development of geological storage resources is not keeping pace with potential future demand, even in leading jurisdictions and especially in Europe. Unless dedicated programs are put in place to identify and appraise geological storage, sufficient capacity may not be available when required.



Capture capacity of CCS projects in construction and development (Mtpa of CO₂)