

Public and private investments must fit CCS deployment requirements

Public and private funding for the deployment of CCS should match forecasted spending needs. Sustained public investments both at the European and national level will be necessary to make CCS economically viable and reach climate neutrality. Private investments should be incentivised via adequate business cases and a more robust EU ETS price.

Large-scale funding is required

Europe will not reach climate neutrality by 2050 without carbon capture and storage (CCS). All reliable modelling scenarios, including those from the Intergovernmental Panel on Climate Change and the International Energy Agency, consider the deployment of CCS critical to reaching climate neutrality by 2050¹². Achieving climate neutrality requires a major transformation of energy-intensive and process industries, such as cement, lime, steel, aluminium, waste-to-energy, and chemicals. The Antwerp Declaration signed by industrial companies and trade unions is the latest signal that CCS is critical to preserve industrial production and high-quality jobs in the EU³.

The deployment of carbon dioxide removals (CDR), such as bioenergy with carbon capture and storage (BECCS) and direct air carbon capture and storage (DACCS), is another crucial component of the EU's climate toolbox. Their deployment at scale must complement and not displace emissions reductions; the latter must remain the priority of climate action. The European Commission's industrial carbon management strategy includes the following figures:

- 50 million tonnes of CO₂ captured annually by 2030 in the EU;
- 280 million tonnes of CO₂ captured annually by 2040 in the EU;
- 450 million tonnes of CO₂ captured annually by 2050 in the EU; and
- 250 million tonnes of CO₂ as a minimum injection capacity by 2040 in the European Economic Area.

The strategy also foresees that the 2030 injection capacity objective of 50 million tonnes of CO₂ per year under the Net Zero Industry Act requires approximately €3 billion of investments in storage facilities⁴. A report by the Joint Research Centre estimates that the investment needs for the transport infrastructure of pipelines and ships associated with the 2030 objective would range between approximately €6.2 and 9.2 billion by 2030⁵. Finally, a recent analysis estimates a cumulative funding gap of €10 billion by 2030 for currently announced CCS projects⁶.

¹ [Climate Change 2022: Impacts, Adaptation and Vulnerability](#), Intergovernmental Panel on Climate Change, 2022.

² [Carbon capture, utilisation and storage](#), International Energy Agency, 2022.

³ [Antwerp Declaration for a European Industrial Deal](#), 2024.

⁴ [Industrial carbon management strategy](#), European Commission, 2024.

⁵ [Shaping the future CO₂ transport network for Europe](#), Joint Research Centre, 2024.

⁶ [The gap between carbon capture and storage ambitions and available funding](#), Carbon Limits and Clean Air Task Force, 2022. The analysis is based on project announcements as of January 2022 and assumes a carbon price increasing from €60 per tonne to €93 per tonne in 2030.

The next European Commission should commit to funding

ZEP recognises and strongly welcomes the support provided to date to CCS projects by the Innovation Fund and other EU and national funding programmes. The European Commission proposed an increase in the Innovation Fund and Horizon Europe programmes under the proposed Strategic Technologies for Europe Platform (STEP). ZEP regrets that there will be no increase in these two programmes under the informal interinstitutional agreement.

There is a wider concern that current national budgetary ambitions are not in line with the funding required for adequate CCS deployment. In addition, the current price of EU ETS allowances has fallen to approximately €56 per tonne⁷, which is far from providing the required incentive for private companies and mechanically reduces the size of the Innovation Fund. An increase in EU ETS prices that is not accompanied by adequate incentives could also threaten the financial viability of industrial sites investing in CCS. A general increase in EU climate funding for industrial decarbonisation would address these concerns and avoid divergence between Member States. This increase could take various forms, including Carbon Contracts for Difference (CCfDs) at the national level, tax credits coordinated at the EU level for industrial installations investing in full decarbonisation or an overarching funding programme replicating the precedent set by the NextGenerationEU Green Bonds.

The industrial carbon management strategy indicates that the European Commission could “*work, as of 2024, with Member States in the transparent and coordinated design of a possible important project of common European interest for CO₂ transport and storage infrastructure via the JEF-IPCEI*” and “*engage, as of 2024, with the European Investment Bank on financing of CCS and CCU projects*”. These two possible mechanisms are welcome and would trigger additional investments. The commitment of the next European Commission on these two proposed policies and their prioritisation would be welcome.

Funding must match deployment requirements

The total size of national funding programmes, EU funding programmes, and private investments must reach the scale required to reach net zero by 2050 and enable intermediary targets in 2030 and 2040. Developing national investment schemes at the required scale and enhancing EU funding programmes supporting CCS, such as the Connecting Europe Facility for Energy (CEF Energy), the Innovation Fund, Horizon Europe, and LIFE, would help match funding requirements. National funding programmes have proven critical to support CCS projects and should be replicated across Europe. Unused funds from the Recovery and Resilience Facility should also be allocated to funding programmes focused on CCS deployment at scale. The effective allocation of the funds available under these programmes to CCS projects is crucial. The cohesion between the various funding programmes is also key to avoiding a fragmented funding approach. Future Horizon Europe programmes should provide adequate opportunities in the form of dedicated calls for the funding of innovative research projects and pilots on CCS and carbon removal technologies and their applications to industrial decarbonisation. The Innovation Fund should continue supporting the deployment of large-scale industrial CCS projects across hard-to-abate sectors via grant funding. Dedicated competitive bidding processes should also be launched for low-carbon technologies, including CCS. In that regard, the Hydrogen Bank could

⁷ [The price of emissions allowances in the EU](#), Ember, as of 11 March 2024.

support the deployment of CCS in Europe if its scope is expanded to the production of low-carbon 'blue' hydrogen. The CEF Energy should continue supporting the development and implementation of cross-border CO₂ network projects of common interest (PCI) and projects of mutual interest (PMI) projects. This includes, for the first time, CO₂ storage under the 1st PCI/PMI list. The introduction of new eligible infrastructure categories under the revised TEN-E regulation, such as hydrogen, should not jeopardise CEF Energy funding allocated to cross-border CO₂ network projects. Its budget should be increased accordingly to accommodate the expansion of infrastructure categories.

Support schemes should be predictable and designed to specifically address market failures preventing the deployment of the full value chain. Policy schemes targeted to one element of a CCS project are likely to be less successful than a holistic approach that facilitates planned and sequential investment decisions in full-chain, multi-actor CCS projects. CCS projects typically require major investment decisions with very large capital expenditures and can also face uncertain utilisation rates and cross-chain risks. These major infrastructure developments are likely to require bespoke policy approaches that provide projects with capital support and address the full-chain financial risks. Funding capacity building for EU and national public authorities will also be crucial to reduce bottlenecks and avoid project delays. This includes staff recruitment and staff training on CCS.

A more robust and stable EU ETS price, combined with an effective carbon border adjustment mechanism to avoid carbon leakage, would help incentivise industrial decarbonisation at scale. Strong business cases along the value chain are required to guarantee sufficient private investments where public funding is not required. Finally, supporting markets for low-carbon products, including via public procurement, would help incentivise private investments in CCS.

The benefits of investing in CCS are significantly higher than their deployment costs. Funding programmes and investment frameworks need to align with this reality.

About the Zero Emissions Platform

The Zero Emissions Platform (ZEP) is a European Technology and Innovation Platform (ETIP) under the Commission's Strategic Energy Technology Plan (SET-Plan) and acts as the EU's adviser on the deployment of Carbon Capture and Storage (CCS), and Carbon Capture and Utilisation (CCU).

ZEP supports the European Union's commitment to reach climate neutrality by 2050, defined as net-zero greenhouse gas (GHG) emissions by 2050. To this end, CCS technologies represent readily available and cost-efficient pathways for the decarbonisation of industrial and energy sectors in the European Union. Some applications of CCU – where CO₂ is stored in a manner intended to be permanent – can also contribute to this goal.