



ZEP Briefing – Industrial Carbon Management Strategy

Summary

The European Commission opened a public consultation in June 2023 to gather input ahead of an EU strategy dedicated to CCUS. The European Commission published the strategy on 6 February 2024 together with a proposal for an EU climate target for 2040 (link to the [strategy](#)).

Key elements

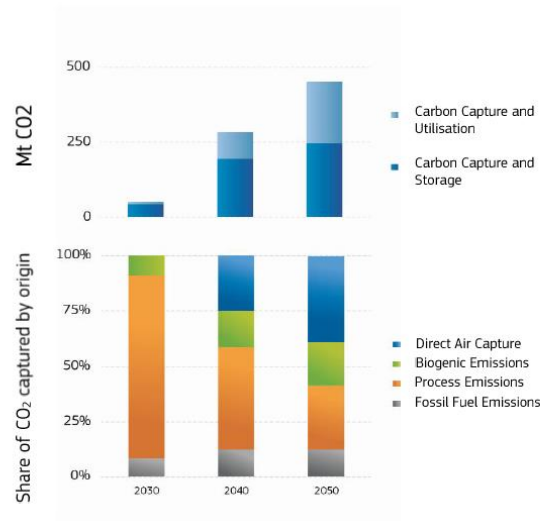
Targets

- **50 million tonnes** of CO₂ per year captured in the EU **by 2030**;
- Approximately **280 million tonnes** of CO₂ per year would have to be captured in the EU **by 2040**
- Up to **450 million tonnes** of CO₂ per year captured in the EU **by 2050**
- **By 2040**, about **half of the captured CO₂** would have to come from biogenic sources or directly from the atmosphere
- At least **250 million tonnes** of CO₂ per year stored geologically in the **European Economic Area in 2040**

Costs and benefits

- The investment cost of transport infrastructure related to the Net Zero Industry Act 2030 objective would amount to **between €6.2 and 9.2 billion by 2030** and would require approximately EUR 3 billion in investments in carbon storage facilities.
- Beyond 2030, it is estimated that the required investment needs in CO₂ transport infrastructure would rise to **between €9.3 and 23.1 billion in 2050**, based on the objectives set out in the EU's 2040 climate target communication.
- Theoretical EU market potential of **360 to 790 million tonnes** of captured CO₂ could lead to a total economic value between **€45 billion and €100 billion**, contributing to the creation of **up to 170,000 net-zero jobs**.

Figure 1: Volume of CO₂ captured for storage and utilisation in the EU (above chart) and share of the CO₂ captured by origin (below chart)¹³



Three pathways

- Capturing CO₂ for storage
- Removing CO₂ from the atmosphere
- Capturing CO₂ for utilisation

Transport infrastructure

The transport infrastructure, including ships, trains, and trucks (depending on the business case), is expected to be facilitated by EU-wide CO₂ transport infrastructure interoperability rules – including minimum CO₂ quality standards to ensure it can flow freely across the EU/EEA.

The Communication states that the latest PCI/PMI list includes “14 CO₂ transport projects with an overall planned capacity up to 103 Mtpa of CO₂ and a possibility to reach up to four onshore storage sites and eight or more offshore locations”.

The European Commission foresees to:

- From 2024, prepare a **potential CO₂ transport regulatory package** to establish an EU-wide single market for CO₂ (covering market and cost structure, cross-border integration and planning, technical harmonisation and investment incentives for new infrastructure, third-party access, competent regulatory authorities and tariff regulation for transport assets, as well as ownership models)
- From 2024, propose an **EU-wide CO₂ transport infrastructure planning mechanism** in cooperation with Member States and the CCUS Forum.
- From 2024, consider nominating **European coordinators** to support the early development of (cross-border) infrastructure projects

- Adapt emissions accounting rules under the EU ETS to **recognise all modes of transport**
- Work with CEN and CENELEC to create **minimum standards for CO2 in transport and storage** infrastructure to be used in a network code and consider guidelines on **‘incidental associated substances’**
- Assess if **re-use/repurposing of existing hydrocarbon transport infrastructure** for CO2 transport is possible
- Encourage Member States to establish **Important Projects of Common European Interest** for CO2 transport and storage infrastructure projects
- Promote through the International Maritime Organization the development of any necessary **guidelines on safe transportation of CO2 by sea**

Demand management

The European Commission foresees to:

- By **2026**, establish an **EU CO2 aggregation platform** to support CO2 capture companies in procuring CO2 value chain services and matching supply and demand;
- By 2025, develop with Member States step-by-step **guidance for permitting processes for net-zero strategic projects for CO2 storage**;
- By **2026**, establish an **EU-wide investment atlas of potential CO2 storage sites**; and
- Develop **guidelines for CO2 storage permitting balancing site-specific flexibility with investment predictability** to expedite the roll-out of CO2 storage (especially for the first 50 million tonnes of annual storage capacity by 2030).
- Use the **knowledge-sharing Platform** for industrial CCUS projects to develop together with industry sectoral roadmaps for industrial carbon management.

Member States should:

- Include in their national energy and climate plans (NECPs) their assessment of capture needs and storage capacity/options and identify actions to support the deployment of a CCS value chain;
- By 2025, ensure that they have **transparent processes** in place **for storage permit applicants** to engage with the competent authorities during the preparatory phase;
- From 2024, support the development and roll out of cooperative net-zero strategic projects under the NZIA to create full carbon capture, transport and storage value chains; and
- By 2025 at the latest, enable their **geological services to contribute existing data** and to generate new data to contribute to an EEA-wide investment atlas of potential CO2 storage sites.

Carbon removals

- **By 2050**, the EU could need carbon removals to balance out around **400 million tonnes CO2** equivalent of residual emissions in hard-to-abate sectors;

- Consider setting specific objectives for carbon removals, based on a net 2040 GHG emission reduction objective;
- Develop support mechanisms for industrial carbon removals, including if and how to account for them in the EU ETS; and
- Boost EU research, innovation and early-of-a-kind demonstration for novel industrial technologies to remove CO₂ under Horizon Europe and the Innovation Fund.

CCU

- Identify and address existing structural challenges and regulatory barriers to the deployment of CCU technologies, by implementing a **comprehensive framework for CCU**;
- Use the knowledge-sharing Platform for industrial CCUS projects to co-develop with industries sector specific roadmaps on CCU activities;
- Draw up a coherent framework to account for all industrial carbon management activities that **accurately reflect the climate benefits across their value chains**, and to incentivise the deployment of innovative and sustainable permanent and non-permanent CCU applications, while removing barriers;
- Assess **demand pull options**, in concertation with industries, to increase the uptake of sustainable carbon as a resource in industrial sectors (in full consideration of the Commission's upcoming Biotech and Biomanufacturing initiative);
- The **EU ETS 2026** review will assess whether accounting system ensures that all emissions are accounted for and **avoids double counting** when CO₂ captured is used in products that are not considered as permanent in an ETS context; and
- The 2026 review of the EU ETS will also assess the feasibility of including **municipal waste incineration installations**, and other waste management processes.

Investments and funding framework

CCS projects are expected to amount to a cumulative €10 billion by 2030 (with current funding shortfall), but a commercially **viable market** should continue beyond 2030 **based on the ETS carbon price**. **Carbon Contracts for Difference (CCfD)** are indicated as a viable alternative to create a market that does not rely entirely on direct subsidies.

The European Commission would:

- As of 2024, work with Member States to potentially launch important projects of common European interest for CO₂ transport and storage infrastructure via the JEF-IPCEI;
- As of 2024, engage with the **European Investment Bank** on financing of CCS and CCU projects; and
- Facilitate **investment needs** in industrial carbon management up to 2040 and 2050.
- Launch a cross-border CO₂ transport infrastructure call with EU countries using CEF funding to support **Important Projects of Common European Interest (IPCEI)** as well as projects of common interest (PCI) and projects of mutual interest (PMI);

- Evaluate the maturity of certain CO₂ capture installations, such as those used in cement or lime production, to determine if they are ready to move from **grant support** to **competitive bidding** auctions under the Innovation Fund; and

Cross-border and international cooperation

The European Commission foresees to:

- Work towards accelerated international cooperation to promote **harmonised reporting and accounting** of industrial carbon management activities, to ensure they are accurately accounted for under the UNFCCC transparency framework.
- Work to ensure that **internationally carbon pricing frameworks** focus on the necessary emissions cuts while providing for carbon removals to tackle emissions in the hard-to-abate sectors.

In addition, the Strategy stipulates that any potential future recognition of CO₂ storage sites in third countries without a linked ETS would depend on there being equivalent conditions to ensure permanently secure and environmentally safe geological storage of captured CO₂, provided that the storage is not used to increase hydrocarbon recovery and that this leads to an overall reduction in emissions.

Public perception

The European Commission foresees to:

- Work with EU countries to ensure CO₂ transport and storage projects can reward **local communities** hosting those projects; and
- Work with EU countries and industries to **increase knowledge** of CCUS.

R&I

The European Commission foresees to:

- Support a new **knowledge-sharing platform** for industrial CCUS projects.
- Continue to invest in R&I for all industrial carbon management technologies, including energy and cost efficiency optimisation of processes and pre-normative research to contribute to **standardisation**.