



DAC/DOC: Closing the loop of green CO₂



The problem is not that Europe lacks ideas or ambition. But innovation is blocked at the next stage: we are failing to translate innovation into commercialisation, and innovative companies that want to scale up in Europe are hindered at every stage by inconsistent and restrictive regulations.



Mario Draghi

The Dutch DAC/DOC coalition champions the adoption and long-term growth of green carbon removal technologies benefiting industry, society, and the wider economy.

Why human life depends on CO₂ and why we need to get rid of the excess levels in the atmosphere, and avoid more pollution taking place?

CO₂ is a fundamental resource for society and a vital building block of life itself. From natural ecosystems to industrial processes, a wide range of systems depend on CO₂ to function effectively. However, the world is now confronted with the urgent challenge of permanently removing billions of tonnes of CO₂ from the atmosphere. Natural carbon sinks, such as oceans and forests, are no longer capable of absorbing emissions at the scale required.

In short: the carbon cycle is out of balance.

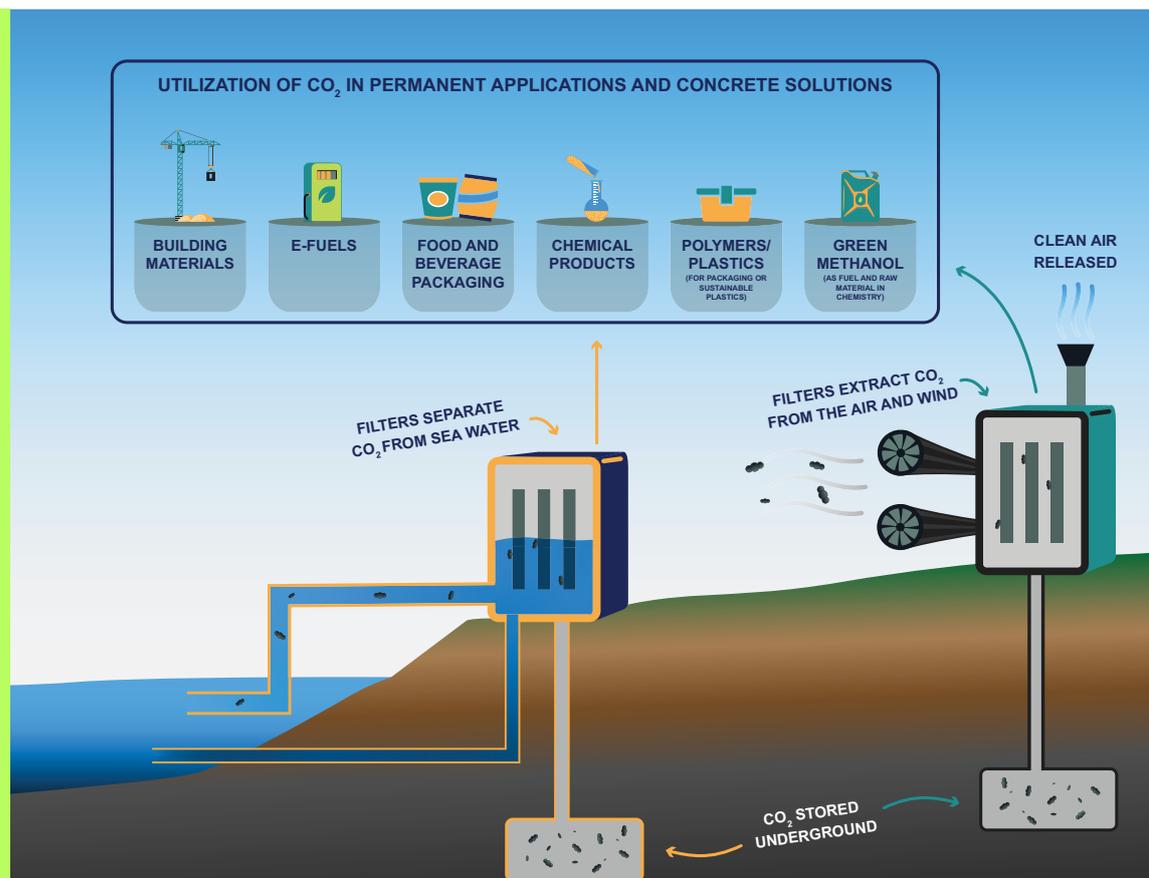
Restoring this balance demands a fundamental shift in the way we emit, utilise, store, and actively remove carbon. In this context, Direct Air Capture (DAC) and Direct Ocean Capture (DOC) technologies play a pivotal role.

Recirculating and removing CO₂ from the atmosphere

The availability of DAC/DOC CO₂ for essential industrial applications will become increasingly critical, as it can be repurposed for use in construction, steel production, (petro)chemical processes, and other industrial sectors. Our coalition focusses on extracting CO₂ with the use of DAC/DOC technology and repurpose it into valuable resources for various products and industrial sectors. Replacing fossil CO₂ for industrial production processes with circular CO₂ prevents new CO₂ emission from entering the atmosphere through short-cycle use. This approach closes the carbon loop and ensures that the ongoing energy transition does not lead to scarcity or high CO₂ prices for key industries.

Furthermore, capturing CO₂ from the atmosphere or oceans and storing it permanently in geological formations or depleted oil and gas reservoirs, is crucial for achieving net-zero targets. Therefore, Direct Air Capture (DAC) and Direct Ocean Capture (DOC) are vital for both carbon reduction through avoided emissions and carbon removal climate mitigation strategies.

DIRECT OCEAN CAPTURE & DIRECT AIR CAPTURE



Recommendations

Current climate policy must be expanded to include **an integrated value chain approach that considers circular sources of CO₂ for Carbon Capture and Utilisation (CCU), Carbon Capture and Storage (CCS) and Carbon Dioxide Removal (CDR) as part of a single, interconnected system that achieves the broader climate goal and strengthens economic competitiveness.**

This requires recognition of the difference between CO₂ generated from fossil sources and that derived from DAC/DOC sources. Broader implications across the entire value chain should be examined, identifying economic and sustainable synergies.

For instance, co-locating DAC installations at industrial CCUS sites can provide a reliable non-fossil supply of CO₂ for greenhouses or Power-to-X production, while also leveraging industrial utilities such as residual heat from industries or heating systems.

Similarly, DOC can be implemented near offshore storage locations. This strategic approach is paired with a clear policy stance: the capture of fossil CO₂ from point-sources should be stimulated exclusively for permanent storage to reduce new fossil emissions, while the transition from fossil fuels sources to DAC/DOC fuel sources should be rewarded as a replacement for use of fossil based CO₂ sources.

This two-pronged strategy is a crucial next step in accelerating the CO₂ transition and creating a viable carbon economy.

The European Commission's Industrial Carbon Management Strategy represents a key milestone in the advancement of a European CO₂ market. However, achieving carbon neutrality by 2050 will require a more enabling environment that supports the growth of companies like ours.

We therefore propose the following recommendations.

1

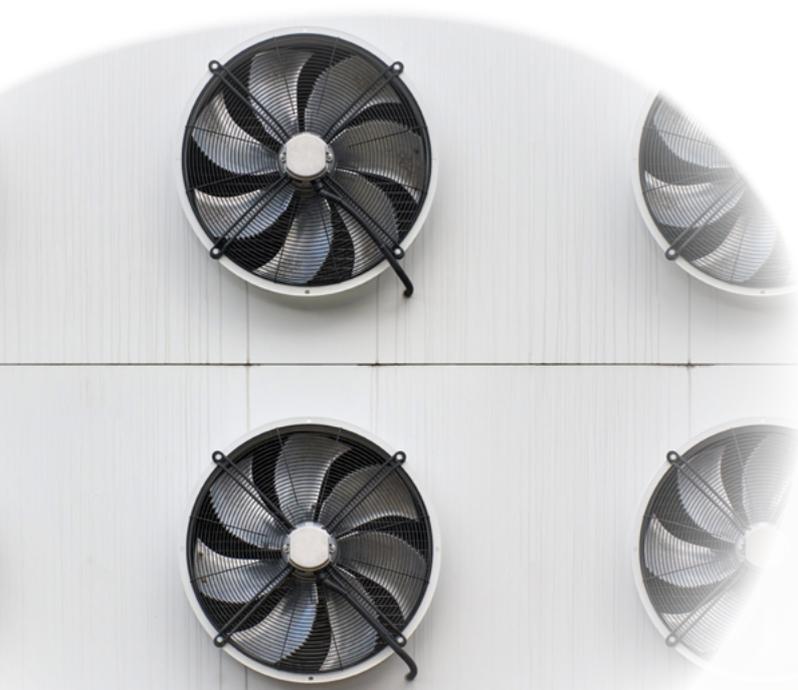
Clear policy recognition and differentiated incentives

- **DAC/DOC as a legitimate carbon reduction and removal technology in EU long-term climate strategies with clear and consistent policies and binding targets.**
- **Stronger policy integration of DAC/DOC** explicitly in national and EU climate strategies, legislation, and National Energy and Climate Plans (NECPs).

2

Develop robust market mechanisms and incentives

- **DAC/DOC integration in EU Emissions Trading System (EU ETS)** to create stable and predictable demand that incentivises investment and scale-up. In this regard, a distinction should be made between fossil and DAC/DOC-based sources of CO₂, as well as between temporary and permanent storage applications. Fossil CO₂ only reduces emissions in hard-to-abate industries when permanently stored, while DAC/DOC CO₂ can result in net reductions or even negative emissions. Failing to make this distinction risks greenwashing driven by fossil CO₂ for use, and undermines the effectiveness of instruments like the EU ETS.
- Introduce **mandatory storage quota for mixing DAC/DOC-based CO₂ with fossil CO₂** in large carbon storage projects (CCS) to leverage the CCS infrastructure, whilst stimulating technology development and adding negative emissions/ carbon removal next to carbon emission reduction at the fossil industry.
- **A robust market for low-carbon products** that includes production processes decarbonised with use of DAC/DOC and support durable products manufactured using carbon utilisation technologies.



3

Streamline funding and capital investment

- Actively support **FOAK risk financing and CAPEX subsidies** with a green market purchase obligation.
- **Stimulate technology development investments** in DAC/DOC technology expansion through the EU's Industrial Decarbonisation Bank and by introducing mechanisms that mitigate risk, enabling commercial equity investments.
- **Ensure clear, simplified, and efficient funding application** processes with limited red tape to accelerate and streamline evaluation process for Capex funding programmes. For example, the European Innovation Council Fund applies very complex funding procedures that are disproportional to the limited chances of securing support.
- Incentivise Member States to use **Contracts for Difference (CfD)** mechanisms and encourage support for Important Projects of Common European Interest (IPCEI) for DAC/DOC projects stimulating technology development and prioritise European projects that use DAC/DOC technologies over those that rely on fossil-based CO₂.



4

Optimise regulatory frameworks and permitting

- **Streamline permitting procedures**, reduce administrative complexity, and accelerate DAC/DOC deployment, particularly for start-ups.
- **Establish (offshore) hubs that integrate Direct Ocean Capture (DOC) with geological CO₂ storage**. In addition to enabling carbon removal at gigaton scale, these hubs can unlock new decarbonisation opportunities by supporting hydrogen production. Moreover, the combination of hydrogen with DAC/DOC-based CO₂ facilitates the production of green methanol and e-Sustainable Aviation Fuels (e-SAFs).