Zero Emissions Platform

EUROPE NEEDS ROBUST ACCOUNTING FOR CARBON DIOXIDE REMOVAL – ZEP REPORT

What is Carbon Dioxide Removal?

Carbon Dioxide Removal (CDR) involves taking CO2 out of the atmosphere, where it contributes to climate change, and putting it in a location where it will not affect the climate for an extended period of time. The aim is to reduce the concentration of CO2 in the atmosphere. This can be achieved through natural and technological means.

How does this report define CDR?

This report provides a definition of carbon dioxide removal based on four principles presented in previous ZEP report '**Europe needs a definition of carbon dioxide removal**'. The definition also defines a screening process to identify whether CCS and CCU projects may lead to CDR and outlines the factors that need to be considered when assessing a project's potential for CDR.

What are the key messages?

- Reaching climate neutrality by 2050 will only be possible if mitigation efforts are supplemented with active removal of CO2 from the atmosphere.
- Once removed, CO2 must be properly accounted for, kept away from the atmosphere and **stored in a manner intended to be permanent**.
- CCS is a safe, scientifically proven, cost-efficient technology which can enable CDR through capture and geological storage of CO2 from biogenic sources and direct air capture and storage.
- **Development of Europe-wide CO2 transport and storage infrastructure** is needed to deliver CDR at the scale that will be required for Europe to achieve climate neutrality.
- In a CCS and CCU context, **Bio-CCS and Waste-to-Energy with CCS will play an important role** for the decarbonisation of energy-intensive industries and management of residual waste in cities, providing a real and sustainable alternative when recycling and reuse has already taken place.

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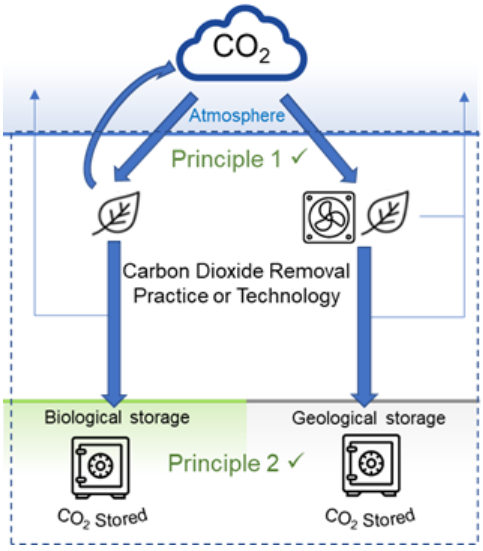

Carbon Dioxide Removal principle

CO2 is removed from the atmosphere either via photosynthesis or through direct air capture. CO2 is either bound in the biosphere (green storage, to the left), stored in geological formations (grey storage, to the right) or bound in minerals with the intention in all cases to keep it away from the atmosphere as long as possible. These processes are the opposite of CO2 emissions.

What are ZEP's policy recommendations?

- A **consistent, coherent policy framework** – based on accurate and thorough carbon accounting – should be put in place to incentivise CDR.
- **Climate change mitigation must be pursued as a matter of priority**. CCS can be a real driver for the decarbonisation of energy-intensive industries and the energy sector, and can enable CDR.
- The **transfer of captured CO2 to a storage site by ship, truck, train or pipeline** should be included in the Monitoring and Reporting Regulation Article 49 (a) (ii) or (iii). This calls for a consequent revision of all the pieces of legislation connected to the EU ETS, such as the TEN-E regulation. The European Taxonomy for Sustainable Finance allows CO2 transportation by all modalities – pipeline, ship, barge, truck, and train. Harmonisation and consistency will be needed.
- There should be acknowledgement that any industrial or energy installation **capturing CO2 from atmospheric or biogenic sources, for storage in a manner intended to be permanent**, has the potential to realise carbon dioxide removal. The potential should be verified through robust life-cycle analysis and carbon dioxide accounting to confirm that removal of CO2 is indeed happening.
- **Some applications of CCU**, where CO2 is captured and stored in a manner intended to be permanent, should be **included in a revised EU ETS**.

This report was produced by ZEP's Carbon Dioxide Removal Working Group.
Download: Europe needs robust accounting for Carbon Dioxide Removal

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Find out more about the Zero Emissions Platform at zeroemissionsplatform.eu

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