

GREENHOUSE GAS EMISSIONS

CO₂ capture and storage

The concept of carbon capture and storage to reduce carbon dioxide emissions into the atmosphere is not a new solution. The demonstration projects carried out so far in the energy sector have, in many cases, not achieved the expected results. The possibility of using this technology, however, is emerging in other areas of industry, which is also being considered by domestic entrepreneurs.

Natural carbon capture is carried out by green plants, ocean water and peatlands, among others, but this is a relatively slow process. In order to permanently remove excess CO₂ from the atmosphere or reduce its emissions at source, sequestration - i.e. capture and storage - is required.

The two main mechanisms involved in the elimination of CO₂ are most commonly distinguished, i.e. CDR (*Carbon Dioxide Removal*) and CCS (*Carbon Capture and Storage*). In the case of CDR, CO₂ is captured from the atmosphere, while in the case of CCS technology, CO₂ is captured and stored at the point at which it is generated.

Due to geological conditions, sequestration is most often carried out by trapping CO₂ in the pore spaces of minerals and rocks or in specially prepared underground reservoirs. More common today is the storage of carbon dioxide in special reservoirs, defined as sedimentary rocks, underground saline layers or depleted coal deposits. Through impermeable layers placed above them, these reservoirs allow carbon dioxide to be retained for up to 1 000 years.

With the development of the CCS technology, the possibility of simultaneously extracting natural gas and oil by increasing the pressure inside the reservoir (resulting in their easier escape to the surface) has also been explored.

In order to meet environmental commitments, CCS projects are increasingly of interest to entities in sectors other than power generation - including oil and gas extraction, petrochemicals or construction.

Are you interested in this topic?

Feel free to contact us.

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