



**Direct Air Capture and Storage (DACS)** is a negative emission technology that captures  $\text{CO}_2$  from the atmosphere and stores it permanently in geological formations. First commercial DACS plants are already operational.

## Mission

The DACStorE project aims to prepare the sustainable and large-scale deployment of DACS technology to achieve global  $\text{CO}_2$  neutrality and support the transition to a defossilized economy.

CO<sub>2</sub> storage

## Technology Assessment

- Identification of optimal sites and operation modes for DAC plants and  $\text{CO}_2$  storages
- Techno-economic and macro-economic analyses
- Analysing the impact on the atmosphere
- Analysing the process chains and the sustainability of the life cycle

## Device Research

- Material development and process engineering for 3 technical DAC approaches
- 3 technical DAC approaches: (1) adsorption, (2) membrane adsorption, (3) electro-swing
- Site-specific system solutions
- Development of mini-plants and demonstrators

## Transformational Studies

- Exploring the non-technical challenges and opportunities associated with the introduction of DACS
- Analyzing interest groups and acceptance factors for DACS
- Recommending policies and regulations
- Developing a roadmap for the broad roll-out of DACS in Germany

## DACStorE Transformation Hub

A virtual platform offering events and information based on the DACStorE research. Enables stakeholders from industry, politics and the public to define business cases, shape boundary conditions and make decisions based on reproducible knowledge.

## NETs@Helmholtz

The DACStorE graduate school program provides a framework to support young scientists in their research work, in developing their soft skills and successfully launching their careers. Thus, NETs@Helmholtz promotes the next generation in the transdisciplinary research field of negative emission technologies.

**Project Duration:** 2022-2027

**Project Management:** Forschungszentrum Jülich

**Project Speaker:** Prof. Dr. J. Linßen

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