

eccsel

European Carbon Dioxide Capture and Storage Laboratory Infrastructure

ECCSEL has established and provides access to a world class research infrastructure (RI) in Europe for CO₂ capture, transport and storage (CCS) technologies research.

The mission of ECCSEL is “Opening access for researchers to a top quality European RI, devoted to next generation CCS technologies in an efficient and structured way, to help enabling low to zero CO₂ emissions from industry and power generation to combat global climate change.”

The ECCSEL consortium teams up selected Centres of Excellence on Carbon Capture, Transport and Storage research (CCS) from 9 countries across Europe. The current implementation of ECCSEL is supported with funding from the European Union’s HORIZON 2020 programme.

14 partners are part of this project:

NTNU (Norway) – Project Leader

TNO (The Netherlands)

BGS (United Kingdom)

SINTEF (Norway)

CIUDEN (Spain)

PGI-NRI (Poland)

OGS (Italy)

SINTEF Energy (Norway)

CERTH (Greece)

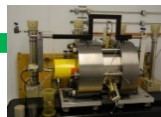
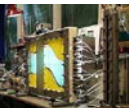
BRGM (France)

SOTACARBO (Italy)

ETH Zurich (Switzerland)

GIG (Poland)

SINTEF Petroleum (Norway)



About ECCSEL:

ECCSEL is implementing and operating an European distributed, integrated Research Infrastructure (RI) based on a selection of the best research facilities in Europe for CO₂ capture, storage and transport research. A number of those facilities are planned to be upgraded in the future and later new facilities are planned to be constructed.

Goal of ECCSEL:

- Provide a scientific foundation to respond systematically to the most urgent R&D needs in CCS at a Pan-European level, in a short and long term perspective
- Maintain Europe at the forefront of the international CCS scientific community
- Make the European Research Area more attractive for both European and international scientists
- Increase cooperation between research institutions

- Optimize the value of the European countries and EU’s financial support through better utilisation of new and existing research facilities

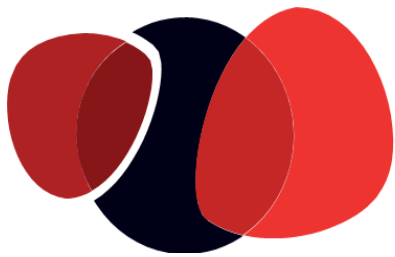
Foundations and Operation of ECCSEL

Carbon Dioxide Capture and Storage (CCS) is identified as a future key technology for reducing emissions from fossil fuels used for power generation as well as from industrial processes. Global demand is large, in particular from emerging economies. However, further research and technological development is urgently needed if CCS is to become a fully viable and cost-effective technology.

The consortium aims to establish ECCSEL as a robust and sustainable legally independent entity and is currently working on registering ECCSEL as an ERIC.

The ECCSEL Research Infrastructure is available now for research and a sponsored Transnational access program will start end of January 2016.





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ECCSEL Transnational Access

The European Union's HORIZON 2020 programme funding, supporting the current implementation of ECCSEL, also finances **Transnational Access** to the ECCSEL RI. The 'Transnational Access' grant allows researchers (groups) to access free of charge the available ECCSEL facilities included in this program, including free travel and lodging.

Research topics

Any researcher with a research project related to CO₂ capture, storage or transport (CCS) can apply.

Financing

A Research Infrastructure grant offers free access to the Infrastructure including logistical, technological and scientific support, free lodging, a fixed daily subsistence fee and reimbursement of international travel expenses.

Eligibility

The scheme is open for researchers primarily from institutes located in a EU or Associated Country, but some access is also available to others. All user groups must be allowed to disseminate the results they have generated under the action

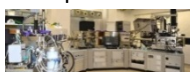
Applying for access

Applicants are invited to complete the online proposal form and submit it prior to the application deadline. An independent panel will evaluate the proposed project on the basis of

scientific merit. The first call will be published end of January 2016 (subsequent calls will be end of July and November 2016).

Contact - please register your interest by e-mailing:

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Access is offered to 43 outstanding laboratories • especially designed for the study of technologies and processes in all areas of CCS (listed by partner):

NTNU (Norway):

- Fabricate polymer-based membranes
- Test membrane gas permeation performance
- Absorption kinetic studies
- Solvent degradation laboratory
- Thermodynamic studies package

TNO (The Netherlands):

- Mini Plant for solvent preparation & testing
- QSCAN (quick scan) solvent test street
- CLC fixed bed facility
- High pressure absorption & desorption pilot

BGS (United Kingdom):

- Transport properties research lab: Multi-phase flow in natural and engineered, low and ultra-low permeability geomaterials
- Rock Mechanics laboratory
- Hydrothermal Laboratory
- Near surface gas monitoring facility

SINTEF (Norway):

- Sorbent laboratories for CCS
- In situ characterization of solid materials for CCS
- Powder processing laboratories for CCS
- Membrane laboratories for CCS
- Solvent degradation Rig

Tiller Pilot Plant (380 kW) designed to be as similar as possible to a full scale post combustion plant (with CO₂ absorption and solvent regeneration).

CIUDEN (Spain):

- Pilot for CO₂ injection in soils
- Transport test rig at CO₂ technology Development centre for CO₂ capture
- CO₂ storage technology development plant

PGI-NRI (Poland):

- Micro Analysis Laboratory (isotopic, mineralogical and petrographical investigations, environmental protection studies, microbiology and archaeology)
- Geophysical lab with tools for monitoring of shallow subsurface as well as groundwater-soil system with the use of a suite of geophysical methods

OGS (Italy):

- DeepLab sea floor landers for meteoceanographic physical and geochemical data collection
- Research aircraft equipped with high-tech remote sensing instruments
- Ecological laboratory for mesocosm experiments
- Panarea Natural Laboratory to study the impact of CO₂ on benthic organisms and marine ecosystems

SINTEF Energy (Norway):

- Chemical Looping Combustion rig
- High pressure Oxy-Fuel combustion facility
- Facility for accurate phase equilibrium measurements of CO₂-rich mixtures

CERTH (Greece):

- Chemical Looping Combustion facility
- CO₂ storage facilities

SOTACARBO (Italy):

- Coal to Hydrogen Generation pilot plant

ETH Zurich (Switzerland):

- Adsorption equilibrium measurement balance
- Two column lab PSA setup
- Mineral carbonation: Flue gas mineralization unit
- High pressure hydrostatic flow cell

GIG (Poland):

- High pressure thermogravimetric analyser
- Fixed bed reactor
- Pilot-scale moving bed reactor

SINTEF Petroleum (Norway):

- Core Flood (SCAL) laboratory
- Fluid (pVT) laboratory

BRGM (France):

- Monitoring of microbiological and geochemical processes in high pressure and dynamic conditions

