



CO₂-SPICER (CO₂ Storage Pilot in a CarbonatE Reservoir)

The project is being implemented under the KAPPA Programme for applied research, experimental development and innovation, which was announced by the Technology Agency of the Czech Republic and which is co-funded by the Norway Grants.



Photo: M. Pagáč, MND



Programme **Kappa**

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Main project activities:

- A pilot CO₂ storage site will be prepared for immediate use in a depleting oil and gas field in south-east Moravia. At the same time, the CO₂ storage site will serve as a model example for possible implementation of further CO₂ storage sites in both the Czech Republic and Europe.
- A three-dimensional geological model of the entire storage complex will be created.
- Dynamic modelling and computer simulation of CO₂ injection into the reservoir will be performed.
- The geomechanical and geochemical properties of the storage complex will be evaluated.
- Risks associated with CO₂ storage on the site will be assessed.
- A monitoring plan and scenarios of further development of the storage site will be prepared.

What makes the project unique:

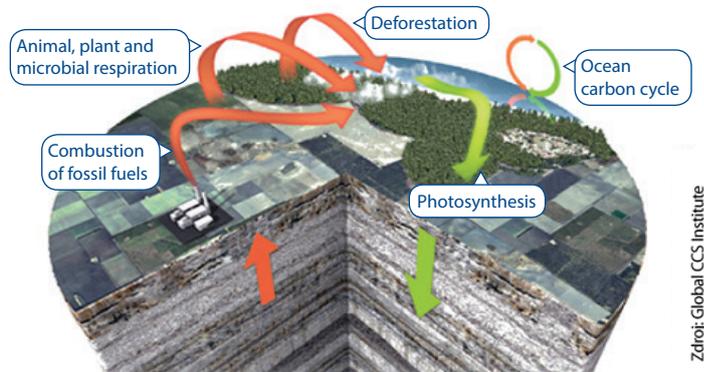
- If the overall objective is successfully achieved, it will be the first CO₂ storage pilot project in Central and Eastern Europe.
- The implementation of the CO₂-SPICER project, based on Czech-Norwegian cooperation, will significantly increase the technology readiness level of geological storage of CO₂ in the Czech Republic.
- It will represent an important step towards deployment of the CCS (Carbon Dioxide Capture and Storage) technology in Central Europe.
- The project is part of a long-term concept of the development of geological storage of CO₂ in the Czech Republic.
- The project will employ a number of novel approaches and methods, such as dynamic modelling and computer simulation of CO₂ injection, the latest monitoring techniques and an evaluation of the possibility of combining CO₂ storage with bacterial methanogenesis.

WHY IS CO₂ A PROBLEM?

CO₂ is a greenhouse gas that traps some of the sun's radiation in the atmosphere, causing the Earth's surface to heat up.

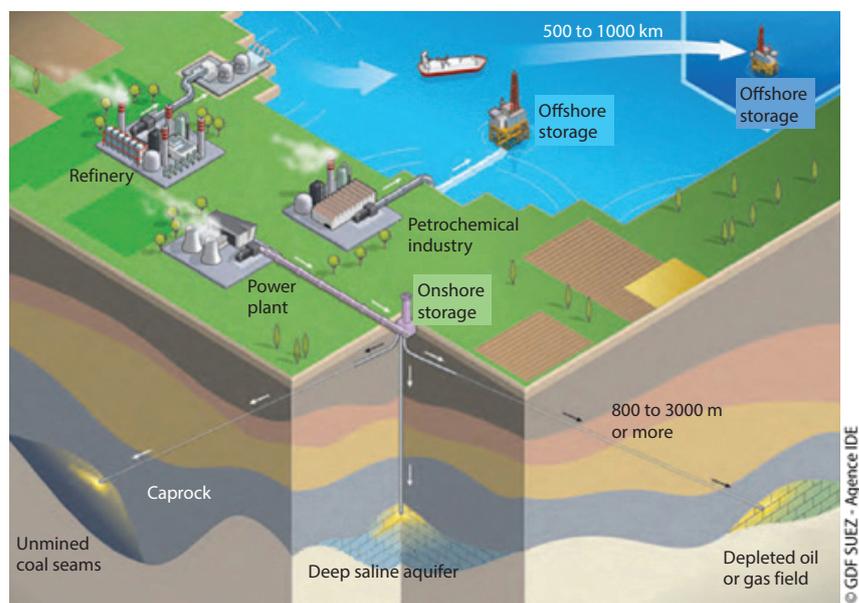
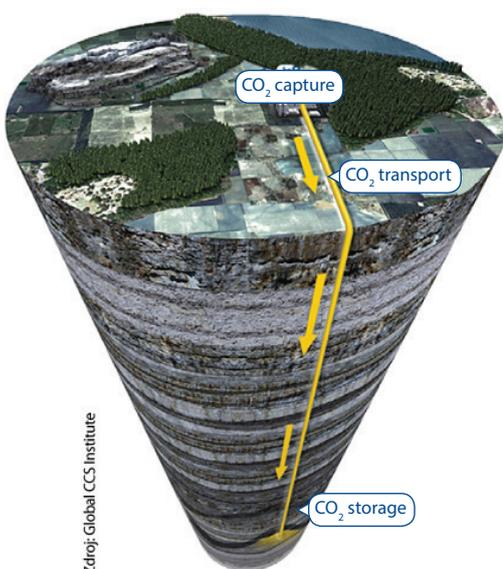
The amount of CO₂ released into the atmosphere due to human activity is constantly increasing, currently

amounting to over 30 billion tonnes annually. Only about a half of the amount is absorbed naturally by oceans, soil and forests. The result is the already ongoing climate change.

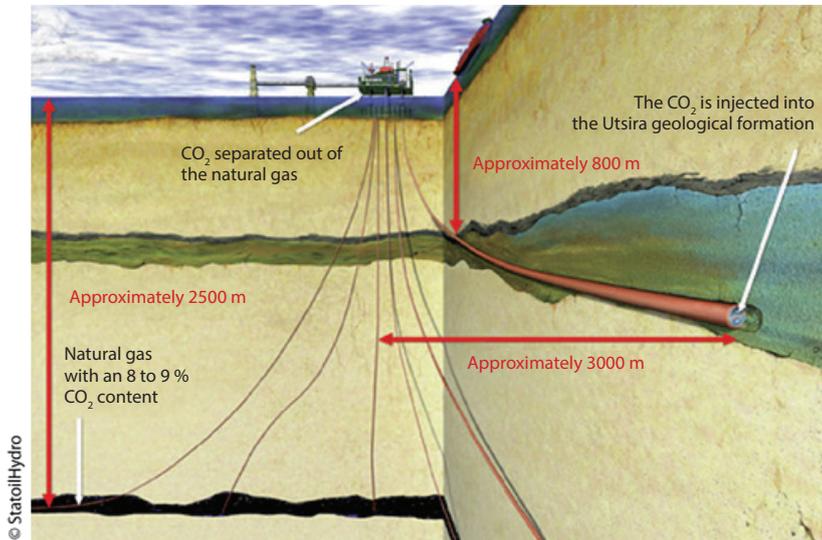


WHAT CAN WE DO ABOUT IT?

A necessary massive reduction in CO₂ emissions cannot be achieved with a single solution. According to the International Energy Agency, by 2050 38 % of the required emission reductions could be achieved by saving energy and 17 % by using renewable energy sources. Another solution is to capture CO₂ emitted by large industrial plants and to permanently store it in rocks deep beneath the Earth's surface, thereby isolating it from the atmosphere.



WHAT IS GEOLOGICAL STORAGE OF CO₂?



The process consists of capturing CO₂ emitted by large industrial plants and storing it in dense fluid form in rocks deep beneath the Earth's surface, using injection through boreholes. The objective is to limit the growing amount of CO₂ in the atmosphere and to mitigate the associated climate change.



IS IT SAFE?

The capture and sub-surface storage of CO₂ employs proven as well as new technologies, which must meet safety criteria throughout the entire process – both on the surface and beneath it, in the short and long terms. Safety systems for capturing and transporting CO₂ have already been well tested; they are based on industry standards and legislation for industrial equipment. Geological storage of CO₂ has been carried out successfully in various parts of the world since the 1970s. In the EU, it is currently regulated by the European CCS Directive of 2009, which has already been transposed into all national legislations of the Member States.

PROJECT PARTNERS



CZECH
GEOLOGICAL
SURVEY



INSTITUTE OF GEOPHYSICS
OF THE CZECH ACADEMY OF SCIENCES



COORDINATOR

The CO₂-SPICER project benefits from a € 2.32 mil. grant from Norway and Technology Agency of the Czech Republic.

CONTACT

CO₂ Storage Pilot in a CarbonatE Reservoir (CO₂-SPICER)

Project leader: Vít Hladík, Phone: +420 543 429 289, e-mail: vit.hladik@geology.cz, web: co2-spicer.geology.cz

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