PRESS RELEASE

Safe storage of CO_2 for millennia

CO_2CARE-Final Conference at GFZ German Research Centre for Geosciences

Is it possible to store the greenhouse gas CO_2 safely and permanently in the deep underground? This is the key question which geoscientists and engineers have been approaching for almost three years within the EU project *CO_2CARE- CO_2 Site Closure Assessment Research*. Close to the end of the project, scientists from *13* countries are discussing the results at the CO_2CARE Final Conference between 4th and 5th November 2013 at GFZ German Research Centre for Geosciences, Potsdam.

The aim of the project, which is coordinated by GFZ, is to develop technologies and procedures ensuring a safe and sustainable closure of geological CO_2 storages. A consortium of 23 partners from Europe, USA, Canada, Australia and Japan has carried out comprehensive geological, chemical and geophysical studies as well as numerical modelling. Research work is mainly focussed on three topics: 1. Well abandonment and long-term integrity. By means of laboratory and field experiments as well as computer simulations robust techniques for well abandonment and for its monitoring are developed. 2. Reservoir management and long-term predictions for a sustainable site closure. The current behaviour of CO_2 in the storage complex is analysed and compared with the simulated site behaviour. Essentially, long-term integrity and stabilisation of the abandoned CO_2-storage sites should be demonstrated. 3. Methods of risk management for long-term safety. Risks are assessed and methods for the mitigation of possible damages are developed, for instance in case of a leakage.

Different monitoring techniques are used and combined together for the localisation and migration of CO_2 in the underground, which can also serve for the detection of potential leakages. Nine different storage sites, onshore and offshore, are examined worldwide. The GFZ pilot site Ketzin near Berlin, for example, is one of them.

In addition to the geoscientific issues also legal topics related to site closure are of central importance. Within the project, technical and scientific requirements were developed in cooperation with representatives of the competent authorities and ministries of Germany, the Netherlands, France, Italy and Norway. "*We have presented and discussed the requirements for a hypothetical closure of three different CO_2 storage sites, onshore and offshore*", said Axel Liebscher, project coordinator and head of the centre of geological storage CGS at GFZ. "*Aim of this „dry-run" was the development of a preliminary catalogue of requirements for a safe and sustainable storage of CO_2 in close collaboration with the authorities. On one hand, these requirements are considering the new CO_2CARE research results and on the other hand they are in compliance with the provisions of the EU DIRECTIVE 2009/31/EC for the geological storage of CO_2 and with the individual national CCS laws".*

At the end of the project duration, Best Practice Guidelines for regulatory compliance will be available for the closure of CO_2 storage sites. This is of international relevance. Although there are numerous geological CO_2 storage sites worldwide, most of them have not been closed under regulatory approval so far. To accomplish this task, the CO_2CARE Best Practice Guidelines will be an important aid.

More information can be found under: www.co2care.org.

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