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CO2CARE - CO2 Site Closure Assessment Research

Michael Kühn (1), Mario Wipki (1), Sevket Durucan (2), Jean-Pierre Deflandre (3), Alexander Kronimus (4), Andy Chadwick (5), and Sergio Persoglia (6)

(1) Centre for CO2 Storage, GFZ German Research Centre for Geosciences, Germany, (2) Imperial College of Science, Technology and Medicine, Great Britain, (3) IFP - Institut Français du Pétrole, France, (4) TNO - Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, (5) Natural Environment Research Council, Great Britain, (6) Istituto Nazionale di Oceanografia e Geofisica Sperimentale, Italy

Over the past 20 years, scientists have continuously monitored climate parameters on a global basis. The research results led to the conclusion that the human activity, especially the release of man-made CO2 beside other greenhouse gases, has a significant influence on the global atmosphere. The discussions about Climate Change respectively Global Warming and the desire for a clean and climate friendly energy production has led to massive research activities, not only in the European Union but also world-wide.

As a consequence of these research activities, technical and non-technical solutions are being developed for the reduction of CO2 emissions. One of the promising technical solutions is the storage of CO2 in various deep geological formations such as saline aquifers or exhausted gas fields. Within the Seventh Framework Programme of the European Commission a new programme, “CO2 Site Closure Assessment Research“, abbreviated “CO2CARE“, has started in January 2011.

CO2CARE aims to support the large scale demonstration of CCS technology (Carbon Capture & Storage) by addressing the research requirements of CO2 storage site abandonment. It will deliver technologies and procedures for abandonment and post-closure safety, satisfying the regulatory requirements for transfer of responsibility.
The project will focus on three key areas:
* well abandonment and long-term integrity
* reservoir management and prediction from closure to the long-term
* risk management methodologies for long-term safety.

The CO2CARE consortium will develop plugging techniques to ensure long-term well integrity; study the factors critical to long-term site safety; develop monitoring methods for leakage detection; investigate and develop remediation technologies, and perform laboratory research and field experiments. Predictive modelling approaches will be assessed for their ability to support the definition of acceptance criteria. Risk management procedures and tools to assess post-closure system performance will be developed. The new developed techniques including dry-run applications for site abandonment will be implemented and tested at nine locations in United States, Europa, Japan, and Australia.

Beside various project partners comprising universities, research institutes and multinational energy companies based in EU countries, also partners from the US, Canada, Japan, and Australia are working closely together. The new research findings and the data obtained from current and closed sites will contribute to the field monitoring database and place the results of CO2CARE in a world-wide perspective.