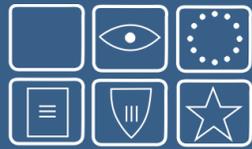


Newsletter

March 2012



CO₂ REMOVE
research monitoring verification

Presentations from the closing conference:

*Key messages to the project – **Ton Wildenborg, TNO***

*Site performance assessment from early scenarios to prediction – **Jean-Pierre Deflandre, IFPEN***

*Initial risk assessment needs to be inclusive and as broad as possible – **Richard Metcalfe, Quintessa***

*Monitoring requires good baseline and appropriate technique selection – **Andy Chadwick, BGS and Rob Arts, TNO***

*How regulatory processes could incorporate research results – **Heleen de Coninck, ECN***

CO₂ReMoVe Closing conference

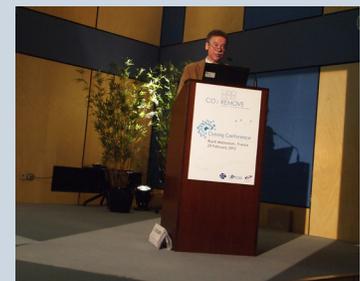
On 29th February the results of this EU project were presented at a closing conference near Paris. The CO₂ReMoVe project has involved over 30 partners from research and industry from Europe and beyond, and has been running for six years. A key conclusion is that results from all the sites indicate that underground CO₂ storage can be carried out safely, with CO₂ effectively contained in all storage projects studied.

Approximately one hundred delegates

who included industry, regulators and policy makers attended the conference.

As well as the keynote speeches there were approximately 30 posters presenting key research from the project.

A summary of the conference has been produced and will be available on the website along with the presentations.



Ton Wildenborg, project coordinator presenting at the closing conference

Key messages from the project

The main question that arises for CCS, and in particular for the storage component, is **"Is it working?"**.

Depending on the stakeholder's main concerns this overall question basically covers the following:

- Is it safe and effective?
- Is it practicable and affordable?
- Can it be standardized?
- Does the research support policy making?

Experience gained from the CO₂ReMoVe project shows that geological storage of CO₂ is safe and viable. Extensive monitoring and verification at sites such as In Salah and Sleipner demonstrates that CO₂ has remained in the target storage complex.

The project has highlighted that the gathering of monitoring baseline datasets is essential for effective performance verification of a storage site.

The verification activities in the project have shown that monitored site performance always deviates from predictions. It is therefore important to establish what an acceptable deviation is and to demonstrate convergence of prediction and observations with time.

Emissions measurement is very challenging; a combination of point and areal measurements is required, but even so direct quantification is likely to be impossible.

A limited portfolio of monitoring tools will provide assurance at a given storage site. The CO₂ReMoVe project has investigated a much wider range of monitoring techniques than a CO₂ storage project, operating normally, is ever likely to use, this effort however is far from wasted. Although not all techniques will be used widely at the industrial scale, pilot-scale monitoring has two important benefits: the reliability of our predictive models has

been tested to a high level of detail; and the wide range of specific tested monitoring techniques allows a high degree of flexibility to respond to unexpected circumstances during site operation. Testing and validating a variety of alternative tools in early CO₂ storage projects will also allow for effective cost optimisation when CCS is rolled out at industrial scale.

Ongoing dialog between regulators and other stakeholders is recommended to ensure policy makers understand the importance of setting viable performance standards for CO₂ storage that can be met using a flexible, site-specific and appropriate suite of monitoring methods and technologies.

For further details please visit the website: www.co2remove.eu.



Installations at In Salah



Platform at the Sleipner field

CO₂ReMoVe is funded by the EC 6th Framework Programme and by industry partners Statoil, BP, Schlumberger, ConocoPhillips, ExxonMobil, Total, DNV, Vector, Vattenfall and Wintershall. R&D partners are BGR, BGS, BRGM, CMI, DNV, ECN, GFZ, GEUS, IEA-GHG, IFP, Imperial College, MEERIPAS, OGS, TNO, URS, Quintessa, Schlumberger, SINTEF, Total and Vattenfall R&D. Three R&D institutes outside Europe participate in CO₂ReMoVe: CSIR from South Africa, UNLDP from Argentina and ISM from India.

For more information please go to the website (www.co2remove.eu) or contact the project coordinator Ton Wildenberg (e-mail ton.wildenborg@tno.nl tel. + 31 30 256 4636).



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