



## New Website for the In Salah Project

We are pleased to inform you that the website for the In Salah carbon capture and storage (CCS) project has gone live. We hope that you find the website a useful resource; providing background information and up to date news on the project.

In Salah, in Algeria, is operated by BP, Sonatrach and Statoil. This joint venture has overseen the capture and storage of one million tonnes a year of CO<sub>2</sub> from its natural gas refinery. Since 2004 the project has compressed, dehydrated, transported (via two pipelines) and stored the CO<sub>2</sub> in a deep saline formation close to the gas-field. Three state-of-the-art horizontal wells are used to store the CO<sub>2</sub> 2km below ground. The storage formation is a low-permeability Carboniferous Sandstone, which is commonly found in the USA, northwest Europe and China - regions with high CO<sub>2</sub> emissions.

[www.insalahco2.com](http://www.insalahco2.com) ●

## CCP Project Publish Book of Results

Speaking ahead of the CSLF ministerial meeting, Gardiner Hill, Chairman of the CCP said, "The CCP is a leading example of how public-private partnerships can work successfully to make rapid progress on closing the technical knowledge gaps that will allow widespread deployment of next generation technologies. Our findings represent a crucial step in the evolution of CCS. However, if CCS is to become part of the solution for managing climate change, governments and industry must not only collaborate on technology development but also on deployment. CCS needs to be met half-way. We have a technology ready for deployment today, and the CCP work will help underpin future reductions in cost and build public confidence of CCS."

The findings are the result of a major collaborative effort between the members of CCP including eight oil & gas majors and government bodies including the EU, the US Department of Energy, the Norwegian Research Council and 60 academic institutions, industry and leading environmental groups. Over 150 projects have been undertaken by the CCP, to date, to increase understanding of the science, engineering applications and economics of CCS. The CCP is now entering its third phase – using insights from the first two phases to further test and trial high potential technologies. This work will prepare the ground for widespread deployment of these technologies throughout the oil and gas industry and the power sector. Formed in 2000, the CCP is a respected technical authority on CCS, facilitating the sharing of expertise to advance the development of next-generation capture technologies, the transport of CO<sub>2</sub> and the development of a certification framework for CO<sub>2</sub> geological storage. For further information please visit: [www.co2captureproject.org](http://www.co2captureproject.org) ●

## Erratum

In the last edition of Greenhouse Issues, number 95, we wrongly attributed the hosting of the workshop on modelling held in Svalbard. The hosts of the workshop were the University of Bergen, not Sintef as previously stated. We apologise for this error. ●

## FENCO-ERA Workshop on CCS, Learning by Doing

By Jan Willem Dijk (DConsult) and Peter Versteegh (SenterNovem)

On October 28th 2009, a FENCO-ERA Workshop on "CCS, Learning by Doing: Large Scale Demonstration Project Managers tell their Real Stories" was held in Amsterdam. FENCO-ERA is a European Union 6th Framework Programme Coordination Action (CA) on clean fossil fuel energy. The overall aim of FENCO-ERA is to map the national R&D activities in the field of fossil energy conversion and CO<sub>2</sub> capture and storage (CCS) in order to construct a durable network and cooperation that will enable European Industry to compete effectively in the global marketplace.

In total 31 delegates from 11 EU member states participated. They comprised public officers, representatives of national

authorities, technical experts, industrialists, future CO<sub>2</sub> storage operators, and FENCO-ERA members. This article presents a short summary of the Workshop.

Many FENCO-ERA members are now getting near or have already realised the first implementation of CCS projects in the form of large-scale demonstrations. Oil & gas multinationals like Shell, Vattenfall, and Total are now facing the first real-life challenges of CCS implementation. One of the biggest issues emerging is that of public awareness/acceptance and this was cited by many other presenters including Gassnova, the UK Advanced Power Generation Forum (APGTF), Groningen Province, and Rotterdam Climate Initiative.

The participants came to the overall conclusion that fully integrated large-scale and operating CCS Power Plant is necessary to gain the necessary learning effects on e.g. public awareness and acceptance. This view was echoed by Mr. Neil Wildgust of IEA GHG based on the conclusions of an IEA GHG survey amongst all large-scale CCS-operators.

Mr. Philip Sharman, Chairman of the APGTF referred to the UK-government competition that was announced in the March 2007 budget for a large-scale CCS demonstration. Funding will be made available for a fully integrated >300MWe post-combustion capture project based on coal-fired power plant with offshore CO<sub>2</sub> storage. A pre-condition is that the gained knowledge is disseminated.

Norway is also taking-up large-scale demonstrations. Mr. Tore Amundsen Managing Director of European CO<sub>2</sub> Technology Centre (TCM) stated that the Norwegian government has set as a goal that no carbon based power

generation is allowed without CCS.

The State and Statoil agreed upon a 2-stage approach to pursue this goal:

1. Demonstrate and develop technologies
2. Build large scale (1 MtCO<sub>2</sub>/year) CCS chain

It is expected that stage 1 will probably cost around €600M. The project is called the TCM and starts in 2011.

So, large-scale demonstrations are being taken up by several European member states. Most stakeholders have great interest in the learning effects concerning public awareness and acceptance processes. Several operators such as Total, Vattenfall, and Shell have already gained some experience on the matter.

In order to improve public acceptance, Mr. Gérard Moutet of Total recommends setting up the right level of resources early in the process. An operator should consider establishing a special CCS implementation information team consisting of technicians and communication specialists. The team should start with a full social relationship management analysis to map opinions of the stakeholders upfront. To this end Total undertook public consultations. The company distinguishes the need for three different types of approaches at local, regional, and national level. All three levels may have differing view points on CCS. Mr. Moutet explained that if a balance between burdens and benefits for all stakeholders involved is established, the public acceptance will increase. Total gained experience with their Lacq project in France.

Mr. Korshøj described Vattenfall's experience from the Nordjyllandsvaerket project and the pivotal role played by communication with the public. He explained that one of the key factors for success was the formation of a local contact group to secure communication between Vattenfall and the public. It worked very successfully and the levels of acceptance are high.

Shell also learnt that an important and very difficult part of the project concerns public acceptance. Ms.

Margriet Kuijper of Shell CO<sub>2</sub> Storage said that understanding and handling the playing field is not easy. Shell gained experience with the preparation of the onshore CO<sub>2</sub>-storage Barendrecht project. Ms. Kuijper believes that the public must understand basic elements before starting a large-scale CCS-demonstration. It all starts with understanding of the urgency of climate change and energy security. Secondly, awareness must be raised on the necessity of CCS related to the transition towards renewable energy. Only then understanding for small demonstrations will grow and the framework for full-scale installations can be developed.

Mr Jaap Siemons of the Groningen Province said that governmental officials who have to deal with the playing field of conflicts of interest (economy versus environment) have to be trained properly in order to learn to make the right decision. He suggested that an interdisciplinary CCS core team should be established within regions, with a flexible structure. Besides Networking and lobbying is also important to understand the different political issues, and to increase changes.

During the discussion, it was concluded that national governments and the European Union should give similar messages. Governments should explain the different options, and how necessary they are for tackling the climate change. Mr. Barend van Engelenburg of the Rotterdam Climate Initiative explained that in the Netherlands a website was prepared with information provided by scientists, NGOs, and the government on explaining what CCS is and the accompanying risks. This approach worked because it provided unbiased information and was authorized by almost all stakeholders.

The workshop organisers have published the presentations and the proceedings on their website:

[www.fenco-era.net/WS7-Amsterdam/](http://www.fenco-era.net/WS7-Amsterdam/) ●

**FENCO**  
ERA-NET  
ossil Energy Coalition