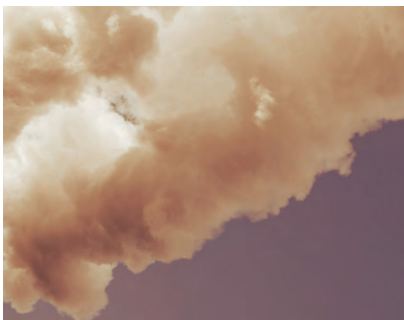


FIRST SHARING EVENT

EUROPEAN CCS DEMONSTRATION PROJECT NETWORK REPORT



BILTHOVEN
THE NETHERLANDS
APRIL 28th-29th 2010





A first sharing meeting between large-scale CCS projects

The first meeting and knowledge-sharing event organised by the European CCS Project Network was arranged in Bilthoven, the Netherlands on 28 - 29 April 2010. This is the first time large-scale integrated CCS projects have met to share knowledge anywhere in the world and this is a landmark event in the European Commission's aims to support and accelerate the demonstration of CCS technologies across the full value chain.

In this first preliminary meeting the six projects granted funding under the European Energy Program for Recovery (EEPR) participated, namely:

- **Belchatów, Poland**
- **Compostilla, Spain**
- **Hatfield, UK**
- **Jämschwalde, Germany**
- **Porto Tolle, Italy**
- **Rotterdam, the Netherlands¹**

The Network meeting focused on three themes that were identified as crucial areas for sharing experiences by European CCS project developers during a preparatory meeting held in Oslo in December 2009²:

- **Permitting**
- **Public engagement**
- **Risk management**

The meeting started with one plenary session going through the status of the CCS Project Network and an update on the membership agreements. Then the participants were divided into three break-out groups, each discussing one of the themes.

The main objective of the meeting was to initiate the knowledge-sharing processes within these three themes and explore the potential for sharing. The discussions were focused on answering questions such as:

- What are the projects' experiences to date - if any?
- What are the more specific issues related to the theme that the projects consider beneficial to share?
- Are there external sources of knowledge that could be invited to the Network?
- What outputs can the Network produce that would be valuable resources for other projects or people working on CCS issues? >>

DNV offices in Bilthoven, The Netherlands



1 More information on the EEPR projects can be found online at: http://ec.europa.eu/energy/publications/doc/2010_eepr_brochure_co2_en.pdf. Whilst these projects make up the first members of the Network, it is open to any early-mover large-scale CCS demonstration project in Europe and additional projects are expected to join in the coming months. More information on how to apply can be found at: <https://www.ccsnetwork.eu>.

2 See <https://ccsnetwork.eu/index.php?p=publications> for more information on this event.



Based on the experiences and views that were brought to the table at this first meeting, future discussions will be facilitated to explore these further and assist the successful delivery of CCS demonstration in Europe. Wherever possible, key lessons and learnings will be disseminated to other CCS project developers in Europe and worldwide, and to stakeholders who can benefit from the information.

The meeting concluded with a presentation from Jan Panek (Head of Unit, EC) who thanked the participants for their contributions and open engagement with the themes under discussion. He underlined now the process of knowledge sharing has now begun, momentum will now need to be maintained by ongoing cooperation between projects, the EC and Det Norske Veritas, the contracted party assisting the EC in establishing the Network.

Knowledge sharing theme 1: Permitting

The session on permitting started with the projects presenting their status with regard to permitting, their experiences with the permitting processes and challenges they see in the process.

The projects are still in the planning stages and they have limited experience with permitting in the field of CCS. However, they have gained some experience and several areas were identified for more-in depth discussion:

- **Legislative framework.** Sharing on development of the regulatory framework in the member states to keep each other informed and to learn from how project management can best deal with the regulatory framework and any initial lacks of laws and regulations, or how projects manage the dialogue with the regulators.
- **Public engagement** is directly connected to the permitting process through consultation processes, public hearings and political processes influencing the project. Successful public engagement is important for successful permitting.
- Exchange of lessons learned and **best practices.** The group agreed that there is a large potential for learning from other major infrastructure projects, both in the energy sector and in other industries that will be beneficial in developing full-scale CCS projects.
- **Regulative hierarchy/governmental levels.** Exchange of experiences on matters connected to dealing with different levels of government (national, state and local).

The group concluded that benefit could be gained from knowledge sharing on permitting, especially with a particular focus on sharing experiences with the purpose of developing best practices for commercial scale CCS projects. >>

Representatives from European CCS demonstration projects





Knowledge sharing theme 2: Public engagement

The knowledge sharing session on public engagement started with mapping the experiences and status for each project regarding public engagement. The group regarded public engagement as one of the most crucial aspect of their projects, especially where on-shore pipelines and storage are involved.

To initiate the discussions in the session, DNV presented views on how people perceive risk. Presentations from Shell and ECN complemented the external perspective on the subject: Shell presented their experiences with public engagement in the Barendrecht project in the Netherlands and Marjolein de Best-Waldhober of the Netherlands Energy Research Centre presented an overview of research on public perception and CCS.

Permitting subgroup

Participants thought that most mutual benefit could be gained from collaborating on the following:



- Documentation of projects / case studies in a consistent way
- Development of a set of guidelines, in analogy with the NETL public outreach guide, with a European angle
- Development and collection of reference case studies on public engagement, e.g. on storing natural gas
- Identification of and collaboration with trusted messengers who could help engage with the public
- Sharing of methodologies for social site characterisation
- Multi-language materials on each of the projects

Knowledge sharing theme 3: Risk Management

This thematic session started with presentations of the projects on their current focus and approach on risk management. Due to the novel nature of large scale CCS, the demonstration projects are facing a large spectrum of risks; technical, economical, commercial, organisational and political. DNV contributed to the discussion by presenting generic models and frameworks on Risk Management.

Public engagement subgroup listening to Dr. Marjolein de Best-Waldhober

In a collaborative session the participants identified the high priority risks for the demonstration projects. Funding and financial risks, the permitting process and technical risks related to scale up problems, lack of basic design standards and CO2 purity as well as the choice of storage site were on top of the list.



During a group discussion several areas were identified that have potential for further exploration and exchange of ideas:

- **Risks related to funding.** Understanding timing and predictability will help the projects to develop a better preparedness for funding-related risks.

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- **Risks related to CO2 stream composition.** In practice the approach to CO2 stream composition will be set by technical and economical possibilities across the supply chain, and will be bounded by any regulatory requirements. These limits, and the associated engineering risks, are not fully understood by the projects individually, but might be better managed by coordinating available knowledge on the subject.
- **The transposition of the EU CCS directive.** This process may create risks to the projects related to uncertainty of timing and detailed interpretation. There is a need for identification of these risks and recommendations on how project managers can deal with those risks.
- **Managing interface risks.** Specific for all integrated CCS projects is the need for managing risks across the CCS supply chain. The development and operation of an integrated CCS infrastructure involves a variety of partners that maintain organisational interfaces that need to be managed in order to ensure smoothness of operation. Risks associated with these organisational interfaces need to be managed, just as well as the risks associated with the interfaces between the various technology building blocks across the CCS value chain.

Risk management group working



Participants in this thematic session believed added value would be obtained from further knowledge sharing on Risk Management and in particular a focus on sharing experiences and approaches with the purpose of identifying lessons learned and developing best practice recommendations for commercial scale CCS projects.

Next steps

Based on the results of the 3 working groups, an agenda for the next meeting on 30 June will be prepared. The intention is to focus this second event on deepening the topics discussed and to start to produce joint outputs. A third event is already being prepared as well and is scheduled for October. It is expected that this latter event will seek to conclude some of the topics and to review the knowledge sharing agenda of the Network. <<