



An introduction to
The European Carbon Dioxide
Capture and Storage (CCS)
Demonstration Project Network

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The European Carbon Dioxide Capture and Storage (CCS) Project Network

In its 2008 climate and energy package the European Union stated its conviction that carbon dioxide emissions need to be cut by at least 50% by the year 2050. An important element of this package was the recognition of the role for technologies that enable the capture, transport and storage of CO₂ (CCS). In order to help fulfil the potential of CCS we are sponsoring the world's first network of demonstration projects, all of which are aiming to be operational by 2015. Our goal is to create a prominent community of projects united towards the goal of commercially viable CCS by 2020. The CCS Project Network will foster knowledge

sharing amongst the demonstration projects and leverage this new body of knowledge to raise public understanding of the potential of CCS. This will accelerate learning and ensure that we can assist CCS to safely fulfil its potential, both in the EU and in cooperation with global partners. The European Commission is co-ordinating the work of the Network with DNV and we look forward to developing the Network into a leading community for CCS deployment.

Simon Bennett | CCS Project Network Manager |
Directorate-General for Energy and Transport |
European Commission



Steinar Thon | DNV

The CCS Project Network Team

DNV (Det Norske Veritas) is providing expert assistance to the European Commission and helping run the Network; the foundation has a sound body of knowledge and experience in the field of cleaner energy. Since 2006 it has operated a dedicated global unit for Carbon Dioxide Capture, Transportation and Storage, and has around six years of experience supporting knowledge sharing for EU research projects.

The CCS Project Network is the third knowledge-sharing network for which DNV has provided expert assistance to the European Commission,

and we are drawing on this previous experience as well as our work in the energy sector and elsewhere. Our combined CCS and knowledge management expertise offers us an opportunity to provide a service to the Network members that is both mature in its ideas yet innovative in its applications.

We welcome the members and look forward to a fruitful and rewarding collaboration for all parties involved.

Steinar Thon | CCS Project Network | DNV





CCS Project Network objectives

The European CCS Project Network will play a central role in the demonstration of CCS technologies in the EU. It has been established to enhance co-ordination between first-movers and add value to its members through tasks such as:

- *Facilitating the identification of best practices with respect to large-scale CCS projects and enabling knowledge sharing amongst the projects, primarily by collection and dissemination of new information generated by the projects in the course of their implementation*
- *Providing a common EU identity to Network members*
- *Leveraging the experience gained from projects and the evidence generated by them in order to gain public confidence about the feasibility and safety of CCS; provision of consistent and collective information about project progress to the public*
- *Promoting CCS, the EU's leadership and the cooperation potential in CCS to third parties/countries*

The CCS Project Network adds value to projects

To maintain the support of the public as we progress from the planning phase to authorisation and construction of demonstration plants, it will be essential to present CCS in its wider purpose as part of a co-ordinated, Europe-wide initiative to test low-carbon technologies and help them realise their future potential. The CCS Project Network provides this context and confers a globally-recognised identity on the member projects, which will be used to communicate with the European public about the goals and the progress of this initiative, and to communicate internationally with other initiatives about the successes and the commitment in Europe.

The community of CCS Project Network members will be in a unique position to share their experiences and build stronger relationships with each other, with EU Member States and internationally. There is still much learning to be done to integrate the CCS value chain and overcome the legislative and non-legislative barriers. We believe that through a commitment to exchanging information and sharing best practices at all stages of the demonstration projects, our efforts in Europe will be more efficient and more sustainable.





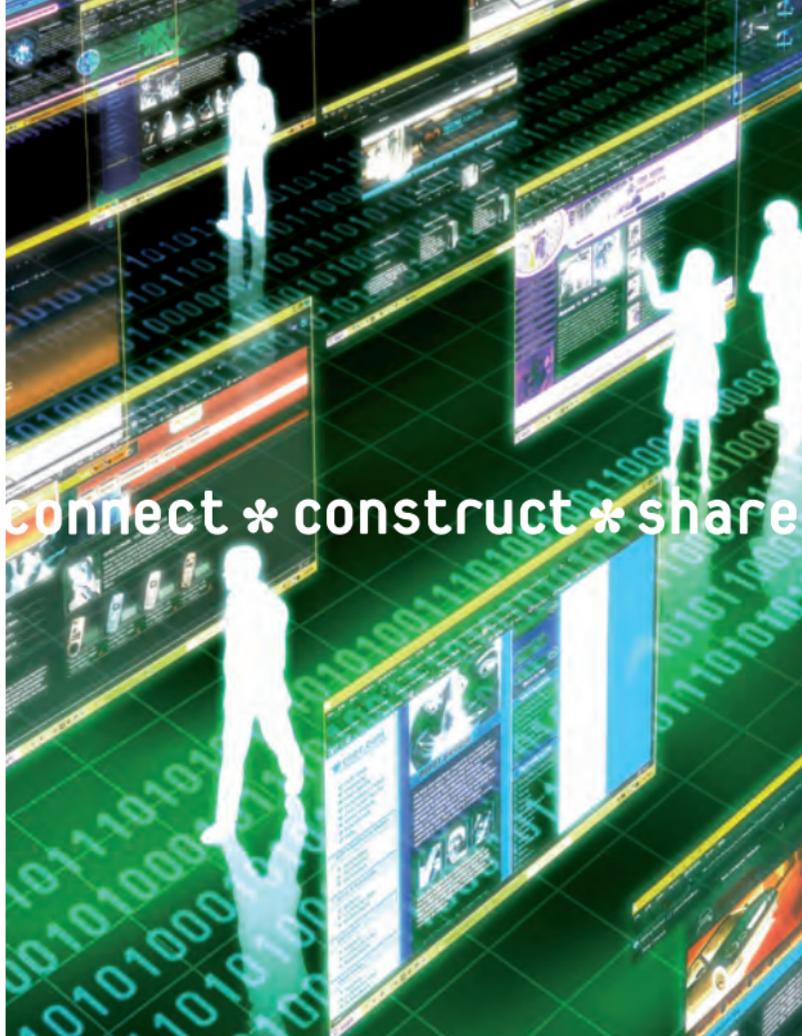
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Why share knowledge?

Imagine a situation in 2012 where Project A in the CCS Project Network is able to report that: ‘Following the first CCS Project Network Knowledge Market event in 2010 we continued to discuss our challenges with Project B, which was already engaged in a constructive dialogue with the national authorities about the siting of a large-scale aquifer storage site. When permitting issues caused a delay in our own negotiations we were able to benefit from the experience of Project B in securing authorisation, and, in turn, we were able to offer our pipeline expertise and we are now collaborating on a shared CO₂ storage facility and the development of a pipeline network.’

Imagine that in 2013 Project C is able to report that it has successfully obtained all of the required permits for routing its CO₂ transport pipeline across the national boundary between Germany and Poland: ‘Our project has been actively involved in the Network’s forum for trans-boundary CO₂ issues. Sharing our experience with that of CCS demo projects in other parts of Europe has made the dialogue with regulators more effective and the permitting process a great deal more efficient. Within our own project we have avoided duplication of effort and learned important lessons for scaling up our transport operations between now and 2020.’





connect * construct * share

What is knowledge sharing?

“Knowledge sharing involves the active participation of network members in the exchange of information and experiences that could be applied to similar situations elsewhere. Such exchanges can be informal and unstructured but may also be captured in ways that can enable re-use at later dates. The organisation of such content supports further dissemination and its retrieval by network members as required. Knowledge sharing ultimately allows for useful comparisons between alternatives and fosters the early development of an educated competitive market where informed actors will be able to make better decisions, earlier.”

source: Position Paper of the EU Power Plant Suppliers on Knowledge Sharing in the framework of CCS demonstration.

Helping projects to make connections

The European CCS Project Network team aims to help projects identify knowledge and experience that can be shared for mutual advantage. We will also help to capture lessons learned during the projects and to help Network members and the wider CCS community to capitalise on these lessons. The Network will help you to:

- * **Connect** with members at dedicated CCS Network events
- * **Construct** new infrastructure and new areas of knowledge
- * **Share** experience and best practices for the future

through the following integrated services:

- **Member support**
- **Event facilitation**
- **Representation**
- **On-line facilities**





Member support

We will provide support to member projects by bringing in our own knowledge, experience and problem-solving capacities and draw upon existing networks, joint industry projects and other sources of knowledge. These services will include:

- ***Benchmarking exercises***
- ***Help with capturing lessons learned***
- ***Peer assistance to aid problem solving***

Event facilitation

We will organise, design and facilitate participative events aimed at knowledge sharing on behalf of the network of demo projects. The first of these will be an annual Knowledge Market at which participants will interact to identify and plan technical and commercial knowledge-sharing activities. These events will help to establish the major sharing themes that will be the subject of smaller, focused events during the following twelve months. In order to optimise involvement in these events, projects may prefer to involve more specialised expertise. Events focused on public acceptance of CCS and engagement with global CCS activities are foreseen for 2010.

Representation

We will proactively assist projects to disseminate valuable activities and results. We will represent the CCS Project Network community, plus individual projects where appropriate, as global ambassadors for EU CCS demonstration in communications with external stakeholders. Communications will include presentations, attendance at international events and production of promotional materials.

On-line facilities

A public site that contains general information about the activities of the Network. It will be a hub for information about Europe's CCS projects, focusing on the activities and outcomes of this Network collectively and its individual member projects. A home page for each project will enable them to provide specific information about the aims and activities of the projects, to showcase innovative practices and to engage with the wider community. A network space will provide facilities to engage in discussion forums, share documents and find expertise.

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Programmed events for members

Knowledge markets are annual, informal but structured events that help the project community to efficiently match knowledge needs and knowledge offers and to establish and explore common themes that deserve joint knowledge development and sharing.

The common themes will set the sharing agenda for future, more in-depth sharing days.

Sharing days focus on exploration of a particular issue to advance understanding and improve project quality. Typically, these events will be preceded (and followed up) by online discussion and provision of input by participants around a set of prepared questions. Where needed, external expertise will be drawn

in to seed the discussion and provide feedback. Sharing days are timed such that their impact is greatest in the project stage immediately following each one of them.

Project debriefs are meetings following a structured format with individual projects seeking to capture project progress and lessons learned in agreed areas, and to feed in experience from others to enhance project progress.

Issue-based clinics Unlike sharing days which bring projects together, clinics are available to individual projects. In case projects need more specific support than can be offered through sharing days, the Network Team can mobilise the relevant expertise.

The global leader in CCS

For over 10 years the EU has been funding R&D in CCS, focusing on projects that will improve performance and enable electricity produced with CCS to be no more expensive than electricity from most other low-carbon sources.

Since 2009, EU legislation on geological storage of CO₂ is in place. This provides the necessary regulatory framework and ensures that CO₂ will be safely and permanently stored underground. Recent developments in the Emissions Trading System (ETS) mean that CO₂ captured and reliably stored can now be considered as not emitted. This creates the conditions to move CCS closer to economic viability and makes investments in the technology a good business decision.

Large-scale demonstration is the next milestone. In 2007, leaders agreed that the EU should aim to have up to 12 such demonstration projects by 2015. An EU portfolio of demonstration projects is the first initiative of its kind to unite public and private efforts towards the common goal of advancing the deployment of CCS.

More information | Contact

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This introductory booklet helps you to understand the role of the European CCS Demonstration Project Network in advancing CCS technology from demonstration to commercialisation.

The material is provided to you by the CCS Project Network Team, which is dedicated to building links between the projects and stakeholders. In addition to the details in this booklet, you will find further information about how the CCS Project Network will operate and how to apply for membership on our website.

Directorate-General
for Energy
and Transport



DG TREN assisted by DNV MANAGING RISK



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