Thematic Report

Regulatory Development Session October 2012

A report from the European CCS Demonstration Project Network

Website version

Proceedings from the Rotterdam knowledge sharing event 24th/25th October 2012

Contents

Introduction

The European CCS Demonstration Projects Network has continued the regulatory development theme with in detail updates from the projects, an increased focus on issues surrounding the implementation of the CCS directive within the legal framework of the different member states, a special report from ROAD, and input from DECC. In addition to this report regarding the workshop at the knowledge sharing event in Rotterdam in October 2012, a case study regarding the permitting process for the ROAD project has been presented and discussed within the regulatory development group. We expect a public version of this report to be available soon.

1 Status of projects

1.1 ROAD

1.1.1 Status of the Project

The basic design of the capture plant has been completed. The capture plant permits are irrevocable and the Engineering, Procurement and Construction (EPC) contract is ready to sign.

The storage permit has been successfully reviewed by the European Commission, which has given its first opinion of a permit submitted under the CCS Directive (a second opinion will be given prior to injection). Transport and storage permits will be published by the Netherlands authorities soon. The slides regarding the project can be found on the website:
http://www.ccsnetwork.eu/uploads/publications/Review_ROAD_storage_permit.ppt

1.1.2 Case study by ROAD

The case study presented by ROAD is described in more detail below and in an additional report will be made public soon

1.2 Compostilla

1.2.1 Status of the Project

The Compostilla project has been hampered significantly by the delay in the process of implementing the CO_2 storage regulations. Due to the lack of suitable regulations, storage permit applications cannot be submitted. Due to these problems in the administration process, the envisaged start date for the FID process has been moved to March 2013.

The inertia of the OXYCFB300 Project has been compounded due to the changing expectations of the plant's operation. Auxiliary equipment, such as the Air Separation Unit (ASU), reduces the operational flexibility. As a result of the increased use of renewable energy there is an increasing need for flexible operations from fossil fuelled power plants.

1.2.2 Capture Permit

The permit notification for the capture elements was submitted to the Substantive Body (Ministerio de Industria) on February 2011, along with a bank guarantee (20 MM€) submitted by ENDESA in May 2011. The Substantive Body submitted the documentation to the Environmental Body on March 22nd, 2011.

Remarks to the initial document were received on 17th May 2012. As it is required by the legislation procedures, these remarks have been considered in the environmental impact assessment (EIA) elaboration. At the beginning of August 2012, administrative and environmental projects were

submitted to the related administrative bodies (EIA, Integrated Environmental Authorization (AAI), Administrative Authorization (AA), Public Utility Statement (DUP)). Important permits such as: Water intake, grid connection point and land use permits have been submitted.

1.2.3 Storage Permit

On June 21th 2011 ENDESA (one of the partners in Compostilla project) requested that the Spanish administration facilitate a suitable permit process for the Duero site under the current Mining Law with the inclusion of new regulation act for CCS. At the present time, ENDESA is still waiting for an answer from the Spanish administration.

On May 16th 2011 ENDESA also requested a suitable permit process for the Ebro site. The Aragon administration has to date granted a site exploration permit. Eight wells 'drilling administration permits' authorizations have been requested and obtained. ENDESA holds authorization permits for all seismic surveys.

1.2.4 Transposition of the CCS Directive

The new regulatory regime for carbon capture and storage (CCS) has been implemented in Spain – Act 40/2010, of 29 December 2010 (the CCS Act). The CCS act did not result in well-defined CCS legislation. Currently the Compostilla project is considering following existing mining regulation to obtain the storage permit.

The main reason for the delays, reported above, is that the new legislation in Spain does not cover the four guidance documents that were released in March 2011. In addition, CO_2 transportation is not covered by this new legislation, rendering the permitting of transport of CO_2 impossible at this time.

1.3 Belchatów

1.3.1 Status of the Project

The project has faced some delays in its schedule therein also in the area of permitting.

1.3.2 Capture

The capture technology has been changed in the project which meant that a new permit request for the capture plant was required, and a delay of several months is envisaged. Based on the applicable law, the following administration decisions have been obtained:

- Decision on Environmental Conditions awarded in 12/2009, although a new one will be issued due to the changes in the amount and composition of the effluents from the CCP Installation
- Building Permit awarded in 02/2011, although a new one will be submitted as the building documentation was updated for the new setup of the capture unit.

1.3.2 Storage

Site characterization is now in its second phase (Site Characterization).

To date the following decisions have been issued by the Minister of the Environment (within Phase I – Site Selection), based on the approval of the drilling works:

- Decision on the approval of design on the gravimetric picture in the area of Wojszyce (10/2009)
- Decision on the approval of design on the gravimetric picture in the area of Lutomiersk-Tuszyn (10/2009)
- Decision on the approval of design of the geological works for the survey of Wojszyce (2/2010)
- Decision on the approval of design of the geological works for the survey of Lutomiersk-Tuszyn (10/2009)

1.3.3 Transposition of the CCS Directive

In Poland the Ministry of the Environment is responsible for the transposition of the CCS Directive into Polish Law and for the permitting of CO2 storage. A Draft Act to transpose the CCS Directive and amend existing laws has been created by the Ministry of the Environment called the "Assumptions for the Draft Act", which has been accepted by the Council of Ministers in 03/2011. The Draft act has been submitted to the Governmental Legislative Centre (GLC) for further work. GLC, with the cooperation of the Ministry of the Environment, prepared the Draft Act on 07/2012 and undertook a 30 day consultation.

The draft act includes the definitions of the geological formation, the underground CO2 storage, the complex of underground CO2 storage, the corrective measures, the CO2 leakage, and the closure of underground storage site. The key issue is that the draft act facilitates only demonstration CCS projects, which could lead to an unknown hurdle at a later stage when projects move into commercial operations. One of the reasons mentioned by PGE that the Draft act is only covering the demonstration phase is because it has been linked to 'novel technology developments'. The draft act also regulates the access to CO2 transport networks and thereby to storage sites.

At this time it is envisaged that the final version of the Draft Act will be accepted by the Council of Ministers and enacted on by the Parliament by the end of this year.

1.3.4 The Draft Act on Transport Corridors

PGE is waiting for the final version of the Draft act on Transport Corridors and preparatory work already started for the pipelines.
The Draft Act on Transport Corridors:

- establishes adequate and stable conditions for the pipeline investment, including setting up, maintaining and modernising the CO2 transport pipeline with the related technical infrastructure;
- regulates the decisions on the establishment of transport corridors, to support a smooth process in obtaining the corridors for CO2 transport; and
- acceleration of the administrative process; addressing the conditions to invest and the building permit.

1.4 Porte Tolle

1.4.1 Permit situation of Porte Tolle Power Plant

As reported in our May 2012 meeting a hearing was held on the state Council VI Section in May 2012, regarding the issue of whether the EIA process should be applied to new Regional Law (which repealed the comparison gas-coal) or to the previous Law, in force at the time of the judgment. The overall progress of the conversion to coal firing of Porto Tolle power plant has been affected by the Decision of the State Council, that voided the Environmental Authorization (EIA). The Environmental Ministry required a new Environmental Impact Assessment to be issued within 2012.

Due to the issues related to Porto Tolle Power Plant permit, the CCS project is affected by relevant delays and the schedule of the overall project is under assessment.

1.4.2 CO2 offshore Storage

Request for the Exploration permit, including the drilling of an appraisal well, will be submitted in 2012, although the technical decrees of the Storage Regulation are not still implemented.

1.5 Don Valley

1.5.1 Status of the Project

The UK government published the Draft Energy Bill on the 22 May 2012, which proposed the introduction of Feed In Tariffs (FiT) with Contracts for Difference (CfD). (More information can be found in section 3.1 of this report). The structure and design of the CfDs should cover the entire project's balance sheet; however there is an ongoing debate about the Feed in Tariff (FiT) for CCS projects in the UK right now.

1.5.2 Transport

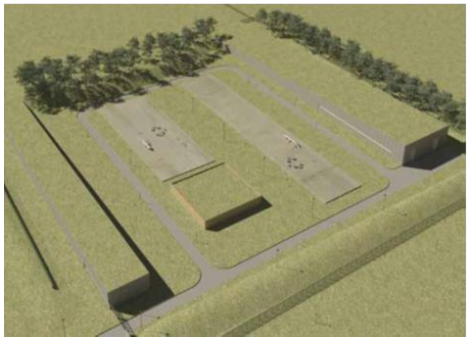
In summer 2012, the project conducted further public consultations and interaction discussing potential locations for above ground infrastructure (compression, pumping and valve gear) and different design concepts/views of pumping stations as illustrated in figure 2 below. The preferred pipeline corridor has now been identified, as have the sites for the above ground infrastructure.

Design style option 1 - Contemporary

The contemporary design option would make use of modern industrial materials and possibly environmental innovations like green roofs, which are appropriate for this semi-rural / semi-industrial setting. The site would be surrounded by landscaped bunding and trees would be planted where appropriate.

Design style option 2 - Farmstead

The farmstead design option takes its inspiration from a farmstead or collection of smallholdings, in a similar style as those which can be found in the local area. As for the above option, the site would be surrounded by landscaped bunding and trees would be planted where appropriate.



Design style option 3 - Landscaped

The landscaped design option seeks to reduce the impact of any structures by using sloping green roofs, which rise over the pumping station buildings. As for the above options, the site would be surrounded by landscaped bunding and trees would be planted where appropriate.

Figure 2 Different bird eye views of the pumping station used in the public consultation meetings.

Before the formal CO2 transport permit application can be submitted, the environmental impact assessment must be completed and the design and detailed piping route has to be defined as such that the location of the pumping station and relevant pipeline crossings are clear and defined. The project has worked in collaboration with CO2Sense (formerly Yorkshire Forward), a local group of stakeholders that have promoted a CCS cluster and studied the economic benefits.

1.5.3 Storage

There are two storage options under consideration for the project. National Grid is working on the Saline Storage option which is in the southern North Sea approximately 90 km from the coast, while 2CO Energy is focused on an EOR storage option in the Central North Sea approximately 345 km from the coast. On the 10th October 2012, National Grid and the Energy Technologies Institute (ETI) announced an intention to drill the saline formation, subject to the license for exploration and ground rights; ETI has invested £2m in the project.

For further information see:
http://www.eti.co.uk/news/article/national_grid_and_eti_to_drill_offshore_carbon_capture_and_storage_site_off

1.6 Sleipner Project

The Sleipner project is regulated under the Norwegian Act Pertaining to Petroleum Activities (under the Ministry of Petroleum and Energy) and the Pollution Control Act (under the Ministry of Environment).

The Pollution Control Act (http://www.klif.no/artikkel_33746.aspx) is the most relevant piece of legislation, covering the application and withdrawal of permits, the authority's responsibilities, and inspection, provision of information, closure, and liability. The Act will also form the basis for CO2 storage legislation.

The building and operation of pipelines, exploration of offshore reservoirs for permanent storage, the need for an environmental impact assessment, monitoring, or third party access to pipelines or storage will fall under new regulations in the Continental Shelf Act.

2 Case study – Lessons Learnt from ROAD

Getting a CCS project permitted is a long and difficult process, especially because of the storage permitting obligations. The regulations on a storage permit (the CCS Directive, Guidance Documents) are new and these leave room for interpretations. The ROAD project storage permitting process took almost two years. ROAD was fortunate to have Dutch competent authorities that fully supported the demonstration project. While this may not be the case for other projects, the case study gives some lessons learnt and concrete examples on how to approach some of the key issues arising from the CCS Directive.

The outcome of the storage permitting process seems to be one of the most important factors for a CCS projects. In particular, the requirements regarding the Financial Security (FS) and Financial Mechanism (FM), for example, could be key reasons for an organisation to stop its involvement in a project.

Several conclusive remarks form the ROAD project:

The way in which a project is organized is very relevant for the storage permitting application. Establish a separate storage permit team that combines all different disciplines and represents one contact for the competent authorities and other important stakeholders.

Undertaking detailed analyse of the key issues arising from legislation will be of the utmost importance. Most important aspects that should be covered in depth are:

- Financial Security
- Financial Mechanism
- Transfer of responsibilities

The case study is drafted by the ROAD-project and therefore it only represents the views and opinions of the ROAD joint-venture parties. A full length report written by the network will be coming out shortly.

2.2 Lessons learnt ROAD project

During the presentation of the case study a number of questions were asked, and the following lessons learnt were made:

- When dealing with the government ministries, it helped to have a single point of contact that has the right level of authority and could interact with others as needed.

- Regarding public opposition, the ROAD project undertook a lot of preparation, and actively engaged the public and other key stakeholders. More information can be found in the detailed report that has been shared with the group.

- The competitive bid period ensured that the granting of the storage permit was an open process. As soon as the permit application was filed by TAQA, the competent authority published the application. In the Netherlands the CCS Directive requirement of "Member States shall ensure that the procedures for the granting of storage permits are open to all entities possessing" is elaborated in the requirement that the government must publish the permit application in order to enable possible other interested party to apply also for the same storage permit. Competitors have a 91-days term in which they can file an application.

- Regarding the time taken to grant the permit, ROAD explained that the EU-commission only starts assessing the permit when every document is available and all national procedures have been finished.

- Given the timing and complexity of the process, it was beneficial to have a general approach regarding the higher level items required for the storage permit. The principles (terms and conditions) of the higher level items that will require more detail have been agreed upon. For example, the definitions of the Storage site and the Storage Complex has been supported by the EC.

  As a result the storage site is a specified volume within a geological formation that is used for the geological storage of CO_2 and includes wells penetrating such volume. The storage complex includes the storage site and all the surrounding geological volumes that act as barriers to migration (out of the storage site) or leakage (out of the storage complex).

- ROAD concluded that the following activities that must be covered with the Financial Security are:
  - Monitoring
  - Contingency monitoring
  - Abandonment
  - Financial contribution
  - EUAs in case of leakage

  Their approach will provide an adequate coverage of liabilities. Issues regarding civil liability are explained in more detail in the separate report.

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The European CCS Demonstration Project Network was established in 2009 by the European Commission to accelerate the deployment of safe, large-scale and commercially viable CCS projects. The Network that has been formed is a community of leading demonstration projects which is committed to sharing knowledge and experiences, and is united towards the goal of achieving safe and CCS. The learnings that are gained will be disseminated to other projects, stakeholders and public to help gain acceptance of the technology –and support CCS to achieve its full potential as a vital technique in our fight against climate change.

Network support provided by:

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