

IEA CCS Roadmap

Poland Roundtable Meeting Notes

18 June 2009

Background

On 18 June, as part of its research for the International CCS Roadmap, the IEA organized a Roundtable event on carbon capture and storage (CCS) in Warsaw. There were over 50 attendees at the event from the mining, utility, oil & gas and finance sectors, national government, NGOs, research institutes and the European Commission.

The Roundtable was the second of a series of Roundtables on CCS that the IEA will host in key emerging economies. The goal of these Roundtables is to collect detailed information about the technology, legal, financial and public awareness issues associated with CCS demonstration and commercialization in these markets. The first roundtable was hosted in China in April 2009 with future roundtable meetings planned for Brazil and South Africa.

Presentations

The event included presentations from the IEA, the Polish National Government, and the Polish State Geological Institute. Also included were presentations on the two planned Polish demonstration projects at Belchatow and Kedzierzyn, by representatives of companies involved in development of these projects.

Energy Director Henryk Majchrzak in the Ministry of Economy presided over the meeting from the Polish government, and provided a speech demonstrating that Poland is aggressively moving forward with CCS demonstration and the development of regulatory frameworks. Further, in accordance with the new EU CCS directive, Poland is looking to have a legal framework in place for CCS by midway through 2011. The representative from the Polish State Geological Institute reported that Poland is also in a very good position geologically sitting over part of Europe's largest sedimentary basin – The Central European Permian-Mezozoic Basin. Saline aquifers in the Polish part of this basin are likely to be good reservoirs for safe CO₂ storage and particularly useful for the needs of large industrial installations. To build on this knowledge and to help confirm actual capacity the Polish Ministry of Environment has launched a four-year (2008-2012) National Programme titled "Actions of the Ministry of Environment for assessment of formations and structures suitable for underground CO₂ geological storage".

The two demonstration projects in Poland are both looking to be operational by 2015. The Belchatow project is a post-combustion advanced amine capture project that will be fitted to the new 858MW lignite fired unit currently being constructed. The project aims to capture around 30% of the emissions from this unit, which is around 2MtCO₂ per year. The Kedzierzyn project is a pre-combustion IGCC project that will also produce syngas to replace the current natural gas feedstock in an existing chemicals plant on the site as well for production of electricity and heat. The project will run on 90% coal in conjunction with 10% condensed biomass and will store around 2.4MtCO₂ per year. The feasibility study for the project has almost been completed. Both projects are now seeking the funding required to progress the project within the tight time scales described; the

European Union funds for CCS are actively being examined. The first (Belchatow) project has been listed in the European Economic Recovery Plan with a final possible support at the level of 180 million euro.

Discussion

Following the presentations there was a discussion with all the participants which looked at the government's position on CCS, the industry perspective, large scale deployment of CCS in Poland, potential funding mechanisms, public acceptance, and international collaboration.

Government perspective

The government's perspective was based around a new report from the Polish Prime minister that looks at energy and climate change in Poland out to 2030. The report was based on consultation with a number of stakeholders in the country and will form the basis of long term development in Poland. Analysis showed that Poland's dependence on its vast lignite and coal reserves will continue for the foreseeable future, so if Poland is going to reduce its CO₂ emissions, CCS will be crucial. However, the report notes that CCS will require large investment and the status of the technology means there will be some uncertainty associated with CCS deployment including the potential for CO₂ leakage. It is also noted that CCS will significantly increase the cost of electricity. The report concludes on CCS by saying that, given the current EC funding and future potential funding mechanisms, Poland has the potential to be a world leader in CCS building on the foundation of the two large scale CCS projects that are currently being developed.

Industry perspective

Following the Government perspective, industry representatives were asked to comment on the priorities for government in regards to CCS. The overarching sentiment coming from industry was that the State must not pose any obstructions to the deployment of CCS but rather provide the legal and regulatory environment to facilitate CCS projects. It was also felt that initially government will also have to provide significant funding to demonstration projects as industry cannot afford to fund projects alone. It was suggested that one potential source of government funding could come from the revenue raised through the auctioning of EU emission trading scheme (ETS) credits. In addition to financial support, industry also saw a need to clarify public procurement law to allow the Belchatow project to spend EU recovery fund before the end of 2010 (as per the funding requirements) and a need for governments to accept the long term liability for the stored CO₂. Ultimately industry felt that government support for CCS needs to recognize the public good that will come from the development of these technologies, particularly in Poland given their dependency on coal and lignite and their consequent potential exposure to an increasing CO₂ price.

Large scale CCS deployment

The next question for discussion was about whether or not Poland had looked into the total potential for CCS in the country and the costs associated with this level of deployment. This analysis was also performed in the 2008 report looking out to 2030 however; this analysis did not include Poland's recently granted derogation which requires its electricity companies to buy only 30% of their emissions rights at auction in the next phase of the EU ETS, instead of 100%. Analysis without

this derogation shows that the costs and impact of CCS on GDP were significant however the derogation should ease some of this impact.

Funding options

The attendees were also asked if Poland had considered applying for a loan from the European Investment Bank (EIB) to help support the development of CCS. The response from industry was that companies need clarity on the post-2012 rules, including which projects will receive the free emission credits under the Polish derogation, before they could consider approaching organisations such as the EIB for loans.

Public acceptance

The next topic for discussion was the current status of public acceptance for CCS in Poland. The start of the discussion focussed primarily on the interaction of Polish industry with the Polish representatives on the European Parliament (EP) and the role that plays in regards to public acceptance of CCS domestically. The opinion of industry was that they have a very good relationship with their EP representatives and that a number of initiatives done in conjunction with the EP representatives were having a positive impact on public acceptance. These initiatives include three conferences on CCS which were well publicised, had media coverage and were well received by the public. Following on from this there was a broader discussion about the belief in industry that government need to be more publically supportive of CCS in order to generate public acceptance. It was noted by industry that in the governments new report looking at energy and climate out to 2030 that deployment of CCS only included two demonstration projects and it was the opinion of industry that this did not show the commitment to the technology that will be required to convince the public of its importance. Industry also expressed a desire for government to be more vocal in support of industry when they announce and discuss planned CCS projects. It was suggested that the British governments programme of helping to part fund initial demonstration projects and their engagement in public awareness about CCS was a good example that the polish government could follow. The Polish government however felt that given the very high costs of CCS as mentioned by the IEA and others, combined with the fact that Poland was in a very unique energy situation with 92% of electricity being derived from coal, that it can be difficult to be enthusiastic about this technology when talking to the public until costs are reduced. It was then noted that the cost of CCS is only high when compared to the business as usual scenario, whereas when placed in the context of the need to reduce CO₂ emissions, the cost of CCS compares very favourably with the costs of other options such as renewables and is more relevant to the Polish circumstances.

International collaboration

The final point of discussion for the day was on Poland's international collaboration on CCS. Poland has already been active internationally in respect to CCS with the EU RECOPOL pilot project, which looked at CO₂ storage in coal seams, taking place in Poland. Poland is also involved in the follow up project, MOVECBM. The Polish government are also looking to become members of the new Global Carbon Capture and Storage Institute (GCCSI) which was recently launched in Australia. The Polish government have also signed a memorandum of understanding on CCS with Italy, possible are MOUs with Japan and the USA institutions, e.g. Carbon Sequestration Leadership Forum or National Energy Technology Laboratories (NETL). There has also been collaboration on a project and its scientific

level of the Bechatow Power Plant who are coordinating there activities with the support of RWE, Mitsubishi and Alstom. The Polish projects will also look to be involved in the EU CCS Projects Network that is being set up by the Norwegian contractor DNV.

Next Steps

The IEA will incorporate these findings into the International CCS Roadmap. The presentations were made public by the Ministry of Economy. The IEA is also exploring ways to expand its outreach and capacity building on CCS in Poland and will be in contact as ideas arise. If the Polish participants have an interest in working with the IEA, please contact Brendan Beck at Brendan.beck@iea.org.