Netherlands Carbon Capture and Storage Related Activities

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Some experiences with CCS in the Netherlands

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Introduction

I would like to thank you as new-comer to the Carbon Sequestration Leadership Forum, for this opportunity to inform the members of the Policy and Technical groups about:

1. Dutch political attention/input, to Carbon Capture and Storage (CCS) and
2. the activities being deployed in the Netherlands

Political attention/input

In the recently published Energy-report of the Ministry of Economic Affairs CCS three goals are set:

1. security of supply
2. environmental quality
3. economic efficiency

In order to improve the environmental quality and security of energy supply CCS is one of ten topics Dutch politics would like to show more leadership on. CCS is an interesting mid term option for a transition towards a sustainable energy-production system, but may not jeopardise the development and stimulation of sustainable energy-production and energy efficiency activities. The Netherlands shows great potential for CCS, due to the amount of (small) depleted gas fields. Through current discussions with the energy sector, a joint vision and approach on CCS is being developed.

A topic we are currently looking at is the introduction of CCS into the European ETS (Emission Trading System). In order to ensure the integrity of the ETS proper monitoring and reporting guidelines have to be developed.

In addition, we are investigating the status of carbon dioxide stored offshore in the North Sea in relation to international agreements made during/at the London Convention and the OSPAR-treaty. The demonstration project currently running is in line with both these agreements but for a long term solution a proper monitoring program, site selection mechanism and management regime have to be set up.

As you can see the Dutch government is acknowledging CCS and looking into the legal aspects and conditions but there are also other activities being deployed which I will outline for you next.

Activities

In 2004 a knowledge network in the Netherlands on CO_2 Capture, Transport and Storage called CATO started (www.uce-uu.nl). In the period 2004-2008 the network will generate the necessary validated knowledge and expertise, investigate the societal and industrial basis in the Netherlands, and create the technological expertise for the possible transition to a clean use of fossil fuels in the Dutch energy economy. Topics which are being researched are:

1. Systems analysis and Transport of CO_2
2. Capture of CO_2
3. Storage of CO_2
4. Mineralization
5. Monitoring, safety and regulation
6. Communication
7. Management and Knowledge transfer

Participants of the project are research institutions such as the Utrecht University, Leiden University, and TNO and companies such as Shell. The programme is financially supported, for 50% (€ 12.7 million), by the Dutch Ministry of Economic Affairs, through its SenterNovem agency, and for 50% by the participating companies and institutions.

As part of the Dutch CRUST (CO_2 Reuse through Underground Storage) program a demonstration project has started, aiming at CO_2 storage in a gas field under the North Sea. Gaz de France Production Nederland B.V. (GPN) captures carbon dioxide during the production of natural gas (which has a high content of CO_2) in stead of emitting it in the air. With an expected rate of 20,000 ton of CO_2 per year, it is re-injected into the gas field (for half a year), enabling, via enhanced gas recovery (EGR) even more natural gas to be produced, and in turn permanently storing the CO2 (www.co2captureandstorage.info/project_specific.php4?project_id=131). The CCS part of the project is financed for 90% by the Dutch government. Besides offshore CO_2 storage the Dutch government received a few initiatives from companies in the energy sector for onshore CO_2 storage. Currently we are reviewing the possibility to start an onshore demonstration project.

On the 7th of September Queen Beatrix initiated use of the pipeline for the OCAP project. This project transfers 300 kton CO_2 from the Shell refinery (in the Botlek) to the horticultural sector. The CO_2 originates from hydrogen production and will be compressed, transported and delivered through a distribution network to approximately 500 market gardners. Because of the uptake of CO_2 by the market gardners the emissions will diminish by 170,000 ton. The distribution network can be extended so more gardners can profit from this CO_2 transfer. Among others, the Ministry of Economic Affairs supports this project financially.

Concluding

The Netherlands is deploying several initiatives on CCS. Not only by gaining knowledge but also by gaining experience from the several demonstration projects. We are interested in discussing the CCS position within the ETS and the Monitoring and Reporting guidelines, the London convention and OSPAR treaty with you and would like to hear about your point of view concerning this topic.