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THEMATIC REPORT

PERMITTING: LESSONS LEARNED IN 2010

A REPORT FROM THE EUROPEAN CCS DEMONSTRATION PROJECT NETWORK

EXPERIENCES AND LESSONS ON PERMITTING LEARNED BY EUROPEAN CCS DEMONSTRATION PROJECTS IN 2010

A report From the European ccs Demonstration Project Network

This report presents an overview of key activities undertaken in the area of permitting and lessons drawn in this area by the six member projects of the European CCS Demonstration Project Network.

In accordance with the Network's knowledge sharing protocol[1], the main purpose of this document is to share experiences with the Network's external stakeholders to help advance take-up of CCS in Europe and beyond. The intended readership includes CCS project managers, communication specialists, technical specialists, policy makers, and the general public with an interest in CCS.

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This document draws on the three reports of the knowledge sharing workshops held in 2010:

- Bilthoven[2]
- Brussels[3]
- Hamburg[4]

that are already in the public domain and summarises the field of CCS permitting in relation to its maturity at the end of that year.

The report was edited by Det Norske Veritas as part of its role as facilitator to the European Commission.

General information on the Network and its members can be found at www.ccsnetwork.eu

1 http://ccsnetwork.eu/uploads/publications/european_ccs_project_network_knowledge_sharing_protocol_final_20100531.pdf

2 http://www.ccsnetwork.eu/uploads/publications/webprintversion-ccsreportbilthoven.pdf

3 http://www.ccsnetwork.eu/uploads/publications/ccs-rapportsecondsharingeventbrussels30-6-10.webversion.pdf

4 http://www.ccsnetwork.eu/uploads/publications/thirdsharingeventhamburg_eccspn(1).pdf

Summary

The six projects are located within the European Union (EU), but in different Member States with different legal and regulatory systems and traditions. Hence the projects are carried out in different legal and regulatory environments. The environment is also heavily influenced by the political attitude towards CCS, which is interlinked with public awareness and/or acceptance of CCS. However, the Network meetings have shown that there are similarities and ways of carrying out permitting processes that are beneficial to share.

The European CCS demonstration projects are currently in the early permitting stages. Key observations from CCS permitting in Europe are that the legal and regulatory frameworks for transport and storage of CCS projects are in progress, but in general not implemented in national legislation. The CCS demonstration projects are among the first CCS projects in Europe and will be instrumental in the practical implementation of the regulatory framework (interpretation and precedent) and in building competence among regulators on regulating CCS projects. The regulatory framework will be further developed, based on experiences and issues identified by the first CCS projects.

In this context it is essential that the project developers take an active role in communicating their needs to the regulators and discuss regulatory approaches and the need for documentation in the permits. To some degree, the project developers will have to contribute to building competence among the regulators.

This report gives an overview and some general observations regarding the status of permitting for the CCS demonstration projects in Europe. Some of the main conclusions that could be drawn on CCS permitting so far are:

- The capture plant appears to be mainly regulated adequately by existing laws and regulations;
- The regulatory framework for transport of CO_2 is currently under development: regulations for transport of CO_2 are expected to be implemented by either amending existing regulations for pipelines or by including transport in new regulations covering transport and storage of CO_2;
- The EU Directive 2009/31/EC on geological storage of carbon dioxide is being transposed in the Member States with 25 June 2011 as the deadline for full transposition;
- The Network members are the front runners and are therefore part of the process for developing the legal and regulatory framework for CCS in Europe and in their Member States;
- CCS is new to both project developers and regulators. There is a need to build experience among all stakeholders to understand CCS projects and the critical issues in these projects;
- There is a strong link between permitting processes and public awareness/acceptance of CCS. Lack of public acceptance for geological storage of CO_2 may delay a CCS project, or even entirely prevent its permitting.

The main challenges identified by the member projects related to permitting of CCS projects in Europe are:

1 Public engagement/acceptance influencing the permitting process;
2 Communication with regulators and stakeholders during the permitting process;
3 Transposition of Directive 2009/31/EC;
4 Several levels of authority bodies (national, regional and local) which may have different viewpoints on CCS;
5 Absence of legislation for geological storage of CO_2;
6 Risk of litigation with landowners (lengthy and costly court proceedings).

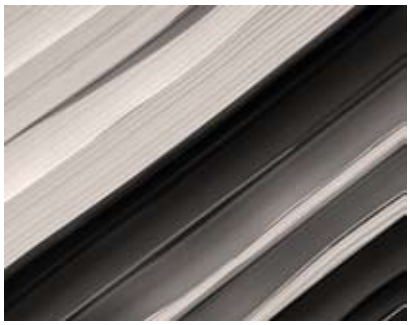
The main challenges related to the regulatory framework will partly be resolved in 2011. The regulatory framework for CCS in Europe will (in most countries) be implemented and the main challenge will be timely permitting of the CCS demonstration projects and interpretation of the legislative framework. In this stage it is important that the CCS demonstration projects actively push the permitting process forward and communicate frequently with the relevant regulators.

The challenges of addressing different levels of authority that may have different viewpoints on CCS may still remain, however, the projects must ensure active involvement with all levels of authority.

The link between successful permitting and public engagement is highly relevant to the projects and will influence the consultation processes that have to be carried out by the project developers. Experiences and lessons learned from public engagement activities will be important in further developments within CCS permitting.

The main challenges that the European CCS demonstration projects will gain experience with during 2011 are:

- Preparing the necessary applications, supporting documents and cooperation with the competent regulators. Experiences of value to other CCS project developers are in particular the expected level of detail in supporting documents and discussions with regulators on acceptance criteria for granting storage permits;
- How to undertake efficient and successful consultation processes and be able to further develop good or best practices for CCS project consultation;
- The interaction between public engagement and permitting needs to be further studied and may provide valuable insights for future project developers.



The expected main developments in the regulatory framework in 2011 are:

- The regulators will further develop their competence on CCS. Building this competence in key Member States is important for efficient permitting processes;
- The European CCS demonstration projects are working towards start-up of the full CCS value chain by the end of 2015. To meet this target it is necessary to have an efficient permitting process in place. The project developers have the main responsibility for the permitting process. The regulators should, as far as possible within the legal framework, accommodate efficient permitting processes for the CCS demonstration projects.

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Introduction

This report is a summary of the inputs from the six member projects of the Network to three knowledge sharing events held during 2010. The content generated during these events has been collated and analysed by DNV as part of its support to the Network.

In a preparatory workshop held in Oslo in December 2009, CCS permitting emerged as one of three themes for knowledge sharing during 2010. This report should be read in conjunction with the corresponding reports on public engagement and risk management.

The main purpose of this document is to summarise the lessons learned by the Network members from the permitting processes so far in their project execution. The target groups for this information are:

1 CCS projects that are not yet members of the Network;
2 Relevant European public authorities and regulators;
3 Developers of regulatory frameworks and processes for CCS in non-EU countries.

The process of sharing information and experiences on CCS permitting in the Network has been considered valuable by the Network members. During three workshops in 2010 the permitting group members have shared and collected their common experiences.

The group has also studied experiences from related industries (coal-fired power plants, gas storage, major infrastructure projects) with permitting processes. These experiences and lessons learned are described in this document. The projects have collected what could be seen as good advice to other CCS projects that are currently starting to develop the Permitting Plan for their projects.

CCS is still in its early stages as a measure to reduce CO_2 emissions. CCS projects are complex with high capital investment and there is no or limited experience with full-scale projects in the industry. The Network member projects are working towards start-up of the full CCS value chain by the end of 2015.

Permitting is identified by the member projects as a challenge mainly due to the current lack of legal and regulatory frameworks for geological storage and due to very limited experience, among industry and regulators, in carrying out permitting processes for CCS projects. There is also a strong link between successful permitting processes and public acceptance for the project. [Public Engagement Thematic Report 2010][5]

This report summarises the experiences and lessons learned from the European CCS demonstration projects on permitting processes including public hearings so far. This content is based on the practical experiences of advanced projects and provides insights into the complex and emerging domain of CCS permitting.

5 http://ccsnetwork.eu/index.php?p=publications#Network

Some of the findings in this report are also based on experiences the project developers have from other major infrastructure projects in the energy industry (power plants, pipelines, transmission grids).

The legal and regulatory framework for CCS is currently under development in the EU. Member States and their regulators are gaining knowledge on how to regulate CCS projects. The Network member projects will be the frontrunners in carrying out projects under the new legal and regulatory regimes for CCS and will also be the first CCS projects that relevant regulators will gain experience from regulating.

Status of permitting for CCS projects in Europe

This section describes the main characteristics of the permitting processes for CCS projects and provides a status overview for each of the projects.

The European CCS Demonstration Project Network members in 2010:

- Bełchatów, Poland
- Compostilla, Spain
- Hatfield, United Kingdom
- Jänschwalde, Germany
- Porto Tolle, Italy
- ROAD, The Netherlands

The tables below give an overview of the main permits for the projects that have been granted and the permit applications that are under preparation as at end-2010.

Bełchatów, Poland

main permits	comments
Granted	
Building permit for the capture plant was approved in February 2010	*Will be updated in 2011 before start-up of construction.*
Under preparation	

Prior to obtaining the building permit for the carbon capture plant the comprehensive Environmental Impact Assessment Study was prepared and submitted to the local authority in order to attain the relevant 'environmental decision' for the carbon capture plant. This environment permit was granted on December 11th, 2009.

Alternative storage sites have been studied according to administrative decisions issued by Polish Ministry of Environment that enable geological and geophysical work within the area of potential storage sites. These decisions were issued in October 2009 and February 2010 according to the existing Polish Mining and Geological Law.

The project is currently studying alternative storage sites and pipeline corridors and the necessary permit applications will be submitted to the relevant regulators by 2012/13.

Transposition of the EU CCS Directive

The EU CCS Directive will be transposed into the Polish Mining and Geological Law. The exploration and storage permits are planned to be issued by the Ministry of Environment. The application for a storage permit will include an Environmental Impact Assessment (EIA) in order to have an 'Environmental Permit' for the storage site. The licensing for a storage site will also have to be agreed with the relevant local authority. The storage site operator will also have to submit a 'Plant Operating Plan' to be approved by the State Mining Authority.

Compostilla, Spain

main permits	comments
Granted	
Storage - Exploration Permit for the Storage CIUDEN pilot project, awarded under the Spanish Mining Law	*Less than 100,000 tonnes of CO_2 per year. Spanish Law 40/2010 on Storage is not applicable*
Storage – Exploration Permits for the "demo commercial storage" awarded under the Spanish Mining Law	*18 months to be adapted to the Spanish Law 40/2010 on Storage*
Under preparation	
Capture - 'Initial Document'	*To start the environmental permitting process*
Capture - Environmental Impact Study	
Storage - Drilling Permits	

The project falls under the authority of the same regulators as for a conventional power plant project. The responsible Ministries are the Ministry of Industry (MITyC) and the Ministry of Environment (MARM). In Spain, the decisions are made at three levels of government issuing permits to the project: national, regional and local.

In general, the Spanish Government is supportive of CCS and this is reflected in the law on geological storage of CO_2[6].

The permits necessary for the capture plant are covered by the current laws and regulations for the energy sector. Based on the permitting processes described in these laws and regulations, it will be challenging to reach the target of start-up of the capture plant by the end of 2015.

6 Law 40/2010 of 29 December, BOE

Transport permits

Standards for CO_2 Transport have to be developed and it is expected that CO_2 pipelines will be regulated by similar laws and regulations as for natural gas pipelines.

Transposition of the EU CCS Directive

The transposition of the EC Directive has been completed. The Spanish law on geological storage (Law 40/2010) is in place. The new law includes a section that will facilitate a more 'efficient' permitting process for CCS projects supported by the EEPR Programme to help them meet their start-up targets.

Hatfield, UK

main permits	comments
Granted	
Consent to construct and operate an IGCC power station pursuant to section 36 of the Electricity Act 1989 and the Town and Country Planning Act 1990, responsible agency: Department of Energy and Climate Change (DECC)	*Granted 5 February 2009*
Water abstraction licence, relevant agency: Environment Agency	*Granted February 2009*
Awaiting Approval or Under Preparation	
Consent to construct an overhead electricity line to connect the power station to the electricity grid, pursuant to Section 37 of the Electricity Act 1989, responsible agency: DECC	*Recommended by local authority to DECC in April 2009*
Environmental Permit in relation to power station emissions (SO_2, NOx etc.), pursuant to the pollution prevention and control regulations, responsible agency: Environment Agency	*Draft application in discussion with the Environment Agency*
CO_2 storage site Agreement for Lease for use of seabed, responsible agency: The Crown Estate (TCE)	*Discussions ongoing with TCE, target resolution Q1 2011*
CO_2 storage site Intrusive Exploration Licence, responsible agency: DECC	*Regulations for offshore storage of CO_2 (licensing etc) came into force on 1 October 2010. Discussions are ongoing with DECC, target resolution Q2 2011*
Development Consent Order in respect of Nationally Significant Infrastructure Project (NSIP), pursuant to the Planning Act 2008, responsible agency: the Major Infrastructure Unit within the Department for Communities and Local Government	*DECC consultation on draft National Policy Statements (NPS) for Energy ongoing. Transportation solution Strategic Options Appraisal Report prepared for engagement with key stakeholders in Q1 2011*

Power Station / CO_2 Capture Facility

The Hatfield pre-combustion capture IGCC power station was granted consent by DECC in February 2009. This is the primary consent required for construction and operation of a power station in the United Kingdom. Related consent has also been given for use of natural gas as a fuel source for power generation. Applications are underway or decisions awaited in relation to pollution prevention and control regulations and in relation to electricity overhead line works.

CO_2 Transportation Infrastructure

Construction of the onshore CO_2 pipeline is deemed a Nationally Significant Infrastructure Project requiring consent pursuant to the Planning Act 2008. Administration of this consenting process is currently being transferred from the Independent Planning Commission (IPC) to the Department for Communities and Local Government and the basis of assessment is by reference to National Policy Statements, drafts of which are currently subject to a second DECC consultation.

CO_2 Storage Site

The Regulations for Offshore Storage of CO_2 (licensing etc) came into force on 1st October 2010. These regulations transpose into UK law aspects of the EU Directive on geological storage. A framework licence structure is identified and the first stage will be a licence to conduct intrusive exploration activities. An Agreement for Lease is also required and the responsible body is The Crown Estate. Discussions with TCE in relation to the Hatfield storage site are at an advanced stage.

Jänschwalde, Germany

main permits	comments
Granted	
Exploration permit Birkholz under Mining Law	*Granted 23 October 2009*
Exploration permit Neutrebbin under Mining Law	*Granted 14 March 2010*
Main operating plan Birkholz under Mining Law	*Granted 28 January 2011*
Under preparation	
Modification permit under § 16 Federal Emissions Control Act for the new power plant block G with an Environmental Impact Assessment and public hearings	*Submission of the application to the Environmental Authority in December 2011*
Water permits for the new power plant block G under Federal Water Act	*Submission of the applications to the Environmental Authority in December 2011*
Special operating plans for seismic surveys, construction of drilling sites and drilling under Mining Law	*Operating plan submitted to the Mining Authority in February 2011, operating plans for drilling will be submitted in 3rd quarter 2011*
Regional planning assessment for the pipeline route with an Environmental Impact Assessment	*Submission of the application to the Conjoint Planning Authority of Berlin and Brandenburg in October 2011*
Operating plans for Enhanced Gas Recovery with CO_2 in the Altmark gas field under Mining Law	*Submitted to the Mining Authority in November 2007*

Transposition of the EU CCS Directive

The Federal Ministry of Environment and the Federal Ministry of Economy are responsible for the transposition of the EU Directive 2009/31/EC into German law. The first CCS draft law from spring 2009 was abandoned by the Parliament due to lack of public acceptance for geological storage of CO_2. The new draft law from February 2011 is subject to discussions between the Federal States and the Federal Government and will come into force by the end of 2011.

The Jänschwalde capture plant will be regulated by the Federal Emissions Control Act and Federal Water Law. The CCS law will contain special regulations for transport and storage of CO_2.

Currently there is no legal basis for transport and storage of CO_2 in Germany, although existing laws and regulations are to some degree applicable for CCS projects. Explorations of saline aquifers may be executed on the basis of Mining Law (exploration permits for brine), as well as permits for the application of enhanced oil/gas recovery. For the transport of CO_2 some existing regulations for natural gas pipelines may be applied. The capture part is covered by existing laws and regulations - the Federal Emission Control Act and the Federal Water Act.

The Jänschwalde project has been granted permits for exploration and seismic activities based on existing laws and regulations.

Porto Tolle, Italy

main permits	comments
Granted	
Application for a Permit to construct and operate a coal- fired power plant at Porto Tolle submitted in May 2005.	*Permit was expected to be granted in 2010.*
Environmental Authorisation for the power plant issued July 2009	
IPPC authorisation: The final Conference of Services was held on 27 January 2011.	*IPPC authorisation expected to be issued by February 2011.*

The Ministry of Economic Development and Ministry of Environment are responsible for CCS and transposition of the EU Directive on geological storage. The project will be regulated by national (central), regional and local authorities.

In the permitting process for the Porto Tolle power plant, approximately 30 authorities have been involved.

Transposition of the EU Directive

The regulatory framework for storage is under development. The Italian Government has drafted a Decree to transpose the 2009/31/EC Directive on geological storage of CO_2 and has initiated a consultation process. The CCS Porto Tolle project (Enel and ENI) is part of this consultation process.

The draft Decree will cover geological storage of CO_2, but not transport and the capture plant. Geological storage will also be regulated by Legislative Decree 152/06 following amendments on environmental issues.

ROAD, The Netherlands

main permits	comments
Granted	
No permit applications submitted formally	*Date of application to be decided by management board*
Under preparation	*Comments*
EIA completed. Draft version submitted and discussed with authorities.	
Main permit application documents completed. Draft versions submitted and discussed with authorities.	
Decision will be taken by management board on when to submit the permit application.	

The Ministry of Economic Affairs is responsible for regulating CCS in The Netherlands.

The permitting process for the project can be divided in four steps:

1 *Overview of procedures:* establish an overview of formal procedures, the relevant authorities and planning of the permitting process (permits, including conditions for EIA and spatial planning)

2 *Preparing the documents*: draft versions prepared by the companies. Drafts reviewed by the authorities to make sure the documents meet all requirements.

3 *Formal procedures:* the authorities, including a national EIA committee, consider all submitted requests and after public consultation decide on the permit conditions.

4 *Legal procedures*: even after permits have been granted, legal procedure can be started against the project. Court procedures may take a long time and their outcomes are hard to predict. After final judgement the FID (Financial Investment Decision) can be taken. The schedule for the legal procedures is not clear.

The ROAD project is currently at a stage where it is establishing an overview of permitting procedures relevant to the project. This is the first stage in the permitting process for the project.

The project has proposed to the Ministry of Economic Affairs that it has nationwide implications and that the permitting process should be co-ordinated by a national (central) regulatory body (called '*Rijkscoordinatieregeling*').

The Ministry of Economic Affairs has agreed that the transport and storage part of the project could be co-ordinated on a national level. However, the capture plant was not included in this procedure and will have to follow the ordinary permitting processes (without national co-ordination).

It is challenging for the ROAD project to carry out the permitting process to meet the scheduled start-up of the full CCS value chain by the end of 2015. To meet this target it is necessary that the permitting process runs smoothly and that the permits are granted as soon as possible.

An opportunity for the ROAD project is to obtain a provisional permit for the capture plant. However, all risk of changes associated with the final permit will be borne by the project.

Transposition of the EU CCS Directive

There are currently no CCS laws and regulations implemented in The Netherlands and the ROAD project is waiting for the transposition of the EU Directive for geological storage of CO_2.

Lessons learned so far

From the progress made on the permitting of CCS demonstration projects in Europe in 2010, it has been possible to derive a number of valuable lessons. These lessons should be understood by both projects and competent authorities working towards the permitting of CCS projects in Europe and worldwide. There are of course differences between CCS projects and between the legal and regulatory framework of EU Member States. Furthermore, each CCS project will be required to develop its own unique Permitting Plan. The advice that is presented below is therefore based on the experiences of the members of the European CCS Demonstration Project Network and can be used as input in developing such a Plan.

The lessons learned are categorised as follows and presented below:

I. General advice for project developers
II. Recommended practices for both projects and developers
III. Recommended practices for project developers engaging in the consultation processes

The advice and practices are mainly aimed at project developers, supporting them with guidance on the permitting process.

General advice for project developers[7]

1 Ignoring stakeholders can delay the process: Project developers should ensure that all potential stakeholders are heard and communicated with;
- In Germany the Ministry of Economy in Brandenburg has set up a CCS Committee to involve relevant stakeholders (including politicians, environmental NGOs, Vattenfall etc). This Committee has been a good platform for stakeholder groups to discuss relevant issues regarding the CCS project and it seems to be effective in driving the process forward.

2 Under-estimating the influence of the local community is likely to cause delays: the local community has substantial influence on the permitting process and should be properly consulted early in the project development;
- In Germany, local protests led to deferral of the CCS legislation;

3 Delays can be caused if inter-organisational relationships break down through changes in personnel. Project developers should ensure continuity of key people in the organisational structure. This is important for keeping continuation in the interaction with regulators and stakeholders throughout the permitting process;

4 A focus on technical specifications will ignore other stakeholder concerns and potentially create tensions. During the permitting process and in particular when handling public consultations, it is important to remember the holistic approach: ensure your plans are broader than just the technical issues. If stakeholders only hear a developer's preferred option, they may seek reassurance that other options have been considered and may request additional consultations. Prepare and present alternatives to stakeholders early in the project planning stages;
- In the UK the early presentation of 'strategic options' is encouraged e.g. to demonstrate the relative merits of different transportation methods (road/rail/ship/pipeline etc.).

5 Being reactive rather than proactive can create significant tensions for meeting already tight deadlines. The project developers should map potential project challenges and solutions to these challenges;

6 If project developers are not transparent then they will be challenged from several different stakeholder perspectives: be open, honest and flexible in the dialogue with stakeholders;

7 There is a risk that the permitting process takes longer than was expected. Prepare for a longer permitting process than initially planned This is the experience from other infrastructure projects in the energy sector;

8 Not considering the needs of landowners can cause delays: develop a framework to facilitate discussions with landowners. Try to ascertain the status of public investment to help inform landowners;

7 These notes are not in any hierarchical order

- In the UK and Germany it is expected that some landowner engagement processes that are used for natural gas pipelines or electricity lines will be applicable for CCS projects.

9 Not understanding the permitting process can cause delays and tensions between developers and regulators: understand the planning process as fully and as early as possible. This is critical to developing the Permitting Plan for the project and to carry out an efficient permitting process;

10 If the region or local community have been recently exposed to other large infrastructure projects, an additional infrastructure project may meet with more resistance. The public acceptance and the permitting process for a CCS project may be influenced by other major infrastructure projects, i.e. transmission grids, road/railway or industrial plants that have or are being carried out in the region or locally. The project developer should anticipate the potential impact on the permitting process from such developments;

11 Not having access to the right information at the right time can cause delays. The project developer should ensure that an effective knowledge management system is established. It is important that procedures and agreements are known and available for examination during the life-time of the project.

Recommended practices for both projects and regulators

1 Not relaying needs from either developers or regulators will cause delays and challenge relationships. The project developers should openly communicate project needs to the authorities as early as possible, especially when no legislation is in place;

- In the UK the status of the Hatfield project as an EEPR competition winner has enabled the Crown Estate to consider granting a storage lease;
- In Spain the national authority has proposed amendments to energy legislation to facilitate a more efficient permitting process for the CCS demonstration projects (to meet the 2015-2020 deadlines).

2 Not understanding the different regulatory roles can cause frustrations in knowing who to talk to: build regulatory competence in the CCS project organisation. It is important to understand 'who does what' in the various regulatory institutions and to identify the decision-making authorities during the permitting process. In a situation with a lack of relevant laws and regulations or with limited experience from such processes this is of particular importance;

3 Waiting to involve some authorities may cause developers to only understand those needs at a stage where it necessitates changes to processes. Involve local and regional authorities early in the project to inform and clarify the permitting processes. It is also important to present the project plans and to openly discuss the permitting process. Project developers should involve local authorities in the early stages of the project development with the aim of identifying common interests and benefits to the local communities that could be further developed. This is in the interests of the authorities and the project developer;

4 Incomplete documentation will create delays: the project developer should make sure that permit applications and supporting documentation presented to the regulators are complete, well structured (easy to understand) and consistent. This is to ensure an efficient permitting process. Early and open communication with regulators on these issues will help the project developer to understand the expectations and needs of the regulators and thus avoid delays in granting of permits due to lack of documentation or clarity in submitted documents;

5 Election periods can cause uncertainty and ignoring the political agenda can cause problems at a later stage. During election campaigns there could be heated political debates and there is a risk that decisions are based more on feelings than facts. In planning the permitting process project developers should try to steer clear of making applications, carrying out consultations or taking critical project decisions during election campaigns.

- If possible, consultation processes should be suspended until election campaigns have finished;
- There is a need to communicate with all political parties (in power and in opposition) so that if government changes, key position holders are already well informed about the CCS project.

6 A lack of legal compliance can undermine the permitting process: the project developer should make sure that the project complies with the permitting process from a legal perspective. Ensuring compliance with laws and regulations is the main objective of the project Permitting Plan. However, compliance is challenging when the legal framework is still under development;

7 Not demonstrating the project in its wider context can result in narrowing the perception of its benefits: it is important to communicate that CCS is a joint action with the EC, government and industry.

- Take opportunities to participate in wider energy policy debates and to emphasise the positive role of CCS. For example, in the UK, National Grid contributes to various EU and DECC consultations e.g. EU Energy Infrastructure Package and DECC's 2050 Pathways consultation;
- In Spain, CIUDEN presents news on progress of the Technical Development Plants (TDPs) for capture and storage within the EU project (radio, regional TV and TVE, web, local newspapers and special supplements in "El Pais" journal).

Recommended practices for project developers engaging in the consultation processes

1 Not managing public relationships proactively can result in a lack of acceptance of the project. Public acceptance for CCS will influence the permitting process and there has to be close cooperation between the project permitting and public outreach teams;

- The ROAD and Compostilla projects organise campaigns (2-3 times/year) to involve NGOs, environmentalists, citizens, local press, TV, town hall, technicians (plants involved);

- Vattenfall established an information office in the potential storage area and the Government of Brandenburg set up a committee as a consultation body for the stakeholders.

2 It is important to avoid situations where any group of stakeholders feel that they have been left out of the consultation process: in the planning stages the project developer should undertake a stakeholder assessment of the project location. The stakeholder assessment provides input to the permitting process and in particular to the consultation process;

- The ROAD project approached the identification of stakeholders for power plants on a project to project case.

3 Not valuing and involving stakeholders may lead to resistance: project developers should make stakeholders feel involved and that they may have an impact on the project;

- The ROAD project sent letters of invitation and arranged face-to-face meetings with all stakeholders to explain the whole CCS chain;
- The Compostilla project participated in debate on regional TV and arranged visits to the sites of the CCS installations;
- The Scottish Government held a workshop on CCS permitting processes with all relevant stakeholders;

4 In the permitting and consultation process the project developers should be aware that personal relationships with the different stakeholders may help in undertaking an efficient process. These relationships may develop over time when working with the project.

5 Not understanding the potential benefits for different stakeholders may result in resistance: identify and communicate project benefits to the local communities. It is important for the project developer to understand what kinds of benefits are expected by the local community. Point out employment opportunities that the CCS projects could bring;

- The Compostilla project highlights that benefits of the CCS projects include employment opportunities and a way to continue using domestic coal in a clean process.
- The ROAD project contributes to the Rotterdam Climate Initiative.

6 Provide written answers as part of public consultation: include questions and answers (Q&A) in consultation documents;

- The ROAD project has used Q&A with multiple choice to address the general public (2010)
- The Spanish Technology Platform for CO_2 (PTE CO_2) prepared a Q&A that was sent to the main stakeholders

7 Not understanding the history of any previous consultation process locally may hamper a project in its initial relationships with stakeholders. Undertake analysis of previous public acceptance issues locally, regionally and nationally to anticipate possible challenging issues;

- In The Netherlands there are experiences with CCS projects in Barendrecht and Groningen. For both projects the public was invited to a conference with the operator. However, both these projects experienced bad results from weak consultation processes. It should be realised that introduction of new technology requires extensive informative communication.

8 Without parallel involvement from a range of interested bodies, the developer might appear to be the sole beneficiary of the project. Other stakeholders (politicians, experts and local communities) than the project team should be involved in information campaigns;

- The ROAD project (and other projects) has arranged site visits and face-to-face meetings with local, regional and national authorities and central government.

Conclusions

This document offers a progress report of the current level of knowledge and experience with CCS permitting in the EU.

There is a clear interface with project risk management issues and public engagement activities. Permitting should not be seen as an activity in isolation from these two other key issues.

Both project developers and regulators are in the early stages of building their own knowledge bases and have a lot to learn from each other.

In 2011 CCS demonstration projects worldwide will move forward and legal and regulatory frameworks for geological storage of CO_2 will be defined and implemented. European CCS projects will enter a stage where they initiate the process of obtaining permits, for example, exploration and storage permits and building permits for capture plants.

In the coming years experiences will be gained from both CCS project developers and regulators on carrying out projects in accordance with the new regulatory framework. There will be a phase of regulatory competence building for projects and regulators.

The main challenges that the European CCS demonstration projects will gain experience with during 2011 include:

- Practical experience with preparing the necessary applications and supporting documents, and cooperation with the competent regulators. Experiences of value to other CCS project developers are in particular the expected level of detail in supporting documents and discussions with regulators on acceptance criteria for granting storage permits.
- The projects will gain more experience with how to carry out efficient and successful consultation processes and will be able to further develop good or best practices for CCS project consultation.
- The interaction between public engagement and permitting needs to be further studied and may provide valuable insights to future project developers.

The expected main developments in the regulatory framework in 2011 are:

- The regulators will further develop their regulatory competence on CCS. Building this competence in key Member States is important for efficient permitting processes.
- The European CCS demonstration projects are working towards start-up of the full CCS value chain by the end of 2015. To meet this target it is necessary to have an efficient permitting process. The project developers have the main responsibility for the permitting process. However, the regulators should as far as possible within the legal framework accommodate efficient permitting processes for the CCS demonstration projects.

The European CCS Demonstration Project Network will continue to work with these issues in 2011 and present the results in the next thematic report on permitting.

Annex: Methodology

The experiences and lessons learned that are described in this document have been collected and developed through three workshops during 2010.

Workshops in 2010 were held on either EC or DNV premises:

- 28-29 April, Bilthoven, The Netherlands
- 30 June, Brussels, Belgium
- 6 October, Hamburg, Germany

DNV has prepared a discussion paper and meeting minutes for each of the workshops, all available on the Network website. The methodology has been to facilitate structured group work that generates outputs, which inform the next workshop.

DNV has contributed desk research and the group has also benefitted from input from Star Energy in the UK. Each meeting has focussed on sharing information on the recent developments and challenges each project faces in the permitting process. The first meeting focused on what the projects see as the main challenges and opportunities within permitting. The second meeting was dedicated to sharing experiences with permitting from infrastructure projects (other than CCS) where the members' companies have been involved. In the third meeting the experiences and lessons learned from the two previous workshops were summarised and further elaborated with project-specific examples.