



THEMATIC REPORT

public engagement: Lessons Learned in 2010



A report from the European
CCS demonstration project
network





PUBLIC ENGAGEMENT: THEMATIC REPORT 2010

A report from the European CCS Demonstration Project Network

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

In accordance with the Network's knowledge sharing protocol¹, the main purpose of this document is to share experiences with the Network's external stakeholders in order to help advance take-up of CCS in Europe and beyond. The intended readership includes CCS project managers, CCS communication specialists, CCS policy makers and the general public with an interest in CCS.

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

General information on the Network and its members can be found at <http://www.ccsnetwork.eu>



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



Summary

In 2010, public engagement has been a key theme for the membership of the European CCS Demonstration Project Network. This report presents an overview of the results of knowledge sharing in this important area for CCS.

Using the structure of the *National Energy Technology Laboratory (NETL) best practice guide for Public Outreach and Education for Carbon Storage Projects*, the Network members have jointly developed a record of their main communications activities and have also generated a series of lessons learned that can be summarised as follows:

- Across Europe, 6 project teams have ensured that their interfaces with stakeholders are managed at the highest project level and with the help of communications professionals, key messages have been developed and supported by a wide variety of materials. It is generally felt that development of and engagement in dialogue, especially with local stakeholders is to be preferred above one-sided dissemination of ‘corporate’ project information. This is especially true for those projects who foresee on-shore storage of CO₂: e.g. the Jämschwalde project has developed interesting approaches in this area.
- A number of Network member projects have felt growing opposition against their activities and have invested in local, tailored and two-way communication with the aim of establishing a platform for voicing concerns and clear channels to respond to those. What is particularly important is the involvement of third parties in the dialogue, especially government and the research community. The Belchatów project is an example of a project that aims to be inclusive of those third-party voices.
- Some thorough work has been undertaken in mapping stakeholders. For example, the Compostilla project, through its partner Ciuden, has build detailed profiles of the local context and the ROAD project has applied force-field analysis to better understand their stakeholders.
- It is interesting to see that CCS public engagement activities are seen as part of a wider corporate communication strategy. For instance, Enel, as a lead partner in the Porto Tolle project, sees that corporate educational programmes are a key part of advancing public understanding of climate change problems in general and solutions packages in particular.
- All projects have had key messages developed and have internally shared crib sheets with questions and answers, to facilitate univocal communication by project staff on the project. For example, the ROAD project is using a map of arguments in support of and argument in opposition of CCS.

All member projects have set up plans for continued public engagement in 2011 and beyond. An update report on these activities will be developed towards the end of 2011.







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Introduction

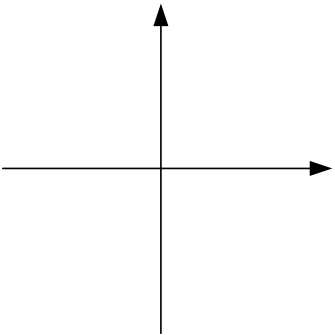
In December 2009, a preparatory Network workshop² was held with participation of CCS demonstration project proponents from across Europe. From this workshop, public engagement emerged as one of three priority themes for knowledge sharing within the Network during 2010. The other themes identified were permitting and risk management, for which 2010 Activity and Lessons Learned reports have been prepared separately.

It is generally agreed that public acceptance is key to successful permitting, financing, delivery and operation of CCS demonstration projects. Given the relatively low levels of public understanding³ towards CCS technology, geological storage of CO₂, contribution of CCS to abating climate change and the climate problem in general, it is key for CCS project developers to engage the general public early, frequently, consistently and truthfully.

An important part of such engagements is the challenging task of communicating- and educating the public about the risks related to CCS. Whereas analysts and risk experts tend to employ quantitative risk assessments to methodically evaluate hazards, the majority of citizens rely on intuitive risk judgments, called 'risk perceptions'. Substantial research effort has been aimed at investigating why certain phenomena tend to be perceived as more hazardous than others. Regrettably, there does not seem to be any straightforward answers to this. However, two factors have been consistently shown to be strongly related to lay people's risk perceptions (figure 1).

Dread factor, characterized by

- Perceived lack of control with the activity
- Fatal and catastrophic potential from accidents
- Uneven distribution of risks and benefits



Known / unknown factor, characterized by

- Hazards difficult to observe
- Activities or technologies that are new to science
- Delayed manifestation of harmful consequences (long term effects)

Figure 1. Factors important to lay people's risk perceptions (the higher the score on each factor, the more risky a hazard is perceived to be).



A challenge when communicating about CCS and striving for public acceptance may be that CCS projects tend to possess several of the ingredients described above: it is regarded a new technology and people do not necessarily trust experts' claims that it's safe.

² http://ccsnetwork.eu/uploads/publications/ccs_network_preparatory_event_report.pdf

³ Public Perceptions of CCS: the results of NearCO₂ European Focus Groups, Paul Upham and Thomas Roberts, NearCO₂ research project, November 2010

(http://www.communicationnearco2.eu/fileadmin/communicationnearco2/user/docs/Near_CO2_WP4_report_final.pdf)





Furthermore, the distribution of risks and benefits are bound to be perceived as uneven (since some people must be the ones living closest to a storage site). Finally, the hazard of a leak is difficult to observe for ordinary people.

Also, risks may be amplified through social mechanisms. An accident may be followed by relatively little societal disturbance if it occurs as part of a familiar and well-understood system (e.g. a train accident). However, a small incident in an unfamiliar system (e.g. in a nuclear waste repository, a gentechology or nanotechnology lab), may be greatly amplified if interpreted as a signpost to future hazards that could possibly endanger later generations⁴. These small accidents or incidents within unfamiliar systems are likely to be highly publicised and thus contributing to the dread factor.

Hence people are likely to be sceptical and raise their guard by default when CCS is introduced. Even talks about doing “pilots” with such a technology may be unacceptable to some people. This further supports the need for a systematic, knowledge based, approach when working to gain public acceptance for CCS. This report is intended to provide a contribution to that aim by presenting an overview of public engagement activities undertaken by Network member projects and their reflections thereon.

Public engagement: the theme within the Network

In 2010, three workshops⁵ on public engagement were held for the mutual sharing of public engagement strategies between the large-scale CCS demonstration projects in Europe and for the development of new insights. Each workshop provided room for updates on progress and contributions from and interactions with external speakers, notably the Barendrecht CCS project experience by Shell, lessons from risk perception research by DNV, an overview of public CCS perception survey results and a stakeholder mapping example, the latter two by the Netherlands Energy Research Centre (ECN).

Apart from the workshops, a web-based facility has been used to pull together documentation and links from across the globe, in order to provide a gateway to valuable resources on public engagement for project proponents.

A framework for sharing

The sharing and discussion of project-specific public communication experiences and strategies within the Network has been informed by a ten-point structure as presented below. These headings are derived from the National Energy Technology Laboratory (NETL) best practice guide for Public Outreach and Education for Carbon Storage Projects⁶. Good practice suggestions in the NETL report have been used as a basis for comparing and contrasting project activities and experiences. It is anticipated that the use of this common structure can advance the development of a global knowledge base in this area.

4 Slovic, P., Weber, Elke U., Perception of Risk Posed by Extreme Events, Discussion Paper, “Risk Management strategies in an Uncertain World,” Palisades, New York, April 12-13, 2002.
5 Reports on these workshops can be found here: <http://ccsnetwork.eu/index.php?p=publications#Event Report>
6 http://www.netl.doe.gov/technologies/carbon_seq/refshelf/BPM_PublicOutreach.pdf





SUGGESTED GOOD PRACTICE	PROJECT SPECIFIC IMPLEMENTATION	PROJECT LESSONS LEARNED AND RECOMMENDATIONS
1 Integrate Public Outreach into Project management		
2 Establish a strong outreach team		
3 Identify key stakeholders		
4 Conduct and apply social characterisation		
5 Develop an outreach strategy and communication plan		
6 Develop key messages		
7 Develop outreach material tailored to audience		
8 Actively oversee the outreach throughout the life of the CO ₂ storage project.		
9 Monitor the performance of the program and changes in public perceptions and concerns		
10 Be flexible, refine the outreach program as warranted		

Table 1: suggested good practices table structure

Furthermore, a series of records of selected public engagement activities was developed, using a simple structure:

NAME OF ACTIVITY	PURPOSE OF ACTIVITY
Target group for engagement activity	
Form of engagement activity	
Cooperating partners	
Effect of engagement activity	
Communications material used	
Lessons learned and would this activity be repeated	
Time and resources committed	
Decision making process	
Uploads of relevant material (if any)	



This report presents the main findings for each of the projects against the NETL structure, a few selected public engagement activities and offers some generic recommendations based on the collective experience gained in public engagement.





Bełchatów

Introduction

The Bełchatów CCS Project is located in Poland, in the Łódź province (in the centre of Poland), near the Rogowiec village, 180 km south-west of Warsaw - Poland's capital city.

The Bełchatów CCS installation will be integrated with the new 858 MW power unit which is in the last phase of construction. This unit is located within the area mentioned above and in the immediate neighbourhood of existing assets of the Bełchatów Power Plant complex (12 other 370 MW units).

Three potential storage sites have been identified from the various studies and analyses: the Budziszewice, Wojszyce, and Lutomiersk-Tuszyn structures. The Budziszewice structure (consisting of the Justynów-Zaosie anticline) is located about 60 km NE of Bełchatów (and SE of Łódź). The Wojszyce structure near Kutno town, located about 115 km from Bełchatów. The Lutomiersk-Tuszyn, structure (consisting of three anticlinal sub-elevations Lutomiersk, Pabianice and Tuszyn) is located between 45 and 60 km north of the Bełchatów plant.

Once the final site has been selected (expected by the end of 2011), the detailed routing and permitting work will be performed with an expected permit in place for the final route of the pipeline.

The strategic impact of public understanding and acceptance of the CCS concept is substantial, as it enables widespread CCS commercialisation. Currently, all outreach activities are focused on realisation of an information campaign for the first phase of the storage component - site selection - and stresses the safety of geological storage.

Public engagement activities and lessons learned

1 Integration of public outreach in project management

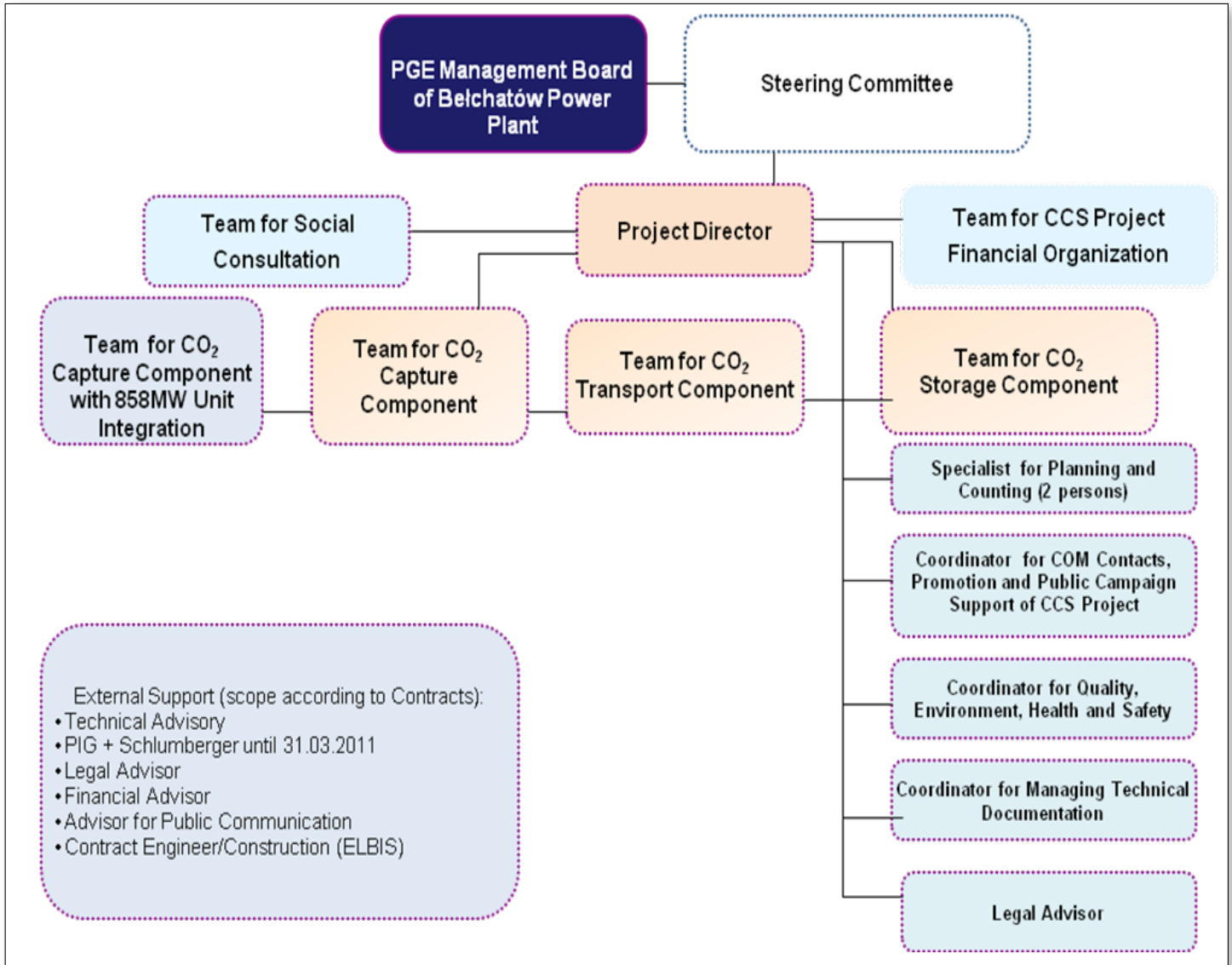
The outreach organisational unit (known as the team for social consultation) is a part of the PGE GiEK SA CCS Project organisation. The team develops and executes a public consultation campaign with respect to the CCS Project by developing a public awareness and consultation strategy and scheduling public awareness and public consultation activities. Within this team, 4 persons are dedicated to the outreach activities. Moreover, the team strongly cooperates with Public Relations department within the PGE GiEK SA organisation, particularly in developing the strategy and developing and maintaining contacts with mass media.



The organisational chart for the CCS Project team

In order to achieve public acceptance for the CCS Project, PGE GiEK SA is cooperating with the Ministry of the Environment, the Ministry of Economy, the Polish Geological Institute, the Technical University of Lodz, the Mineral Resources Management Institute and the mass media.





2 Establish a strong outreach team

The Belchatów team for social consultation strongly cooperates with the Project's technical team to absorb the technical knowledge and thereby being able to provide sound information to all stakeholders.

PGE GiEK SA representatives have also taken part in TV debates, radio programmes and interviews with journalists, covering various CCS-related topics.

With regard to public awareness, the CCS Project team has organised an information campaign about geological storage of CO₂. At the initiative of the CCS Project team, meetings have been organised at the regional and local level with local authorities and communities. Specifically, these included the following:

- Meeting with the Marshal's Office in Lodz on 18.09.2009
- Meeting with the Pabianice district on 27.10.2009
- Meeting with the Kutno District and Krzyżanów Mayor on 2.12.2009







- Meeting with Land Use Planning Office in Lodz on 4.12.2009
- Meeting with Lutomiersk Commune on 19.01.2010
- Workshops for regional and local authorities on 10.02.2010
- Dłutów Commune on 31.03.2010
- Meeting in the Pabianice Commune Head Office on 7.04.2010
- Meeting in Pawlikowice Commune on 9.04.2010
- Meeting in Bychlew Commune on 13.04.2010
- Consultative meeting in Krzyżanów commune (Wojszyce structure) organised by external PR company on 10.06.2010
- Meetings with authorities responsible for the geological research structure within the limits of Lutomiersk-Tuszyn geological structure as a result of changing the structure location in July and August 2010



The meetings mentioned above addressed CCS technology and its role in combating climate change, especially in countries such as Poland, utilising coal and other fossil fuels for heat and electricity generation. Furthermore, the Bełchatów CCS Project implementation was covered with particular attention to the safety of geological examinations of the storage sites.



Moreover, from September to the end of August 2010, the outreach team delivered the external public engagement campaign in relation to the phase I site examination work to those communities where these examinations and tests were proceeding.

The external public engagement campaign

Additional meetings have been planned in areas where the geological examination programme is active or where it will be initiated. Moreover, the CCS Project team has prepared and distributed brochures and leaflets regarding the CCS technology, the PGE GiEK SA CCS Project and the geological examination works, including a Q&A overview that provides answers frequently asked questions concerning CCS.



3 Identification of key stakeholders

In 2009, the CCS team developed the short and long term schedule of public outreach activities. Target groups identified at the national government level are the Ministry of the Environment, the Ministry of Economy, the Chief National Geologist, but the project has mainly focused on local authorities and those communities where geological examination and tests are ongoing.

4 Conduct and apply social characterisation

At the beginning, the outreach team characterised the main groups of stakeholders, to whom Project information should be addressed. In order to better understand the opinions of stakeholders and the local communities in particular, PGE GiEK SA hired an external PR company in August 2010 to prepare social group characterisations.

5 Development of an outreach strategy and communication plan

The basic communication action schedule and scope was developed by the outreach team but it is to be adjusted together with the PR company.







6 Development of key messages

This topic is partly realised in 2010, i.e. several areas are covered in communication. Some basic areas like general role of CO₂ in global warming are discussed during the meetings with local communities but some communities' representatives are not convinced that global warming caused by CO₂ emission really exists.

7 Development outreach materials tailored to the audiences

Materials distributed so far are rather general and not really tailored for particular audiences. New materials are hoped to be prepared in cooperation with the external PR company.

During all meetings, the outreach team has distributed a Polish version of the 'CO₂GeoNet European Network of Excellence' brochure, informative CCS PGE GiEK SA leaflets and a brochure prepared by the Project's Seismic 2D contractor, addressing Questions & Answers geological storage of CO₂.

KALENDARZUM ZDARZENI

14 lipiec 2009	Złożenie aplikacji w celu pozyskania środków w ramach Europejskiego Programu Inicjatyw Gospodarczych (ERDF) na realizację projektu "Plan for Recovery - EPRP"
23 październik 2009	Złożenie w gminie Kleszczów deklaracji o poddaniu się wdrożeniu projektu CCS w ramach Programu Inicjatyw Gospodarczych (ERDF) na realizację projektu "Plan for Recovery - EPRP"
2 listopada 2009	Podpisanie z Kłosem Górnym Capture and Storage (GCS) z firmą Front End Engineering and Design (FEED) dla instalacji wychwytywania i składowania dwutlenku węgla (CCS) w celu opracowania dokumentacji niezbędnej do uzyskania pozwolenia na budowę dla instalacji CCS oraz dokumentacji, w tym specyfikacji technicznych urządzeń instalacji oraz wymagalnych kosztów inwestycyjnych
11 grudnia 2009	Decyzja o środowiskowych uwarunkowaniach dla instalacji demonstracyjnej wychwytywania i składowania dwutlenku węgla w ramach Programu Inicjatyw Gospodarczych (ERDF) na realizację projektu "Plan for Recovery - EPRP"
31 grudnia 2009	Złożenie w Starostwie Belchatowskim wniosku o pozwolenie na budowę wraz z niezbędną dokumentacją dotyczącą instalacji demonstracyjnej wychwytywania i składowania dwutlenku węgla

HAJMONOGRAM REALIZACJI PROJEKTU CCS

I. Wychwytywanie	
► pozwolenie na budowę	lutym/marcem 2010 r.
► zakończenie budowy	styczeń 2014 r.
► gotowość do rozruchu	grudzień 2014 r.
II. Transport	
► pozwolenie na budowę	sierpień 2013 r.
► zakończenie budowy składowiska	grudzień 2014 r.
III. Składowanie	
► wybór miejsca składowania	grudzień 2010 r.
► decyzja samostanowa o wydaniu pozwolenia i rozpoczęcie budowy składowiska	grudzień 2012 r.
► wydanie decyzji o rozporządzeniu	grudzień 2014 r.
► zakończenie procesu optymalizacji i oddanie końcowej instalacji CCS	grudzień 2015 r.

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Prace prowadzone są zgodnie ze światowymi standardami przy zachowaniu wysokich wymagań ochrony środowiska naturalnego oraz poszanowania wszelkiej własności. Badania są realizowane w oparciu o ustawę Prawo górnicze i geologiczne z dnia 4 lutego 1994 z późniejszymi zmianami.

Kierując się filozofią przyjazną środowisku, Geofizyka Toruń poświęca się ochronie oraz propagowaniu bezpieczeństwa, zdrowia i ogólnego dobra ludzi oraz środowiska (HSE). W tym celu, nieustannie rozwija zintegrowane zarządzanie oparte o międzynarodowe normy ISO 9001, ISO 14001 oraz polską normę PN-N 18001.

DODATKOWE INFORMACJE NA TEMAT PROWADZONYCH PRAC W ASPEKcie REALIZOWANEGO PROJEKTU „LUTOMIERSK” MOGĄ PAŃSTWO UZYSKAĆ W SIEDZIBIE GRUPY SEISMICZNEJ.

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Grupa Seismiczna P-63
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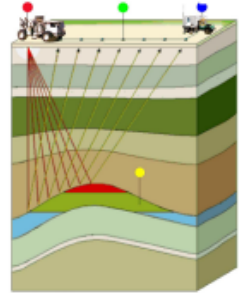


**Informacja
w sprawie prowadzonych prac geologiczno –
poszukiwawczych metodą sejsmiczną**

Geofizyka Toruń Sp. z o.o. wchodząca w skład grupy kapitałowej PGNiG na zlecenie PGE Elektrociepłowni Belchatów SA i pod patronatem Państwowego Instytutu Geologicznego prowadzi badania sejsmiczne w obrębie obszaru pomiędzy Poddębicami, Piotrkowem Trybunalskim, Tomaszowem Mazowieckim, Łowiczem i Kutnem.

Badania sejsmiczne są szeroko stosowanymi bezinwazyjnymi pomiarami geofizycznymi prowadzonymi w celu rozpoznania geologicznej budowy ziemi. Prowadzone są dla celów naukowo- badawczych jak również dla celów poszukiwawczych.

Wzbudzenie fal sejsmicznych
Geofony (odbiorniki)
Rejestracja danych sejsmicznych



STADIUM 40 0000000

Prace sejsmiczne wykonywane przez Geofizykę Toruń Sp. z o.o. polegają na wysłaniu do ziemi fal sejsmicznych, generowanych za pomocą zestawu specjalnych maszyn samobieżnych (wibratorów sejsmicznych), które następnie odbijają się od granic warstw geologicznych.

Pomiar czasu wpływającego od wysłania fali do powrotu na powierzchnię fali odbitych, po odpowiedniej obróbce komputerowej i interpretacji uzyskanych danych, pozwala rozpoznać budowę geologiczną badanego regionu.

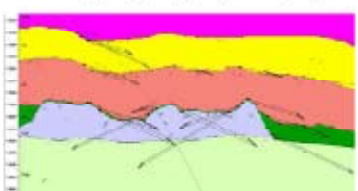


Fale sejsmiczne rejestrowane są za pomocą układu pomiarowego, którego podstawowym elementem są geofony (czujniki drgań rys. poniżej).



Punkty pomiarowe (miejsc, w których instaluje się komplety geofonów) są zlokalizowane co kilkudziesiąt metrów wzdłuż zaprojektowanych linii pomiarowych (profilu sejsmicznego). W czasie jednego pomiaru rejestruje się sygnały z kilkuset (standardowo 200 do 1000) punktów zlokalizowanych wzdłuż jednej linii.

Efektem prac są przekroje geologiczne (rys. poniżej) obrazujące głębokość zalegania magmasy (grubość) i ukształtowanie warstw geologicznych. Zintegrowana interpretacja uzyskanych danych pozwala na stworzenie modelu budowy geologicznej sejsm prowadzonych prac.




Wibratory sejsmiczne

↑ Belchatów example: CCS Project brochure



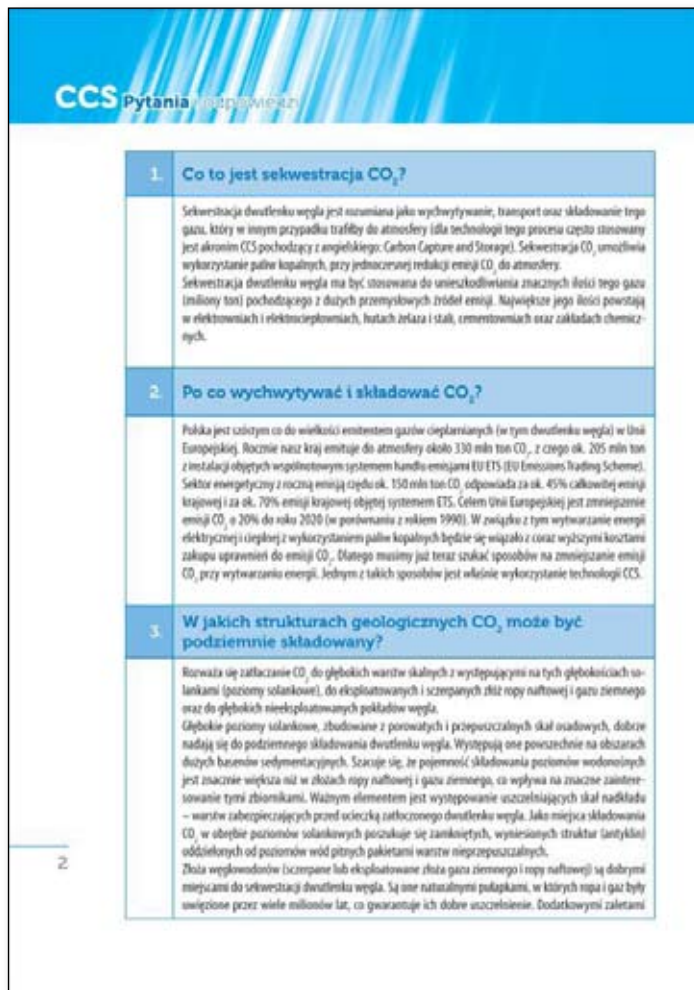








↑ Brochure concerning all legal issues and procedures regarding CCS in Poland.





CCS Bełchatów Project FAQ

8 Actively oversee and manage the outreach programme throughout the life of the CCS project

An outreach lead has been created and made operational. It is anticipated that its strategy will develop along with the projects life. Yet, the Project is still in a rather early stage of its life and further development and increase of activity is expected.

9 Monitor the performance of the outreach programme and changes in public perceptions and concerns

Monitoring of outreach actions is done partly and informal post-action communications are orchestrated, for example: during the regional CCS conference organised by the Technical University of Lodz, on the 26th of November, 2010, all arguments against the CCS technology presented by a local NGO were rebutted by scientists and experts from Polish Geological Institutes.

10 Be flexible: refine the outreach programme as warranted

The Project's outreach team is ready to adapt to the situation arising in the same vein as they did as a result of local resistance arising from concerning geological examinations.

name of activity: Bełchatów project roadshow purpose of activity: to raise awareness and acceptance in communities local to CO₂ storage, of the geological surveys, with a road show type campaign	
Target groups for engagement activity	- Local communities and stakeholders that may be influenced by the Bełchatów CCS project. - More specifically this mainly involved the farmers whose land was involved during examination and tests were ongoing and where is possibility that CO₂ will be stored under.
Form of engagement activity	- A Roadshow type activity travelling to 10 communities using a tent to display information. - Providing information about the geological and geophysical examination to be undertaken. - This activity was mainly dedicated to geological surveys and less to other aspects of the project.
Cooperating partners in engagement activity	- Local authorities helped by distributing information about the time and place of the engagement activities. - One of the project contractors also helped by distributing information about the activities and took part in all events as an expert.
Effect of engagement activity	Feedback from a study undertaken by an independent PR company following the activity has been positive.
Communications Material used	- Brochures from the Bełchatów project and also the EU funded CO₂GEONET project were available for stakeholders from the display tent. - Four people from the project were available at the tent at all times to discuss the project with stakeholders. - The Bełchatów project brochure asked the stakeholders to give feedback on what should be done next.
Lessons learned and would this activity be repeated?	- Hiring an external PR consultant to measure the response of the campaign gave good feedback on the effectiveness of the campaign. - Starting engagement at the beginning of the project is important to help prevent speculation. - It is also important not to overload the stakeholders with information, so in this case the Bełchatów project is only engaging the communities on the activities currently being undertaken on the project, so for now they are only talking about the geological surveying work being undertaken.
Time and Resources committed to the activity	Each of the roadshow meetings took 3 to 4 hours. Preparation of the activity started in June 2010. Firstly, the team met with representatives of local authorities in each commune and asked for approval, suggested an appropriate place and time for the event and helped in disseminating the invitation throughout the communities. Every meeting was attended by at least 4 people from the Outreach Team and 2 additional persons from the contractor.
Decision making process	
Uploading of relevant material (if applicable)	





Compostilla

Introduction

The OXYCFB300 Compostilla Project is an integral commercial Carbon Capture and Storage (CCS) demonstration project, covering the entire CCS value chain (CO₂ capture, transport and storage). This Project is one of the 6 CCS demonstration projects funded by the European Energy Programme for Recovery (EEPR).

Location of the capture site of the OXYCFB300 Compostilla Project

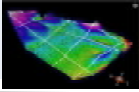


The Project is based on Circulating Fluidised Bed (CFB) supercritical oxycombustion technology with CO₂ storage in a deep saline formation. This technology will be tested first on a new 30 MW_{th} Technology Development Plant (TDP) sited in Cubillos de Sil (Castilla y León, Spain), close to ENDESA's Compostilla Power Station in the Northwest of Spain, in which it will be scaled to demonstration size.

OXYCFB300 COMPOSTILLA- CCS DEMO PROJECT MAIN CHARACTERISTICS

CCS VALUE CHAIN

- CO₂ CAPTURE
 - Basic engineering of an OXYCFB capture Unit 330 MWe.
 - Design, construction and operation of a Capture TDP at pilot scale (30 MW_{th}).
 - Validation tests at Capture TDP in order to scale up the technology.
 - Develop models for optimising the final design for oxy-combustion.
 - Capture Economic and Risk assessment studies.
- CO₂ TRANSPORT
 - Preliminary studies
 - Singular studies: conceptual & basic design, risk, monitoring and safety studies.
 - Design, construction and operation of a Transport TDP at pilot scale.
 - Transport Economic and Risk assessment studies.
- CO₂ STORAGE
 - Site assessment
 - Preliminary Characterization of the subsurface structures
 - Extensive subsurface characterization
 - Design, construction and operation of a Storage TDP at pilot scale.
 - Storage Economic and Risk assessment studies.



Co-financed by the European Union
European Energy Programme for Recovery

The Project has been divided into two distinct phases to significantly reduce the economic and technical risks of this cutting edge CCS Demonstration Project:

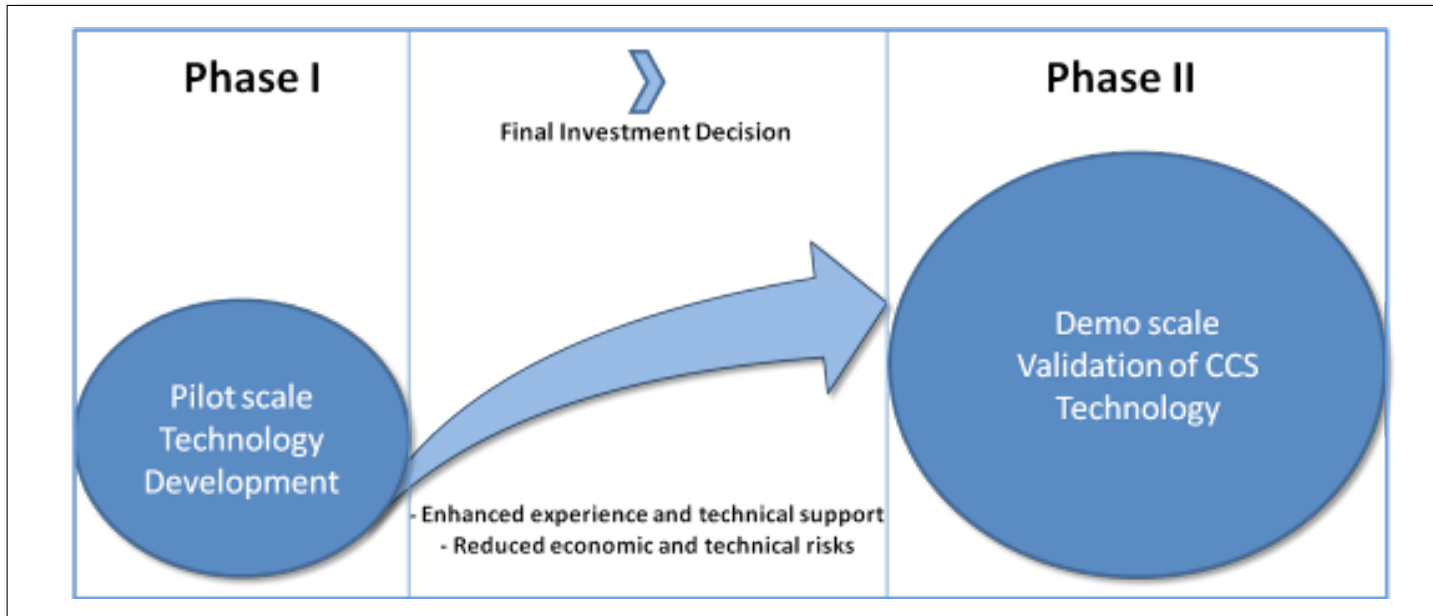


- Phase I. Technology Development (2009-2012)
- Phase II. Construction of the Demo Project Infrastructure (2013- 2015)

Phases of the OXYCFB300 Compostilla Project

The Compostilla Project is led by a consortium of ENDESA, CIUDEN and Foster Wheeler. All three consortium members are dedicated to developing and promoting the Project to achieve successful commercialisation of CCS technology.





The Compostilla Project
OXYCFB300

EEPR – BENEFICIARIES

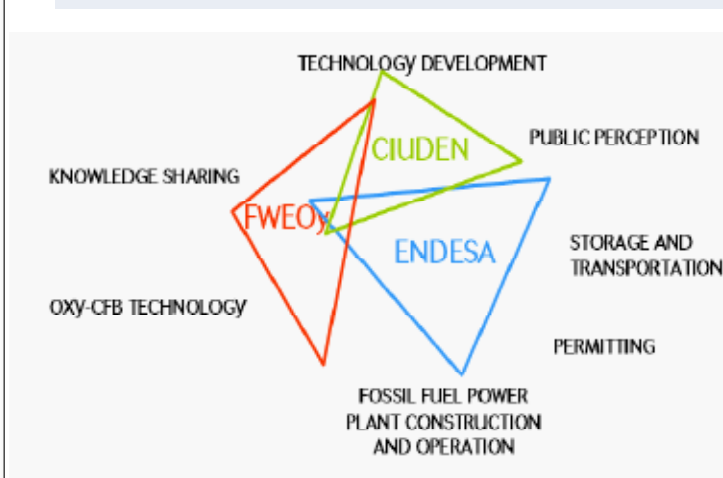
ENDESA GENERACION



CIUDEN



FOSTER WHEELER



ENDESA GENERACION

- General coordination and project management
- Engineering (FEED, studies, etc). Capture, transport and storage
- Permitting
- Knowledge Sharing

CIUDEN

- CCS Technology Development Plants (TDP) promoter
 - Capture (OXY-CFB and OXY-PC)
 - Transport (Test Ring)
 - Storage

FOSTER WHEELER

- OXY-CFB Technology developer and provider



Co-financed by the European Union
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The Castilla y León region, in the northwest of Spain, is a remarkable territory, strong for its agrarian and livestock farming, with industrial development only starting in the 1950s. It had the sixth highest population figures of all the regions in Spain, but the population has been decreasing year by year, for example, 10% in 1950, 6.5% in 1991 and 5.5% in 2000.

Over the last 5 decades, there has been a noticeable shift in demographics: today, the population is concentrated in a few key areas and a general loss of population in the rural territories can be observed.

The Capture Technological Development Plant (TDP) in Cubillos del Sil
Cubillos del Sil has 1606 inhabitants. Larger, urban areas in the region include Ponferrada and León (the capital of the province), which are situated 9 kilometres and 120 kilometres respectively from Cubillos del Sil. The town itself is within the El Bierzo comarca (shire) of the province of León. This province a population of 500,169 people (2010). It is the second most populated area of the Castilla y León region after Valladolid, the capital of the region.

Mining and energy production industries in the El Bierzo shire have been the most prosperous industries in the region. They have also been the most extensive, although they are located within only a limited number of municipalities. The most extensive extractive industry is coal mining followed by slate extraction. The energy production is basically through coal-fired power plants, but there are also hydroelectric and wind farm installations.



↑ Capture TDP in Cubillos de Sil (León, Spain)



Electricity generation has been an essential activity in the region for the last century and a half, for three main reasons; a) the existence of coal-fired power plants, b) the existence of water dams, and c) because of the demand of the coal mining industry. El Bierzo is the main generator of electricity for the province of León, which itself generates nearly half (47% in 2007) of all the electricity consumed in Castilla y León.





The Storage Technological Development Plant (TDP) in Hontomín

The experimental TDP for the CO₂ Geological Storage is located in a rural area in the North of the Province of Burgos, in the small village of Hontomín, situated in the east of the Municipality of Merindad del Río Ubierna.

The municipality is divided into 21 communities, governed by neighbourhood community committees, all of them belonging to the Merindad del Río Ubierna City Hall located in Sotopalacios. The valley to the south of the municipality contains the majority of the population while the Páramo to the north is less populated. In 2009, the province of Burgos had a population of 375,563, including its Capital Burgos with 178,966 inhabitants. It is the third most heavily populated province in Castilla y León, after Valladolid and León. The population density in the province is 25.5 inhabitants per square km which, although low, is not amongst the lowest in Castilla y León. The Hontomín area presents a significantly lower density. The province of Burgos consists of 371 separate municipalities, which is the highest number in Castilla y León. 128 of them (34%) have less than 101 inhabitants, and a further 181 (48%) have between 101 and 501 inhabitants.

The Burgos province is now suffering a strong territorial restructuring process, similar to that occurring across most of Spain, whereby the rural environs are losing their population in favour of medium size urban areas.

Public engagement activities and lessons learned

1 Integration of public outreach in project management

In the Compostilla Project, public outreach has been properly integrated in the project management structure: technical meetings between the communication team and research staff are held regularly in order to disseminate knowledge within the Compostilla Project staff, resulting in trained experts capable of transferring knowledge on Capture and Storage Technology for it to be understood by stakeholders.

Lesson Learned

The seismic campaign and its timeline was developed jointly by the technical and the public outreach teams. In this way, it was ensured that local stakeholders were well informed on the interventions required by the seismic studies.



2 Establishment of a strong outreach team

The entire project team's behaviour and their communications with stakeholders greatly influence the public perception. Therefore, the Compostilla project believes that it is essential to establish a strong outreach team with a clearly defined structure with delineated roles and interfaces with the rest of the project staff. To do this, the project has sought highly motivated and professionally trained workers for the communication team.





Lesson Learned

Establish a multi-disciplinary team. Because of the importance the public perception has in projects like the Compostilla Project, the Outreach Team of the Project is composed by specialists from different fields and points of view (media specialists, press officers, scientists, engineers)

3 Identification of key stakeholders

The Compostilla Project uses the opinions of stakeholders to help shape the early stages of the project, thus improving their support and enhancing the quality of the project. A fluid communication with stakeholders ensures that they know its activities and benefits thoroughly.

Lesson Learned

Early engagement. The main activity done in the seismic campaign, related to the public perception, was the identifying of the key stakeholders to contact them, as a part of our strategy before taking any other action within the area.

4 Conduct and apply social characterisation

A first draft of a social characterisation report has been produced by the public outreach team of the Compostilla Project. Socioeconomic characterisation efforts have started in 2010 at the locations affected by the two phases of the project.

Lesson Learned

The social characterisation has been done by the outreach team, with the collaboration of external teams using the most appropriated methodologies (ESTEEM methodology).

5 Development of an outreach strategy and communication plan

An integral communication plan and a strategy on public engagement have been developed by the Project, taking into account initiatives and organisations at European and global level.

In 2010, a project website has seen the light (www.compostillaproject.eu) and key material is uploaded. The Project developed different leaflets in order to facilitate understanding of the project and the technology used. It is intended that multiple types of materials are created, depending on the make up and interest of the audience.







WORK PROGRESS ON PUBLIC PERCEPTION: Communication Plan

Creating a vision for CCS

- FAQs
- Material
- Website
- Direct communication
- Survey

Co-financed by the European Union
European Energy Programme for Recovery

↑ Compostilla Project work progress on public perception, communication plan & website ↓

WORK PROGRESS ON PUBLIC PERCEPTION: Website

www.compostillaproject.eu

Co-financed by the European Union
European Energy Programme for Recovery



Lesson Learned

It is very important to have an appropriate communication plan. The main objective is the dissemination of information on capture, transport and storage technologies to different levels, both the general Spanish society at large as well as targeted stakeholders (policy makers, authorities in the areas of the planned facilities, local and national media, etc.), as a part of a strategy for mitigating the climate change. The ultimate aim is to increase the social consciousness of Spain as an international leader in the field of innovative technologies that contribute to fight climate change.

6 Development of key messages

In 2010, the Communication team has worked with some key messages. Because they are often an overlooked element in communications planning, the team is trying to develop one which integrates the next points:

1. Inform the public about the CCS programme;
2. Generate or rebuild public confidence;
3. Stimulate public action.

An example message is:

Nature's lesson:

If the Earth's crust is able to store natural CO₂ without risk for the population, industrial CO₂ can also be stored under the same conditions?

Lesson Learned

The key messages for public perception are the following:
The capture, transport and storage technologies are part of the climate change solutions.
This project is the result of public-private cooperation.
Through development of new knowledge, job opportunities, and social wealth will be triggered (the development of this technologies is a chance for Spanish companies and a push for the local economy in areas where CCS facilities are situated).

7 Development outreach materials tailored to the audiences

Outreach materials should be simple and understandable. That is why the communication team is treading carefully when editing and translating texts. The team is aiming to understand literacy levels and linguistic preferences. In 2010, the Compostilla Project communication team has made a variety of information materials, such as brochures, a website, reports and articles.









↑ Compostilla Project brochures



Lesson Learned	Multi channel delivery. In the Compostilla Project, messages have been designed and delivered through 5 types of action lines.
	Coordination and dissemination of press releases and information packs to the media (local, regional, national and international level).
	Informative meetings and interviews (local, regional, national and international level)
	Establishment of a group of specialised spokesmen/spokeswomen for media and local population.
	Assistance and participation in events, conferences, congresses and workshops Empowerment of on-line communication: websites, social communities and other on line relevant sites.



EL MUNDO DE LEÓN

LEÓN SABOR A SABOR EL MUNDO skew se esparce hoy a la red y al plato. (Agencia)

Las empresas culpan a la banca de asfixiar proyectos innovadores

Chivo experto: coinciden en que la banca española no sabe medir los riesgos de la I+D+i. «El gran peaje de las pymes es un defecto», asegura Federico Barco.

El Gobierno aumenta un 19% la partida para el I+D+i, 5,5 M€ en 2011

La mitad de los hogares tuvo problemas para llegar a fin de mes en 2009

La captura experimental del CO2 entra en una fase decisiva para el carbón

La planta de Cluden comienza en junio de 2011 y su tecnología dará vida al mineral.

El tiempo de Cluden, decisivo para el carbón

La planta de cluden comienza en junio de 2011 y su tecnología dará vida al carbón.

19,4 M€ para capturar CO2 en la planta de Cluden en 2011

1.400 millones para la planta de Cluden en 2011

28 millones para almacenar el CO2 en Biscaya

100 millones para el futuro Nacional de la Energía

CineoDías Entorno

El carbón 'verde', un megaexperimento en el corazón minero

Justo en el corazón de una zona de carbón, se levanta la primera planta en España de captura de CO2.

En el mundo hay reservas de carbón para 120 años

by cytelevision

<http://www.rtve.es/mediateca/videos/20100919/informe-semanal-futuro-del-carbon/880618.shtml>

News on progress of the Technical Development Plants (TDP) for capture and storage within the EU project (radio, regional TV, local newspapers, special supplements in El Pais, Web and TVE)



8 Actively oversee and manage the outreach programme throughout the life of the project

In order to address the public perception factor, the Compostilla project developed a well coordinated & responsive communication team that has been seeking opportunities for interaction since the beginning of the project and will continue to do so over the course of the project. During the course of this project, the communication team was trained on CCS for improving their skills on the technology.

Lesson Learned

The public outreach project must continuously undertake an exhaustive monitoring of all the information published in media about the stakeholders' opinions and organisations that could be against CCS technologies.

9 Monitor the performance of the outreach programme and changes in public perceptions and concerns

The communication working team is identifying specific activities to support the project goals as well preparing to adapt to unexpected events to ensure a positive perception of CCS.

These actions address the need to:

- 1) implement the outreach strategy and
- 2) begin national level outreach during the initial implementation phase. In future years, outreach goals will be revisited and outreach efforts from the previous year will be documented and evaluated.

Lesson Learned

In 2010, the Project hasn't yet implemented a monitoring plan, but it is planned to achieve it as soon as possible and it will be included in the communication plan.

10 Be flexible: refine the outreach programme as warranted

The Compostilla communication team is flexible to fit adapt to changes of the public perception, whilst following the expected goals and taking responsibility for the public communication.

Lesson Learned

The strategies and annual communication plans objectives are adapted to the project requirements and changed if circumstances so dictate, always looking for the most efficient interventions.



5 key resources that the Compostilla outreach team has greatly valued in its work

Suggested reading material (on following pages)





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European Energy Programme for Recovery

the european union
OXYCFB300

Social Perception Study
Technological Development Plants on Carbon Capture,
Transport and geological Storage

- Cubillos del Sil, El Bierzo (León)
- Hontomín, Merindad del Río Ubierna (Burgos)

The Compostilla Project
OXYCFB300

1.1. MENSAJES SOBRE EL CAMBIO CLIMÁTICO

1. El calentamiento global es inequívoco y se debe a la acción humana con una probabilidad superior al 90%.
2. La demanda energética mundial crecerá un 50% en 20 años.
3. China duplicará su capacidad de generación eléctrica cada década para cubrir las expectativas de crecimiento.
4. Todos los Organismos internacionales coinciden en afirmar que los combustibles fósiles seguirán siendo la principal fuente de energía mundial durante las próximas décadas, cubriendo en 2030 el 82% de la demanda primaria.
5. La reducción de emisiones de CO2 como consecuencia de la aplicación de las tecnologías de CAC comenzará a escala comercial en 2020.
6. El mejor escenario previsto por la AIE es el de estabilización a 450 ppm, donde las emisiones de CO2 bajarían hasta 23 Gt en un primer momento, reduciéndose a 10 Gt en 2050.

↑ 1. Social Perception Study Technical Development

Plants on Carbon Capture, Transport and geological

Storage: Cubillos del Sil (León) y Hontomín (Burgos),

(CISOT-CIEMAT).

↑ 2. Messages and communication strategies developed by the Spanish CO₂ Platform

Sample key messages developed by the Spanish CO₂ platform

PREGUNTA	IDEA PRINCIPAL	EVITAR	RESPUESTA
5. ¿Cuáles son los escenarios energéticos que fija la AIE para satisfacer la futura demanda?	La AIE aboga por un escenario con menos emisiones de CO ₂ y más oferta de energías limpias		Escenario de referencia, escenario alternativo y escenario de estabilización a 450 ppm
6. ¿Qué se prevé en el escenario de referencia?	Impensable para el planeta		Las fuentes predominantes en 2030 seguirían siendo el petróleo, el gas natural y el carbón, con un ligero incremento de la energía nuclear, con lo que las emisiones aumentarían hasta las 47 Gt.
7. ¿Qué se prevé en el escenario alternativo?	Solución intermedia poco ambiciosa. Opción rechazable	No proponer como opción menos mala	Disminuiría la demanda energética al 1,3% anual. Se potenciaría la utilización de fuentes energéticas renovables, nucleares y de carbón con captación de CO ₂ , por lo que las emisiones llegarían a las 34 Gt en 2030 (estabilización a 550 ppm).
8. ¿Qué se prevé en el escenario de estabilización a 450 ppm?	Solución más realista y beneficiosa para el planeta		Las emisiones de CO ₂ bajarían hasta 23 Gt en un primer momento, reduciéndose a 10 Gt en 2050. Las renovables, biocombustibles, el carbón limpio y la nuclear colaborarán en estas reducciones en un 19%, 4%, 21% y 16% respectivamente.
9. ¿El mundo podrá renunciar a alguna de las fuentes energéticas actuales?	Poco probable	No negar la evidencia de que se seguirán utilizando los combustibles fósiles en esta primera mitad del siglo XXI	Todos los Organismos internacionales coinciden en afirmar que los combustibles fósiles seguirán siendo la principal fuente de energía mundial durante las próximas décadas, cubriendo en 2030 el 82% de la demanda primaria.

↑ 3. Communication of carbon capture and storage: Outcomes from an international workshop to summarise the current global position (Global CCS Institute).

Sample Q/A crib sheet developed by the Spanish CO₂ platform





National Research
FLAGSHIPS
Energy Transformed





www.csiro.au

Communication of carbon capture and storage:
Outcomes from an international workshop to summarise
the current global position

Peta Ashworth

TRIM: P2010/524
February, 2010



National Research
FLAGSHIPS
Energy Transformed





www.csiro.au

Communication, project planning and
management for carbon capture and storage
projects: An international comparison

Energy Transformed Flagship

Peta Ashworth, Judith Bradbury, C.F.J. (Ynke) Feenstra,
Sallie Greenberg, Gretchen Hund, Thomas Mikunda and Sarah Wade
EP 104273

Prepared for Sarah Clarke, Global Carbon Capture and Storage Institute






↑ 4. Communication, project planning and management for carbon capture and storage projects: An international comparison (CSIRO).

↓ 5. CCS leaflet in Spanish (Zero Emission Platform).

Captura y almacenamiento de CO₂
Una introducción a la tecnología CAC





Name of activity: GUIDED TOUR TO THE TDP and HEADQUARTERS
Purpose of activity: campaign for better communication

Target groups for engagement activity	Local and regional stakeholders.
Form of engagement activity	More than 30 guided tours to the TDP (Cubillos del Sil) and to the CIUDEN's Headquarters (Ponferrada).
Cooperating partners in engagement activity	Politicians, trade unions, social agents, local authorities, political parties, and others groups.
Effect of engagement activity	Spreading of information on CCS and the project in particular
Communications Material used	Guided tour plan, leaflets, TDP's model, and video.
Lessons learned and would this activity be repeated?	The guide showed the Project the important of the direct communication for better understanding so the team is going to keep on doing it.
Time and Resources committed to the activity	<i>Guided tour: 2 hours</i> Preparing for the guided tour: 1 month. <i>Key tasks:</i> • Preparation and creation of guided tour material. • Adapt the area under construction to allow for visitors. <i>Involved resources:</i> • Local collective. • TDP • Headquarters
Decision making process	The team expects to spread positive CCS messages from the local community to the autonomous region and then on to the country population in order to develop and disseminate understanding of the technology in Spain.
Uploading of relevant material (if applicable)	Example guided tour group (see picture on this page)

Example guided tour group





Name of activity: GUIDED TOUR TO THE TDP + HEADQUARTERS purpose of activity: campaign for better communication	
Target groups for engagement activity	Local and regional journalists.
Form of engagement activity	Workshop for journalists about CCS technologies (held at CIUDEN Headquarters) and tour to the TDP (Cubillos del Sil).
Cooperating partners in engagement activity	n/a
Effect of engagement activity	Spreading
Communications Material used	Guided tour plan, leaflets, TDP's model, and video.
Lessons learned and would this activity be repeated?	The guided tour showed the importance of direct communication for better understanding, so the Project is going to keep on doing it.
Time and Resources committed to the activity	Guided tour: 2 hours Preparing for the guided tour: 1 month Key tasks: Create guide material. Adapt the area under construction for visitors. Involved resources: Local collective. TDP Headquarter
Decision making process	The team expects to spread CCS technological advances to the media in Castilla y León and then to the country's population in order to make better understanding of technology.
Uploading of relevant material (if applicable)	(see pictures on this page)









name of activity: create a scale model purpose of activity: campaign for better communication in scientific fairs	
Target groups for engagement activity	This activity is focussed on all target groups
Form of engagement activity	Scientific fairs.
Cooperating partners in engagement activity	Science communications centres.
Effect of engagement activity	Spreading of CCS information, supported by the model
Communications Material used	Leaflets & live technical explanations
Lessons learned and would this activity be repeated?	The Project realised that scale models are proper tools for disseminating CCS information. The Project will repeat this activity.
Time and Resources committed to the activity	• Preparing the scale model: 3 weeks • The Project has showed the model during five days. 40.000 visitors saw the model.
Decision making process	The Project decided to construct the 3D model when they saw the benefits that other models had in other technology fields.
Uploading of relevant material (if applicable)	Scale model (see picture next page)

name of activity: conferences (experts and the general public) purpose of activity: - dissemination campaign	
Target groups for engagement activity	Experts, stakeholders, University students and general public.
Form of engagement activity	Conferences at Spanish universities and others events in order to disseminate information about these technologies to experts and the general public. Events with stakeholders and experts: SET Plan Event (4/06/10) and Brandenburg State Event (28/06/10).
Cooperating partners in engagement activity	Universities, research centres and public bodies, SET Plan, Brandenburg State.
Effect of engagement activity	Spreading & broadcasting the event widely
Communications Material used	Video and brochures.
Lessons learned and would this activity be repeated?	The conferences allowed us to directly communicate with experts and the general public. That means that questions can be properly and directly answered by the experts. This is to be repeated.
Time and Resources committed to the activity	Preparing and adapting the arguments: 2 hours
Decision making process	Compostilla expected to disseminate CCS technological advances to the public in order to improve understanding of technology.
Uploading of relevant material (if applicable)	(see pictures next page)



Scale model (top table page 30)



pictures for table below on page 30





name of activity: press release – press conferences purpose of activity: campaign for better communication	
Target groups for engagement activity	Media.
Form of engagement activity	News and interviews about the progress of Compostilla Project. We do this very often.
Cooperating partners in engagement activity	
Effect of engagement activity	Dissemination of information
Communications Material used	Press release and pictures.
Lessons learned and would this activity be repeated?	Compostilla felt this activity as being one of the most important, not only because it is crucial for spreading but also for making the project better known in different places.
Time and Resources committed to the activity	We are updating information for getting ready and adapting the arguments at least monthly.
Decision making process	The team expected to spread CCS technological advances to the public in order to improve understanding of the technology.
Uploading of relevant material (if applicable)	see pictures on bottom of this page





4 Conduct and apply social characterisation

Not carried out so far, however, there is a plan to do some research in the area on public perception of CCS and CO₂, where this information will also come out.

5 Development of an outreach strategy and communication plan

A communications strategy is in place. However, we are still in the early stages of this project. An information event for key external stakeholders in relation to development of the onshore CO₂ transportation solution is planned for February 2011.

6 Development of key messages

Key messages are in place and reviewed regularly. Areas covered include:

- Need for CCS
- Climate change targets
- Safety
- Building a pipeline
- Research

Further key messages will be developed for the offshore part of the project.

7 Development outreach materials tailored to the audiences

Materials have been planned as part of the communications strategy and will be implemented when necessary. This includes, newspaper adverts, public consultation information - leaflets, letters, newsletters, web page, display boards, public exhibitions etc.

8 Actively oversee and manage the outreach programme throughout the life of the CCS project

A community relations agency has been appointed and a communications lead is in place.

9 Monitor the performance of the outreach programme and changes in public perceptions and concerns

Part of the communications strategy is to monitor public perception and media perception of the project. Changes to the programme will be put in place where necessary.

10 Be flexible: refine the outreach programme as warranted

Reviewing the communications plan on a regular basis should mean that aspects of the plan can be changed when necessary.







Name of activity: Letter sent to the Financial Times by NGO, Green Alliance, on behalf of CCS supporters
Purpose of activity: To jointly raise concern on funding cuts

Target group for engagement activity Readers of the Financial Times (targeted mass media), which is predominantly the banking and finance community in UK. UK Government Treasury, who are currently reviewing Government spending in the UK and are rumoured to be considering removing a levy on electricity consumers designed to fund up to 4 CCS demonstrations on power generation in the UK

Form of engagement activity A letter was sent to the Financial Times and was subsequently published on 11 October 2010, prior to final announcement of the outcomes of spending review due on 23 October 2010.
 Following on there will be a workshop held to discuss a proposed Emissions Performance Standard (EPS) for the UK and the level at which this could be set.

Cooperating partners in engagement activity The NGO Green Alliance chose the circulation of the letter to be the major players in the CCS industry in the UK, which includes power generators, developers, equipment and technology suppliers, storage licence holders and academics.

Effect of engagement activity The letter has drawn together a number of unlikely allies, in the form of NGO's and large corporations.
 It is yet to be seen what effect the publication of the letter has had, but a decision on funding due on 23 October.

Communications Material used A letter emailed to various stakeholders seeking their support.
 The letter was subsequently published in the mass media as a means of distributing and getting support for the cause.

Lessons learned and would this activity be repeated? To be determined

Time and Resources committed to the activity unknown

Decision making process unknown

Uploading of relevant material (if applicable) The letter and it's signatories are available online at:
<http://www.ft.com/cms/s/0/99c9daeo-d4df-11df-b230-00144feabdc0.html>
 text on next page







The text is as follows:

Companies warn on carbon fund cuts

By Fiona Harvey, Environment

Correspondent

Published: October 10 2010 18:44 | Last

updated: October 10 2010 18:44

Fears that the Treasury may be planning to cut support for fledgling technology to cut carbon emissions from coal-fired power plants have prompted a group of companies to warn that the UK risks falling behind other countries.

Carbon capture and storage technology involves taking the greenhouse gas emissions from power stations and storing them in deep caverns underground. However, the technology has yet to be proven.

Companies working on plans for trials of the technology had been counting on government support under a scheme set up by the last administration whereby up to four plants would receive billions of taxpayer funding, while a levy on energy bills would provide ongoing support.

This support is now in doubt as the Treasury is understood to be reluctant to commit such funds in the current economic climate.

Under the comprehensive spending review, both the initial funding and long-term support for CCS plants are in question. Writing in today's Financial Times, a group of 19 organisations urges the government to retain the support programme for CCS.

They argue that without it the UK will lose its competitive edge in a fledgling technology that could be vital to the future of a low-carbon economy.

The companies include General Electric, Shell, Siemens and Alstom, as well as organisations such as the Trades Union Congress, the Green Alliance think-tank and several universities.

Matthew Spencer, director of the Green Alliance, said: "The coalition government has been clear in its desire to see four CCS demonstration plants in the UK, but this new industry cannot live on promises alone.

"The CCS levy was enacted with cross-party support earlier this year to give a credible funding framework that can catalyse private sector investment.

"If the government were to now retreat from introducing the levy they would be shooting themselves in the foot."

<http://www.ft.com>.

[cms/s/0/1f8b04e2-d495-11df-b230-00144feabdco.html](http://www.ft.com/cms/s/0/1f8b04e2-d495-11df-b230-00144feabdco.html)

CSR threatens good intentions for carbon capture and storage

Published: October 11 2010 05:26 | Last

updated: October 11 2010 05:26

From Mr Matthew Spencer and others.

Sir, The UK needs strong leadership to drive investment in our future and create high-technology jobs. In his speech to Conservative party conference last Monday, the chancellor rightly highlighted the need for carbon capture and storage (CCS) so that the UK can "reap the financial rewards of the green energy revolution". Similarly, we all welcomed the declaration in July that the coalition government wants to make the UK first choice for investment in CCS. But those good intentions are now under threat due to the pressures of the Comprehensive Spending Review.

CCS is essential for the rapid and cost-effective decarbonisation of the power sector, and subsequently industrial emissions, as advised by the Committee on Climate Change. Furthermore, the UK is ideally situated to commercialise CCS thanks to our world class engineering and academic skills base, the availability of suitable offshore geology for CO₂ storage, and positive stakeholder support. The rapid demonstration of CCS on a commercial basis is the necessary next step to securing global leadership in this growing sector. If industry is to invest billions of pounds in CCS projects, infrastructure, and supply chains, it must have confidence that a credible funding support framework is in place. To secure this, a levy on energy suppliers was enacted in the Energy Act 2010 with cross-party support. Its passage into law significantly bolstered the business case for investment in the four CCS projects proposed for the UK. It is therefore deeply concerning to hear that the CCS levy may not be introduced.

Given past history, the CCS community is wary of promises of support that are not backed up by robust delivery mechanisms. If the levy were to be abandoned it would seriously threaten industry investment and the creation of tens of thousands of high-skilled green jobs in the UK, while simultaneously undermining delivery on UK climate targets and energy security. We must not let this opportunity go.

Matthew Spencer, Director, Green Alliance

Jean-Michel Aubertin, Chief Executive, Doosan Power Systems

Brendan Barber, General Secretary, TUC

Grant Budge, Chief Operating Officer, Powerfuel Power

Jeff Chapman, Chief Executive, Carbon Capture and Storage Association

Patrick Corbett, Head, Energy Academy, Heriot-Watt University

Magued Eldaief, Managing Director, GE Energy UK

Mike Farley, Chair, TUC Clean Coal Task Group

Jon Gibbins, Professor of Power Plant Engineering and Carbon Capture, University of Edinburgh

Lewis Gillies, Chief Executive, 2Co Energy

Jon Gluyas, Professor in Geoenergy and CCS, Durham University

Andreas Goss, Chief Executive, Siemens and Cluster North West Europe

Robert Gross, Director, Centre for Energy Policy and Technology, Imperial College

Stuart Haszeldine, Professor of Carbon Capture and Storage and Geology, University of Edinburgh

Alex Kemp, Professor of Petroleum Economics, University of Aberdeen Business School

Joan MacNaughton, Senior Vice President, Power and Environmental Policies, Alstom Power

Alisa Murphy, Director, B9 Coal

James Smith, Chairman, Shell UK

Peter N. Whitton, Managing Director, Progressive Energy





Jänschwalde

Introduction

In 2009, Swedish utility Vattenfall, with operations in eastern Germany and Berlin, announced its plans to explore possible storage sites for CO₂ to close the value chain of its CCS-project. Two promising, suitable sites were chosen, both situated in eastern Brandenburg, between Berlin and the Polish border. The CO₂ to be stored would come from a CCS demonstration plant in Jänschwalde, scheduled to start operating in 2015. The planned project has seen difficulties concerning public acceptance from its inception: In Germany, CCS is not perceived to be a green technology but has the image to simply serve as an excuse for utilities to carry on with their dirty coal business. In addition, large infrastructure projects in the energy sector generally do suffer from a lot of opposition in Germany, no matter if it is the building of wind farms or the construction of transmission grids. Therefore, gaining public acceptance for both the storage site exploration and for the eventual storage of CO₂ was a key target from the onset.

Public engagement activities and lessons learned

selected lessons learned	
Development of information material regarding the planned exploration and the project in general	At first, Vattenfall has been working with the “standard” material that the company is using for all purposes and produced a brochure that matched this style. Later it became clear that glossy brochures are not the right communication tool in order to get local people to trust the company. Therefore, the brochure was replaced by an extensive online tool and single fact sheets that were more “hands on” and easier to update.
Organisation of discussion events/ evenings	In the beginning, the information events were featuring Vattenfall experts who were presenting on selected topics. After some time it became clear, that experts from different disciplines (universities, science) are more trustworthy and believed than employees.

1 Integration of public outreach in project management

Public outreach has been integrated in the project management right from the beginning. The project plan has paid close attention to communication and lobbying issues and has adjusted planned activities accordingly. Weekly meetings with the heads of the project and the communication department have been set up in order to implement a strategic communication plan and secure the internal information flow. Each step within the permitting process was accompanied by different communication activities - both internally and externally.

Example: The decision on when to go public with the planned activities has been made on the basis of suggestions from communications experts - the initial date was postponed due to a public initiative against new opencast mines in Brandenburg.







2 Establishment of a strong outreach team

The planning team for exploring possible storage sites in east Brandenburg consisted of project team members as well as communication experts and is assisted by colleagues from Public Affairs and by colleagues living in the region in question. There are three colleagues within the communication department that have worked full-time on the topic of gaining local acceptance for the exploration project, with one of them living and working in the region. A project plan has been implemented and has been updated frequently in order to ensure up-to-date-information about the status quo of the project.

Example: Vattenfall has set up a local information centre where residents, tourists and employees can get information, have discussions and learn about the project. This office is lead by a colleague living in the city, enabling the company to make use of various personal contacts.

3 Identification of key stakeholders

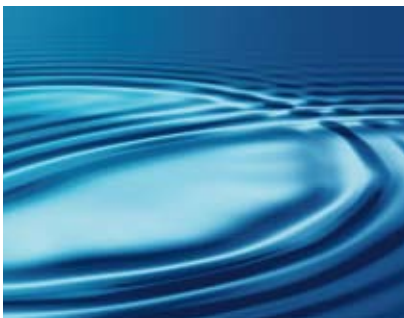
An extensive stakeholder mapping with all different target groups and single persons with influence (opinion leaders) has been conducted prior to the project start and has been updated frequently during the project. Stakeholders from national, regional and local level have been identified and informed before the official start of the outreach and were invited to take an active part in the upcoming discussion. Personal meetings have been conducted with mayors and other representatives from the region in order to keep them informed and involved. An intensive dialogue with the local media has been initiated with the start of the project.

Example: The Ministry for Economies in the Federal State of Brandenburg was involved in the planning of the whole process and has played an active role right from the start. They have set up a local advisory council that accompanies the permitting process and act as a hub between Vattenfall and the authorities on the one side and the local community on the other.

4 Conduct and apply social characterisation

The two regions that will be investigated for potential storage sites are rather small and not overly populated. A characterisation of the people, the political, social and economic landscape and a picture of the local media was conducted in an early stage of the project. This was done in close connection with the mapping of stakeholders. Meetings with politicians and representatives of different stakeholder groups (e.g. the farmers) were asked to give an overview on how the community ticks. In addition, small surveys were done by members of the project team and additional information has been gathered through the work of the local advisory council.

Example: The information gathered in the first round of surveys and interviews was used to establish a first mapping of topics that was viral in the communities at that time. Through small engagements in the communities (e.g. helping school classes with realising their project days etc.), Vattenfall tried to address some of these topics.





5 *Development of an outreach strategy and communication plan*

Developing an outreach strategy and a communication plan was done in an early stage of the project development. Both are in line with the project plan and are adjusted in accordance to this. The outreach strategy can be summarised by saying that at its heart there is the idea to set up a local dialogue around the topic of CO₂-storage and the exploration activities in order to get people in the region involved in the project and address their fears and concerns by being present and approachable. The communication plan thus is the translation of this strategy into actions and activities. It contains scenarios for different aspects of the project as well as crisis plans and manuals for dialogue-orientated communication. For every action, someone is put in charge and there is an underlying timeframe for both the whole plan and its single parts. Every action taken has been evaluated afterwards and adjusted if it did not fit the needs of the locals or the underlying strategy.

Example: In order to get people to engage in the dialogue, it was planned to set up a mobile information car that is manned with two experts (one from the project team and one from the communication team) and participate in community events and be present on market days etc.

6 *Development of key messages*

- The communication concerned with the site exploration project has been working with six key messages that were adjusted according to the audience in each single situation or material used:
1. Global climate protection is only possible with CCS
 2. Vattenfall holds a leading position in the development of this technology
 3. High-Tech: made in Germany
 4. Safety is top-priority when it comes to storing CO₂
 5. Security of supply is only possible with CCS
 6. CCS needs support(ers)

Example: The key messages are used in different channels and materials, e.g. on the website, the information flyers etc.

7 *Development outreach materials tailored to the audiences*

Information materials now comprise of fact sheets, flyers, brochures, models, newsletters, website, displays, roll-ups, reports, articles, special issues written with journalists for newspapers, films, animations, etc.

8 *Actively oversee and manage the outreach programme throughout the life of the CCS project*

All activities conducted within the project are supervised by a steering committee that is informed about the progress on a regular basis. The steering committee exists on two levels and is made up of members of the project team, communication specialists, executives and public affairs experts on level I and of members of the board of Vattenfall on level II. The members of the committee are responsible for the actions taken and can intervene if they feel that the project is moving in the wrong direction.

Vattenfall outreach example: Beeskow information centre (further examples can be obtained through the European CCS Demonstration Project Network)







*
* *Example:* The CCS office is a regular meeting where members of the board get together
* with different experts from the project in order to discuss issues such as public acceptance
* and communication.
*

*
* 9 *Monitor the performance of the outreach programme and changes in public*
* *perceptions and concerns*
*

* Keeping track of the communication activities and the progress of the whole project
* has been crucial from the beginning of the project. Status reports and protocols of
* meetings and events are being filed and discussed in the different committees in order
* to boost performance and generate understanding for the work of the project group.
* Media activities are monitored and the stakeholders are watched very carefully in
* order to anticipate changes in opinions or behaviours.
*

* *Example:* A daily stakeholder report provides the project team and connected parts of
* the company with an overview about developments in the region, articles in local
* newspapers and initiatives' activities.
*

*
* 10 *Be flexible: refine the outreach programme as warranted*
*

* Both strategy and communication plan are revised regularly in order to secure their
* effectiveness.
*

* *Example:* Every two weeks the plan of communication activities is revised and updated
* to ensure flexibility and effectiveness.
*

Name of activity: CCS-Info-Bus	
purpose of activity: to reach target audience that cannot visit the information centre	
Target groups for engagement activity	General public, politicians, journalists, Vattenfall-employees
Form of engagement activity	A small bus has been transformed into a mobile information centre that can be used for fairs, markets etc. in order to spread information and dialogue into the region. Especially for the northern parts of the exploration sites, this can be a good possibility in order to get people to engage into a discussion about the technology and the possibilities it offers – both for the climate and for the region. The bus is manned with technically educated and discussion-trained Vattenfall-employees that can answer all questions in relation to the project and the company.
Cooperating partners in engagement activity	none
Effect of engagement activity	Not yet measurable
Communications Material used	Printed material, films and animations, models
Lessons learned and would this activity be repeated?	Not yet measurable
Time and Resources committed to the activity	Planning: ca. 20 FTE, Manning depends on opportunities (ca. 4 FTE/month)
Decision making process	Decision was taken within the communications department and approved by the Management Board.
Uploading of relevant material (if applicable)	N/a





Porto Tolle

Introduction

The Porto Tolle power plant is located in the area of the Po river, approximately 2 kilometres away from the Adriatic seashore, in the surrounding of Polesine Camerini, in the Municipality of Porto Tolle approximately 160 kilometres south of Venice.

The Porto Tolle Power Plant will be converted from oil to high efficiency coal firing. The new plant will have a capacity of about 2000 MW, consisting of 3 USC units of 660 MW.

Key features of the new power units will be the high efficiency thermal cycle (45% net), and extremely low pollutant emissions. The specific CO₂ emissions of the plant will be 780 g/kWh

The Porto Tolle Power plant will be designed and constructed to assure an environmentally compatible use of coal for power production, satisfying the more stringent regulation on emissions, effluents and residues.

The demonstration plant will be designed to treat a flue gas flow rate of 810.000 Nm³/h, corresponding to 40% of the flue gas coming out from Unit 3 (660 MW) and to a power capacity of 250 MW net. CCU will capture about 4500 t/day corresponding to approximately 1 MT/y of CO₂.

The plant configuration for the capture section is of the “side stream” type. The Carbon Capture Unit (CCU) will be fed with desulphurized gas taken before the Gas - Gas Heater of the Unit 3, after the existing wet-FGD.

The preliminary route of the pipeline consists of a short overland running from the compression unit to the sea branch to reach a platform to be installed about 20 kilometres offshore.

The pipeline is expected to be of a small nominal diameter, i.e. 10” ND, sized to carry 1.0 Mt/y CO₂ and buried for mechanical protection along the entire route, approximately 100 kilometres long.

The identification of suitable deep saline formations for this demonstration project was carried out in cooperation with ERSE, INGV, OGS and other skilled academic institutes starting from the preliminary work done by the EU Geocapacity project and the estimation of the overall CO₂ storage potential in Italy committed to ERSE by the Italian Ministry of Economic Development.

Enel’s research programme also consists of testing the carbon capture unit at pilot scale at Enel’s Brindisi Power Plant, pipeline transportation and geological storage. On 21st October 2008, Enel signed a Strategic Cooperation Agreement with Eni to build the first integrated CCS pilot plant in Italy combining the CO₂ capture and the injection phases.

↓ Enel’s Brindisi CCS pilot plant







The plant size of Brindisi CCU is 10.000 Nm³/h of flue gas with a capture capacity of 2,5 t/h of CO₂. The CO₂ produced by the pilot capture unit in Brindisi will be liquefied and temporarily stored before being carried by road to the injection site. The CO₂ will be transported to Cortemaggiore (Piacenza), where Eni is carrying out a project to inject a gross amount of CO₂ of 24.000 tons (corresponding to 13 M Nm³) in three years into an exhausted gas field. One dedicated injection well will be drilled and a multi-technique monitoring system has been designed. The monitoring phase will cover a period of two year after the injection ends with a baseline recorded before injection starts.

As the CCS Demo Plant will be realised on an existing power plant, the relationships with local stakeholders are already well consolidated. However, considering the conversion of the plant to coal and construction of the CCS demonstration plant, the local stakeholder positions are gradually changing.

In addition, there will be new stakeholders sensible to the construction of the CCS demonstration plant, especially to offshore storage of CO₂. Indeed, the local fishermen are among the most active and concerned about the storage stage of the project. Enel expects that other stakeholders will become active during the realisation of the project.

Public engagement activities and lessons learned

1 Integration of public outreach in project management

Enel's approach to public outreach is very well consolidated and all large infrastructural projects have external relations teams inside the project structure to manage their impact on the territory. In the case of Porto Tolle, there is an opportunity to assess the impact of CCS on the acceptance of the base plant reconversion to coal.

Enel's main goal is to synchronise both processes of technical realisation and public outreach, while working on the overall acceptance of the project in Porto Tolle (both the reconversion as well as application of CCS).

Enel's public outreach teams provide valuable inputs for decision making such as the monitoring of the stakeholders' consensus or the media monitoring.

On the coordination side, Enel applies an internal policy to coordinate all public interventions and participations at conferences by project team members.



Lesson Learned	In the project's experience, the main challenge is to successfully coordinate various multidisciplinary teams from the external relations areas involved; and overall coordination with all the other project areas.
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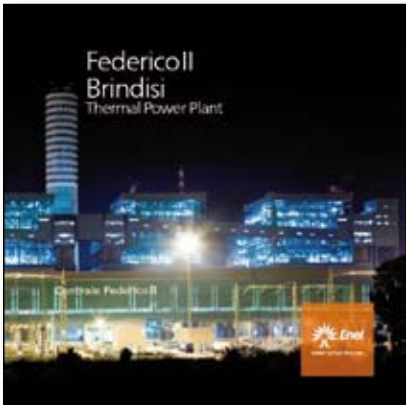
2 Establishment of a strong outreach team

In the Public Outreach effort, there are several external relations teams involved, working specifically in:

- permitting and institutional affairs







↑ Enel Brindisi power plant brochure cover



↑ Enel zero emissions programme brochure cover



- community relations (focusing on dealing with local stakeholders)
- external communication (including web site, informative materials, educational projects, research)
- media relations

The outreach team has also been working closely with the Corporate Social Responsibility department to ensure the coordination with Enel's sustainability policy.

Lesson Learned	All teams have specialised resources and although there are no full time resources dedicated specifically to CCS, the company involves the best available talents in the outreach of CCS project.
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3 Identification of key stakeholders

Extensive territorial knowledge and stakeholder mapping has been an essential part of Enel's presence around Porto Tolle. Therefore, the project took off with a clear picture and a backdrop of well-established stakeholder relations.

On the other hand, in preparing the reconversion project, the scope was extended and the team kept continuously monitoring the existing project stakeholders.

Enel has deployed a stakeholder relationship management methodology which allows to measure and monitor consensus of the most important and influential stakeholders.

4 Conduct and apply social characterisation

Enel is in the process of designing and applying specific research with the purpose of mapping awareness of the role of CO₂, its impact on climate change and perceptions regarding CCS technology.

Additionally, at the local level, Enel has planned specific research related to the acceptance of the project and the attitudes towards available solutions to reduce CO₂ emissions and in particular towards CCS.

5 Development of an outreach strategy and communication plan

The draft of the Outreach Strategy and Communication Plan was created at an early stage in the project. The communication plan contains key messages, main communication activities to be undertaken, descriptions of outreach materials to be developed, channels to be used and a preliminary stakeholder analysis.

Enel's main focus is to position CCS as a valuable element in the mix of Climate Change Solutions and ensure proper levels of information about its pilot project in Brindisi and its demonstration project in Porto Tolle.

6 Development of key messages

Within the communication plan, Enel has developed and is testing key messages which will be supported by communication activities and tools. The following are among the most important key messages:

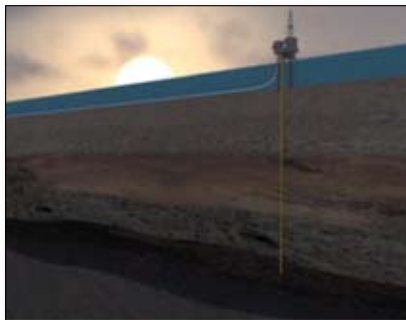




↑ Enel's Brindisi CCS pilot plant



↑ Porto Tolle CCS demo plant simulation



↑ Porto Tolle CCS storage simulation

↓ Brindisi CCS pilot plant and Porto tolle CCS
demo plant location



- CCS is a fundamental part of the mix of climate change solutions which can be deployed to contain emissions from existing fossil fuel assets. Enel's mix includes also energy efficiency and increased generation from CO₂ -free energy sources (including renewables and nuclear).
- CCS is a reliable process based on existing technology and existing experience and international standards, which just needs to be promoted to an industrial scale.
- CCS is a safe process mirroring natural cycle of CO₂: CO₂ is put back again into the earth, where it always was. Additionally, the future development of CO₂ processing technologies to use it as raw material for other industries, opens the door for further industrial developments.
- CCS is an urgent solution for 2020 and 2050 goals since it allows the reduction of CO₂ emissions from existing fossil fuels plants.
- CCS is a commercially viable technology, but its deployment needs capital investments and financial and legislative support from public authorities.
- CCS can generate benefits for consumers: security of energy supply, reduction of GHG, improvement of air quality, etc.
- CCS industrial development will have many positive economic impacts, also for consumers since reduction of CO₂ without CCS would be much more expensive.

7 Development of outreach materials tailored to the audiences

Enel has created various outreach materials in order to support CCS communication process:

- Web sites: a website dedicated to Porto Tolle CCS project (<http://zeportotolle.com>) and a website dedicated to Enel's environmental strategy (<http://thefuturewillfollow.com>).
- Enel zero emissions brochure, dedicated to different CO₂ capture technologies, transport and injection options and to Enel's CCS projects.
- Enel's Brindisi power plant brochure dedicated to CCS pilot plant.
- Enel zero emissions video and CCS Post combustion video.

Enel is developing other outreach materials for different stakeholders: information brochures, updated videos and physical models.

Enel continues to sponsor events with scientific or technical content and these are also used as platform to convey tailored messages to the audience.

8 Actively oversee and manage the outreach programme throughout the life of the CO₂ storage project

As the Porto Tolle demonstration plant project is in a very early stage, there were no specific actions in 2010. However, this aspect is certainly part of the approach and will be considered.

9 Monitor the performance of the outreach programme and changes in public perceptions and concerns

Performance of the outreach programme will be measured by monitoring achievements against established objectives related with permitting, public levels of information, acceptance of the base plant project, media coverage and a range of other indicators of the implementation of communication activities. Furthermore, public perception will be monitored through regular surveys.





10 Be flexible: refine the outreach programme as warranted

The communication plan is defined on a yearly basis and monitored/fine-tuned during implementation. Enel is aware of the need to refine and adapt its initiatives to accommodate new external events, internal challenges and reacts to moves from opponents.

name of activity: ccs observatory purpose of activity: monitoring the development of ccs technology, legislation changes on the issue and dissemination of findings.	
Target groups for engagement activity	Institutions, the scientific community, local communities.
Form of engagement activity	Monitoring and sharing of information on the development and implementation of CCS technology, changes and innovation in legislation. Promotion and organisation of working groups with involvement of interested companies, institutions, environment organisations, social committees. Promotion of divulgation activities on the issue.
Cooperating partners in engagement activity	Sustainable Development Foundation, Italian National Agency for New Technologies, National Geophysics University, other Universities and Research Institutes, companies involved in CCS implementation.
Effect of engagement activity	Third party endorsement in order to promote CCS
Communications Material used	Website, specific presentations, media relations, events.
Lessons learned and would this activity be repeated?	Enel are now at the initial stage; the lessons will be consolidated during 2011.
Time and Resources committed to the activity	9 – 12 months
Decision making process	Internal evaluation after external scouting.
Uploading of relevant material (if applicable)	n/a







ROAD

Introduction

ROAD is the Rotterdam Opslag and Afvang Demonstratieproject (Rotterdam Capture and Storage Demonstration Project) and is one of the largest, integrated Carbon Capture and Storage (CCS) demonstration projects in the world.

The initiating parties of the ROAD project are E.ON Benelux and Electrabel, Group GDF SUEZ. Together they constitute the joint venture Maasvlakte CCS Project C.V. Intended partners of the joint venture are GDF-SUEZ E&P Nederland B.V. for the CO₂ transport and TAQA Energy B.V. for the CO₂-injection and the permanent storage in under the sea bed of the North Sea. The ROAD-project is co-financed by the Government of the Netherlands and the European Commission within the framework of the European Energy Programme for Recovery.

The objective of ROAD is to demonstrate that an industrial, integrated CCS-chain can be realised in a reliable and efficient way in the intermediate future (2020) and can make a substantial contribution to climate change objectives. ROAD uses various CCS technologies which have been tried and tested on smaller scale pilots and which now need to be applied and integrated on a larger scale.

From 2015, approximately 1.1 megatonnes of CO₂ per year will be captured (post-combustion) from the new Maasvlakte Power Plant 3 (MPP3) located in the Port of Rotterdam. The captured CO₂ will be transported through a 25 km pipeline to the P-18-A Platform of TAQA at the North Sea. From the platform, the CO₂ will be injected in depleted gas reservoirs at a depth of 3,500 meters under the seabed of **the North Sea**.

General context, local situation

The capture unit of ROAD is located in the port and industrial area of Rotterdam and the captured CO₂ will be stored in offshore depleted gas reservoirs. Although the capture unit and storage location are remote from residential areas, ROAD prefers to engage local stakeholders in order to keep them informed on the progress of the demonstration project. Furthermore, there has been an ongoing political and public debate on CCS, especially onshore CO₂ storage. In addition, CCS has been positioned by NGO's in the public debate as legitimacy of new coal fired power plants. The case of CO₂ storage at Barendrecht and the northern provinces of the Netherlands moved public acceptance as necessary condition for onshore CO₂ storage high on the political agenda.

Public engagement activities and lessons learned

1 Integration of public outreach in project management

The ROAD project organisation has a dedicated team focusing on Stakeholder Management covering the following specialisms:

- Communications and Public Engagement.
- Public and Regulatory Affairs.
- Permitting.
- Knowledge dissemination.
- Fund agreement management.

Location ROAD-project:

Rotterdam Port area and North Sea



Capture location: Maasvlakte Power Plant 3

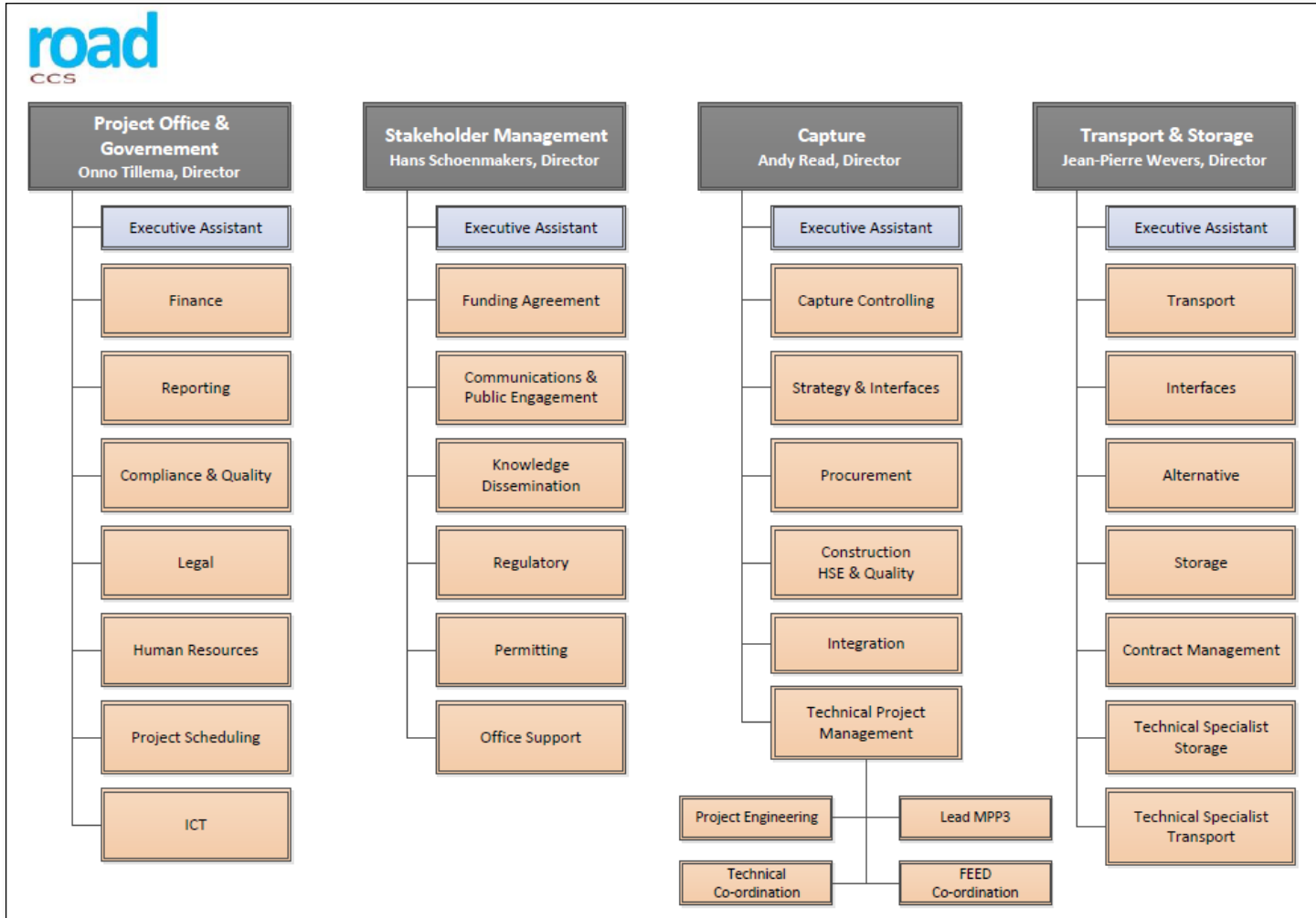


250 MWe Capture unit (post-combustion)

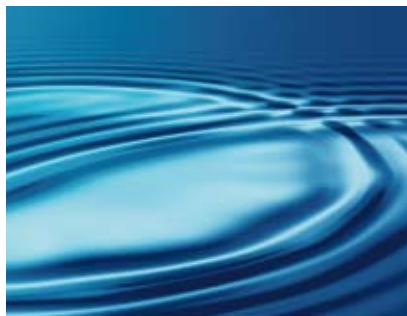








The Director Stakeholder Management is part of the Board of Directors of ROAD. The Stakeholder Management team co-ordinates all stakeholder relations, including public outreach. In addition, the ROAD communication team has regular meetings with communication officers of both the parent companies (e.g. E.ON and Electrabel) and the intended partners (e.g. GDF-SUEZ E&P and TAQA) on communication issues and activities.



Lesson Learned

The chain is no stronger than its weakest link. The stakeholder management and communication function should be integrated in the project management since CCS projects have to deal with many issues that are non-technical and to large extent depend on stakeholder perceptions and interests.

2 Establishment of a strong outreach team

The Stakeholder Management team of ROAD comprises professionals in the field of permitting, Public & Regulatory Affairs, communications and public engagement. To a large extent they are responsible for managing the relations with the most important stakeholders of the project. The communication team is responsible for the communication objectives, strategy, key messages, activities and materials.

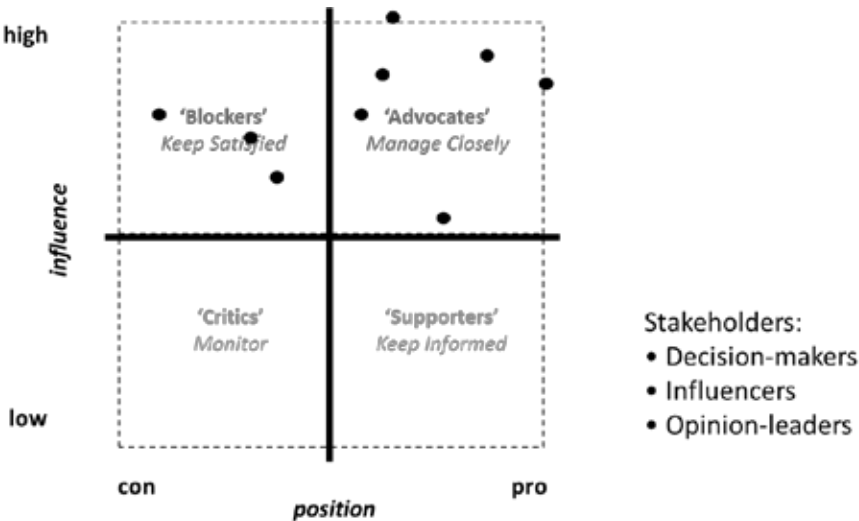


Responsibilities, roles and procedures on internal and external communication of ROAD have been defined in a communication protocol. External communication activities and materials with (possible) high exposure for stakeholders are reviewed by technical specialists on accuracy of facts and figures. External (formal) documents (Environmental Impact Assessment) are checked by communication and Public Affairs specialists on potential political and reputation issues for the project. In addition, technical specialists receive presentation trainings for public events.

The communication team of ROAD and communication officers of the parent companies and the intended partners regularly meet within a communication taskforce. The taskforce is used as a platform to regularly exchange views on communication objectives, strategy, key messages, ongoing activities and materials of the project.

Furthermore, ROAD closely co-operates with other regional stakeholders supporting CCS in the Rotterdam area, such as the Port of Rotterdam, the City of Rotterdam, regional employers' organisation Deltalinqs and DCMR Environmental Protection Agency Rijnmond. One of the common initiatives is focused on developing public outreach and building public acceptance within the Rotterdam region. ROAD is actively involved in setting up a Regional CCS Platform and a Community Advisory Panel (CAP) in order to structurally inform on and engage regional stakeholders in developments regarding the ROAD project.

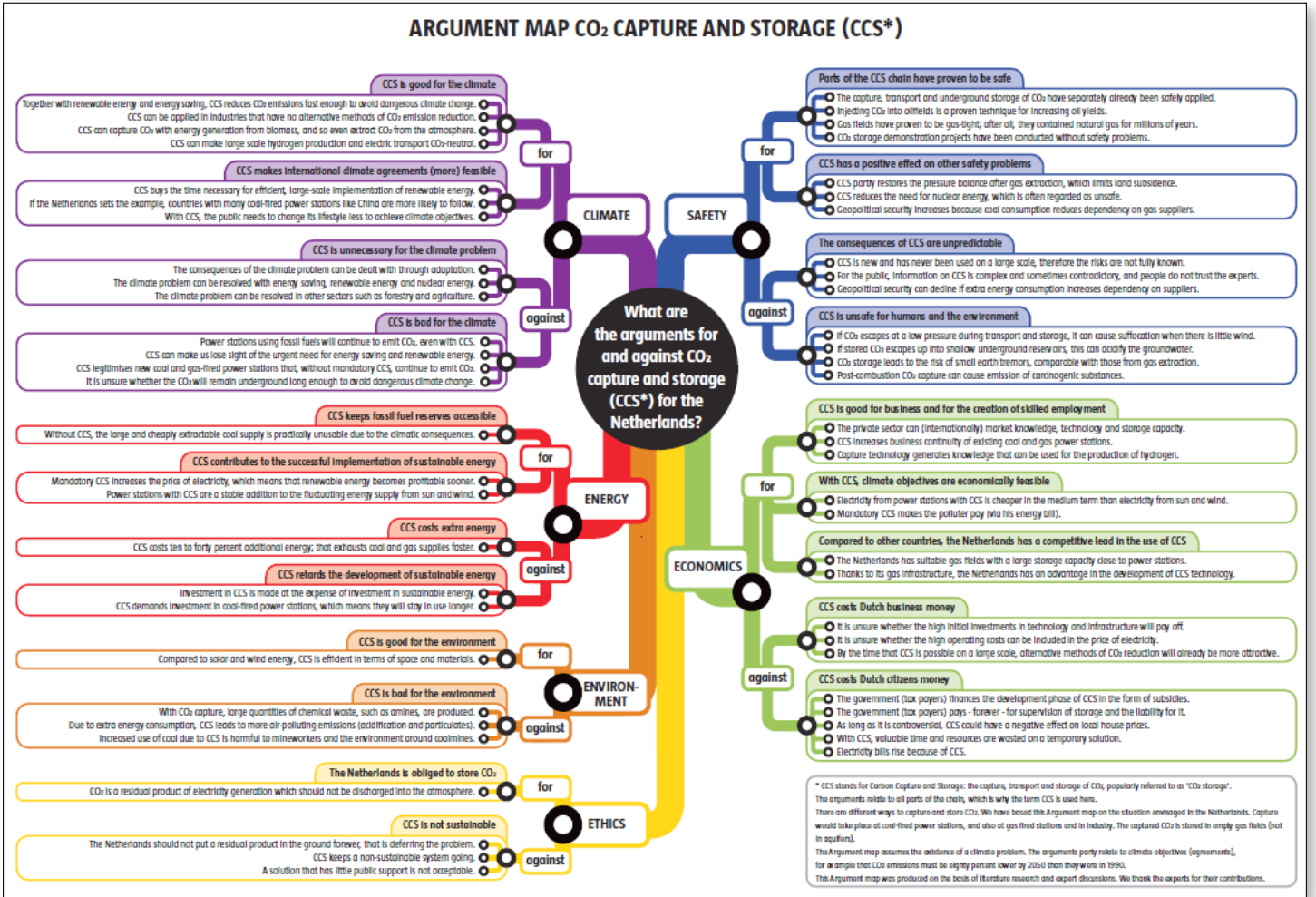
Lesson learned	It's not only about knowledge and information, but also about social skills and empathy. Technical experts received trainings in presentation, conversation and how to adequately cope with emotional situations.
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3 Identification of key stakeholders

In an early stage ROAD defined the key stakeholder groups and their perceptions of CCS and related issues. The project could tap into stakeholder insights which the parent companies acquired during the construction of the new power plants in the same port and industrial area of Rotterdam. ROAD uses these insights to map the force field of stakeholders. A force field map (see graphic) is instrumental in plotting the relative positions of stakeholders on relevant issues concerning the project.





↑ CCS Argument Map

- ROAD identified an extensive list of stakeholders and makes a periodic analysis of the force field in order to keep updated to new initiatives or developments. It focuses on the following categories of stakeholders:
- Local communities and civic groups
 - Regional NGO's (e.g. environmental)
 - Local and regional governments and authorities
 - Regional business platforms (port and industrial area)
 - National government and parliament
 - Local and national media
 - National NGO's
 - Knowledge institutes



In addition to the force field map, ROAD also uses the CCS Argument Map presenting an overview of the pros and cons on CCS used the public debate in the Netherlands. The CCS Argument Map is produced by CATO-2 (the Dutch national R&D programme for CCS) and can be found on their website of (www.co2-cato.nl).



Lesson Learned

A near neighbour is better than a distant cousin. It's important to structurally inform key stakeholders that can act as ambassador and advocate for the project.

4 Conduct and apply social characterisation

ROAD is to some extent familiar with the regional and community characteristics and stakeholder groups in the Port of Rotterdam area (Maasvlakte). The recent building of Maasvlakte 2 (land reclamation for the Port of Rotterdam) and the construction of the power plants by both E.ON and Electrabel provided ROAD a general insight into relevant stakeholder groups, perceptions and potential issues for large-scale (infrastructure) projects in the region.

In addition, ROAD has used the following research sources in order to get a more in-depth understanding of the perceptions of relevant stakeholder groups on CCS:

- Opinion surveys and focus groups.
- Consultations of regional stakeholders.
- NEARCO₂ research project (e.g. Energy Centre of the Netherlands) on public perceptions of CCS.

ROAD monitors and periodically researches the position of relevant stakeholders also using the CCS Argument Map to identify issues that might influence public perceptions of CCS in general and the ROAD-project specifically. Within the context of the Environmental Impact Assessment ROAD organised a number of town hall meetings in order to inform local communities on the project.

Town Hall meetings



On the long term, the development of a Community Advisory Panel (CAP) should also offer an ongoing platform for an open, constructive dialogue between ROAD and its stakeholders and to monitor developments in public perceptions.

Lesson Learned

Context is everything and perceptions are relative. In many cases historic events, affect and interests in local communities determine to a large extent perceptions and positions of stakeholders regarding the project.

Town Hall meetings



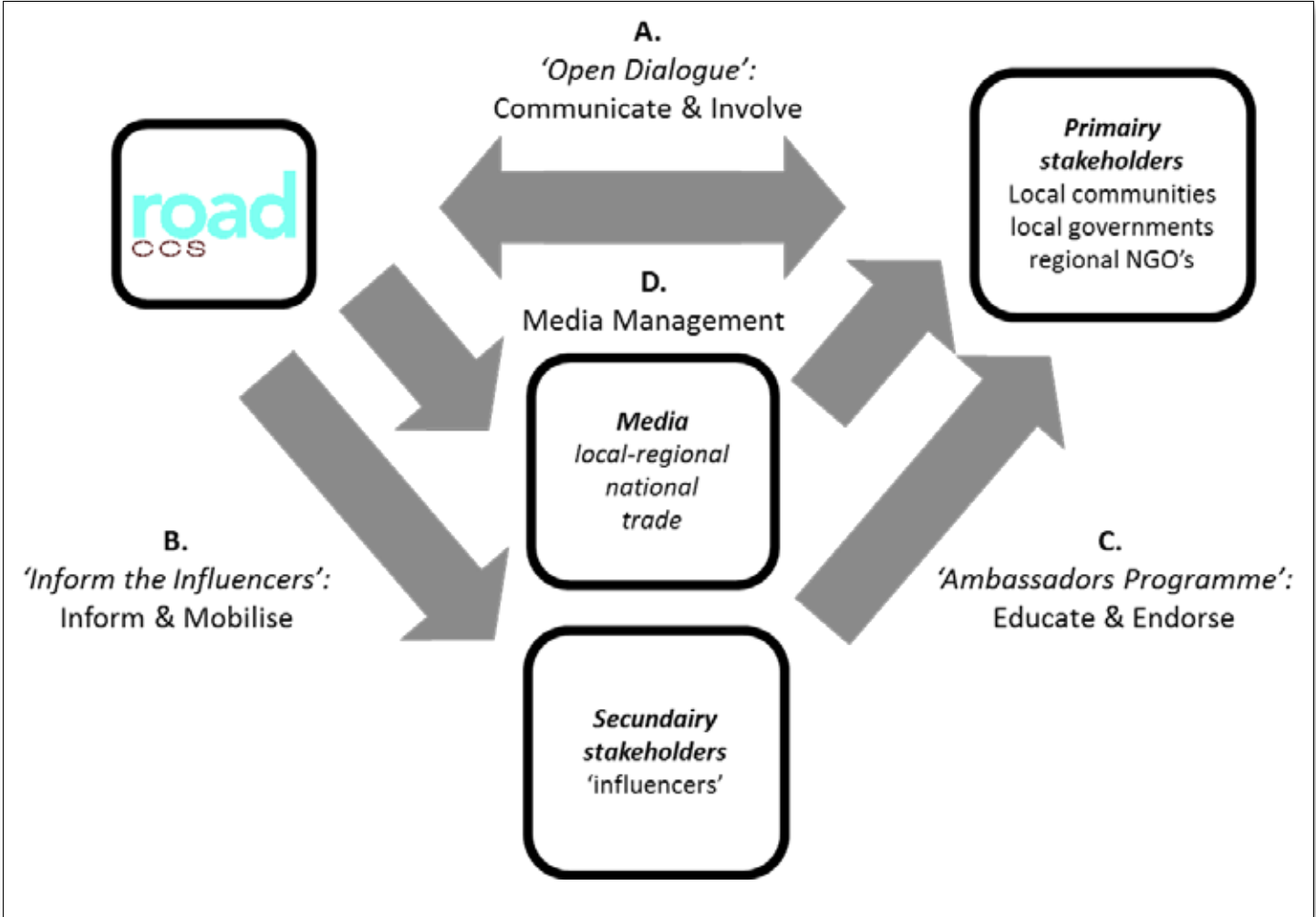
5 Development of an outreach strategy and communication plan

ROAD has developed an integral outreach strategy and communication plan for the long term. The communication strategy focuses on 3 stakeholder groups:

- Primary stakeholders: local communities, local governments, regional NGO's.
- Secondary stakeholders: influencers and opinion-leaders (e.g. scientists, officials, regulators, interest groups)
- Intermediary stakeholders: local, regional and national media

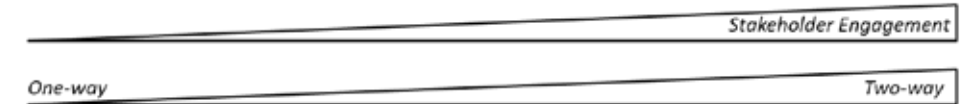






The outreach strategy of ROAD is aimed at gradually involving local communities in the project. In the first stage (e.g. design and permitting) of the project communication activities are generally aimed at informing stakeholders on the project (e.g. brochure, website).

Inform	Probe	Consultate	Co-produce	Dialogue
Examples: •Info meeting * •Info package * •Advertisement * •Working visit •Campaign •...	Examples: •Town hall meeting * •Poll •Focus group •...	Examples: •Advisory board •Expert meeting * •Round table •...	Examples: •Co-ordination group •Project group •Agreement •...	Examples: •Dialogue platform * •Referendum •...
	ROAD → ●			→





With the progress of the project ROAD is gradually building up the dialogue with local communities. On the long term the outreach strategy is focused on creating a structural platform via a Community Advisory Panel (CAP) and building and securing mutual understanding and trust.

Lesson Learned	<i>Speech is silver, listening is golden. With a two-way communication strategy and getting an insight in expectations and mutual interests of stakeholders the project will be better able to secure public acceptance on the long term.</i>
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6 Development of key messages

ROAD has defined a vision and mission statement for the project that drives all communication and corresponding key messages. The vision and mission of ROAD is as follows:

- Vision: “In transition to a sustainable energy supply we will have to rely on various transition technologies (and-and) in order to secure a reliable, efficient and clean energy supply.”
- Mission: “Demonstrating that an industrial, integrated CCS-chain (offshore) can be applied in a reliable and efficient way within 10 years (2020) and can make a substantial contribution to the climate change objectives, and share knowledge and experiences with other industries and countries.”

Within the framework of the vision and mission statement ROAD has formulated a number of positioning statements and key messages that drive communication. Key words are:

- Industrial, integrated CCS chain
- Offshore
- Reliability (safe)
- Public engagement
- Leading (knowledge, expertise, innovation)
- Transition technology (reliable, efficient, clean)
- Spearhead of RCI (Rotterdam CCS cluster)
- Dutch and European (financial) support

Lesson Learned	<i>It's the economy,...! Not only focus on climate change, but also on the economic benefits of CCS and local value propositions it offers to local communities.</i>
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7 Development outreach materials tailored to the audiences

ROAD has developed various communication materials to support its outreach strategy such as: brochure with background information, website, exhibition materials and animations of how the CCS chain (capture, transport and storage) works.

All materials are reviewed by the technical team. However, materials are easy to read and understand and mostly visualised. If possible they are endorsed by independent research institutes and/or scholars and scientists. The information is not only specifically on the ROAD-project and CCS, but also includes background information on climate change.







- Surveys and focus groups
- Media monitoring
- Regular talks with stakeholders
- Meetings with research institutes (i.a. ECN, GCCSI)

A picture is worth a thousand words. CCS is technical and complex and for local communities it's easier to understand and experience images and tangibles than words and numbers.

Planning

Year	Milestone
2010/2011	Final investment decision
2010/2011	Environmental impact assessment and permitting process
2011	Planned start of construction
2013	MPP3 operational
2015	Integrated CCS-chain operational and start of demonstration stage
2020	End of demonstration stage



CCS is a technology under development and, in the future, is expected to make a substantial contribution to achieving the climate objectives. ROAD has the potential to enable great strides to be made towards the commercial application of CCS.

While the Framework of Decisions and European climate policy, additional objectives have been formulated for reducing CO₂ emissions substantially by 2020 and thereafter. In addition to a reasonable energy supply, CO₂ is a key technology for achieving these objectives.

Another advantage of CCS is that it can be broadly applied. The technology is applicable to all large point sources in the energy sector and industry. Also heavy industries, which are largely dependent on fossil fuels, stand to benefit from the continued development of CCS. It is one of the

low climate-sensitivity measures which can substantially reduce CO₂ emissions. In addition, there are plenty of CO₂-storage options in the North Sea underground. The optimally suited depleted gas reservoirs which have successfully held natural gas for millions of years, and saline formations.

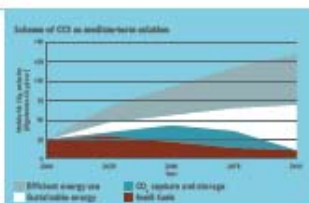
contribution to achieving this. The aim of INCO is to build an integrated CCL chain on an industrial scale with a capacity of around 1.1 megatonnes of CCL per year. Initially, it is one of the first projects in the power industry to demonstrate large-scale, integrated CCL.

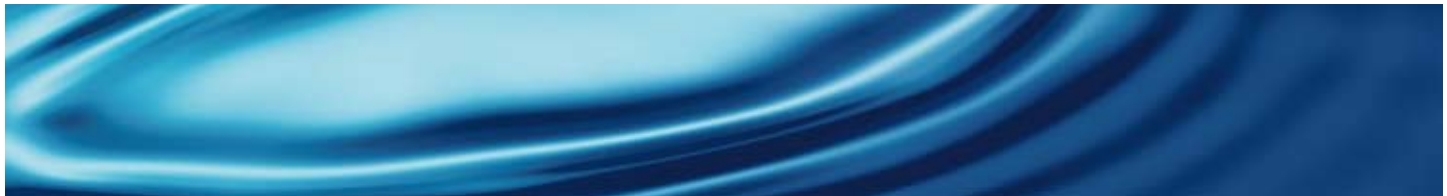
Tactical knowledge, which has been acquired over the years regarding the capture-transport-release cycle, such as in the Dutch CAPD project, is to be applied to practice and integrated within the SCAR framework. This will generate new insights and experience necessary for the future application of CCE.

ROAD plans to capture 1.1 megatonnes of CO₂ per year from the flue gases of the new E.ON power plant on the Maasvlakte near Rotterdam. Storage will take place in depleted P-18 gas reservoirs under the seabed of the North Sea off the coast of Rotterdam.

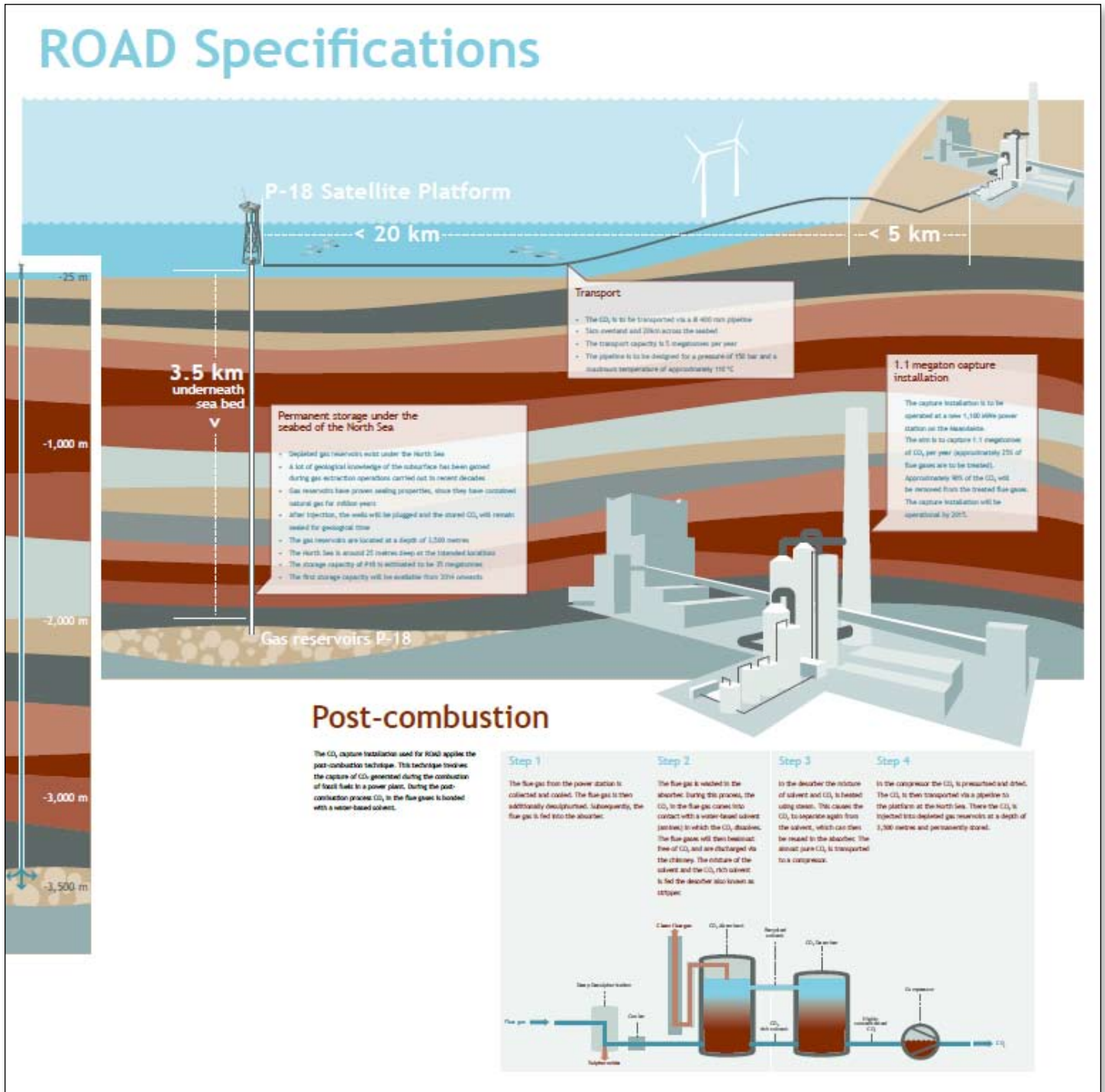
The displaced gas reservoirs are in P-10 (P-10 a, P-10-b and P-10-2) of the Dutch continental shelf, approximately 20 kilometres off the coast, at a depth of around 2,000 metres under the seabed of the North Sea. The CO₂ will be injected from a platform into displaced gas reservoirs. The storage capacity is approximately 20 million tonnes.

Any risks and effects for people and the environment will be properly detailed in the Environmental Impact Assessment report (Diffuse Effect Report). The focus will be on the possible risks and effects of CO₂ capture, transport and storage for the oil and natural, surface water, natural habitat, flora and fauna, archaeological and landscape values and natural safety. An assessment will also be conducted on the possible risks and effects of a leak.





↓ ROAD brochure





Over ROAD | Road - Windows Internet Explorer provided by Road2020
<http://www.road2020.nl/hoofdmenuag-1/over-road/>

Over ROAD | Road




Over ROAD

De initiatiefnemers van het ROAD-project zijn E.ON Benelux en Electrabel, Groep GDF SUEZ. Zij vormen samen de joint venture Maasvlakte CCS Project C.V.

De joint venture zet een samenwerking op met de beoogde partners GDF SUEZ E&P Nederland B.V. en TAQA Energy voor respectievelijk het transport, de CO₂-injectie en de permanente opslag in uitgeteerd gasreservoirs onder de bodem van de Noordzee. Het ROAD-project wordt mede mogelijk gemaakt door financiële steun van de Rijksoverheid en door financiële steun van de Europese Commissie in het kader van het European Energy Programme for Recovery.

Met het demonstratieproject wil ROAD nieuwe kennis en ervaring (technisch, juridisch, economisch, organisatorisch, maatschappelijk) opdoen. Deze kennis en ervaring zal ROAD gaan delen met het Europese CCS netwerk (www.ccsnetwork.eu) van overheden, bedrijven en kennisinstellingen. Daarmee kan ROAD een belangrijke bijdrage leveren aan de commerciële introductie van CCS en uiteindelijk aan de wereldwijde reductie van CO₂-emissies.

Menu

- Over ROAD
- CO₂-opslag onder de Noordzee
- CCS als belangrijke Klimaattechnologie
- ROAD & Planning

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 Interessante links
 Nieuws
 Home
 Publicaties
 Disclaimer

Met financiële steun van:

- Co-financed by the European Union
European Energy Programme for Recovery
- Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer

↑ Website ROAD-project: www.road2020.nl ↓ ROAD exhibition stand

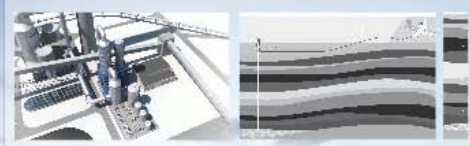


road
CCS

Carbon: 1.1 Mton CO₂ per year

Capture: Post-combustion

Storage: 3500 meters under the North Sea



www.road2020.nl



Capture

- Capture location: Maasvlakte Power Plant 3 (1,100 MWe)
- Carbon capture unit: 250 MWe equivalent
- Capture technique: post combustion
- Capture efficiency: 90% of CO₂
- CO₂ captured: 1,1 Megaton per year
- Operational: in 2015

road
CCS

With financial support from:

Transport

- Length of pipeline: 5 km onshore and 20 km offshore
- Pipeline size: 16 inch (DN400mm)
- Operating pressure: 20 - 150 bar
- Operating temperature: 20 - 110 °C

road
CCS

With financial support from:

Storage

- Storage location: P-18 fields at North Sea
- Reservoirs depth: 3,500 m
- Storage capacity: 35 Megaton
- Original pressure: 350 bar
- First reservoir available: in 2014

road
CCS

With financial support from:

↑ ROAD exhibition banners

- 8 *Actively oversee and manage the outreach programme throughout the life of the CCS project*
See under 5.
- 9 *Monitor the performance of the outreach programme and changes in public perceptions and concerns*
See under 4.
- 10 *Be flexible: refine the outreach programme as warranted*
See 3, 4 and 5.



name of activity: community advisory panel (CAP) purpose of activity: to develop a structural stakeholder dialogue with local communities in order to raise awareness, build trust and increase acceptance of the ROAD CCS project	
Target group for engagement activity	Regional/local communities ROAD project
Form of engagement activity	The CAP offers a platform for an open, constructive dialogue between ROAD and stakeholders. It is composed of about 10 members representing local communities (not representing interest groups) presided by an independent chair and meets approximately 4 times a year.
Cooperating partners in engagement activity	Port of Rotterdam, City of Rotterdam, Deltalinqs (regional employers' organisation) and DCMR Environmental Protection Agency Rijnmond
Effect of engagement activity	The CAP should structurally inform stakeholders on developments and progress regarding the project and should be instrumental in creating mutual understanding and trust on the long term
Communications material used	• Periodic stakeholder meetings • Round tables with experts • Working visits • Fact sheets • Website
Lessons learned and would this activity be repeated?	In progress; lessons learned to be determined.
Time and resources committed to the activity	To be determined
Decision making process	n/a
Uploading of relevant material (if applicable)	n/a







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Public engagement via the web

The Network members have set-up various web resources to help support their public engagement strategies. An overview is provided in the table below.

project	public engagement web resources
Bełchatów	http://www.elb.pl/index.php?dzid=123&did=2075
Compostilla	http://compostillaproject.eu
Jämschwalde	http://www.vattenfall.com/en/ccs/janschwalde.htm http://www.vattenfall.de/de/das-ccs-projekt-von-vattenfall.htm
Hatfield	http://www.powerfuel.plc.uk/id15.html http://www.nationalgrid.com/uk/EnergyandServices/NonRegs/CCS/Projects/Hatfield/
Porto Tolle	http://zeportotolle.com
ROAD	http://www.road2020.nl

Overview table with links to project or project proponent CCS public engagement web activities







Conclusions

In 2010, public engagement has been a key theme for the membership of the European CCS Demonstration Project Network. Across Europe, 6 project teams have ensured that their relations with stakeholders are managed at the highest project level and with the help of communications professionals, key messages have been developed and supported by a wide variety of materials. It is generally felt that development of and engagement in dialogue, especially with local stakeholders is to be preferred above one-sided dissemination of ‘corporate’ project information. This is especially true for those projects who foresee on-shore storage of CO₂: the Jämschwalde project, in particular, has developed interesting approaches in this area and recommends that marketing materials should be developed in such a manner that they can be cheaply and easily updated to reflect changes in the project.

All Network member projects agree that early planning and timing is essential, especially in cases where (local) elections are due. These significantly affect the timing of communications activity and the impact of communications, and need to be built into planning.

A number of Network member projects have felt growing opposition against their activities and have invested in local, tailored and two-way communication with the aim of establishing a platform for voicing concerns and clear channels to respond to those. What is particularly important is the involvement of third parties in the dialogue, especially government and the research community. It appears that levels of trust are depending on who is giving the message and are often higher if independent sources are involved, such as the research community. The Bełchatów project is an example of a project that aims to be inclusive of those third-party voices.

Some thorough work has been undertaken in mapping stakeholders. For example, the Compostilla project, through its partner Ciuden, has build detailed profiles of the local context and the ROAD project has applied a technique called force-field analysis to better understand their stakeholders. Force-field analysis maps the forces in favour of change against forces against change. Across the Network membership, it is felt that social site characterisation and stakeholder mapping are vital, as is differentiated communication depending on the stakeholder group concerned.

It is interesting to see that CCS public engagement activities are seen as part of a wider corporate communication strategy. For instance, Enel, as a lead partner in the Porto Tolle project, sees that corporate educational programmes are a key part of advancing public understanding of climate change problems in general and solutions packages in particular.