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SiteChar

Characterisation of European CO₂ storage

Deliverable N° D9.4

**Minutes of the second SiteChar Stakeholder Workshop
“Public awareness and acceptability of CCS technology”**

Lead Beneficiary	UniRoma1-CERI	
Written By	Marta Kaiser, Florence Delprat, Samuela Vercelli	
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1 Introduction

The second SiteChar Stakeholder Workshop was held at Imperial College on December 11th 2012 in London. The workshop was dedicated to “Public awareness and acceptability of the CCS technology”. At this workshop results from the social scientific research (WP8) in the SiteChar project as well as a new approach for raising public awareness have been presented. Results and applicability of the approach for real CCS projects were discussed focusing on the following topics:

- Integration of the social research results with the technical results from the SiteChar project
- Integration of social aspects in the licensing process for CCS projects
- Public engagement in the process of project development

The workshop gathered 45 participants from 20 organisations. Dissemination materials were distributed to the participants providing an overview of both WP8 results from public awareness studies and the SiteChar project. It was hailed a success having attracted significant interest and contribution from the wider community of stakeholders. The feedback received encourages close collaboration between geological and social site characterisation processes and stimulates the application of public engagement activities to real licensing processes.

This report provides the minutes of the workshop, a copy of the workshop agenda, participant’s list press release and the links for downloading the brochures. A copy of the workshop presentations is available on the webpage dedicated to the workshop in the project’s website (www.sitechar-co2.eu).





2 Minutes of the workshop

2.1 Welcome

Professor Sevket Durucan from Imperial College, London formally opened the workshop and welcomed the participants. He presented Imperial College, which is consistently rated amongst the world's best universities. The speaker finally wished everyone fruitful and constructive discussions.

2.2 The SiteChar Project

Florence Delprat-Jannaud (IFPEN) outlined the research objectives of the SiteChar project and briefly presented the workflow of the project. The speaker then introduced the five sites chosen for the detailed characterisation for CO₂ storage during the course of the research: the North Sea Moray Firth (UK), Vedsted (Denmark), Zalecze-Zuchlow (Poland), Halten Terrace / Trondelag platform (Norway) and Southern Adriatic (Italy). It was highlighted that out of the five aforementioned sites, two were chosen for social site characterisation and public engagement activities. The sites identified for this research are the offshore North Sea Moray Firth site (UK) and onshore Zalecze-Zuchlow site (Poland).



The speaker then outlined the preparations for the dry-run licence applications which will be submitted to the competent regulatory authorities for the North Sea Moray Firth (UK) and Vedsted site (Denmark).

Florence Delprat-Jannaud concluded the presentation illustrating the key benefits of the SiteChar project, namely: technical recommendations for storage site characterisation and best practice guidance for storage licensing from the perspective of both applicant and regulator.

2.3 Geological site characterisation of the Scottish and Polish site

Maxine Akhurst from British Geological Survey (NERC) presented the overview of the offshore North Sea Outer Moray Firth (UK) and the development and review of the dry-run licence application for this site.



Marcin Mazurowski (PGNiG) then outlined the geological characterisation of an onshore Zalecze-Zuchlow (Poland) and explained next steps of the technical analysis.

2.4 Results from the social scientific research

2.4.1 Introduction of the methodological approach

The second part of the workshop was dedicated to the social scientific research in the SiteChar project. This part of the project (WP8) is dedicated to advancing public awareness and helping people to form their own opinion about ongoing selection of places where CCS projects might be planned. At two sites, the North Sea Outer Moray Firth site in the UK and the Zalecze & Zuchlow site in Poland, community representatives and the local public have been informed about the research and are involved in discussions about CO₂ capture and storage technology by a focus conference and an information meeting. The objective of this part of the project was to identify and develop appropriate methods for involving the local population in the process of a CCS project development. Results of the research at the two sites will be used to develop recommendations for public engagement at other sites throughout Europe.

Suzanne Brunsting (ECN) presented the tasks and partners working in WP8. She outlined that the key objectives of the research activities in WP8 are to create a 'social map' of stakeholder opinions and opinion shapers but also a 'hinge' to actual stakeholder engagement, monitor changes and compare results.

The speaker presented then the focus conference method, used to raise public awareness and assist public opinion forming processes of a prospective CCS site in the UK and Poland. The aim of the focus conference was also to test a format in which project developers, authorities and the local public could enhance their cooperation in project planning. This method structured the participation process in two weekends, which have to be prepared and followed up afterwards. During the preparation and setup of the focus conference, particular emphasis is given to providing



knowledge, giving space for discussions, allowing each participant to gain own experience and creating opportunities to compare their own opinion with the opinion of others. The process of opinion forming during the focus conferences results in a positioning paper, in which the participants write their statement on CCS technology.

2.4.2 Results from the North Sea Outer Moray Firth site (UK)

Suzanne Brunsting (ECN) outlined the results of the focus conference and second representative survey in the North Sea Outer Moray Firth site (UK). In the opinion of the participants of the UK focus conference action has to be conducted to mitigate climate change. They think that CCS should be part of a suite of climate change mitigation technologies. The participants also stated that information campaigns on CCS are needed and that national government should clarify its position on this technology.

The speaker presented then the results of the second representative survey in the Moray Firth, which show that the awareness of CCS in general and local plans for CCS in this area is fairly low. However, the respondents who have at least heard about CCS mainly expect a positive impact of CCS on the local area. Unemployment and factory closure are perceived as the most important issues facing the Moray Firth. Interestingly, the majority of the respondents indicate that they think the most important benefit of CCS is that it will bring jobs to the area and improve the local economy. This factor may thus have a large influence on the perception of attractiveness of CCS in the local area. This makes it important to provide accurate information about the possibility of CCS improving the local economy. Besides these positive expectations, respondents also expressed some doubts about whether CCS can be used without damaging the marine life and environment.

Suzanne Brunsting highlighted that while over 50 % of the respondents indicated that they support the development of CCS in the Moray Firth and other parts of Scotland, there is still a lack of information on this issue, e.g. about economic aspects of this technology. If one aims to increase awareness and endorsement of CCS, it seems crucial to engage in public consultations and increase the number of information campaigns on CCS.

Discussion raised a point about the possibility to engage the media during the focus conferences. Suzanne Brunsting explained that the social site characterisation procedure needs to be adapted to each situation; for instance, since SiteChar is a research project and not a real CCS project, there was no need for media involvement.

2.4.3 Results from Zalecze-Zuchlow site (Poland)

Marta Kaiser (UfU) presented results of the public engagement activities carried out in Zalecze-Zuchlow site in Poland. The work carried out involved focus conference, information meeting and representative survey of the local public.

The speaker explained that the focus conference on CCS took place on two weekends in March and April 2012 and included 16 people from the local population. The aim of the focus conference was to support a group of citizens in the development of an informed and structured opinion on the chances and risks of CCS technology, as well as on the requirements for a socially acceptable implementation of CCS projects. During the weekends the participants had the opportunity to learn the scientific, technical and social aspects of CCS technology and to listen to different points of view on CCS technology. Experts from research, politics, industry and NGOs were invited to participate in both weekends, during which they gave presentations and answered questions from the participants. This process resulted in a positioning paper written by the participants representing a statement on CCS technology from their perspective.

Marta Kaiser outlined then the key messages from the Polish positioning paper divided in arguments pro and contra CCS technology. The arguments can be summarized as follows. The participants identified the following benefits from the use of CCS technology in Poland:



- Poland's influence on the European policy on climate protection will increase,
- Poland will contribute to climate protection,
- Life service extension of the gas mines Załęcze and Żuchłów,
- Safe jobs,
- Provide new jobs.

In the citizens' opinion there are also important arguments against the implementation of the CCS technology in Poland, namely:

- Poland could be used as the European „garbage dump“ for CO₂ emissions;
- Concerns to the safety – unforeseeable phenomena like earth tremors, CO₂ leakage;
- CCS is very costly;
- There is no clear position of the government on CCS (no legal framework, financial contribution etc.);
- Real estates would lose their value.

Most of these arguments were confirmed also in the second representative survey. Marta Kaiser highlighted that the economic aspects of the CCS technology (e.g. costs and jobs) have great importance for the citizens.

The speaker finally presented the recommendations of the Polish focus conference participants for the implementation of the CCS technology in their local area.

Discussion: some participants to the workshop pointed out that, surprisingly, Polish citizens seemed to be more concerned about CO₂ leakage than about gas production. Marta Kaiser answered that since there has been no accident with gas production, the local population is quite confident. But since CO₂ geological storage is a new technique, local people fear there could be some risks. It was however pointed out that the long term risk might not be a specific issue for the population.

2.4.4 The added value of social scientific research

René Zimmer (UfU) presented the analysis of the opinion forming process during the Polish focus conference. He outlined how the course of the discussions and the argumentation changed during the conference between the two week-ends. Economic issues, like costs of the technology and economic benefits for the local area, gain an importance compared to risks and climate protection arguments. The speaker presented also the key arguments of the UK positioning paper.



René Zimmer finally highlighted the importance of the results and explained how they can be used in future projects. Economic aspects have a significant value for people, this is why it's important to show the citizens which benefits the CCS technology will bring to their country, region and themselves. The costs of the implementation of the CCS technology as well as the financial basis have to be communicated in a transparent way. There has to be an open discussion about CCS state-of-art, possible risks and how to handle them. The citizens want to have a timeframe for the development and implementation of CCS, they need an idea of the period for which CCS is an option and of what happens in the meantime. To dispel the people's concerns that their region can become a dumping ground for CO₂, a public information campaign is needed, explaining for example why CCS can be an option for Poland or Scotland despite the fact that Germany or The Netherlands rejected the technology.

Discussion: One participant observes that perhaps Scottish citizens foresee more benefits since they live in an industrialised area and in their case the potential storage site is linked to a power plant located near their homes; the Polish citizens instead live in a rural area so the potential storage site appears to be removed from the industrial plant. Marta Kaiser explains that for the Polish people independence is very important and they wouldn't like to store CO₂ from other countries.

One participant observes that the focus on economic benefits overlooks the importance of environmental risks. Marta Kaiser explains that it is important to take into account the specific local situation, in some countries environmental protection might have a lower priority on economic concerns. Another participant notes that it's difficult for people to have a clear opinion, since they have no relevant expertise for judging, so they might often limit themselves to an evaluation based on the possible implications for everyday life or the impact on the local environment.

2.5 Word Café discussion

After the presentation of René Zimmer a World Café discussion was started. The World Café revolved around three topics:

1. Integration of the social research results with the technical results from the SiteChar project
2. Integration of social aspects in the licensing process for CCS projects
3. Public engagement in the process of project development

The participants were divided into three groups. Each group had 15 minutes to discuss each topic with the support of Suzanne Brunstig, Marta Kaiser and René Zimmer During the discussion round

the participants wrote their key issues on the “tablecloths”. After 15 minutes the groups had to change table in order to discuss the next topic. So all the participants had the possibility to discuss the three topics. At the end of the event the three moderators presented the main results from the discussion at each table. The key discussion points for every topic are described below.



2.5.1 Integration of the social research results with the technical results from the SiteChar project

The participants agreed that the integration of social and technical research in the SiteChar project but also in other projects is very important.

Although at the beginning of the SiteChar project, there was no cooperation between the technical (WP3) and social (WP8) partners, the results of social research in WP8 have a high importance and will be included in the dry-run licence application for the North Sea Moray Firth site (UK).

There were different views on the question on how to integrate public engagement activities in real project development. Should the perspective of the public be acquired by independent organisations? When is an organisation independent? When it's funded by the EU, state, industry? Are universities and NGOs independent organisations? The participants agreed that every region is different, that is why before the beginning of the project planning the social site characterisation is needed.

Social researchers should support technical researchers in the communication with the public, e.g. they should help to “translate” the technical language of the presentations into “simple” language, understandable for the lay people.

Finally the participants agreed that the social researchers from the SiteChar project should summarise their key recommendations on public communication for future CCS projects in an extra report.



2.5.2 Integration of social aspects in the licensing process for CCS projects

All discussants agreed that it is necessary to consider social aspects during the licensing process as social support is an important aspect of a project's success. But there were different views whether measurement of social acceptance, some kind of social mapping or public participation should become part of the licensing process or whether these measurements should take place as an accompanying activity. There were also different views about the question: what is more important, to offer and to do different social scientific measurements and public engagement activities or to have a public vote on the planned CCS project? And what does the offering of social measurements and activities mean? Will there be a catalogue of pre-selected social measurements that is mandatory for all planned CCS projects regardless whether they are implemented on-shore or off-shore? Or is it in the discretion of each company to choose site-specific social activities? And if there is a vote of the public in favour or against a CCS project how binding is the vote? Who is the target audience for all these activities? All these questions clearly show how important the co-operation between social scientists, geologists, companies and authorities is in order to develop suitable, specific and realizable steps for the licensing phase of planned CCS projects.





2.5.3 Public engagement in the process of project development

The group agreed that this topic is important but there was discussion about at what points in time the public should be engaged and how. What does it mean to engage the public 'at the very outset' of a project? And when does a project start?

A timeline was drawn and efforts to public engagement were added resulting in the following:

- Even before site explorations, the public should be informed/involved in the technology: Why look into it at all, what place does it have in the general energy transition policy, etc. This is not a role for project operators but primarily for governments.
- Project operators should involve the public every time something happens that affects them. So that includes for example test drilling and other research related to site selection. Relevant stakeholders including public representatives should be on board already in the siting process.
- When the site is selected and a major investment is made for research and application for an EIA, it's important to take local stakeholders along in this process. It may be problematic that at this stage the public cannot influence the site selection. However it will be possible to negotiate conditions for acceptability. During and after this stage, in which also financial close of the project is reached, the wider community needs to be involved by properly organized public outreach activities.
- The right of access to information is prescribed in the EU Directive. Site Operators should take care to live up to these guidelines.



3 Workshop agenda

09.30 – 09.40	Welcome	Sevket Durucan (Imperial)
09.40 – 10.00	General presentation of the SiteChar project	F. Delprat-Jannaud (IFPEN)
10.00 – 10.20	Presentation of the geological site characterisation of the Scottish site	Maxine Akhurst (NERC)
10.20 – 10.40	Presentation of the geological site characterisation of the Polish site	Marcin Mazurowski (PGNiG)
10.40 – 11.00	Coffee break	
11.00 – 11.45	Presentation of the social research results of the Scottish site & Discussion	Suzanne Brunsting (ECN)
11.45 – 12.30	Presentation of the social research results of the Polish site & Discussion	Marta Kaiser (UfU)
12.30-14.00	Lunch	
14.00 – 14.30	The added value of social scientific research	Dr. René Zimmer (UfU)
14.30 – 16.00	Break out groups on 3 key topics: <ul style="list-style-type: none">• Integration of the social research results with the technical results from the SiteChar project• Integration of social aspects in the licensing process for CCS projects• Public engagement in the process of project development	Suzanne Brunsting (ECN) Marta Kaiser (UfU) Dr. René Zimmer (UfU)
16.00 – 16.30	Wrap-Up and End of Workshop	F. Delprat-Jannaud (IFPEN)



4 List of participants

Name	Surname	Organization	Country
Maxine	Akhurst	British Geological Survey	United Kingdom
Masoud	Babaei	Imperial College London	United Kingdom
Suzanne	Brunsting	Energy research Centre of the Netherlands	The Netherlands
Dong	Chen	Imperial College London	United Kingdom
Joanna	Chojnacka	PGNiG	Poland
Florence	Delprat-Jannaud	IFPEN	France
Sevket	Durucan	Imperial College London	United Kingdom
Dr Ward	Goldthorpe	The Crown Estate	United Kingdom
Clair	Gough	Tyndall Centre for Climate Change Research	United Kingdom
Rajesh	Govindan	Imperial College London	United Kingdom
Hallvard	Høydalsvik	Gassnova	Norway
Emmanuelle	Hutin	IFP Energies nouvelles	France
Marta	Kaiser	Independent Institute for Environmental Issues (UfU)	Germany
Susan	Kidd	The Crown Estate	United Kingdom
Lukasz	Klimkowski	AGH University of Science and Technology	Poland
Anna	Korre	Imperial College London	United Kingdom
Szymon	Kuczynski	AGH University of Science and Technology	Poland
Anna	Kuzniar-Klimkowska	AGH University of Science and Technology	Poland
Leslie	Mabon	School of GeoSciences, University of Edinburgh	United Kingdom
Rudolf	Maurer	Statoil ASA	Norway
Franz	May	BGR - Bundesanstalt für Geowissenschaften und Rohstoffe	Germany
Marcin	Mazurowski	PGNiG	Poland
Beatriz	Medina	AMPHOS 21 CONSULTING	Spain
Barbara	Merson	OGS	Italy
Anthony	Michel	IFP Energies nouvelles	France
Katarzyna	Mróz	PGNiG	Poland
Krzysztof	Polanski	AGH University of Science and Technology	Poland
Niels	Poulsen	GEUS	Denmark
David	Reiner	University of Cambridge	United Kingdom
Joanne	Robinson	Shell UK Limited	United Kingdom
Ewa	Sadlowska	PGNiG SA	Poland
Noalwenn	Sallée	IFP Energies nouvelles	France
Simon	Shackley	School of GeoSciences, University of Edinburgh	United Kingdom
Ji-Quan	Shi	Imperial College London	United Kingdom
Marzena	Strzelczak	PGNiG	Poland
Matthew	Surry	SSE	United Kingdom
Amer	Syed	Imperial College London	United Kingdom
Sylvain	Serbutoviez	IFPEN, Economics Division	France



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Owain	Tucker	Shell	United Kingdom
Samuela	Vercelli	University of Rome La Sapienza - CERI	Italy
Valentina	Volpi	OGS	Italy
Linsey	Wilson	Scottish Government	United Kingdom
Tomasz	Wlodek	AGH University of Science and Technology	Poland
René	Zimmer	Independent Institute for Environmental Issues (UfU)	Germany



5 Press release

Geological storage of CO₂

**“Public awareness and acceptability of CCS technology”
Second workshop of the FP7 “SiteChar” European project
www.sitechar-co2.eu**

The second workshop for the European SiteChar project, dedicated to social scientific research for the characterisation of sites for the geological storage of CO₂, was held December 11th 2012 at Imperial College, London (UK). This workshop focused on providing insights from the research carried out so far aiming to support industry, regulators and other stakeholders in the rollout of geological storage on an industrial scale in Europe to reduce CO₂ emissions. The SiteChar partners have presented a new approach for raising public awareness in relation to prospective CO₂ storage sites that has been tested with regard to two potential storage projects, an offshore site in the UK and an onshore site in Poland. Results from these research activities and their applicability for real CCS projects have been discussed. Another important topic has been the role of social aspects in the licensing process for CCS projects,

The FP7 funded SiteChar project brings together seventeen partners from research, industry and the consultancy sector in ten EU countries: IFP Energies nouvelles (coordinator), AGH, ECN, ENEL, GEUS, GFZ, IMPERIAL, NERC (BGS), OGS, PGNiG, Statoil, TNO, SINTEF-PR, UniRoma1-CERI, UfU, Vattenfall and the Scottish Government. It is also supported by Veolia Environment and Gassnova. The project is scheduled to continue until December 2013. SiteChar examines the entire site characterisation chain, from the initial feasibility studies through to the final stage of application for a storage licence based on the criteria defined by the relevant European legislation: storage capacities, geological modelling at basin or reservoir scale, injection scenarios, risk assessment, development of the site monitoring plan, technical and economic analysis (assessment of all the costs related to storage), public awareness, etc.

During the workshop, the results from social research carried out with regard to two potential European storage sites studied in SiteChar, a North Sea offshore multi-store site (hydrocarbon field and aquifer) in Scotland and an onshore oil and gas field in Poland, were presented and discussed. Both sites have been studied in their social components including local awareness, knowledge, perceptions, issues affecting local well-being, as well as trusted media, institutions, and public representatives. A tool to improve public involvement and engagement has been presented: “focus conferences”, which combine provision of expert knowledge with lots of room for discussions, allowing each participant to gain own experiences on CCS. Participants to the 2nd SiteChar workshop have then had the possibility of direct interaction and exchange with the researchers through dedicated break-out groups.

The first SiteChar workshop gathered 45 participants from 20 organisations. It was hailed a success having attracted significant interest and contribution from the wider community of stakeholders. The feedback received encourages close collaboration between geological and social site characterisation processes and stimulates the application of public engagement activities to real licensing processes.

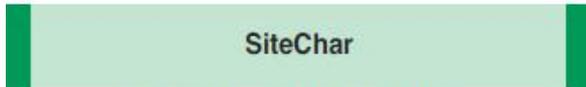


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A EU RESEARCH PROJECT DEDICATED TO THE
CHARACTERISATION OF EUROPEAN GEOLOGICAL
CO₂ STORAGE SITES



Advancing public awareness
on the selection of sites
for the geological storage of CO₂

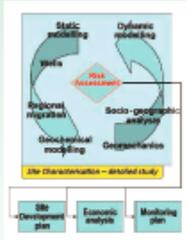


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SiteChar Workflow

A methodology for site characterization, validated through insight from research on the SiteChar sites portfolio, to guide the implementation of the EC CO₂ Storage Directive and OSPAR regulation in Member States.



Coordinated and led by IFP Energies nouvelles, SiteChar partners are from research, industry, and the consultancy sector from ten EU countries: AGH, BGS, ECN, ENEL, GEUS, GFZ, IMPERIAL, OGS, PGNIG, SINTEF-PR, Statoil, TNO, UfU, UniRoma1-CERI, Vattenfall and the Scottish Government. SiteChar is also supported by Gassnova and Veolia Environnement.

In 2013 SiteChar will organise workshops and webinars dedicated to regulators, industry and researchers to share its results on workflow, dry-run permits and public engagement activities. Contact us to register for our invitation list: florence.delprat-jamaud@ifpen.fr



Coordination:
IFPEN
florence.delprat-jamaud@ifpen.fr

SiteChar

A EU research project dedicated to the characterisation of European CO₂ storage sites



www.sitechar-co2.eu



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