Near CO_2

Participation and communication near CO_2 capture and storage operations

Deliverable 3.1

Engagement and communication strategies for CCS projects:

Gaps between current and desired practices and exemplary strategies

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Key messages

The NearCO_2 project aims to support the development of effective public and other stakeholders' engagement and communication strategies for CCS projects. In Work Package 3, of which this document reports, we analysed the gaps between existing practices of public engagement in CCS and other energy projects, and available toolkits or guidelines on this matter. Subsequently, we developed strategies for local engagement and communication that address the identified gaps.

Essential identified gaps between CCS engagement practices and available guidelines were:

- *Internal alignment:* Toolkits generally lack explicit and elaborate attention to the fact that the project developers are usually intra organizational cooperatives with different backgrounds, skills, knowledge, resources and cultures. This effect is even stronger when the project is developed by a consortium of parties. As a consequence, project developers may have a difficulty coming to a common engagement strategy and speaking with one voice.
- *Use of toolkits and timing:* Mostly toolkits appear to be used by project developers to check whether the approaches already chosen are consistent with those of others, not as a help to design an approach ex ante. Also, there seems to remain a tendency to stay quiet as long as no one protests; even if project developers largely subscribe to the principle of early engagement and communication. Developers often encounter the question how to adapt or increase further engagement and communication when conflict has already surfaced and polarization is taken place. Existing toolkits do not offer advice for this.
- *Instrumental approaches and scope for negotiation:* Most project developers look at engagement and communication from a very instrumental point of view, intended to win support or at least gain acceptance of the project in order to be able to implement the project. Also, project developers generally see limited room for substantive negotiation with local stakeholders. Most toolkits/guidelines provide no or only limited support in getting clarity on the aims of engagement. Additionally, they offer no elaborate mechanisms for costs-benefit sharing.

On the basis of this gap analysis, the project developed elements for improving engagement and communication strategies, focusing on the first gap identified above: the fact that project developers need to continuously internally align views for effective external interaction. An additional step was introduced into the ESTEEM toolkit, the most comprehensive process methodology reviewed. This step is important throughout the entire project process. At least the following points of discussion and agreement should be part of this internal exploration and reviewing process:

- The goals of the engagement and communication strategy
- The scope of engagement and communication, including the way participants' input will be treated: instrumental or for dialogue and negotiation?
- The mandate for those designing and implementing the strategy
- Key milestones and evaluation moments during the engagement process, including an exploration of subjects open to evaluation and change.

These points were further elaborated in the form of hands-on checklists that can be easily implemented in the ESTEEM process format. Also, we included a discussion on potential indicators for the eventual assessment of engagement and communication strategies. These relate to the process as well as the outcome, and their specification should take place in the internal alignment process. Using these insights, we provide a number of concrete suggestions for the engagement and communication process in a Polish CCS case.

Contents

Executive summary

Introduction

Deliverable 3 (D3) has evolved from the work done in Work package (WP) 1, 2 and 3 of the NEARCO$_2$ project, a project that aims to support the development of effective engagement and communication strategies for CCS projects.

The purposes of engagement and communication can differ. The most narrow purpose is an instrumental one, when getting the project accepted and implemented is the only goal of participation. Within the NEARCO$_2$ project however, we have worked with the broadest definition, which also leaves room for democratic and quality goals (see table a). In line with this, *effective* engagement and communication has been defined in terms of meeting the needs (information and process related) of the involved stakeholders (including the 'general local public').

Table a: different aims of engagement and communication

Utilitarian or instrumental goals:	If engagement and communication are aimed at mobilising support and gaining acceptance, then engagement and communication is instrumental in getting the project implemented – with as little opposition as possible, and acceptance by main stakeholders, including the local general public.
Quality goals:	Participation is intended to gather scientific, experiential, tacit or local knowledge and can concern practices, stakeholders, processes, expectations, risk perspectives etc. Engagement and communication is aimed at improving the design, planning and decision-making process and its outcome. It also aims at clarifying the diverse perspectives on the (desirability of) the project and the main problems identified (problem structuring). Participation can aim at learning, network building and improved understanding among specific stakeholder groups.
Democratic goals:	Here, engagement is both means and end. A central notion here is that stakeholders (including the general local public) should be informed and granted the opportunity to participate in decision-making that affects their direct living environment and daily lives.

Part I of D3 aims at improving our understanding of gaps between current and 'desired' practices of engagement and communication. Part II elaborates the insights gathered into suggestions for the devise of effective communication and engagement strategies, including flowcharts, case studies and indicators.

PART I: ENGAGEMENT AND COMMUNICATION: GAPS IN RESEARCH AND PRACTICE

Current practices in stakeholder engagement may very well meet the legal requirements, but that is by no means a guarantee for effective strategies. Therefore, rather than focusing on legal institutional requirements, the NEARCO$_2$ project has gone more in depth into conditions affecting opinion formation about CCS technologies and about CCS projects. This was done mostly in WP 1 and 2. Based on this and other research, chapter 2 summarises the following issues that are important to take into account when devising an engagement and communication strategy:

- The need to address misperceptions.
- The differentiated information needs and differentiated use of different media.
- The importance of trust in the source of information.
- The importance of clarity on the process.
- The need to take risk opinions seriously.
- Transparency about the scientific uncertainties relating to storage and leakage.
- Transparency about costs and benefits and their distribution.
- Room to discuss conditions of acceptability (and discussions on the cost-benefit distribution).
- The role of the media.
- Timing issues.
- Taking account of local contingencies.

- The importance of a good process.

In part these issues address *the level of the individual* and how individuals may respond. Such lessons can be generalized across and have relevance for different projects and geographical contexts. In part, these lessons also point to the importance of taking *process dynamics* seriously. And in part they emphasise the importance of knowing the *particular local social, institutional, physical, political and infrastructural context* of the proposed CCS site(s) in order to be able to engage with local stakeholders effectively. Lessons drawn in chapter 2 are about tailoring of the engagement and communication approach to a particular context, addressing local stakeholders, the local public or 'host communities' of proposed CCS operations. So far, a lot of attention has been awarded to this receiving side. Understanding their motivations and opinion-shaping processes is crucial when trying to improve engagement and communication processes.

However, much less attention has been awarded to the implementing organisations (e.g. energy companies; oil industry; or industrial consortia) involved in CCS projects. Their internal institutional dynamics, organisational practice, characteristics, competences and resources affect the resulting effective engagement and communication strategy. Chapter 3 and 4 zoom in on the implementing side and then in particular the project developers and consultants they hire to support them in preparing and executing an engagement and communication strategy.

Chapter 3 explores what insights literatures on organisational practices with regard to engagement and communication can bring us and these then provide the underpinning for the interviews with project developers (chapter 4). While societal expectations around stakeholder dialogue and engagement are increasingly widespread, there will still be differences in the ways that firms respond to them. These differences and their relevance for the design of CCS-related engagement strategies are the focus of chapter 3. In particular, we consider the role of what have been collectively described as 'informal institutions' in influencing engagement practice, focusing particularly on factors within the organisations involved in promoting CCS projects.

In line with a socio-technical perspective on innovation, we regard engagement and communication strategy as the outcome of a process in which (beliefs and expectations about) the project context play an important role, next to internal organisational and institutional dynamics. The particular organisational context, the particular project context, and interaction between the two (e.g. through the involvement of local stakeholders in the devise of the engagement and communication strategy) will affect the resulting engagement and communication strategy.

We have selected concepts from different studies and theories with the aim to shed light on the internal aspects of company practice with regard to engagement and communication. The analytical concepts were arranged as fitting within the overarching socio-technical perspective. Given the novelty of the topic and the scarcity of associated empirics and focused theory, this exploration has been explorative rather than comprehensive. The preliminary insights resulting from this chapter will be taken further in the empirical work. The next chapter presents the fieldwork (interviews).

Chapter 4 empirically investigated internal company practices by means of 15 semi-structured interviews with project developers, who are the prospective end-users of engagement and communication toolkits and guidelines. The interview questions were framed with the following issues in mind:

- The influence of the internal institutional dynamics in developer organisations on the devise of an engagement and communication strategy (e.g. organisational norms and values; or diverging value systems between departments or consortium partners).
- Other organisational conditions that affect the devise of an engagement and communication strategy and how project developers attend to these (e.g. formal internal task divisions, authority structure; available resources and competences).
- Project developers' understanding of their role in devising an engagement and communication strategy.

Chapter 5 compares the following toolkits and guidelines for engagement and communication:

- The ESTEEM Toolkit: ESTEEM toolkit: resulting from the FP6 Create Acceptance Project, available at http://www.esteem-tool.eu/. See also Jolivet et al, 2006; Raven et al, 2009).
- The CSIRO Toolkit:
- Ashworth P., Bradbury J. ,Feenstra C.F.J., Greenberg S., Hund G., Mikunda T., Wade S. and Shaw H. (2011) Communication/Engagement Toolkit for CCS Projects. Commonwealth Scientific and Industrial Research Organisation (CSIRO) Energy Transformed Flagship, EP105893. And see also Ashworth, 2010.
- The WRI Guidelines: WRI (2010). CCS and community engagement. Guidelines for Community Engagement in Carbon Dioxide Capture, Transport, and Storage Projects. World Resources Institute (WRI), Washington, Nov 2010: 100 pp.
- The NETL outreach guidelines: NETL (2009) Public Outreach and Education for Carbon Storage Projects DOE/NETL-2009/1391. Dec. 2009. National Energy Technology Laboratory www.netl.doe.gov, 62 pp.
- IISD Workshop outcomes: IISD (2007) Carbon Capture and Storage Communication Workshops. University of Calgary, International Institute for Sustainable Development (IISD), Climate Change Central (Canada) CCS projects Climate Change Central (2007)

The review is based on several criteria that address central issues of the toolkits like:

- Focus and scope;
- Background theory and the aims of the engagement;
- Empirical basis of the toolkit;
- View on the prospective end-user;
- Structure/ architecture of the toolkit;
- Timing issues;
- Tools, activities and techniques proposed;
- Incorporation of existing knowledge;
- Positioning in the broader societal or public debates;
- Distinguishing features.

The review shows that the WRI guideline, NETL and IISD publications provide helpful frameworks to understand important elements of engagement and communication and point out directions on how to go about preparing and devising such a strategy. They offer less concrete and ready-to-use tools than ESTEEM and the CSIRO toolkit. The relevance of the WRI, NETL and IISD publications lies on a more strategic and general level, while also giving concrete recommendations. When a project developer is looking for a translation of recommendations into concrete tools and techniques that can be directly applied, then the ESTEEM and CSIRO toolkit offer the most practical and comprehensive support. The ESTEEM toolkit is most comprehensive.

Chapter 6 brings together the most interesting outcomes and conclusions based on chapters 2–5. These relate to:

- The importance of internal alignment within CCS consortia, in order to come to a coherent external engagement and communication strategy; this is an element that current toolkit do not take into account.
- The implications of different contexts for capture, transport and storage, e.g. in terms of relations between developer and local community, and possible local benefits.
- Timing: early engagement is often subscribed but in practice hardly done.
- The little direct use that is made of toolkits & guidelines; they are mainly applied to check whether the approaches chosen are consistent with those of others.
- Differences in basic ideas on the aim of engagement and communication; from a very instrumental point of view (‘how to create acceptance’) to a wider scope for views from the community, changing project and/or process; current toolkits hardly provide support on getting clarity on this aim.

- Scope for negotiating costs & benefits; most toolkits except for the ESTEEM tool do not provide support for getting clarity on the room for negotiation (possibly aligning expectations and then interests)
- The relevance of the national context, and the influence that national political and societal debates on CCS has on a project's feasibility

What has become clear from the fieldwork interviews and conceptual section on company practices, is that prospective end-users of these engagement and communication toolkits come in many kinds. Any engagement and communication strategy therefore not only needs to be tailored to the specific context of the proposed CCS development, but also needs to be tailored to the specific characteristics of the project developer organisation. In line with this, not only external but also internal communication is crucial for effective engagement and communication. In addition, organisational learning prior to and during the whole project cycle is important, to arrive at an internal alignment of expectations and views. In this process, the needed competences and skills as well as potential organisational constraints should also be addressed.

The sort of instruments or tools used (e.g. dialogue workshop, focus group meetings, community board) still says very little about the approach in engagement and communication. It does not tell whether communication is about one-way information provision or about alignment of diverging perspectives. That depends on what is being done with the stakeholder inputs gathered. If these are mainly used to further fine-tune the message directed at the local stakeholders, then this is in line with a one-way communication strategy of informing, educating, reassuring and persuading people.

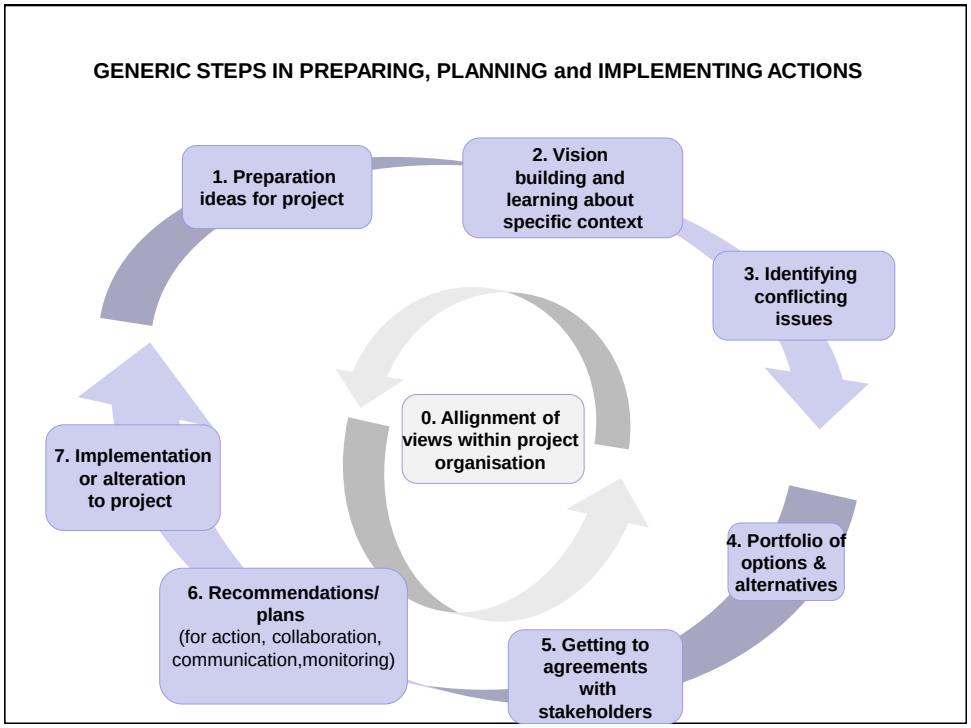
PART II: Strategies for engagement and communication

Chapter 7 introduces a flowchart that depicts strategic 'steps' in preparing and planning a CCS project. These are illustrated with case examples of Barendrecht, Beeskow and Ketzin, for which elaborate case studies have been conducted in WP1. In addition, a case study on the Polish Bełchatów CCS project has been performed and on the basis of this study (see Annex 2 for elaborate case study). We have evaluated the strategy for communication and engagement so far and elaborated further suggestions in line with the steps of the flow charts.

There is no "one-size-fits-all' approach to engagement and communication and the success of any approach is contingent on many conditions that differ for each project. The exact choice and 'content' of the overall strategy of an engagement and communication approach needs to be tailored to the project's specific aims and context, the project developer and a variety of relevant (local) stakeholders including the 'general local public'.

The flowchart below illustrates (very broadly) the steps involved in project preparation, planning, implementation, evaluation. Our point of departure is the ESTEEM toolkit that consists of a six-step process methodology that is intended to support the "start or improvement of a communication process between project manager and relevant stakeholders such as NGOs, policy actors and the local citizen community" and to develop plans for future action that the project manager can undertake to improve societal acceptance of the project (Raven et al., 2009:966).

The flow chart depicts each of the ESTEEM steps in a slightly adapted form. In addition, we have added another cycle depicting the internal organisational learning process in the centre. These steps are the basic building blocks for any strategy for engagement and communication, which can be further divided in sub-steps and 'dressed up' with instruments, tools and techniques (which are available in existing toolkits). *How* the strategy elements/steps are being used, depends on the internal and external project context. Since context varies across space and time, for each project, this will look differently and it may also change over time. The circular form indicates that there is no fixed end-point. Moreover, steps may need to be repeated if the operating circumstances change or if it turns out that important information is missing at some point.



Chapter 8 is about indicators to assess the effectiveness of engagement and communication strategies. Like there no “one-size-fits-all’ approach to engagement and communication, there also is no “one-size-fits-all’ approach to the evaluation of effectiveness. However, the inner circle in the strategy development flowchart (step 0) offers a process in which the goal of the engagement and communication, definitions and indicators of effectiveness can be developed and elaborated. During the process of developing the strategy, implementing, monitoring and adjusting the strategy, the development, evaluation and perhaps adaptation of indicators takes place as well. Hence, a set of indicators specified for a particular CCS project is first defined in step 0.

Chapter 9 points out that we have not addressed all the gaps that we identified as that was not feasible within the scope of Work package 3. We mention a few gaps that need to be taken up in further research.

1. Introduction

A planned CCS storage project by RWE in Schleswig-Holstein, northern Germany had to be given up, due to substantial local opposition (Schulz et al., 2010). Another project by Vattenfall in the Eastern Part of Germany is facing considerable local opposition (Dütschke, 2010). In the Dutch town of Barendrecht citizens and municipality joined forces in their vehement opposition against the CO_2 storage underneath a neighbourhood (Brunsting et al, 2010). This project was cancelled in early 2011 by the Dutch government, with reference to the lack of social acceptance. Local social acceptance is far from self-evident when it comes to the implementation of new technologies. Many and diverse reasons underlie local opposition and to some extent they are context specific, e.g. related to the historical relations between project implementers and local stakeholders. From the moment a project is being proposed, stakeholder opinions are forming and may change in response to changes in circumstances, e.g. new information about potential risks.

A distinction can be made between, on the one hand, opinions regarding the acceptability of CCS as a *technology* to mitigate climate change by storing CO_2, and on the other hand opinions regarding a specific CCS *project* that is planned and the distribution of costs and benefits[1] associated with this concrete application. In the latter case, opposition need not involve opposition against CCS technology itself. Like research on other energy projects has shown, opposition can also relate to discontent about the particular project design (e.g. size, technologies used, location) or about the process (Breukers and Wolsink, 2007; Devine-Wright, 2010).

Often a lack of social acceptance or commitment manifests itself at the local level where a specific project is being proposed and planned. In the case of CCS, the Dutch example in Barendrecht moreover shows, that even when national government can and does shift decision-making competences from local to national level, that is by no means a guarantee for project implementation. This example also shows that if national government expresses the view that a planned CCS project is sound and safe, this does not mean that others will share this view. Quite often the opposite is the case: people feel that their concerns are not taken seriously when government or project developer responds with soothing words, referring to risk assessment and proven safety.

One overall aim of the NEARCO$_2$ project is to develop effective strategies to involve stakeholders in local planning of and decision-making on CCS projects. We define effective in terms of meeting the needs (information and process related) of the involved stakeholders (including the 'general local public'). Current practices in stakeholder engagement may very well meet the legal requirements, but that is by no means a guarantee for effective strategies. Instead of focusing on legal institutional requirements, it makes more sense to learn about opinion-shaping factors in general and in relation to specific projects. We rely on the previous work packages when we address these opinion-shaping factors.

Work package (WP) 3 zooms in on the implementing side, the project developers (and consultants they hire to support them in setting up and implementing an engagement and communication strategy). The reason for this is that so far, a lot of attention has been awarded to the receiving side: local publics, stakeholders, 'host communities'. Understanding their motivations and opinion-shaping processes better certainly helps in trying to improve engagement and communication processes and several tools have been developed to support such processes in practice. However, understanding the implementing side is important as well, and that side has not been addressed exten-

[1] Costs and benefits relate to more than financial gains – although often these gains are for the project developer and not for the local community. Benefits can also relate to e.g. employment opportunities, mitigation measures, changes in the design or exact location of a project, compensation measures, quality of the further process. Costs refer not only to clearly defined and measurable costs, but also to concerns and uncertainties about risks, nuisance during examinations and construction, loss of landscape quality, etc.

sively. Within the project developer organisation, (diverging) motivations, opinions and beliefs are likely to affect the choices made in preparing strategies for engagement and communication around specific CCS projects. Because several toolkits and guidelines for engagement and communication already exist (see the review of these in chapter 5), WP 3 addresses how these tools can be improved based on a better understanding of the prospective end-users[2] of these tools. To devise effective strategies for engagement and communication in planning and decision-making on CCS projects, D3 is structured as follows.

Part I aims to deliver insights in the gaps between current and 'desired' practices of engagement and communication. First, chapter 2 summarises lessons that can be drawn from work done in WP 1 and 2[3] and other relevant research on perceptions and CCS (thereby addressing the receiving side of local (public) stakeholders). Chapter 3 focuses on project implementers and their organisational practices in relation to engagement and communication. It explores what different theories have said about organisational practice of engagement and communication. Chapter 4 presents an interview format based on relevant issues that have emerged from chapter 3, followed by an analysis of the main outcomes of these interviews with project developers about their approach in engagement and participation . Chapter 5 compares existing toolkits and guidelines for engagement and communication, using several criteria that address central issues like focus, scope, background theory, the aims of the engagement and the empirical basis of the toolkit; attention for the prospective end-user; the structure of the toolkit; timing issues; tools, activities and techniques proposed. Part I concludes in Chapter 6 with summarising all relevant lessons from chapters 2-5 and indicates directions for improvement based to be further elaborated in part II.

Part II takes the findings of Part I towards an understanding of what would be needed for an effective engagement and communication strategy. Chapter 7 first introduces a flowchart that depict strategic 'steps' in the preparation and planning of a CCS projects. We evaluate 3 case studies from WP1 on how project developers have performed these 'steps', in order to better understand how problems might have been prevented. Based on lessons learned, we briefly sketch an alternative strategy for engagement and communication that could have been followed. Some of these strategic suggestions address the organisational context as a new element to existing toolkits and guideline. Next to these strategies for concrete cases based on hindsight, we will also elaborate a strategy for a case that is more future oriented. Based on a case study undertaken for WP3 of the Polish CCS project in Bełchatów (see annex 1 for the case study report), we evaluate the strategic steps in engagement and communication undertaken so far and formulate suggestions for future steps. Chapter 8 addresses indicators that can be used to evaluated the effectiveness of engagement and communication strategies and. Chapter 9 provides overall conclusions and points out future research needs.

[2] The end-users we focus on are project developers which can be single companies or consortia or other types of project-based organisations, and consultants that they have hired in order to support in the preparation, design and implementation of the engagement and communication strategy around the deployment of a CCS project.

[3] At the NearCO_2 website http://www.communicationnearco2.eu/documents-and-materials/ deliverables of other WPs are available.

PART I: ENGAGEMENT AND COMMUNICATION: GAPS IN RESEARCH AND IN PRACTICE

2. Existing knowledge & practical lessons

2.1 From research to knowledge

Previous research on public opinion of CCS has provided us with an indication of how people react when they are first introduced to the technology (e.g. Curry et al 2007; Miller et al 2007; Huijts et al. 2007; Shackley et al. 2009). Recently, extensive research has been added to this. Part of this has been carried out by NEARCO$_2$ research partners in other projects, part has been done within the framework of the NEARCO$_2$ project (Reiner et al., 2011; Best-Waldhober et al., 2010; Best-Waldhober and Daamen, 2010; Brunsting et al., 2010; Dütschke, 2010; Brunsting et al, (2010a); Riesch and Reiner, 2010; Roberts and Mander, 2010; Upham and Roberts; 2010). Below we summarise the main conclusions of this research on public perceptions on CCS technology. Most of these findings have relevance also when preparing, planning and implementing specific CCS projects.

- The presence of particular knowledge about CCS and topics related to CCS cannot be assumed in an audience of lay people.
- The relationship between current energy use and climate change is not well understood by the large majority of the general public.
- (In the Netherlands), awareness of CCS among the general population is slightly increasing, but this increase does not match the steep increase in media attention for CCS.
- Uninformed opinions are hardly predictive of public opinion. These opinions are more unstable than informed opinions and change easily.
- Because of the relative unfamiliarity with CCS technology, opinions change with increasing exposure to information.
- If people are informed prior to their opinion formation, their opinion is based mostly on information, but not completely[4].
- Communication can decrease concerns based on several uncertainties but some remain (e.g. concerns about leakage).
- After valid and balanced expert information, most people have a preference for renewable energy and energy efficiency over CCS. CCS is reluctantly accepted and principally as a bridging technology.
- There is correlation between the level of acceptance and the level of climate change concern and perception of CCS benefits.
- Trust in and communication with technology managers and relevant institutions are important factors in public acceptance.
- Stakeholders such as Shell, Greenpeace, research institutes and government can reach consensus on information regarding consequences of CCS options. Mors et al. (2010) showed that collaborative information provision by divergent stakeholders (e.g. Shell and Greenpeace) is valued higher than information provided by e.g. the project developer only.

Existing literature on risk perception, science and technology studies and social psychology suggests that public acceptance of CCS is unlikely to be a very different from other energy related innovations (e.g. wind projects): despite particular characteristics, public perceptions of CCS are likely to be amenable to understanding within existing conceptual frameworks, albeit with some perspectives (e.g.

[4] What else it is based on is currently being investigated in another research project.

on risk) being more apposite in the case of CCS than in the case of renewables (Upham and Roberts, 2010). The conclusions listed above pertains to general public perceptions regarding CCS technology (see also box 1).

Box 1 Example of focus group research on CCS technology

Oltra et al. (2010) have explored how different discourses may coexist in public debates on CCS

- CCS as a technological option to tackle climate change;
- CCS as a risk issue;
- CCS as a science and technology investment opportunity.

Focus groups held in Spain in 2009 show that individuals felt ambivalent towards the technology or they rejected it based on its perceived risk (main factor explaining rejection); on uncertainty surrounding storage; preference of available of options for renewable energy; and based on the consideration that the technology was unproven. More positive views of CCS technology were held in light of opportunities for investment in research and development. The technology was also reluctantly accepted in cases where focus group attendees appreciated the urgency of climate change. A number of key attitudes found among participants were distinguished: uncertainty, reluctant acceptance, rejection and ambivalence. Attendees expressing uncertainty related to the technology requested more information, those expressing acceptance were encouraged most by the benefits of the technology on climate change mitigation, those rejecting the technology were mostly concerned with the risks from CO_2 storage, and those who were ambivalent questioned the economic costs.

To some extent, lessons can be drawn that are relevant to understand the formation of opinions and attitudes towards *specific CCS projects* as well. However, general attitudes cannot predict local behaviour, for that depends to a large extent on how a project has been proposed, planned, designed, decided upon, implemented and monitored in a specific local context (Breukers and Wolsink, 2007; Devine-Wright, 2010).

2.2 From knowledge to practical lessons

Insights from the reviewed literature can be translated into general considerations that are relevant for preparing engagement and communication strategies for any CCS project.

The right information for the right people, using appropriate channels and trusted sources

The project developer should not assume certain level of knowledge, but rather investigate the level of knowledge among local stakeholders (including the local public) in detail and develop information strategies accordingly. Many people lack knowledge about CCS but also about climate change, our current energy use, how energy production relates to climate change, what the characteristics of CO_2 are, etc. Therefore, information provision should not just concern CCS technology, but also address the wider issues of climate change, CO_2, energy production (and CCS as a mitigation option). Although different people have different information needs, the basics should be clear and understood as a necessary though not necessarily sufficient condition for shaping an informed opinion. During information and communication processes, active mediation can help to answer questions in order to get rid of misperceptions (e.g. whether CO_2 is flammable) which otherwise might influence the opinion formation process.

If this has been done, then a more differentiated approached to cater for different information needs can be adopted. Different actors are likely to have different levels of knowledge, concerns and information needs. Assessing these enables the development of differentiated information materials that address issues, concerns, questions and interests that matter to many stakeholders.

Both the information and the communication should fit the needs and address the concerns of the diverse target groups. This means that appropriate channels should be used, and in a context with diverse stakeholders, these may need to be approached in diverse manners (e.g. letter, personal

talks, email, local newspaper, social media, etc). Information provision should also address questions regarding the project timing and further process of engagement and communication.

Cost (risks) and benefits discussions.

CCS is a relatively technical and remote concept with few points of connection for lay people to use as a frame of reference. Concerns often relate to perceived risks (e.g. leakage) and risk opinions have a great potential to undermine deployment of CCS project. When information is provided to people in a setting that offers no possibility to ask further questions for clarification, this may result in misconceptions and concerns developing or strengthening. This may lead to discontent about the process (in addition to already existing concerns about risks). There is a need for trusted and informed mediation whereby people can get answers to their questions. Such a setting can take many forms.

For the opinion formation process of local stakeholders, the expert risk assessments are not necessarily most influential. Moreover, the 'risk-as-scientifically-determined' is problematic in several respects. First of all, there seems as of yet to be few data available to demonstrate the safety of underground storage for CCS given a lack of systematically applied monitoring standards. The current state of knowledge and the main issues that are subject to expert disagreement should be addressed. Secondly, the 'risk-as-scientifically-determined' is unlikely to address some of the (valid) concerns that people may have. Some perceived risks may e.g. also relate to people's lack of trust in both government and industry in safeguarding their interests. Concerns that local stakeholders may still have after having read expert information, are likely to be about the safety of CO_2 storage. Such concerns may be aggravated by a lack of trust in government and industry to make the right decisions about CCS deployment and to manage risks adequately. The current state of knowledge and the main issues that are subject to expert disagreement should be addressed. It is important to clarify what the uncertainties are about and to address diverging perspectives that exist on risks.

Transparency about costs and benefits and their distribution is crucial. In particular, both governments and project developers should realise it does not enhance their credibility to motivate the development of CCS projects by exclusively referring to benefits like mitigating climate change. The cost-benefits discussion should take account of the levels where both accrue (e.g. global benefits versus local burdens) when negotiating cost-benefit sharing mechanisms. Sharing benefits can refer to all kinds of benefits, including risk mitigation and monitoring measures that local stakeholders propose. The costs of CCS technology (and its short term use) may be reasons for people to disagree with its acceptability as well.

Negotiating conditions of acceptability

In all infrastructure or land use development with significant local impact, most local stakeholders usually count as 'conditional supporters', meaning that they support a development under certain conditions. These conditions are about the distribution of costs and benefits. Often, when a Decide-Announce-Defend Approach (Devine-Wright, 2010; Wolsink, 2000) is chosen, there is only room for stakeholders to respond to ready-made plans, leaving little room for negotiation on the distribution of costs and benefits. If there is no room for negotiating these conditions, a polarised local debate is likely to occur if the stakes are considered high (Breukers and Wolsink, 2007; Brunsting et al, 2010). Finding ways to share benefits can result in a sense of ownership (Heiskanen et al., 2008; Mourik et al. 2007, Raven et al. 2009a). Sharing benefits can take many forms, whereby offering economic co-ownership through local shareholding, job opportunities via local contracting for the building or maintenance of the plant are examples of direct economic benefits. Having influence on the design, exact location, or co-deciding on risk management measures can also affect the distribution of risks and hence affect the acceptability of the project. This means that there should be some room to consider different and perhaps unexpected solutions to meet local concerns.

Trusted sources of information

The source of information is crucial to the perceived quality of the information; perhaps even more so than the content of the information itself. The trust that people have in the information source is crucial for the extent to which they accept this information as being valid. With complex technologies and high stakes, when people are not able to assess all information on its validity, they need to rely on the trust they have in the source. When the source of information also is the main beneficiary of the CCS project, the information is unlikely to be trusted by the local public (e.g. Shell, Vattenfall). Government is also not always regarded as trustworthy, though this may vary across contexts and with regard to levels of government as well. Research by Mors et al. (2010) indicated that information which is devised by stakeholders with diverging stakes is considered 'better information' compared to information provided by a single stakeholder.

Hence, the source of information should not be the project developer only. Care should be taken to help people to form an opinion about a complex matter like a CCS project. That means that it might be good to provide information that comes from multiple sources, and this can even go as far as showing differences in perspectives and what these pertain to. Denying disagreement is not helpful. When studies are to be performed, e.g. in light of an Environmental Impact Assessment similar trust issues apply. If representatives from the local public are involved in and agree with the choice of the consultants that conduct the studies, this is likely to also result in trust in the outcomes.

Role of media

It appears that time spent on reading national newspapers has the strongest and most consistent relation with awareness of and attitude towards CCS compared to local newspapers and to TV media. At the same time, prevalence of CCS in the media cannot be taken as a measure or predictor for general public awareness.[5] This means that other communication channels are needed to inform people about CCS and related issues, e.g. the basics of global warming and mitigation options.

Local contingencies

It is important to do preparatory research of locally salient issues and to initiate a dialogue with local stakeholders early on in the planning stages. This helps to gain an appreciation of pertinent local and regional factors (profiling; social site characterization to address local issues that pre-date the proposed development). There may, for example, be a history of large scale infrastructure development in the area. The communication and engagement approach could take into account how such previous infrastructure development is appreciated locally, and explicitly refer to this local history.

Timing

It is important to start informing local stakeholders early in the process. Because uninformed people are more vulnerable to manipulation, it is important to 'equip' them with the necessary basic knowledge to be able to form an informed opinion (also because such an opinion is less likely to change overnight than a manipulated opinion). Important here is that the information provided is balanced (and not aiming to persuade people into one direction). Early engagement of municipalities and local communities is crucial in preventing (or lessen) local controversies. Furthermore, building trust takes time and in practice may involve managing a lengthy process for which resources need to be made available for the longer term.

2.3 Knowledge gap: the project developers

The above sections have summarised knowledge from previous research on public perceptions on CCS technology and attempted to translate this into relevant lessons for the preparing, planning and

[5] However, for local stakeholders (incl. the general local public) who are confronted with a project in their vicinity, this may be very different, especially if the national media report on what is happening in their 'backyard'.

implementing of specific CCS projects. Research (and toolkits) have extensively addressed the roles of the recipient 'host communities'. The role of government in providing and supporting an institutional environment that is supportive of local engagement in planning and decision-making has been addressed in other literatures (e.g Breukers, 2006).

However, a gap in existing literature and research relates to the roles and diversity of implementing organisations (e.g. energy companies; oil industry; or industrial consortia) involved in CCS projects. Their internal institutional dynamics, organisational practices, characteristics, competences and resources affect how they devise and implement an engagement and communication strategy. The next chapter is a first step in addressing this gap: it explores theoretical insights into organisational practices related to engagement and communication.

3. The project developers: organisational and institutional context

3.1 Exploring literature on project developers' engagement practices

Before recommending strategies for engagement and communication with regard to CCS projects, it is necessary to understand how developer companies 'normally' approach the practice of stakeholder engagement and communication. Attention for the specific context and characteristics of the project developer organisation is in line with a socio-technical perspective, which we take as an overarching conceptual perspective. A socio-technical perspective on technological innovation addresses innovation as the outcome of processes in which technology and society interact and co-shape each other (Breukers et al., 2009; Devine-Wright, 2010; Jolivet and Heiskanen, 2010; Raven et al, 2009, 2009a; Walker and Cass, 2010). Successful innovation depends (among others) on how well the innovation 'fits' and can become embedded in society. Involving societal actors in the design, planning and implementation of new technologies is a way to improve success of this embedding. In line with this, Walker and Cass argue against the one-sided attention for local responses and acceptance issues when they state that engagement 'operates *between* developers and local communities' (Walker and Cass 2010:44; emphasis added). It is not only the local stakeholders and publics that may need to adapt some of their expectations and views, but the implementing organisation may also need to change some of its expectations and beliefs.

In the following, we explore more specifically insights from literatures on organisational practices with regard to engagement and communication and these will then provide the underpinning for the interviews with project developers (see chapter 4). It has become clear that this is an under-researched field: the organisational practice literature does not seem to have dealt extensively with the interface of public participation, communication and environmental management.

We start with an assessment of how new institutionalism in organisational theory can provide relevant insights in company practice regarding stakeholder engagement and communication. Next, we distinguish between responses to external conditions and internal institutional and organisational conditions influencing company practices. Company practices encompass the complex of organisational behaviour, procedures and routines, while norms refer to organisational values and objectives. These features taken together make up "the taken-for-granted character of institutional rules, myths, and beliefs as shared social reality and […] the processes by which organisations tend to become instilled with value and social meaning" (Berger and Luckmann, 1967; Oliver, 1991). Institutions can be defined as rules, patterns or procedures that structure behaviour and interaction. These rules can be informal - norms, habits and customs - or formal - written laws, regulations and standards (Hall and Taylor, 1996; Scharpf, 2000; Williamson, 2009).

3.2 Institutions and organisational practices

While societal expectations around stakeholder dialogue and engagement are increasingly widespread, there will still be differences in the ways that firms respond to them. These differences and their relevance for the design of CCS-related engagement strategies are the focus of attention here. In particular, we consider the role of what have been collectively described as 'informal institutions' in influencing engagement practice, focusing particularly on factors within the organisations involved in promoting CCS projects. Relevant informal institutions also include local traditions in and expectations of local participation; social norms within and outside the organisations; and organisational cultures within the project developer consortium. The relationship between actors and the institutional context is dynamic: they mutually influence each other. Institutions shape and constrain the strategies and options of actors in significant ways, these institutions themselves can also be the intended or unintended outcome of collective strategies and behaviours. While institutions influence organisational dynamics, actors within organisations can collectively affect institutional change as well (Hall and Taylor, 1996; DiMaggio and Powel, 1983). March and Olsen (1989) proposed the notion 'logic of appropriateness', which refers to how actors behave in accordance with what they think is considered appropriate in terms of their institutionalised role. What is deemed legitimate and appropriate differs across historical, cultural and organisational contexts (Powell and DiMaggio, 1991).

Firms are increasingly subject to global standardisation pressures relating to corporate responsibility and stakeholder 'management' (Kourula, 2010). This operating environment can be understood as part of their 'institutional context', in the sense of the complex of both formal and informal laws, rules, norms and pressures that impinge upon them. Institutional environments are becoming more homogenous across national boundaries, with many companies now being subject to the same or similar codes of conduct, guidelines and management systems. Guidance offered by ISO 26000 on Social Responsibility is a recent example of this and includes sections on stakeholder engagement and community involvement.[6] At the same time organisational choices and preferences are still shaped by cultural and historically shaped patterns and norms.

In the closely related field of corporate social responsibility (CSR), researchers have investigated the relationship of factors both internal and external to the organisation in relation to corporate behaviour such as environmental and social disclosure. These factors may be classified as (Adams, 2002):

(1) corporate characteristics (e.g. company size);
(2) general contextual factors (e.g. country of origin, socio-political climate, news media pressure)
(3) internal contextual factors (e.g. a change in company chair and the presence of a corporate social reporting committee).

Environmental and social disclosure practice is in many respects analogous to public engagement in project development: both practices are about developing and maintaining social legitimacy and accountability for corporate activity and CSR in general is often researched from an accountability perspective that relates to the social contract between companies and the societies in which they operate (Kuruppu and Milne, 2010). Moreover, both engagement and disclosure share the characteristics of having the potential to be undertaken to differing extents in terms of quality and quantity and to be influenced by prevailing institutions inside and outside of the company. The quality and veracity of environmental information disclosure – summed up in the term 'greenwash' (Greer and Bruno, 1996) - has been a key area of debate in the field of CSR, alongside issues of third party verification (Kuruppu and Milne, 2010). The same goes for low public trust in industry and government and the need to find and make use of trusted parties – which is a key, recurrent theme in CCS perceptions research (Oltra et al., 2010; Upham and Roberts, 2010).

Similarly, just as, for example, Australian companies have been observed to make stronger efforts towards communicating their positive environmental and social achievements when under conditions of external threat (specifically prosecution by an environmental protection agency

[6] sub-clause 6.8.3, see www.iso.org/sr

(Deegan and Rankin, 1996; Kuruppu and Milne, 2010)), so one should expect the major motive of public engagement by firms involved in CCS developments to be utilitarian: to ease a difficult project through the land use planning and regulatory process by developing and retaining the trust of the public and other stakeholders.

Indeed it is important not to elide the political aspects of engagement, for this would omit one of its fundamental purposes. Progressing a particular CCS development is patently perceived by the firms involved as in their interests. The development of a particular CCS engagement strategy also reflects government and European Commission objectives and, in the case of the 'NER300' European demonstration projects, is co-funded from public and private sources, as set out in Article 10(a) 8 of the revised Emissions Trading Directive 2009/29/EC (EC Climate Action, 2010). All technology deployment is in some sense political if one considers politics as progressing a particular agenda or interests. Given this context, engagement and communication in relation to technology deployment is itself inevitably a political act. To omit reference to the power and the politics of these processes would mean failing to understand the purpose of the exercise (Tregidga et al., 2007). Understanding corporate communication requires attention not only to what is said, but also to how what is said comes about: in other words, it requires attention to processes within the company (Phillips et al., 2004; Tregidga et al., 2007). The same can be said for engagement.

The major motive of project developers to start engagement and communication may be to get the project implemented. In addition to this rather narrow utilitarian or instrumental goal, other purposes of engagement and communication can be distinguished (Hage and Leroy, 2007a; 2007c; Healey, 1997; 1998; Hisschemöller et al., 2001; Hisschemöller and Hoppe, 2001; Klijn and Koppenjan, 2003). These relate to (a combination of):

- Utilitarian or instrumental goals: If engagement and communication are aimed at mobilising support and gaining acceptance, then the participation is instrumental in getting the project implemented – with as little opposition as possible, and acceptance by main stakeholders, including the local general public.
- Quality goals: Participation is intended to gather scientific, experiential, tacit or local knowledge and can concern practices, stakeholders, processes, expectations, risk perspectives etc Interactions hence serve the aim of discovering and/or filling concrete knowledge gaps, in order to improve the design, planning and decision-making process and its outcome. Such a dialogue also intends to clarify the diverse perspectives on the (desirability of) the project and the main problems identified (problem structuring). Participation can aim at learning, network building and improved understanding among specific stakeholder groups.
- Democratic goals: Here, engagement is both means and end. A central notion here is that stakeholders (including the general local public) should be informed and granted the opportunity to participate in decision-making that affects their direct living environment and daily lives.

3.3 External and internal conditions shaping company practices

Engagement and communication strategy choices partially result from internal and partially from external dynamics and responses. Below, we explore the limited literature found on both external conditions and internal institutional and organisational conditions that shape company practices with regard to engagement and communication. After that we conclude by showing how several insights together provide us with a useful conceptualisation – that can provide the basis for further empirical fieldwork namely the interviews with project developers about their company practices about their engagement and communication practices in chapter 4.

3.3.1 Responses to external conditions as shaping company practice

Research on organisational responses to stakeholder-related events is still relatively limited (Aaltonen and Sivonen, 2009; Söderholm, 2008). The most widely employed theories in research on social and environmental reporting, which is closely allied to project-related communication and engagement, are those based on social and political theories. Key among these is *stakeholder theory* (Phillips et al., 2004). Indeed stakeholder-related conflicts and incidents are among the most significant unforeseen risks in projects implemented in challenging environments (Aaltonen and Sivonen, 2009). Yet, while the project management literature provides numerous examples of stakeholder pressures and organisational responses, limited attention has been given to the way in which those responses reflect different strategies in different firms. This however is relevant when we want to understand how strategies for engagement and communication get shape within organisations. In part these strategies result from particular internal dynamics, but in part it is likely to result from external pressures. Aaltonen and Sivonen (2009) have classified the responses to stakeholders of companies involved in four large project proposals (a pulp mill in Uruguay, a telecommunication network in Eastern Europe and two industrial facilities in China). In doing so they used a typology of strategic responses proposed by Oliver (1991), whereby the responses vary in terms of active agency by the organisation, from passivity to increasing active resistance:

1. *acquiescence:* taking forms such as imitation and compliance
2. *compromise*: includes balancing, pacifying and bargaining with external constituents
3. *avoidance* refers to the attempt to avoid conformity or compliance
4. *defiance* is an active form of resistance to institutional processes, be this by e.g. dismissal, challenge or attack
5. *active manipulation* is the purposeful attempt to co-opt, influence or control institutional pressures and processes.

An organisation may use different response strategies for different stakeholders, firms may be understood to use the foregoing response strategies when dealing with the public as well as with other stakeholders (Aaltonen and Sivonen, 2009). Moreover, the above typology addresses responses based on post-hoc observation, without addressing anticipatory planning. Some further additions and comments are in place with regard to this typology.

Firstly, response strategies tend to be emergent and dynamic (Aaltonen and Sivonen, 2009), as firms experience pressures and respond. In addition to other strategies or a blend of strategies being used, the corporate response strategies adopted in relation to particular stakeholders are also likely to change over time and under particular conditions and pressures. Secondly, particular response patterns may be associated with particular environmental conditions (i.e. context in the widest sense) – see table 1 below.

Table 1 Companies' responses to stakeholders vary in terms of active agency

Response pattern	Relation of response patterns to particular environmental conditions
Acquiescence	the claims of stakeholders are perceived to be legitimate in the surrounding environment and the firm is relatively powerless
Compromise	is more likely as the power and legitimacy of stakeholders' claims increase
Avoidance	likely when organisations can transfer the responsibility for managing conflicts to other organisations that have higher level responsibility or that are more capable of responding to claims
Defiance	due to a lack of local knowledge or a lack of experience, or where the claims of stakeholders are not regarded legitimate or stakeholders have little power
Manipulation	Influence strategies require previous knowledge or experience and learning in relation to stakeholder related claims

(based on Aaltonen and Sivonen, 2009)

To summarise, stakeholder theory provides some interesting notions. In addition we have pointed out that any response strategy adopted depends on the type of stakeholders involved. Also, a response strategy adopted may change over time in response to changes in the operating context. Then the question is how such responses get shape (decision-making within company and changes) Additional considerations that we have emphasised include the notion of anticipatory planning (instead of only responding). The influence of the institutional context on beliefs, behaviours, and strategy formation processes is also something that needs closer attention and this is addressed in the next section.

3.3.2 Internal institutional conditions as shaping company practice

The outward-facing practice of communication and engagement is necessarily initiated and mediated by factors that are internal to the company. Adams (2002) notes that internal factors have received less attention (quite possibly because they are less accessible to observers). Based on interviews with staff involved in health, safety and environmental reporting in three British and four German companies in 1998, Adams distinguished between companies in terms of *structures, processes, views and attitudes*. Each of these four classes of variable is applicable to the present case of public engagement in project development, as are the common factors that she identified as being related to differences between firms. Here we combine the factors that Adams (2002) identified with some additional insights from others:

- *The organisational constituencies involved in the decision-making process:* the extent to which different departments are involved (notably PR/communications and environment departments); the number of people involved (i.e. the resource allocated); and the extent to which the process is structured or relatively ad hoc and informal. To this we could add questions of who takes the relevant decisions within the firms, how the decisions are taken (with respect to what criteria, issues and objectives), how the authority for that decision-taking is gained/granted, to what extent that authority and the direct decision-taker's recommendations are followed and how any recommendations on engagement are likely to interact with the foregoing.
- *Forms of stakeholder involvement:* in terms of which stakeholders are given priority in communications (e.g. shareholders, local communities, media, NGOs, customers, environment ministries, government agencies etc); how communication and engagement take place (public meetings, press conferences, email etc, use of various media); direction of information flow (one-way communication or dialogue).
- *Views on engagement purposes, (dis)benefits and future development:* the opinions of company staff regarding the purpose of engagement; its underlying drivers (including the significance of public image and perceptions, the role of national and other legislation); the prevalence of engagement in their sector, nationally and internationally; its benefits and disbenefits and the relative weight attached to these; how engagement is likely to change in future, together with associated drivers of this. Such views are also based on how project managers interpret their external context. The model of organisations as interpretation systems (Aaltonen, 2010; Daft and Weick, 1984) sets out how organisations differ in the modes and processes of interpretation. Two factors determine managerial and organisational responses to interpretations of their environment. First, the management beliefs about that context and secondly, the organisational intrusiveness into the context, i.e. the extent to which project managers seek to understand their stakeholder environment. The interpretation process itself is posited as consisting of three consecutive stages (Aaltonen, 2010; Daft and Weick, 1984):
  (i) data scanning of stakeholders and the organisational environment;
  (ii) analysis and interpretation of the information obtained;
  (iii) strategy formulation and decision-making.
  The method, focus and thoroughness of data scanning is likely to differ from situation to situation.

- *Attitude to information transparency:* particularly to the disclosure of 'bad news' – information that may hold the project back.

To wrap up, when we want to improve our understanding of the differences between companies or consortia in their approach to public engagement and communication, it is relevant to consider the organisational constituencies involved in the decision-making process. Here we can think of different departments involved or even different companies (bringing along their particular organisational cultures) when it concerns project developer consortia – which may pose serious challenges to the internal process. Also relevant to consider are the views within a company/consortium on engagement purposes. An overall major motivation is likely to be instrumental which means that the engagement is only intended to ease implementation. Furthermore, a company's overall attitude to information transparency can help explain differences in approaches towards engagement. Some companies have a tendency to withhold bad news; to deny certain risks (e.g. because these risks seem to small); to present values as facts; or to remain silent about the company's financial interests in a project. Finally, the importance of project managers' *beliefs* about stakeholder engagement; organisations differ in how they interpret their external context. Expectations and beliefs of the project developer about the stakeholders, their power and attitudes affect developers' decisions regarding a suitable strategy for the particular context. This can depend on expectations regarding local capacities to mobilise opposition against a project, for example.

3.4 Research gaps: more theoretical work needed

In line with a socio-technical perspective on, we can regard an engagement and communication strategy as the outcome of process in which (beliefs and expectations about) the project context play an important role, next to internal organisational and institutional dynamics. The particular organisational context and the particular project context, and interaction between the two (e.g. through the involvement of local stakeholders in the devise of the engagement and communication strategy) will affect the resulting engagement and communication strategy.

We have selected concepts from different studies and theories with the aim to shed light on the internal aspects of company practice with regard to engagement and communication. Table 2 below summarises this effort, arranging analytic concepts as fitting within an overarching socio-technical perspective. Given the novelty of the topic and the scarcity of associated empirics and focused theory, this exercise has been explorative rather than comprehensive. Rather than select one perspective on public and stakeholder engagement and communication by CCS consortia, we suggest that a broader view provides a fuller view of the phenomena in question and will better inform any follow-up work. The preliminary insights resulting from this chapter will be taken further in the empirical work in the next chapter presents the fieldwork (interviews).

Table 2 Concepts and approaches explored to use for the analysis of engagement and communication practice

Perspective	Relevant notions
Socio-technical perspective	Co-shaping of technological innovation and societal change: - attention for need for both developers/implementers and 'host communities' to change expectations and beliefs (alignment of visions) - the particular organisational context and the particular project context (and interaction between the two, e.g. by involving local stakeholders in the devise of the engagement and communication strategy) shape the engagement and communication strategy - engagement and communication strategy as the outcome of processes in which (expectations about) the project context and internal organisational (institutional) dynamics are both important
New Institutional the-	Processes involved in the emergence of the rules by which organisational actors are bound

ory	and of the routines and practices that they follow. Institutions have regulatory, normative and cognitive dimensions. Institutions shape and are shaped by behaviour. Of influence on company practice with regard to engagement and communication: (1) corporate characteristics (e.g. company size; internal structure); (2) general contextual factors (e.g. cultural, historical and geographical factors, socio-political institutions, media pressure); (3) internal contextual factors (organisational dynamics)
Stakeholder theory (response to external conditions)	Strategic responses to stakeholders (acquiescence; compromise; avoidance; defiance; active manipulation. Response strategies are emergent, dynamic and are influenced by the relative power of internal and external actors.
Internal dynamics affecting company practices	Internal factors affecting the practice of communication and engagement: s*tructures, processes, views and attitudes*. - *The organisational constituencies;* - *Forms of stakeholder involvement* - *Views on engagement purposes, (dis)benefits and future development:* - *Attitude to information transparency* Cognitive approach to organisational practice: organisations as interpretation systems. Responses are conditioned by: management beliefs about the organisational environment and the extent to which the organisation seeks to understand that environment.

4. The project developers: interviews and analysis

4.1 Why & how: interviewing project developers

Project developer organisations and consultants hired by them are the focus of attention in this chapter. They count as the main prospective end-users of engagement and communication toolkits and guidelines, which stand central in the next chapter. Other (public) actors like e.g. (local) governmental bodies may also count as prospective end-users, but we choose to focus on the project developers as it is this category that has received least attention – when it comes to their role preparing and implementing strategies for engagement and communication.

The purpose of interviewing project developers was to better understand their practices and the beliefs and attitudes of company personnel, all of which collectively constitute the internal informal (non-statutory) institutional aspects of public engagement.

In total, 15 interviews were held: five in the Netherlands, three in the UK, three in Spain, three in Germany and one in Poland (with two interviewees at the same time). In each country, the interviewees were involved in a particular project (on-or offshore CCS). The interviews were conducted in a period where most of the projects were still in the first stages of the project (and engagement) process. For each country we tried to talk to three types of interviewees:

1. employees tasked with public engagement and communication
2. external consultants hired to support in devising and implementing an engagement and communication strategy;
3. employees responsible for the implementation of the CCS project but not actively involved with communication and engagement on a daily basis.

Each interview lasted between 45 and 90 minutes, depending on the respondents' available time. Most interviews were conducted face-to-face, some by telephone. The interviews were semi-structured so that they still had the characteristics of a conversation while also allowing for specific topics to be addressed. The interviews varied in the depth of treatment given to each question, reflecting the varying salience of different questions for different interviewees. As the interview topics included some sensitive issues and as we wanted respondents to answer as open as possible, full anonymity was promised.

The interview questions were framed with the following issues in mind:

- the influence of the internal institutional dynamics in developer organisations on the devise of an engagement and communication strategy (e.g. organisational norms and values; or diverging value systems between departments or consortium partners)
- other organisational conditions that affect the devise of an engagement and communication strategy and how project developers attend to these (e.g. formal internal task divisions, authority structure; available resources and competences).
- project developers' understanding of their role in devising an engagement and communication strategy

On the basis of these issues, the following interview questions were formulated (see annex 1 for detailed interview template):

- What is the organisation's [7]perspective on engagement and participation and how have past experiences affected their current perspective and approach?
- What is the attitude of the organisation regarding communication? What is the organisation's overall strategy to engagement?

[7] Organisation can refer to a company or a consortium.

- Are there differences in practices and attitudes towards engagement among the partners in the organisation?
- What is the role of the interviewee in the project team/ consortium?
- What are the goals of communication and participation?
- Have the actions and inventions been successful so far (and to what extent)?
- What are the needs of the organisation for setting up an effective engagement and communication trajectory?
- Does the organisation have enough resources required for the communication and participation process?
- Does the interviewee use existing guidelines or toolkits on engagement and communication?
- How would the interviewee characterise the collaboration within the project team? Within the organisation? With relevant stakeholders?
- Is there room for negotiations with stakeholders? Can they give input on the process/ results?

4.2 Interview results: internal dynamics, perspectives and current practices

As pointed out already, the interviews varied in the depth of treatment given to each topic, depending on what interviewees chose to focus on. In the presentation of the results below, we therefore do not follow the order of topics as prepared in the interview template. Instead, we present issues as they emerged from the analysis of empirical material collected in all interviews.

Project organisation and internal communication

The CCS projects examined here are largely developed by project consortia, often consisting of different companies working together for the first time. In relation to all activities, including public engagement, this raises questions of, and the need for decisions on control, accountability and allocation of responsibility, among others. Each project has a history and dynamic of its own that influences the character of on-going collaboration. For example, in one case, the project required a regional development organisation and an electricity supplier to work together, financed through large investments by national ministries as part of a European project. In general, a notable theme found in the large majority of the projects is the existence of multiple views through new conjunctions of organisations and subsequent complications for action.

In some cases, the collaborating consortium is formally arranged in a joint venture where a project team is responsible for the CCS project. Sometimes a dedicated engagement and communication team is formally set up. This appears to be a quite new approach, undertaken also to stress the acknowledgement of the importance of stakeholder engagement internally and externally. In other cases there is cooperation between parties without any formal arrangement on communications chain of command, but with an awareness that as the project progresses, this will need to change. In yet other cases, one large party or company is responsible for activities along the whole CCS chain, whereby different departments or offices work together on the project. In some cases an engagement and communication team is responsible for engagement and communication across the CCS chain. In other cases different partners are responsible for their part of the CCS chain and any engagement and communication tasks are split up accordingly. In most cases, the importance of effective public and stakeholder communication plans is understood, as is the need for good local knowledge.

Respondents indicated that there are differences in organisational backgrounds, cultures and experiences amongst collaborating partners, posing a challenge for both internal and external communication and engagement. All interviewees indicated the importance of being seen to speak externally with one voice, and that this necessitates active internal fine-tuning of views and communication tasks. This can be difficult even for a single organisation, particularly if no effective communi-

cations strategy or task division has been agreed upon. When organisations with different organisational cultures together form the project consortium, internal communications are clearly more complicated. One communications specialist indicates a problem with internal co-operation:

> *"There is a team but I'm on my own."*

Another refers to the challenge of co-ordination:

> "*Everyone has a different agenda when it comes to CCS as they control different parts of the chain. It's been really difficult to get everyone singing together about messaging."*

In a different project again, an interviewee illustrates the role of the uncertain organisational environment in which they must operate as a communicator:

> *"The Communication and public perception strategy is led by X…We are not responsible for the public perception issues of the Y Project. We have to take into account that we are part of Z… I do not know how the consortium will be organised in the future."*

Internal norms, influenced by planning norms, play a part in this:

> *"My approach is softly softly - we bend over backwards to engage with everyone we need to... However, X seem to have a different view - they set up pipelines all the time and their attitude is if people don't like it, we will get a compulsory purchase order. …The relationship has been very difficult, one of the biggest challenges."*

In two projects there were contrasting views on the project organisation as voiced by different interviewees. E.g. one interviewee stated that the communications team is highly integrated despite being physically and functionally located at different points in the project, while another considered that the structure was 'very complicated' and difficult for those outside the organisation to understand.

Interviewees from another project attributed a clash of different communication cultures in the main partner organisations to different national norms (hierarchical versus consultative), which was compromising the ability of the project to communicate in an effective and anticipatory way. An exception to this process of organisational tension and learning was a case which in the interviewee's view functions well in terms of organisational practice and design. The main company has established a dedicated company that is responsible for all activities related to carbon transport and storage, and the parent company's communications team works closely with them. This consists of regularly sharing news and information on communication activities, with people in this dedicated company also functioning as a pool of specialists available for events or discussions, e.g. with local politicians. The CCS-communications team is mainly drawn from the communication team which is used to deal with issues around lignite. A consulting agency provides additional support in relation to general strategy.

Being asked about their needs in communication and engagement with relevant stakeholders (including general public), most interviewees indicated that a good functioning and collaborative communications team is crucial. When different companies are collaborating in a consortium, it becomes important that representatives from all the participating companies are part of this team.

The importance of local relationships

In several cases, there were long term and strong relationships with the local communities at the capture sites. In several cases there is a long history of engagement between the local power station or mining industry and the local community. In these communities people are familiar with the industry and sometimes economically dependent on it for employment. In such capture sites, interviewees identified/characterised a relatively high level of trust between the community and the firm.

An example of a prior, long term relationship between the two is a power station which draws employees from the local area and which meets regularly with a group of local councillors, originally to monitor and discuss the disposal of ash from the power station but now as a more general liaison group between the power station and the local community. The power station also operates activities such as a free car washing scheme to remove the fine ash from vehicles and the sponsoring of a police car.

Sometimes the energy industry has also provided community benefits such as equipment for playgrounds or electricity for a new commercial area. Also one interviewee mentioned the offer and possibility of collecting geothermal data at the same time as site exploration, so potentially saving a municipality some costs. In general, however, for the storage sites and transport routes, there tended to be much less prior contact or even no relationship with the local communities at all, relative to power plant vicinities. In those cases, communication and engagement will start from a much lower base in terms of trust. This is further complicated by the cost-benefit distribution at the storage site, at which the burdens (e.g. worries about risks and costs) are experienced by the local community, with no straightforward benefits to compensate.

More specifically, in one case, the project involves companies and individuals with experience of long term planning for village relocations due to surface lignite mining. However, public communication in relation to CCS is raising new public perception issues and is substantially foreshortening the time span during which local people will need to accommodate change – albeit subsurface storage rather than relocation. In this and other cases, fora have been set up in which project-related issues may be raised by and with local stakeholders (including local politicians and NGOs).

Engagement objectives

In each of the projects, the interviewees indicated that the overarching goal of communication is to achieve acceptance and implementation of the project. In view of this aim, engagement and communication are aimed at gaining trust, informing people and engaging in a dialogue with stakeholders. Nonetheless, despite references to dialogue, it is clear that these processes are very much viewed instrumentally, as a way to get the project accepted and implemented. Although two interviewees referred without prompting to an awareness of the need for negotiations with the community, or for compensation for any local negative impact of the projects, all expected little influence from local stakeholders on storage or the further process.

Modes of engagement; timing and message

The interviews indicate that in practice, early engagement – prior to formal participation requirements under planning law, of the public appears largely avoided, with reasons given including: not wanting to 'wake sleeping dogs' (i.e. draw unwanted attention generally); not wanting to draw unwanted media attention given the cancellation of other CCS projects; not knowing how to undertake engagement and not feeling responsible for this; engagement being seen as unnecessary at the early (explorative) stages of a project. One interviewee indicated that use of a low-profile communications strategy as a deliberate approach has been rewarded by steady progress in gaining the necessary permits. They added that this approach is backed by a strategy of staying alert to project related communications and being prepared with appropriate messages and explanations. These can then be deployed as needed and when there is a more pressing need for active communication later in the project. In another project, a pre-test of a broad advertising campaign indicated that this would not help and was postponed, to be possibly used in future.

In a different project, a low key approach to communications and engagement was necessarily converted to a more active approach, illustrating the need for flexibility and responsiveness: initially it was considered unnecessary to explain to the local public why geological examinations would be performed (i.e. to examine the suitability of sites for safe storage of CO_2), as geological examinations had in the past been undertaken without public concern. On this occasion local concern did

arise and eventually an extensive communication effort was undertaken and the required permissions for doing the geological examinations were obtained.

A common theme is that communication with the wider public is largely, though not entirely, reserved for the implementation phase, once planning acceptance has been gained:

> *"We have done a lot (in terms of communication)…we are going to start "bombing" (with information)."*
> *"If you are not active (in the public communication), when you are concerned it is too late…(….) you have to communicate from the very beginning."*

Even though the interviews show that early engagement in practice is not taken up widely, a major concern brought up by several interviewees is what to do when local opposition and resistance arises against the CCS project – they all expect to meet (or already met with) opposition at some point in the process.

Individual personalities can also be important. Communication in one pilot project was initiated by the chief scientist in the storage part of the chain - this individual states that he was the first person to contact the local population, personally organising meetings, as the company's communications section was not involved in the pilot. The interviewee considers that these efforts have been successful and that the local people trust the scientists involved.

Others, particularly professional communicators, consider the novelty of the project a real challenge, requiring real thought and also the ability to respond to a changing context and to a potential criticism the cost of CCS to the tax payer and consumer:

> *"…do we cast it as an experimental project that hasn't been done before (...) Or do we say it's another big infrastructure project which we the consortium are very good at doing?"*

The interviewees acknowledge that overall there is little knowledge about CCS. They state that lay people do not know what CCS comprises, how it (technically) works, what safety issues are (not) involved, why CCS can be considered as necessary. In addition, interviewees have pointed out that people sometimes have wrong ideas and are misinformed on CCS. For this reason the developers argue for providing the general public and especially the local communities with scientifically neutral information. They want to provide information concerning the more technical and risk issues of CCS as well as the more generic reasons behind CCS; the contribution and necessity of CCS to the climate change.

A concern raised by several interviewees is that the wider case for CCS has not yet been appreciated by the public and that this should to some extent be taken up by government or politicians. One interviewee comments:

> *"Everybody is in favour of CCS, science and politics as well. However, there is no common platform saying, that's what we want (…) However, such a platform is needed to create the necessary credibility."*

Regardless of the message context and messaging approach chosen, a key issue for one set of communicators is self-reflexivity, in particular an awareness of how the company is perceived locally, on an on-going basis:

> *"The most important thing at the moment is that we don't seem corporately arrogant. When we did a study of why so many CCS proposals have failed over the last couple of years it was very clear that corporate arrogance was a major issue."*

One of the interviewees echoed this theme, commenting that early expectations of local people simply accepting company messages about the value of CCS have not been borne out. Instead, the company has to go through some forms of discussion and negotiation, even if this leads to process delay.

Resources and capacity

Several interviewees were of the view that opposition and cancelations of projects were in a large part due to not being able to understand local concerns and not being able to respond to them in an appropriate way. This response requires communications capacity, at the least, and the projects varied in the extent of this. In three cases, communications capacity is relatively well-resourced, supported by external communications consultants. One of these cases illustrates the forward planning capability of skilled communicators, with an early prepared, though flexible, communications strategy and material intended to explain in non-technical terms the purpose of CCS, and to manage concerns about, leakage risk, carcinogen risk from capture chemicals, pipeline integrity and so on.

Target audience

Conversely to the perceived need to proceed cautiously with the project's public profile, referred to above, several interviewees also indicated that it can be difficult to gain public interest in the project on the developer's terms. Strategies used to engage with local communities and manage opinion include meetings at storage sites themselves with concerned people; engaging with people who are relatively uninformed about or neutral to CCS, while avoiding opponents and large meetings; trying to avoid opposing groups joining together to form a strong social network against the project. A selective, stakeholder-focussed approach is evident in another project which has targeted six stakeholder groups in preference to the public themselves: academics, environmental NGOs, policy and regulatory bodies, CCS developers working on other projects and financial institutes. In another project also engages with local voluntary fire brigades, which often play an important part in the microstructure of communities.

One interviewee indicated that they continually monitor community attitudes, including reactions to other projects and related developments reported in the media. Action is taken as soon any negative attitudes or discussions are identified. One project has been running public meetings in the area surrounding the power station, along the pipeline and on the coast close to the storage site. In terms of the pipeline, they have focused on areas where infrastructure will be visible on the surface. The most informed communicators are also aware of the dynamics of protest group mobilisation and the need to respond to this at an early stage:

> *"What seems to happen is you get lots of different groups all joining together. For example you may have an anti-coal group joining together with a save our village group and a pro-renewables. You have a desperate group who come together and don't necessarily become anti the project but anti the developer. So my job is to take away the momentum and not give them the traction."*

These communicators are also aware of the potential value of independent third parties, particularly academic scientists, lending legitimacy to the project via studies of issues that are or may be of concern to local people.

New institutions

While some projects are working primarily through existing institutions to engage stakeholders, others have established new institutions, e.g. where engagement is to be institutionalised by a Community Advisory Panel (CAP) chaired by the alderman (mayor or equivalent) of the community. The design of the CAP will be based on existing structures involving industries in the locality and it is intended that the project-developer will raise issues to be presented to the CAP. In another case,

stakeholders are given direct access to the individuals delivering the project, to provide opportunities to discuss the project with the intention of engendering trust.

Use of CCS engagement guidelines

In terms of use of existing guidelines and toolkits for public engagement in CCS development planning, most respondents indicated that they are aware of this literature and that they use it as a form of background information. However, the guides are not actively used to design engagement and communication processes, but rather as a tacit background checklist:

> *"…usually, if we look at the things that are presented we come to the conclusion that this isn't anything that's new to us. To some extent, this is certainly reassuring to see, that no one has found some completely new way how to deal with these things."*

One interviewee expressed scepticism of generic messaging on CCS, observing that messages need to be tailored to national or regional conditions, which vary in terms of environmental awareness, priorities, NGO strength. He did, however, see a role for generic tools informing approaches to mediation. Some interviewees stated that they are member of European networks where experiences with such guidelines are exchanged, discussed and considered. One respondent remarked that it would be "*nice to have a very compact guideline with tools"*. Others stated that they are aware of different tools, referring, for example, to guidance on how to engage schools), but not to any CCS-specific toolkit or guidelines.

> *"Tools and guidelines are used in some way, to help avoid making mistakes. Whether they help us much, that's another question."*

The role of government in context-shaping

Respondents were asked about their view of the appropriate role of government (local, regional, national and EC) in fostering effective participation and communication. Most described the role of the national government as being important for communicating the necessity of CCS (showing political will and commitment). Most also considered that national government is not yet sufficiently taking responsibility in this regard.

Perceptions of the role of local government varied. In some cases local government and local organisations are regarded as having a role to play in emphasising how CCS can contribute to local economic and sustainability goals. Some interviewees see a facilitating role for local government, for example in terms of organising community meetings. Indeed in one locality, the developers asked local borough leaders to organise community meetings near the potential storage site. Sometimes this led to positive communication with local people, but in other cases the information about the meeting was not communicated to the community in a timely fashion, contributing to an initially negative attitude towards the project.

4.3 Analysis company practice on basis of interview results

It is clear to independent observers of CCS developments that this is still a new enterprise for most of those involved and there are major uncertainties. While most of the technical elements are familiar, important features such as long term storage integrity are less so. Moreover it is clear that mistakes in terms of public and wider stakeholder relations have already been made in Europe and in the US (Desbarats et al, 2010). While the technology potentially has a significant future globally for several decades ahead, with substantial political and financial stakes for both energy firms and governments, at present CCS is highly reliant on public subsidy and the expectation that the climate policy environment will become increasingly stringent. Against the background of policy and financial commitments already made, CCS faces this promissory context of long time horizons and major technical

changes in energy systems, pieced together via a network of relationships across both private and public spheres.

In general, the interview responses indicate that the concepts resulting from the literature review in chapter 3 have potential in contributing to explanatory accounts of public engagement and communication behaviour in relation to CCS projects. In terms of empirics, all projects examined were engaged in some, indeed similar, forms of public engagement. These forms were not identical in nature or extent, but each had learned from the public relations difficulties encountered by previous CCS and other projects. Largely, the consortia understand that public and stakeholder communication and engagement is important for project implementation. However, this realization is not shared equally among relevant individuals across each individual consortium and in most cases there have been internal tensions resulting in frustration of attempts to communicate well.

In terms of the emergent and dynamic corporate response strategies identified by Aaltonen and Sivonen (2009, after Oliver, 1991), we see that the corporate responses to the external pressures do indeed vary and that interviewees attribute this to the pre-existing cultures and norms of the firms involved. What is particularly interesting is the interplay of these cultures within the contexts of the CCS consortia, with the result that those tasked with managing the outward-facing profile of the consortia have often had to fight to maintain consistency of company behaviour and message. In addition to tending towards and moving between the five responses options observed summarised in table 1 (Aaltonen and Sivonen, 2009), what is also evident is a tension between response types. For example, in one consortium there was a tension between differing historic practice of the pipeline company on the one hand, which is more used to a defiance mode of operating (though perhaps better summarized as an 'decide-announce-defend' modus operandi) and the historic practice of the power plant company on the other hand, with its culture of developing and maintaining positive, long term local relationships. This difference may itself arise from the differing levels of embeddedness in particular localities: a pipeline installation firm will likely perceive less need of an on-going relationship with particular pipeline localities than a power plant with a business that is immobile, occasionally tangibly polluting and obvious for decades.

It might also be observed that several, if not most, of the consortia seem to have adopted an avoidance strategy in the early stages of geological exploration, while site geology was investigated and associated initial permits sought. Thereafter, the communicators in several consortia have plans for what would in Aaltonen and Sivonen's categorization (ibid) be termed 'active manipulation', in the sense of active message and public response management. In English the word 'manipulation' usually has negative connotations of shaping something in accordance with one's own interests. Nonetheless, no interviewee really expected to give substantial ground to stakeholders or the public (or at least, would not admit to this possibility). Space for negotiation, if any, is likely to centre on issues such as: on-going access to information, compensation, emergency preparedness, landscaping etc.

Regarding the extent to which particular ways of responding are associated with particular environmental conditions, is less clear. For instance, an adaptive strategy may be associated with a perception of relatively high power and legitimacy of stakeholders. It may be too early to draw conclusions on this, as most of the projects are at the time of writing at an early stage and few of the interviewees had implemented substantive public engagement/communication plans.

It is also clear that the historic internal practices of the firms are carrying forward to the new context of the CCS consortia. Moreover, as observed, this has posed complications that have had to be worked through and which have, in some cases, not yet been fully resolved. The interviews revealed issues that merit closer, subsequent investigation, though in practice this is likely to require ethnographic access. These issues include the process of allocating responsibility for decisions on external communication; lines of information flow and control and any differentiation by task and target audience; interpretations of the meaning and purposes of engagement and communication. As noted, the latter was (unsurprisingly) universally interpreted in an instrumental way by the corporate interviewees, who are tasked with easing through CCS implementation.

4.4. Research gaps: more in-depth empirical inquiry needed

Overall, the evidence from the five cases examined suggests that public and stakeholder communication on CCS by the development consortia involved would be improved by a greater awareness of what Marshall describes as "the thoroughly social phenomena of organisational knowledge and learning" (Marshall, 2008).

Several issues merit closer, subsequent investigation (and ethnographic access) like the process of allocating responsibility for decisions on external communication; lines of information flow and control and any differentiation by task and target audience; interpretations of the meaning and purposes of engagement and communication. In addition, more insight is needed into how exactly these consortia and project developers in general view the usefulness of toolkits and guidelines. Interviewees indicated in very general terms that they were aware of or even made use of toolkits on participation and communication. Learning more about this would also require additional research, which falls outside the scope of what is feasible within this project.

The next chapter 5 will go more in-depth into the toolkits that are available and what they have to offer. In combination with the lessons from this and the preceding chapters, we will gain further insights as to how company practice with regard to engagement and communication can be improved. Following on that, chapter 6 will then elaborate on all lessons from chapters 2 to 5 that are relevant to improve company practice with regard to setting up an effective engagement and communication strategy.

5. Review of toolkits and guidelines

5.1 Comparing toolkits

Recent years have witnessed the publication of several guidelines for participation, engagement and communication. A main reason for reviewing such guidelines and toolkits is to identify similarities and differences, asses if lessons from the previous section are addressed, and asses differences in starting points, background theory, approaches suggested as well as omissions.

Not all the reviewed documents are toolkits or guidelines in the sense of giving practical advice and tools for the several phases of project preparation and implementation. Some (e.g. Hammond & Shackley, 2010; Shackley and Evar, 2009) are in fact reviews of existing toolkits, aimed at providing a strategic support for project developers to help them thinking about public engagement in CCS at all stages of planning and to identify the issues and details that need to be considered. These publications are helpful at a more strategic level and can help project developers in deciding on the engagement and communication strategy and the tools or guidelines that would suit them best. Some publications do give advice and wrap up conclusions from earlier experiences, discussions or workshops, but do not elaborate these into practical steps and tools that characterise toolkits and guidelines (e.g. Ashworth, 2010; Ashworth et al., 2009). The IISD public outreach document collects the outcomes of a workshop, which are intended as a resource for those involved in communication on CCS and stipulates dos and don'ts (e.g. 7 golden rules for engagement) but without elaborating these into concrete tools and techniques. So while also referring to Ashworth, 2010, Ashworth et al 2009, Hammond & Shackley, 2010, Shackley and Evar, 2009, we focus on the publications in Table 3 as toolkits or guidelines proper in the review.[8]

[8] Some existing toolkit that are only available in Dutch (e.g. Hage and Leroy 2007a,b,c; IPO, 2006) have not been taken up in the review, because these are only useful for a Dutch-speaking audience and end-users, while we aim at recommendations in later sections that are relevant for end-users in several countries.

Table 3: Toolkits and guidelines reviewed

The ESTEEM Toolkit	ESTEEM toolkit: resulting from the FP6 Create Acceptance Project, available at http://www.esteem-tool.eu/. See also Jolivet et al, 2006; Raven et al, 2009)
The CSIRO Toolkit	Ashworth P., Bradbury J. ,Feenstra C.F.J., Greenberg S., Hund G., Mikunda T., Wade S. and Shaw H. (2011) Communication/Engagement Toolkit for CCS Projects. Commonwealth Scientific and Industrial Research Organisation (CSIRO) Energy Transformed Flagship, EP105893. And see also 2010; Ashworth, 2010.
The WRI Guidelines	WRI (2010). CCS and community engagement. Guidelines for Community Engagement in Carbon Dioxide Capture, Transport, and Storage Projects. World Resources Institute (WRI), Washington, Nov 2010: 100 pp.
The NETL outreach guidelines	NETL (2009) Public Outreach and Education for Carbon Storage Projects DOE/NETL-2009/1391. Dec. 2009. National Energy Technology Laboratory www.netl.doe.gov, 62 pp.
IISD Workshop outcomes	IISD (2007) Carbon Capture and Storage Communication Workshops. University of Calgary, International Institute for Sustainable Development (IISD), Climate Change Central (Canada) CCS projects Climate Change Central (2007)

We have developed criteria for this review, based on previous experiences from project team members with both reviews and development of guidelines and toolkits[9] and based on the particular focus of WP3. The first three criteria (elaborated below) address general issues like the focus, scope, background theory, the aims of the engagement and the empirical basis of the toolkit or guideline. Criterion 4 addresses the particular interest of WP3, namely how the prospective end-user is addressed by the toolkit or guideline. Next, issues like the structure of the toolkit, timing issues, and the tools/techniques that are proposed by the toolkit or guideline are addresses in criteria 5, 6 and 7. Criteria 8,9 and 10 ask what is distinctive, (positively or negatively) remarkable about the particular toolkit, to what extent it addresses the lessons from section 2.2, and how it addresses the wide societal debate on CCS.

Criterion 1 Focus & scope
Regarding focus and scope, we address:

- Phases/steps (e.g. project preparation, planning, implementation, etc): here we will also look at whether it discusses how it intersects with the overall project management cycle; project communication and stakeholder management; Environmental Impact Assessment (EIA) and related procedures; risk management).
- Elements or aspects of engagement and communication (e.g. the focus may be mainly on risk communication).
- Sectoral or other foci (e.g. a toolkit for all sorts of energy-related projects; or specifically for CCS; or specifically for projects involving uncertainty and risk).
- The levels addressed (e.g. a toolkit may address the local level of project implementation; or also the wider political-institutional national or global context).

Criterion 2a Background theory:
Tools and guidelines may differ in the extent to which they are explicitly grounded in conceptual or theoretical work, like for instance participatory or constructive technology assessment; collaborative planning; democratic theory; communication theory; social-psychological approaches or combinations of these.

Criterion 2b Aims and goals of participation:
Aims of participation are relevant to consider, It is possible that a toolkit addresses the aims of participation and communication, explicitly or implicitly. Such aims can relate to (a combination of):

[9] E.g. in the Create Acceptance project (www.createacceptance.net) and in the Changing Behaviour project (www.energychange.info)

- Quality goals: Participation is intended to gather scientific, experiential, tacit or local knowledge and can concern practices, stakeholders, processes, expectations, risk perspectives etc… Interactions hence serve the aim of discovering and/or filling concrete knowledge gaps, in order to improve the design, planning and decision-making process and its outcome. Such a dialogue also intends to clarify the diverse perspectives on the (desirability of) the project and the main problems identified (problem structuring). Participation can aim at learning, network building and improved understanding among specific stakeholder groups.
- Utilitarian or instrumental goals: If engagement and communication are aimed at mobilising support and gaining acceptance, then the participation is instrumental in getting the project implemented – with as little opposition as possible, and acceptance by main stakeholders, including the local general public.
- Democratic goals: Here, engagement is both means and end. A central notion here is that stakeholders (including the general local public) should be informed and granted the opportunity to participate in decision-making that affects their direct living environment and daily lives.

Criterion 3 Empirical bases:
Next to the conceptual grounding, the empirical material (or the background theory) that a guideline is based on is relevant to consider, e.g. the number and depth of case studies; the pilots performed; reviews conducted; other assessments and inquiries performed to develop/improve/validate the guidelines or toolkit.

Criterion 4 View of the end-user:
Guidelines and toolkits are often developed without much consideration for the characteristics of the end-user or for the diversity of end-users in terms of their resources, experience, capabilities, etc. In this context, the following questions are relevant to address:
- Who are the prospective end-users? (project managers, communication experts, local government)
- How is attention paid to their role, the needed resources, competences and knowledge for setting up and implementing an effective engagement and communication strategy?
- How is attention paid to the diverging roles, expectations, values within a project developers' (or consortiums') organisation? (e.g. internal constraints on the people facilitating the engagement etc)?
- How is attention paid to possible constraints and opportunities within the end-user (e.g. the project developing company or consortium) that may affect the options for engagement and communication?

Criterion 5: Architecture of the toolkit
Time is scarce for most of the prospective end-users, who therefore will prefer an easy and compact toolkit over a lengthy and complex one. In addition, depending on the end-user and the phase of the project, more strategic or very concrete support might be preferred. The architecture affects attractiveness and accessibility. What does the architecture or framework of the toolkit/guideline look like? E.g. is it a set of loosely grouped issues that result in a list dos and don'ts; a step-by-step process guide; or a pick-and-mix device?

Criterion 6: Timing:
The timing of involvement is a crucial issue in engagement and communication. Many toolkits argue for the timely involvement of local stakeholders in the design and preparation of a project. What does the toolkit say about this?
- Sometimes, timely involvement is not feasible anymore. What are then the options left for a process manager wishing to improve the engagement and communication process? What do toolkits and guidelines say about dealing with such constraints?

- What other timing issues are pointed out as relevant?

Criterion 7 Tools:
The tools, techniques, instruments or activities suggested may differ in the level of specificity (e.g. interview techniques may be offered that the project developer can use to interview relevant stakeholders)
- What sort of tools are offered and how much is this specified?
- Is the aim of the toolbox that the end-user will perform these activities him/herself or do some toolboxes also suggest to involve external expertise?

Criterion 8 Distinguishing features:
- What is remarkable about this specific toolkit?
- How does this toolkit distinguish itself from other toolkits/guidelines?
- To what extent does this toolbox come up with new and relevant issues and what are these?

Criterion 9 Addressing relevant issues.
Within the NearCo2 project, several issues and lessons have been drawn that are important to take into account when devising an engagement and communication approach (see chapter 2). To what extent do these toolkits address these?

Criterion 10 The broader context:
Devising an engagement and communication strategy around a CCS project does not take place in a socio-political void. Quite the contrary, CCS is a hotly debated issue at several levels of society.
- To what extent does this toolkit address the overall desirability of CCS (or other technologies/applications) and the societal debate about it?
- How does the toolkit provide guidance to deal with the broader societal debates?
- Does the toolkit provide suggestions on how to deal with (supra-local) stakeholders that use a local project proposal to discuss the technology/application (and national policies targeting the technology) in general?
- Does it give advice on how to deal with strategic games and power play?

Criterion 11 Conclusion:
Based on 1-10, a conclusion can be drawn regarding the most relevant lessons and omissions.

For each toolkit, a table like table 4 was filled in, to facilitate the comparison between the toolkits/guidelines on all criteria. In the following, the outcomes of this comparison are presented.

Tabel 4: Criteria for reviewing guidelines and toolkits

	Criteria and questions
1.	**Focus and scope, e.g.:** - phases/steps (how does it related to overall project mgnt cycles?) - sectoral or other foci - levels
2.a	**Background theory:** e.g. none; democratic theory; managerial; communication; definition of social acceptance?
b.	**Aims and goals of participation:** quality, instrumental, democratic **Concrete goals, e.g.:** Quality: gathering knowledge; problem structuring and analysis; mapping diverse perspectives; enhance knowledge of the stakeholders; developing and/or improving networks Instrumental: creating support/acceptance - Democratic: sharing power in decision making
3.	**Empirical basics:** e.g. nr and depth of case studies; pilots; review, assessment work
4.	**View of the prospective end-user?**

	- who? - project manager; local government; communication expert - attention to the role, resources and competences needed etc? - attention to the diverging roles within a project developers' (or consortiums') organisation? (e.g. internal constraints on the people facilitating the engagement etc)?
5.	**Architecture of toolkit**: e.g. issues, check-list; phases/step-by-step; pick & mix
6.	**Timing issues** - What timing issues are addressed? - Does the toolkit offer advice for situations when an engagement and communication trajectory has started late in the process? What does it say about that?
7	**What type of tools are proposed and how detailed/concrete are these?** - E.g. local surveys; stakeholder maps; interviews; tools for interactive meetings; etc.
8	**Distinguishing features:** - What is remarkable about this specific toolkit? - How does this toolkit distinguish itself from other toolkits/guidelines? - To what extent does this toolbox come up with new and relevant issues and what are these?
9	**How does this toolkit pay attention to issues discussed in chapter 2, e.g.** - lessons about the content of information; misperceptions; differentiated information needs; risk opinions; etc
10.	**Taking position in the broader societal or public debates:** - To what extent does this toolkit address the overall desirability of CCS (or other technologies/applications) and the societal debate about it? - How does the toolkit provide guidance to deal with the broader societal or public debates? **-** Does the toolkit provide suggestions on how to deal with (supra-local) stakeholders that use a local project proposal to discuss the technology/application (and national policies targeting the technology) in general? - Does it give advice on how to deal with strategic games and power play?
11.	**Conclusive:** best lessons & what's missing

5.2 Comparison of toolkits and guidelines

Ad criterion 1: Focus and Scope (table 5)

The ESTEEM toolkit, the CSIRO toolkit, the WRI guidelines and NETL and IISD publications give practical advice on how to set up engagement, communication or outreach activities in practice. The NETL outreach guidelines focus on public outreach and education rather than engagement. The ESTEEM and the NETL publications suggest to integrate the engagement and communication strategy into the overall project management cycle. The NETL guidelines follow the technical stages of CCS projects; ESTEEM focuses more on process management cycles by addressing how the toolkit itself can fit with Environmental Impact Assessment (EIA) procedures, risk analysis and risk management. The CSIRO toolkit follows the ESTEEM approach, but goes less in detail. The WRI publication addresses phases or steps, without seeking for integration in the overall project management cycle. All toolkits address risk communication and management as part of overall project management. The CSIRO toolkit addresses risk mostly as risk-to-the-project (e.g. caused by resistance). In addition, it does emphasise the importance of engagement and building trust in situations involving uncertainty, setting out that the project developer should not just try and convince concerned people with the 'facts', but address technical, social and value issues as they arise in a two-way interaction process. (Ashworth et al 2011: 23). ESTEEM, WRI, NETL and IISD address risk by pointing out the importance of taking seriously the different risk perspectives that stakeholder may have regarding a CCS project. The role of trust is mentioned in relation to how perspectives on (the acceptability of) risk are shaped. In the discussion of risk perceptions, the IISD summarises *dos* and *don'ts* in risk communication.

Overall the ESTEEM toolkit is most comprehensive and elaborate. It can complement the overall project management cycle and contribute to risk analysis and management, the EIA process. It addresses a variety of relevant stakeholders in the project context that need to be addressed. It is the only toolkit discussed here which is not focused on CCS only. The ESTEEM toolkit also has a step 0 which helps the user to identify to what extent this toolkit is useful. The toolkits/guidelines all are focused on CCS projects. The WRI toolkit is interesting in that it addresses three 'implementing actors', namely regulators, project developers and local decision makers – for each group slightly dif-

ference recommendations are formulated. ESTEEM also mentions different possible end-users but does not address this any further in the toolkit itself.

Table 5: Focus and scope

1.	Focus and scope, e.g.: phases/steps (how does it related to overall project mgnt cycles?) ; sectoral or other foci; levels	ESTEEM	CSIRO	WRI	NETL	IISD
	Scope: engagement and communication	X	X	X	X	
	Scope limited to public outreach & education					X
	Integration into project management cycles	XX	X		X	
	Integration into technical project management					X
	CCS specific		X	X	X	X
	CCS and other technologies	X				
	Addressing various 'implementers'			X		
	Focus on project developer as 'implementer'	X	X		X	X

Ad criterion 2: Goal of participation (table 6)

A difference between ESTEEM (and WRI to some extent) and the other toolkits is that the latter are more based on research on public perceptions and information-processing, and the former more on the study of social processes involved in the diffusion of new technologies. Only ESTEEM has an elaborate and explicit theoretical basis. It is grounded in a socio-technical theoretical basis, involving the notion of co-evolution of technology and society. In this understanding, during processes of interactions between new projects and the local historical, cultural, institutional, social, economic, material and geographical context, both sides need to move. This means that proper interaction, building relationships and creating a common ground to create mutual benefits is important.

Both the ESTEEM and the WRI toolkit emphasise the quality argument, arguing that a project plan and process can improve through the involvement to local knowledge. In contrast, in the CSIRO, NETL and ISSD toolkits, the instrumental goal of engagement is apparent. These toolkits regard local inputs mainly useful to enable the project developer to better tailor the communication and engagement strategy to the concerns of local stakeholders. Hence, when the CSIRO and NETL toolkits mention the importance of monitoring and being flexible, this refers to being flexible in adapting the communication and engagement approach to changes in the operating context. It does not refer to considering changes to the project design (e.g. size, location) itself or changes to the distribution of costs and benefits among relevant stakeholder groups. Benefits can also relate to e.g. employment opportunities, mitigation measures, changes in the design or exact location of a project, compensation measures, quality of the further process. Costs refer not only to clearly defined and measurable costs, but also to concerns and uncertainties about risks, nuisance during examinations and construction, loss of landscape quality, etc.

A better understanding of local concerns serves to help the project team to foster public acceptance by addressing issues that are of relevance to local community members – although all toolkits acknowledge that good engagement and communication is no guarantee for social acceptance and project implementation. Hence, the CSIRO toolkit aims at enhancing knowledge and improve stakeholders' understanding of CSS on a project-specific scale and in general (CCS as a technology to combat climate change). The NETL strategy hardly focuses on participation but more on fulfilling and responding to communication needs and on tailoring the information provided to the target group (building awareness and education).

Both ESTEEM and WRI point out the importance of quality and democratic considerations, the other toolkits do this to a much lesser extent. The ESTEEM approach moves away from the 'barriers' approach, as does the WRI toolkit, which states that "Too often, the reaction from regulators, project developers and local authorities has been to view public opinion and local communities as a barrier to technology deployment. This report takes the opposite tack: it starts from the position that project developers and regulators should treat host communities as partners "whose questions and concerns

can improve the project and who should be consulted in the design, development and operation of CCS projects on their doorstep."(WRI, 2010:7). The ESTEEM tool also points out that those executing the engagement and communication (e.g. an external consultant) should have clarity on the goal of participation, on their mandate and the scope for engagement. The reviews (Shackley & Evar; 2009; Hammond & Shackley, 2010) point out several different approaches to engagement.

Table 6: background theory

2	**Background theory: e.g. not clear/not explicit; democratic theory; managerial; communication; definition of social acceptance?**	**ESTEEM**	**CSIRO**	**WRI**	**NETL**	**IISD**
	Socio-technical perspective: co-evolution of technology and society.	X				
	Not explicit, but relying on body of public perceptions research on		X	X	X	X
	Aims and goals of participation: quality, instrumental, democratic.					
	Quality goal: local knowledge can be a valuable resource that helps improve the process and project	X		X		
	Democratic goal: providing room for articulation of diverse perspectives and attempt to align these in dialogue process; open-endedness; effective representation; seeking mutual benefits	X		X		
	Instrumental goal: fostering acceptance of CCS project: understanding local concerns, improving local knowledge about the CCS project and CCS technology in general in order to foster social acceptance.		X		X	X
	Information: emphasis on informing local stakeholders; collecting input from local stakeholders serves to better tailor the communication and engagement strategy to local stakeholder concerns		X		X	X
	Scope of the engagement: attention for the mandate and scope for engagement should be clear and non-disputed	X				

Ad criterion 3: empirical basics (table 7)

The ESTEEM toolkit is well-grounded in extensive empirical work (not CCS-specific though), more so than the other toolkits. The project that resulted in the CSIRO toolkit also involved several case studies. Actually, all toolkits and publications rely more or less indirectly on a lot of previous CCS-specific research and/or involve contributing researchers (which partly overlap with the researchers involved in NEARCO$_2$ as well). Hence these guidelines (ESTEEM to a lesser extent than the others) have been devised by a community of social science researchers that has been doing research on public perceptions on CCS over the past decade. What the toolkits share is that they all also collect hands-on experiences (case studies, pilots, examples).

Table 7: Empirical basis

3.	**Empirical basis: e.g. nr and depth of case studies; pilots; review, assessment work**	**ESTEEM**	**CSIRO**	**WRI**	**NETL**	**IISD**
	Grounded in extensive empirical work	X				
	Relying on body of literature and earlier empirical work particularly on CCS and public perceptions		X	X		X
	Hands-on experiences (case studies, pilots, examples).	X	X	X	X	X

Ad criterion 4: view of the prospective end user (table 8)

The ESTEEM tool proposes an intermediary consultant who helps the project managers to devise and implement an engagement strategy. It emphasises that the project developer should provide the consultant clarity on the scope and mandate (e.g. degree of participation and openness in dialogue). Then the consultant should judge whether this is sufficient to facilitate a good ESTEEM process. Both ESTEEM and CSIRO toolkits argue in favour of having an intermediating actor between community stakeholders and project. Like ESTEEM, the CSIRO toolkit also proposes to assign various engagement tasks to others; it suggests the set-up of an Independent Steering Group to assist and support the project management team by informing the local community and identifying its concerns. In addition, a Community Liaison Group and a Community Liaison Officer are proposed, to increase community understanding about the project, to enhance community involvement and to enable a fast and effective response from the Project team to arising issues and concerns. This group consists of local community leaders; local government representatives; media representatives; NGO representatives.

Both ESTEEM and CSIRO toolkits do not explicitly address the competences and resources that the end-users of the toolkits should have or hire. ESTEEM does pose the question 'What managerial challenges do different types of project initiators encounter?" on the ESTEEM website, but refers the reader to several case studies – hence this question is not addressed as part of the toolkit. Moreover, it does not address the situation in which different organisations make up a project consortium. The WRI toolkit distinguishes three prospective end-users: regulators, local decision makers and project developers.

None of the guidelines or toolkits explicitly address potential organisational constraints or lack of resources. However, ESTEEM does provide an indication of the time resources required for different steps[10]. Moreover, unaddressed by all toolkits is the possibility of divergent views on (the aims of) engagement within a project developers organisation or consortium. The ESTEEM tool argues for having a process consultant, in combination with several activities suggested to clarify the project developers' own vision of the project. Any internal divergences are likely to come up in such a process of clarifying and aligning a consortiums vision. However, this is implicit, not explicit. The CSIRO toolkit advises to conduct a SWOT analysis on the key stakeholders and adds that this SWOT analysis can also be used by the project developer to identify opportunities and weaknesses within their own organisation and to get clarity on what the roles and duties within the organisations are. It is advised to do this early in the process. So while both ESTEEM and the CSIRO toolkit address the internal process within the organisation, they do not go into this in depth.

The NETL toolkit is interesting, as it emphasises the need of having a strong outreach team (NETL mainly addresses outreach) with a clearly defined structure and clarity on the roles and responsibilities covering both internal and external communication. The outreach team should maintain good relationships with the technical and regulatory teams, to identify and address internal differences in opinion and perspective on engagement and communication. The NETL toolkit furthermore states that the outreach team itself should involve people with various backgrounds, e.g. technical; communication; education; community relations; local knowledge.

Table 8: View on end-user

4.	View on prospective end-user?	ESTEEM	CSIRO	WRI	NETL	IISD
	Project manager (and consultant) as main end user	X	X		X	X
	Different end users (project developer, regulators; local decision makers)			X		
	Use of intermediary roles: process expert to support the project developer	X	X		(X)	
	Address explicitly both external and internal communication; identify and address internal differences in opinion on				X	

[10] The estimation is that routinely applying ESTEEM requires about three consultant weeks and one project manager week over a period of time of 3 to 6 months.

	engagement and communication					
	Address how internal organisational characteristics can be addressed – e.g. tools for organisational learning prior to and during the whole process. (internal alignment of expectations)	(X)	(X)			
	Attention for time and main resources needed (time investment)	(X)				
	Explicit attention for competences and skills					
	Explicit attention for potential organisational constraints					

Ad criterion 5. Architecture of the toolkit (table 9)

The ESTEEM toolkit is comprehensive and includes a lot of useful tools, instruments, tables and templates, but also quite a lot of text. This makes it less attractive than the CSIRO toolkit, which is brief, concise, and pick-and-mix in the set up – everything you need is in a 50-page document. An advantage of ESTEEM, however, is that it is online available and partly downloadable.

The WRI toolkit is – like ESTEEM, rather textual and lengthy. Overviews, specified for regulators, local decision makers and project developers, remain on a general level. No concrete tools and instruments are provided like in the CSCIRO toolkit or ESTEEM.

The NETL outreach toolkit is systematic, addressing 8 topics and giving suggestions for activities for 4 project stages. Tools are not elaborated into usable formats and tables but included are a sample time frame; sample communication plan; specification on social site characterisation; sample press releases and other publications; planning site visits; conducting a focus group.

The IISD publication includes general lessons and dos and don'ts and does not specify tools, techniques or approaches that can be used for different aspects in the engagement exercise.

The reviews (Shackley & Evar, 2009 and Hammond & Shackley 2010) can be read as 'guides to toolkits' on a more strategic level addressing the sort of issues, approaches and foci found in different toolkits. In addition, a review of most relevant literatures is addressed as well.

Table 9: Toolkit architecture

5	Architecture of toolkit	ESTEEM	CSIRO	WRI	NETL	IISD
	Comprehensive	XX			(X)	
	Pick & mix		X			
	Including a variety of tools and techniques	XX	X		(X)	
	No concrete working formats and tools offered			X		X
	Suggestions for activities; ideas for tools and samples; not elaborated into usable formats.				X	
	Internal coherence	XX		X	X	
	Helpful means to discuss a communication strategy within the project development team	X	X	XX	X	X

Ad criterion 6. Timing issues (table 10)

All toolkits emphasise the importance of early engagement and participation. ESTEEM focuses on the early design stages of a project (see figure 2), when the main project partners are already known but when project details have not yet been definitively fixed. ESTEEM is to be initiated as early as possible – before mandatory public consultation or permitting processes are started. The ESTEEM steps address the phases in which the main options for the further planning and implementation are decided on and set out in several plans. After that, the ESTEEM steps can still be of use for further monitoring, evaluation and adaptations throughout the project cycle.

The CSIRO (figure 1) and WRI toolkits and IISD publication also emphasise the early stages; the NETL toolkit fine-tunes the timing with the technical project management cycle, stressing the importance of taking sufficient time for outreach activities.

None of the toolkits and guidelines provide ideas on what to do when an engagement and communication trajectory has started late in the process or what to do when controversy has already started. However, ESTEEM does have tools to identify conflicting issues – see next paragraph.

Table 10: Timing issues

6	Timing issues	ESTEEM	CSIRO	WRI	NETL	IISD
	Emphasis on early engagement	X	X	X	X	X
	Main emphasis on early phases	X				
	Advice on what to do if the engagement is started later on in the process	-	-	-	-	-
	Advice on dealing with unexpected situations/problems addressed, e.g. how to deal with limited resources	-	-	-	-	-
	Advice on dealing with resistance when it is already apparent?	(X)	-	-	-	-

Figure 1. Flow chart CSIRO Toolkit (Ashworth et al 2011)

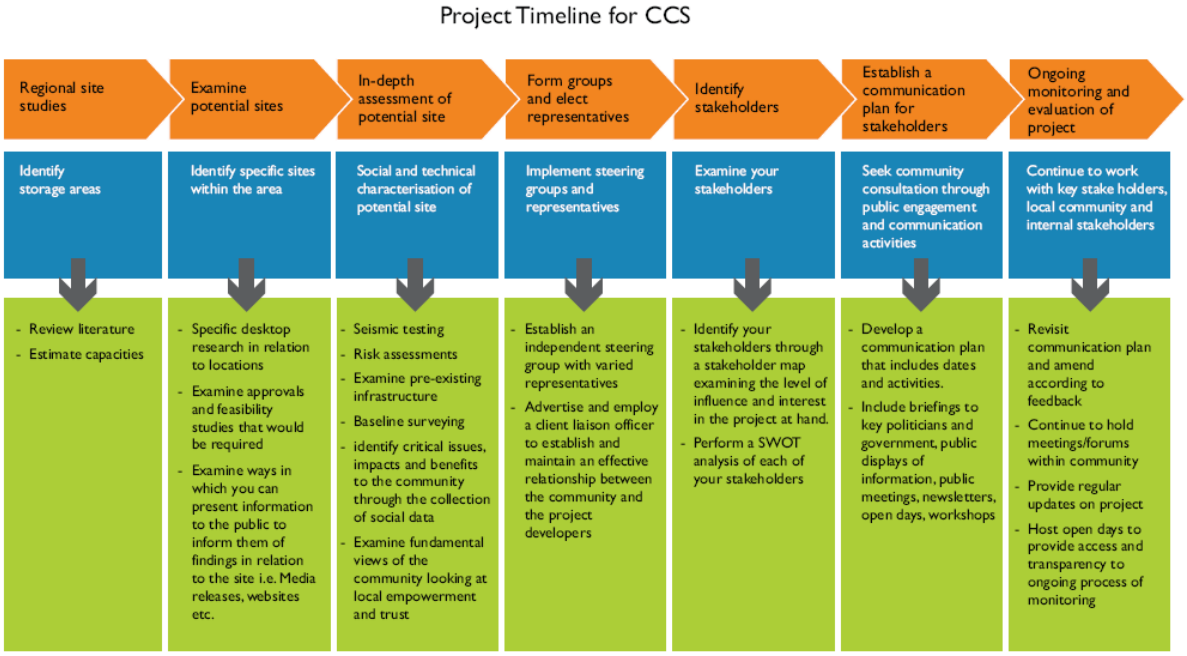
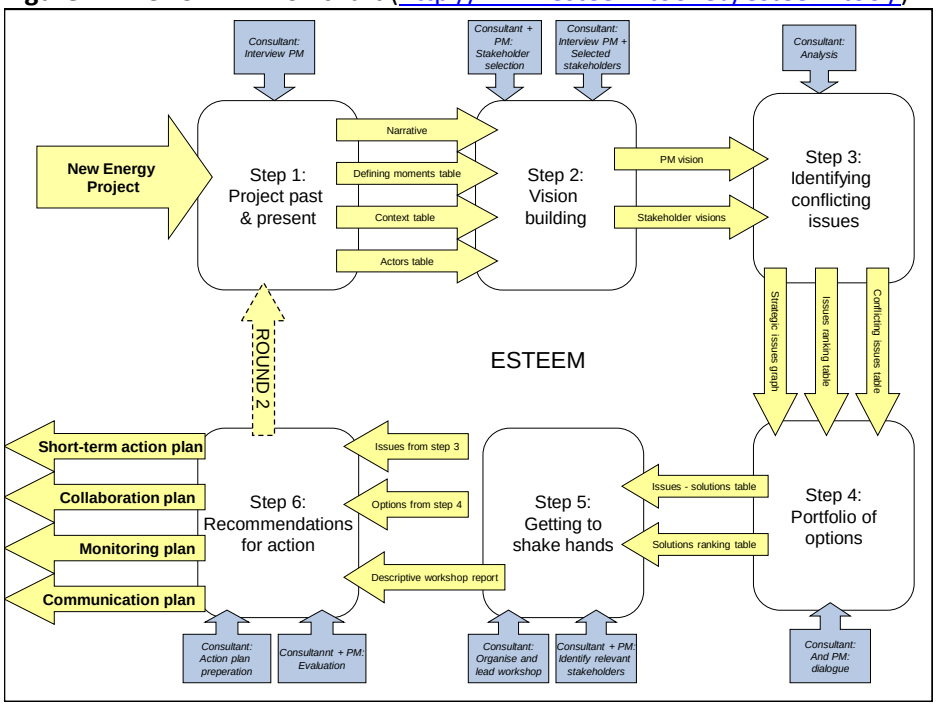


Figure 2: The ESTEEM flowchart (http://www.esteem-tool.eu/esteem-tool/)



Ad criterion 7: Tools proposed (table 11)

Both ESTEEM and the CSIRO toolkit include formats and tools for interactive meetings like tables, checklists, surveys, stakeholder maps, interviews, and tables to fill in on the basis of discussions, . Both toolkits have simple and straightforward tools. In ESTEEM, the presentation of tools is not always very attractive (a lot of Excel files that need be downloaded and filled in), in contrast to e.g. the CSIRO tools, which are all depicted in the 50 page document. The ESTEEM tool has several tools to identify on which conflicting issues negotiations might be useful, e.g. offering the possibility for aligning expectations and finding common ground. The CSIRO tool does not really address how conflicting issues (e.g. local concerns) can become part of a process of negotiation.

The WRI toolkit is rather a framework, intended as a kind of strategic and general check-list and to provide useful exemplary information from prior experiences. It does not provide concrete tools & techniques, but does refer to other tools, e.g. ESTEEM.

The NETL toolkit includes several checklists and exemplary lists e.g. regulatory permits and the parties thereby involved; major stakeholder groups and how to identify them; relevant aspects for social characterisation; relevant aspects for a communication plan; timetable for the first project phase. It furthermore assembles advice on working with the media (and a sample press release), the development of material (e.g. posters, site tours), a sample communications plan, ideas on conducting a focus group, additional information about CO_2 storage. Additionally concrete examples on how issues were solved in earlier projects are given. The IISD publication does not really specify tools, but refers to some, e.g. message maps. The reviews refer to various types of tools and techniques.

Table 11: Tools & instruments

7.	What type of tools are proposed and how detailed/concrete are these?	ESTEEM	CSIRO	WRI	NETL	IISD
	Simple, straightforward and usable tools	X	X			
	tables, checklists, surveys, stakeholder maps, interviews, tools for interactive meetings etc.	X	X			
	Attractive presentation		X			
	Tools to identify conflicting and consensus issues	X				
	General framework, checklist; do's and don'ts			X		X

	Elaborated do's and don'ts; samples and checklists for several phases				X	

Ad criterion 8: distinctive of each toolkit (table 12)

Distinctive of the ESTEEM tool is that it is based on a socio-technical perspective and it is well-grounded in theoretical and empirical knowledge. It regards alignment of expectations as crucial to acceptance, whereby not just the receiving party but also the project developers may need to change in order to enable this alignment and successful implementation of the project. In addition, the context in which a project is planned is placed central. Finally, it proposes the need for a process-consultant, a neutral professional to support the project developer in the engagement and communication process. In doing so, it stresses the importance of having a clear idea on the scope this process manager is granted to perform the ESTEEM process. In as far as organisational learning takes place, the process manager has a facilitating role in this by e.g. supporting self-reflection. However, although organisational learning appears to be part of several steps that aim to better embed the project in the particular context for which it is planned, is not addressed explicitly as part of the processes of project preparation, implementation and monitoring. The fact that project developers come in all sorts and sizes also does not receive extra attention.

Distinctive of the CSIRO toolkit is that it is highly practical and likely to be very appealing to the user because of the limited number of pages and the explicit focus on CCS projects. Furthermore, several intermediating bodies and persons proposed are distinctive.

The WRI toolkit is distinctive in its addressing of three groups of end-users; in explicitly emphasising the open-endedness of the process (cancellation of project as one option); and in being based on broad expertise.

The NETL toolkit also builds on the experience from several (preparatory) projects and is the synthesis of the work of several individual researchers and institutions. It includes very precise tools that can be easily adapted to the conditions of a specific project.

The IISD guide is distinctive in presenting relevant concepts from research, combined with more concrete recommendations. In addition, the attention for risk perception and communication approaches stands out.

Distinctive about the reviews is that they provide very useful guide to guidelines and as such have a practical value for project developers considering how to start with an engagement and communication process.

Table 12: Distinguishing features

8	**Distinguishing features:**	**ESTEEM**	**CSIRO**	**WRI**	**NETL**	**IISD**
	Socio-technical perspective: - alignment of expectations as crucial to acceptance, - not just the receiving party but also the project developers may need to change in order to enable this alignment - the context in which a project is planned is placed central - the need for a neutral professional process-consultant	X				
	- highly practical and appealing to the user. - intermediating bodies like the ISG and CLG/CLO		X			
	- addressing of three groups of end-users - emphasising the open-endedness of process - being based on broad expertise			X		
	- includes precise advice that can be easily adapted to specific project.				X	
	- relevant concepts from research & concrete recommendations - attention for risk perception and communication - outreach team: clearly defined structure and clarity on roles and responsibilities;					X

Ad criterion 9: attention for issues discussed in chapter 2. (table 13)

ESTEEM takes a slightly different approach, it addresses information and communication issues based on socio-technical research. Hence, it emphasises the need to tailor information to the needs of the target groups; it understands communication as a process of addressing and attempting to align different expectations; it regards the use of an independent intermediary consultant to help improve trust in the process and process management; it sees building trust as vital to the various steps in ESTEEM. Furthermore, it argues for the articulation of differences in perspectives (needed before alignment processes can start); to collaboratively search for solutions to conflicts. Instead of information provision, there is rather a process of information alignment. Not just information from e.g. project developers and NGOs are relevant, but also the information provided by other local stakeholders. Information includes values and expectations.

The knowledge reflected in the other toolkits is to a large extent based on a different body of CCS-specific social scientific research on perceptions. Many lessons summarised in chapter 2 (from NEARCO$_2$ project and earlier projects involving partially the same researchers) are explicitly or implicitly reflected in the CSIRO toolkit, the WRI, the NETL and IISD publication (and in the reviews).

CSIRO offers tools to address local information needs – it proposes survey questions that will generate better insight in current local knowledge and values with regard to both CCS and climate change issues. This can be helpful in devising a more targeted communication and education approach and it can help the prevention of conflicts around 'non-issues' (it has been shown before that a lack of knowledge about CCS can generate unnecessary worries and have large impact on local discussions).

Table 13: Use of existing knowledge

9	**How does this toolkit pay attention to existing knowledge/lessons:**	**ESTEEM**	**CSIRO**	**WRI**	**NETL**	**IISD**
	Socio-technical lessons: tailor information to the needs of the target groups; communication as a process of aligning different expectations; independent intermediary consultant to help improve trust in the process and management. Articulation of differences in perspectives (needed before alignment processes can start); to collaboratively search for solutions to conflicts. Instead of information provision, rather a process of information alignment is crucial.	X		X		
	Survey questions that very specifically point out the local levels of awareness, knowledge and values with regard to CCS and climate change issues		X			
	Basis of research on CCS, public perceptions, information processing, etc. (overlap in research refs and researchers involved); overlap also with NCO2 lessons summarised in section 2.# of this report		X	X	X	X

Ad Criterion 10: Taking position in the broader societal or public debates (table 14)

Both ESTEEM and the CSIRO toolkit include tools to map the broader context in which a project is situated, thereby addressing the social-political debates at the supra-local level as well. While all referring to the fact that CCS implementation takes place in a wider context of social contestation and debate, none of the toolkits provide recommendations on whether or how to become engaged in the wider societal debate on CCS.

Table 14: Position in wider debate

10	Taking position in the broader societal or public debates:	ESTEEM	CSIRO	WRI	NETL	IISD
	Tools to map the broader context in which a project is situated (incl social-political debates at the supra-local level)	X	X			
	Advice on how to get involved in national debates, CSIRO toolkit also does not address this.					
	advice on how to deal with strategic games and power plays.					

The toolkits and guidelines have been reviewed on the basis of 10 criteria in order to identify similarities and differences, asses if lessons from the previous section are addressed, and assess differences in starting points, background theory, approaches suggested as well as omissions. As for the reviews (Hammond & Shackley, 2010; Shackley and Evar, 2009), they provide a 'guide to the guides' and report on the different knowledge bases of different toolkits. In doing so, they do not favour one particular perspective regarding the goal of engagement (quality, democratic, instrumental), but rather point out different possible starting points. These guides can point out to a project developer organisation that is looking for specific advice where to turn to for more detailed guidance. The WRI guideline, NETL and IISD publications provide helpful frameworks to understand important elements of engagement and communication and point out directions on how to go about preparing and devising such a strategy. They offer less concrete and ready-to-use tools than ESTEEM and the CSIRO toolkit but do offer relevant knowledge and examples. The relevance of the WRI, NETL and IISD publications lies on a more strategic and general level, while also giving concrete recommendations. When a project developer is looking for a translation of recommendations into concrete tools and techniques that can be directly applied, then the ESTEEM and CSIRO toolkit offer the most practical and comprehensive support. The next chapters gives a combined overview of conclusions and relevant findings from both this and the previous chapters – to come to a better understanding of what can be improved when supporting project developers in devising effective engagement and communication strategies.

6. Conclusions Part I

6.1 Lessons from literature, fieldwork and review of engagement toolkits

Chapter 2 presented relevant lessons for setting up an engagement and communication strategy:

- misperceptions
- the differentiated information needs and differentiated use of different media;
- the importance of trust in the source of information;
- the importance of clarity on the process;
- the need to take risk opinions seriously;
- transparency about the scientific uncertainties relating to storage and leakage;
- transparency about costs and benefits and their distribution;
- room to discuss conditions of acceptability (and discussions on the cost-benefit distribution);
- the role of the media;
- timing issues;
- taking account of local contingencies;
- the importance of a good process.

In part these lessons address *the level of the individual* and how individuals may respond. Such lessons can be generalized across and have relevance for different project and geographical contexts. In part, these lessons also point to the importance of taking *process dynamics* seriously. And in part they emphasise the importance of knowing the *particular local social, institutional, physical, political and infrastructural context* of the proposed CCS site in order to be able to engage with local stakeholders effectively. So these lessons are about tailoring of the engagement and communication approach to a particular context. All these lessons get attention in one or more of the toolkits that have been reviewed in chapter 5.

Chapter 3 and 4 explored a gap in existing literature and research, namely the lack of attention for the implementing organisations, their internal institutional dynamics, organisational practices, characteristics, competences and resources. Since this all affects their ability to devise an effective engagement and communication strategy, this omission is something that needs to be addressed. An engagement and communication strategy can be regarded as the outcome of a process in which both (beliefs and expectations about) the project context and internal organisational and institutional dynamics play a role. The particular organisational context and the particular project context, and interaction between the two (e.g. through the involvement of local stakeholders in the devise of the engagement and communication strategy) will affect the resulting engagement and communication strategy. Chapter 3 explored useful literature to help understand the internal aspects of company practice with regard to engagement and communication. Chapter 4 empirically investigated internal company practices by means of interviews with project developers.

Chapter 5 compares existing toolkits and guidelines for engagement and communication, based on several criteria that address central issues like focus, scope, background theory, the aims of the engagement and the empirical basis of the toolkit; attention for the prospective end-user; the structure of the toolkit; timing issues; tools, activities and techniques proposed.

Having compared the different toolkits, we can now bring together the most important and interesting outcomes from all previous chapters – that are relevant to improve and ease the tasks for project developers in devising of effective engagement and communication strategies for CCS projects.

Internal alignment

Whereas toolkits and guidelines on public engagement typically consider project developers as unitary bodies, in the sense of one organisation with one vision, in practice this is often not the case, as the interviews have clearly shown. The toolkits reviewed lack explicit and elaborate attention to the fact that the prospective end-users of these toolkits come in many kinds, having different backgrounds, skills, knowledge, resources and cultures. CCS-consortia of project developers are often no unitary actors, but include different organisations or at least different units of a large organisation. This means that:

- There can be quite a difference in the organisational cultures (e.g. in terms of hierarchy, history in engagement, openness to change) which can make the internal cooperation already a challenge on itself.
- There can be quite substantial differences in the views on engagement and communication, for instance, differences in opinion regarding the timing, openness and transparency in communication efforts.
- The involvement of different departments (or even different organisations) that are sometimes based at different sites means that quite some effort is needed to align internal perspectives.
- Related to the above, is the difficulty to express a coherent message (speaking with one voice).

There is need to address not only external but also internal communication. In addition, organisational learning prior to and during the whole project cycle is important, to arrive at an internal alignment of expectations and views. In this process, the needed competences and skills as well as potential organisational constraints should be addressed (all respondents indicated that skills are crucially important; financial resources were not an issue). An important conclusion is that we not only need to tailor the engagement strategy to the particular context. We also need to address the needs of the prospective end-user (the project developer) and internal organisational dynamics in order to be able to devise an effective engagement and communication strategy.

Different needs for different contexts of capture, transport and storage

Different approaches might be needed for the capture, the transport and storage parts of the chain. In some cases, the industry is already present at the capture point, people there are familiar with and perhaps employed by the industry. In the surrounding of the storage site, this is less likely to be the case. Onshore storage locations may confront the developer with the largest challenges and may require most intensive efforts at engagement. The project organisation has to start building a good relationship with the local stakeholders there. This is a challenge because often little benefits are offered while the storage is regarded as a burden by the local community.

Early engagement

Early engagement with local publics, prior to formal participation requirements under planning law, is advised by most CCS engagement toolkits and guidelines and is advocated as good practice generally in development planning by many observers and practitioners. The interviews showed that even if respondents largely subscribed to the principle of early engagement and communication, in practice this is not done.

Related to this is an issue that respondents struggled with in different ways: what to do when conflict has already surfaced? How should that affect any further engagement and communication strategy? The toolkits do not offer advice for this.

Use of toolkits & guidelines

Engagement and communication toolkits and guidelines are said to be used to check whether the approaches chosen are consistent with those of others. However, little direct use is made of such guidelines and it has not really become clear why that is the case.

Different approaches have been or will be used to engage with local stakeholders e.g. responding in a very alert manner to each and every contested issue; keeping a low profile and stay quiet as long as no one protests; only seeking to approach those stakeholders that do not belong to the outright opponents; avoiding opponents and large meetings.

Ideas on the aim of engagement and communication

Most respondents did not elaborate explicitly on a clearly stated goal of engagement and communication in their project. Nevertheless, the interviews did show that most respondents (if not all) look at engagement and communication from a very instrumental point of view – intended to win support or at least gain acceptance of the project. There is no strong intention to collect local views and concerns as valuable inputs that may actually result in project or process changes.

The perceived necessity of CCS to counter climate change is regarded as a given by several interviewees, which indicates that the room for alternative perspectives on this is limited. In line with this is the perception that a proper communication strategy is in the end about communicating the necessity of CCS. Although there is also talk about and initiative towards dialogue, listening to concerns etc, the overarching communication idea is implicitly one-way.

The toolkit review further showed that existing toolkits hardly provide support in getting clarity on the aims of engagement and participation. This is an important omission, for if an organisation does not know what the purpose of engagement and communication is, how can it then choose the right tools and instruments?

To conclude on this point, whether communication is one-way information provision or about alignment of diverging perspectives, depends not on instruments used (e.g. dialogue workshop, focus group meetings, community board instalment). It rather depends on what is being done with the stakeholder inputs gathered. If these are mainly used to further fine-tune the message directed at the local stakeholders, then this is in line with a one-way communication strategy of informing, educating, reassuring and persuading people.

Scope for negotiating costs & benefits

Overall, the respondents indicated that they saw limited room for substantive negotiation with local stakeholders. Some mentioned that something should be done with the input from community members, that there should be room for negotiation – e.g. on the provision of community benefits like financing a children's' playground.

Most toolkits/guidelines provide no or only limited support in getting clarity on the aims of engagement and participation – and in line with this, attention for the mandate and scope for engagement is also not present, except for the ESTEEM tool that states that this be clear and non-disputed.

Toolkits furthermore offer no elaborate mechanisms for costs-benefit sharing, which is what negotiations should be about (aligning expectations should be followed by attempts to align interests)

The national context

Several respondents stated that national government should support CCS more explicitly, providing it legitimacy. Several respondents referred to national political and societal debates on CCS as directly influencing a project's feasibility. None of the toolkits advises on how best to get involved in national debates (although ESTEEM offers tools to map the broader context in which a project is situated, including the national social-political debates.

6.2. Towards a strategic instrument for organisational learning

For many aspects, stages, problems and issues in CCS projects, existing toolkits provide information and knowledge, tools and techniques to gain a better understanding of the situation at hand and for undertaking activities that are part of an engagement and participation strategy. At the same time, the interview analysis showed that little concrete use is made of existing toolkits and guidelines. In addition, what has become clear in several interviews is that within consortia, there is often a lack of a shared vision on the engagement and communication strategy. Although the ESTEEM and NETL guidelines do emphasize the importance of arriving at an internally shared vision, no tools are offered to accomplish this. Hence, while the external communication is addressed extensively, the internal alignment of visions and expectations regarding the engagement trajectory is left unaddressed. That is a problem for two reasons. First, within a project developer organisation, the people tasked with engagement and communication may have quite different ideas about the aims, scope and design of the engagement compared to employees with different tasks. Second, when a CCS project is developed by a consortium that consists of different organisations, the internal divergence can be even greater. Hence, it is crucial that a process of internal alignment through dialogue is started before a particular engagement strategy is chosen and devised and before choices are made regarding the uptake of particular toolkits/guidelines.

A strategic instrument can be of help in this process of organisational learning and alignment. Existing work and instruments for organisational learning from a project that resulted in a toolkit for practitioners in energy demand side management projects addresses organisational learning. The following is said on the toolkit website[11] :

"Organisational learning may seem self-evident, this is not always the case. An organisation can enhance its learning ability, which also helps to learn about why approaches work well or fail. One of the main challenges is to actually make available time for reflection in an organisation. Evaluation during the project can help to adapt the project to changing circumstances if needed. Periodic evaluations are best done when you reach certain milestones of the project – when certain steps have been completed or when important decisions are to be made. Checking the progress of a project can also be done by asking relevant stakeholders and target groups for feedback. This brings in valuable information from their perspective; it can alert you to difficulties or problems that you were not aware of; it can help you refine project steps and interventions. Asking for feedback can be done at any implementation stage of the projects, for example at key milestones. It can also be done separately whenever it is felt that there is a need due to important events/changes in the project."

[11] www. http://mechanisms.energychange.info/step-by-step):

PART II: STRATEGIES FOR ENGAGEMENT AND COMMUNICATION

7. Towards strategies for engagement and communication

7.1 Internal and external tailoring

There is no "one-size-fits-all' approach to engagement and communication and that the success of any approach is contingent on many conditions that differ for each project. The exact choice and 'content' of the overall strategy of an engagement and communication approach needs to be tailored to the project's specific aims and context, the project developer and a variety of relevant (local) stakeholders including the 'general local public'. The importance of tailoring the engagement and communication approach to the context in which it is going to be applied gets attention in several toolkits that we have reviewed. This tailoring involves issues like learning about relevant local stakeholders and social networks, the local histories and current social-political dynamics. It is all about gaining insight in the particular local social, institutional, physical, political and infrastructural context of the proposed CCS site in order to be able to engage with local stakeholders effectively.

What has become clear from the fieldwork interviews and conceptual section on company practices, is that prospective end-users of these engagement and communication toolkits come in many kinds. Any engagement and communication strategy therefore not only needs to be tailored to the specific context of the proposed CCS development, but also needs to be tailored to the specific characteristics of the project developer organisation. Several preconditions for a successful strategy lie within the project organisation and in the ability of the organisation to become aligned to the local and project context. In the case of CCS this can pose additional challenges as multiple organisations and sites may be involved. The devise of an effective engagement and communication strategy would ideally start addressing the internally available organisational resources and competences, as well as views and values with regard to engagement and communication. Hence, we concluded that the choice for and further development of an engagement and communication strategy should aim at being in line with the organisational values and norms, so that it can count on continued internal organisational support.

One overall aim of the NEARCO$_2$ project is to develop effective engagement and communication strategies. We define effective in terms of meeting the needs (information and process related) of the involved stakeholders (including the 'general local public'). While we work with this definition, we acknowledge that for project developers, 'effective' may be defined differently, e.g. more in instrumental terms, whereby the eventual project implementation is what counts.

In line with a socio-technical perspective, we regard the success of technological innovation as depending (among others) on how well the innovation 'fits' and can become embedded in society. This means that not only the local stakeholders and publics, as recipients or host communities, should learn and adapt some of their expectations and views. Also the project developer as implementing organisation may need to change some of its expectations and beliefs as well in response to learning about the particular local contextual conditions. The conditions under which a project might be acceptable can become central to local public dialogue, provided that there is room for the articulation of different views regarding how a project 'fits' in the local context; and provided that there is room to discuss costs, benefits and their distribution. In such a discussion, different visions and expectations can be articulated and negotiated

A vision is a longer term future view reflecting what is desirable and realistic. It can emphasize the role of the planned CCS project in bringing employment to the region, the role of the project in technological innovation, or the role of the project in generating other benefits to the region and wide geographical scale levels. Hence, a vision is not a plan (for a plan sets out how to arrive at that

future image). A vision can be more or less detailed and is based on both facts and values. It may well be that there are alternative visions about the particular locale, e.g. a vision in which the untouched natural beauty and landscape qualities stand central and where these are considered as bringing economic benefits as well since people come to the area for leisure outdoor activities. Alignment of expectations of visions means that a process is started in which common ground is sought between these visions. When efforts are made in this direction, negotiations can take place as well. Such negotiations can prevent a stalemate situation between unconditional proponents and opponents, where both sides are unwilling to concede anything and where discussions are about general arguments rather than concrete project-related local concerns and expectations.

Achieving that is easier said than done. We have argued how we regard a purely instrumental approach aimed at persuasion, unlikely to improve the success rate of project implementation. Room needs to be provided for the articulation of different views regarding how a project 'fits' in the local context. As there are concerns about some of the risks involved in CCS projects, there should be room to discuss these. That can create a framework for negotiations on the distribution of costs (including risks) and benefits, mitigation and compensation options, etc.

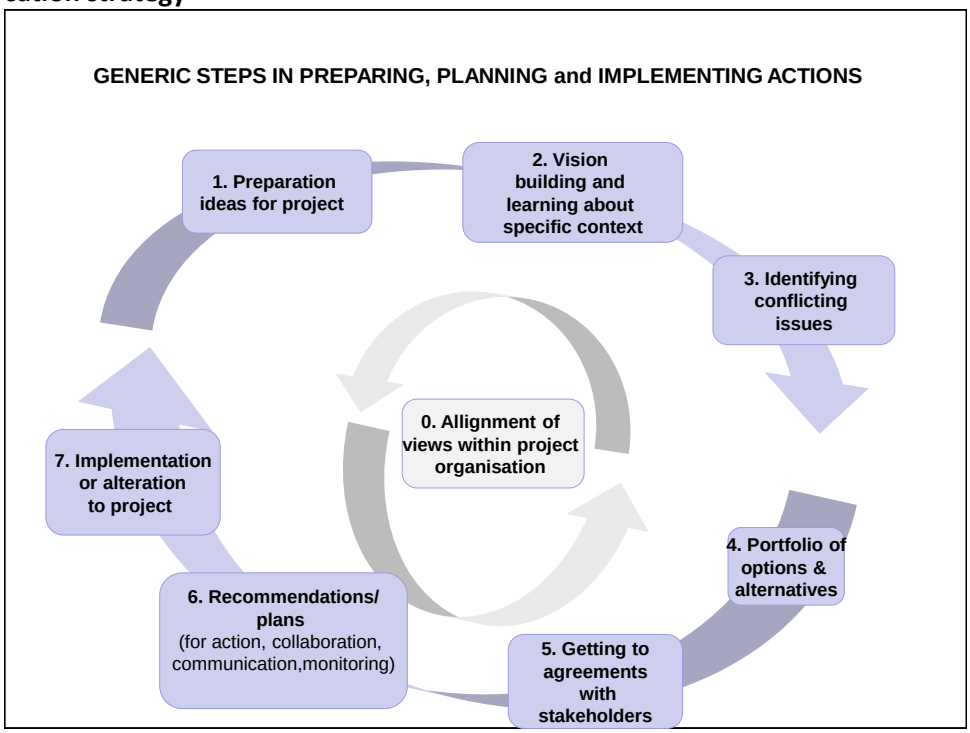
7.2 Steps towards the strategy development

Figure 3 below illustrates (very broadly) the steps involved in project preparation, planning, implementation, evaluation. Our point of departure is the ESTEEM toolkit that consists of a six-step process methodology that is intended to support the "start or improvement of a communication process between project manager and relevant stakeholders such as NGOs, policy actors and the local citizen community" and to develop plans for future action that the project manager can undertake to improve societal acceptance of the project (Raven et al 2009a). We take the ESTEEM process methodology because it is a comprehensive approach towards the various steps and based on a socio-technical perspective.

The flow chart (figure 3) depicts each of the ESTEEM steps in a slightly adapted form. In addition, we have added another cycle depicting the internal organisational learning process in the centre. We regard these steps as the basic building blocks for any strategy for engagement and communication. These steps can be further divided in sub-steps and activities, and further 'filled in' with instruments, tools and techniques (which are available in existing toolkits). Moreover, additional steps may be needed, or the exact order of steps can change in practice. Hence, *how* the strategy elements/steps are being used, depends on the internal and external project context. Since context varies across space and time, for each project, this will look differently and it may also change over time. The circular form indicates that there is no fixed end-point. Moreover, steps may need to be repeated if the operating circumstances change or if it turns out that important information is missing at some point. The first step "Preparation of ideas" is of course important at the outset, but may be repeated several times in order to also capture ongoing developments and changes (e.g. changes in stakeholders' relevance; in the socio-political context after elections). Likewise, when agreements turn out to be difficult to reach, it may be needed to move back a few steps in order to look again at different expectations and visions on the project. Similarly, the 'recommendations/plans' may need to be adapted or at least checked at several points during the process. Actually the inner circle that depicts the organisational learning process and internal organisational alignment of views addresses regular self-evaluation and monitoring and if this is in place, this will allow for flexibility and adaptation of the process in response to changing circumstances. Hence, the inner circle depicting the internal organisational process is crucial for a good internal and external stakeholder engagement process. The steps are elaborated most extensively in section 7.5 and 7.6 (for the Polish case on the Bełchatów project).

The aim here is not to advise on which concrete instruments, tools and techniques to use. These can be found in the toolkits that we have reviewed, most notably the ESTEEM and the CSIRO toolkits.

Figure 3: Flowchart of generic steps in preparing and implementing an engagement and communication strategy



0. Alignment of views within organisation

We have added this step as it is either missing or getting too little attention in the toolkits we reviewed. Step 0 is important throughout the project process. Organisational learning is understood as a process of becoming aware of the type of organisation; its backgrounds, skills, knowledge, resources, cultures. Next to becoming aware, it is about finding ways to align and manage internal expectations (aligning visions within the organisation). Several tools, activities and instruments can start and support a process of organisational learning, e.g. at several moments of self-evaluation before, during and after project completion; ways to report this in such a manner that it can help future projects. In several circumstances it can be highly recommended to have an external consultant who supports this process (and who also supports the other steps).

In relation to a particular project, the following activities are important:

1. Jointly define goals and key milestones – this relates to the definition of organisation-and project specific indicators to measure achievements. Important is to discuss and agree on:
   - The goal of the engagement and communication (e.g. instrumental, quality, democratic or a combination.
   - The scope of the engagement and communication (how much power is shared with stakeholders; what will be done with participants' input during and after the process?).
   - Mandate for those designing and implementing engagement and communication.
   - Evaluation moments and what is subject to evaluation and change (if needed).
2. Define ways to track progress and to qualify and quantify success.
3. Discuss how to move from self-evaluation to improvement.
4. Managing external expectations (relevant stakeholders, including general local public).

If these issues have become clear and are agreed on, then the choice of instruments/tools/techniques used to attain the goals (and assessment of suitability of these instruments to reach these goals) is much easier.

A recently developed toolkit that supports project managers in implementing Energy Demand Side Management Projects provides a variety of tools and activities that can be used for internal learning, monitoring and evaluation.[12] Although it addresses a different type of projects and organisations, this toolkit actually includes several suggestions to support organisational learning.

1. Preparation of ideas for the project: this step is addresses the context for which the project is planned – social-economic, political, institutional, cultural, technological, industrial aspects in the history of the area. Collecting and documenting (mapping) information about relevant stakeholders (past, present, future) is part of this as well. If the project preparations are already underway, then the identification of crucial moments for the project so far is also a good idea. On the basis of this basic information collected, the project developers can already get a first idea of what challenges and opportunities may be ahead.

2. Vision building and confrontation: the project developer clarifies its own future expectations and vision of the project. A vision is a longer term future view reflecting what is desirable and realistic. It can emphasize the role of the planned CCS project in bringing employment to the region, or the role of the project in technological innovation, or the role of the project in generating other benefits to the region and wide geographical scale levels. Hence, a vision is not a plan (for a plan sets out how to arrive at that future image). A vision can be more or less detailed. [13] Next, expectations and visions of local stakeholders can be identified, which allows for a contrasting of the different visions and expectations that exist among local publics and stakeholders. Gaining insight in local social networks is also helpful. This can help in the next step: the identification of potential conflicts.

3. Identifying conflicting issues
When the project developers vision has been confronted with other relevant visions, major points of agreement/disagreement can be further identified and further inquired into. These conflicting issues may relate to diverging expectations about the project itself, mitigation measures and/or the process (or even other issues that indirectly relate to the project/process, e.g. past experiences).

4. Portfolio of options
On the basis of the previous steps, several potential problems, solutions and alternatives can be identified and drawn up. Which elements of the project or process can be subject to negotiation and change? What are the conditions that might affect the support or acceptance of this project by local stakeholders? What is the scope for negotiation on costs, benefits and their distribution?

5. Getting to agreements
When a broad inquiry has been made of the problems, solutions, alternatives, which reflects the diversity of perspectives among the various stakeholders, then this can be a basis for further discussion with a larger number of stakeholders, whereby common ground is sought to reach agreements.

6. Recommendations for action
All solutions are taken into account for further processing. Several plans are drawn up: an action plan, a collaboration plan, a monitoring plan and a further engagement and communication plan. These plans reflect the outcomes of the dialogue and negotiation process.

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[12] See http://mechanisms.energychange.info/ for the toolkit and www.energychange.info for the general project website and backgrounds. The toolkit (and background knowledge) has been co-created with practitioners active in DSM project implementation and the toolkit has been tried and tested in 6 pilots.

[13] One way to illustrate a vision is by trying to write a newspaper article in the future. It may be that in a locality there is already a strongly entrenched vision that e.g. emphasizes the regions cultural-historical heritage – and such a vision is likely to be of relevance for local stakeholders when thinking of the future of their region as well. Then the challenge is to find ways to reconcile different visions.

7. Implementation of or alterations of (parts of) the project
This then results in a change (or no change) to the original project plans followed by a next step in the actual project implementation.

7.3 Ex-post case studies: Barendrecht, Ketzin, Beeskow

Based on existing case study material from WP 1, we will try to summarise what has been done during several engagement 'steps' of the project cycle. This is then followed by the drawing of some lessons (based on hindsight), allowing us to set out an alternative strategy for engagement and participation that could have been followed in these cases.
Of course developing a strategy afterwards cannot take into account how each step or activity would have intervened with organisational, contextual and situational conditions. However, identifying what has been done and what could have been done may point out and clarify salient issues for the particular cases and show how these type of issues can be addressed by an engagement and communication strategy. We will then present a flowchart of alternative pathways based on lessons learned, which can be considered as overall strategies for engagement and communication for real cases (be it ex-post).

For the Polish case of Bełchatów, we will undertake a similar exercise. However, a difference is that Bełchatów is still in its initial phase, so here we will also add some forward-looking strategy suggestions. For the first three cases, the case study reports of WP1 and a brainstorm session with the authors of the case studies served as a basis. For Bełchatów, a new case study has been performed which can be found in Annex 2.

Barendrecht
In the Barendrecht case, Shell was the main project developer, the national government the main facilitator, and the local city council the main source of local public protest. The discussion below focuses on the relation between these stakeholders because this fits the scope of the present report, but the reader must note that it highlights only a part of the story (for more elaborate case analyses see Brunsting et al 2010a and Desbarats et al 2010). Early 2007 the Ministry of Economic Affairs had expressed its intention to make funding available: 60 million Euro through a tender for two onshore CCS projects. Shortly afterwards, Shell shared its plan for Barendrecht with the city council. Not all aldermen liked the plan and from the outset there was no outright support from the city council. Nevertheless, Shell started the permitting process by expressing its intention to perform an Environmental Impact Assessment (EIA) in 2007.

Throughout the process that followed, Shell interacted frequently with the municipality as well with as other stakeholders. For example, in February and April 2008, Shell organized two public information meetings. A platform for information exchange between all stakeholders named "BCO2" had been set up by the summer 2008, aiming to discuss progress and requirements for the Environmental Impact Assesment (EIA). In addition two working groups were established, one of which was tasked with procedural aspects (e.g. related to the EIA procedure) and the other with communication. This group involved communication professionals from all stakeholders and one external communication consultant. Its aim was to keep each other informed of their different activities, but there was no intention to develop a joint communication strategy or plan. Much later in the process (2009) stakeholders did collaborate to develop information for the information centre that was opened in a shopping mall in Barendrecht and funded partly by Shell and partly by the Dutch Government. However, the municipality did not actively participate in this centre and instead preferred to provide its own information provision about the CCS plans.

From January – March 2009, BCO2 organised four meetings to discuss the research done for the EIA. Within this period the EIA was published and, as legally required, the possibility for submitting views was offered. Several experts were involved in the so-called 'knowledge roundtables'. They

were selected by the municipality and paid for by the Dutch Government. Results from these meetings were summarized and published in April 2009. The municipality used the output of the meetings to submit a formal view regarding the approval of the EIA to the authorities involved in its evaluation. The view addressed issues like the cumulative impact and risks involved in storing CO_2 in this particular context. However, none of the in total 1.570 views submitted was thought to contain a ground for disapproving the EIA. The EIA committee stated that the EIA was complete and a fair and balanced assessment of the impact and risks of the project. It also said that the safety risks were properly assessed and complying with Dutch legislation. Nevertheless, views on the project plans remained divergent. Whereas Shell and controlling authorities were confident about the feasibility and safety of the plans, at the municipality questions and doubts remained.

Despite all meetings, project opponents apparently have not felt heard and have not experienced real influence on the process. Shell has not shown awareness of these feelings. Although Shell took great efforts to inform and involve all stakeholders including the local public, these efforts were mainly aimed at informing local stakeholders and convincing them that their concerns were unnecessary. This must have been logical from Shell's point of view, since the Barendrecht project appeared straightforward. Shell had a clear vision on how the project would look like, partly because of the already existing infrastructure which would form part of the project. Elements that would be added were clear. Shell was confident about the technical and geological feasibility. The project was framed as fitting very well in the existing infrastructural context with very little additional impact in terms of infrastructure building and in terms of risk. The confidence in the safety was confirmed by a community of experts and the EIA committee. Geological circumstances were optimal from a project management perspective.

However, while for Shell and approving authorities the safety and feasibility were clear, for other local stakeholders this was not the case. They felt disappointed about what they perceived to be too little room to negotiate perceived risks, to discuss alternatives or mitigation measures. For some reason, Shell has been unable to detect this. Shell did not, at least not visibly to the local audience, attempt to learn about local people's alternative knowledge, views and ideas and thereby neglected the local socio-political context of the project. It appears to have been difficult for Shell to look at the project plans from other stakeholders' point of view (e.g. that of a local resident who know little about CO_2, CCS and climate change, and who may not trust a big companies interests). This made Shell ill-prepared for the possibility of local opposition and possible negotiation strategies towards solutions and project implementation. Whereas Shell at public meetings meant to display confidence and expertise, Shell's responses to questions have often been perceived as arrogant and blind to local concerns. It appears that the impact of this discrepancy between organizational identity and public image on the project has been underestimated.

That said, it appears that in other respects Shell has had little room to prevent a negative project outcome. One major determinant for the timing of the process was Shell's dependence on the national governments' timing of the tender procedure. This the tender procedure has been delayed several times, making adequate project planning difficult. Furthermore, while Dutch policy has expressed support for CCS as a transition technology, the government has not actively expressed this vision in the broader national climate debate. Finally, with the exception of one information meeting at the very start of the process, the government has only started to openly support the Barendrecht project towards the end of it, when stakeholders were already entrenched. By that time, several governmental regulations had been imposed that authorized the national government to take the final decision regarding the approval of the project, leaving no decisive power to the municipality. The municipal protest against the Barendrecht project was thus not only based on concerns about risks and on negative perceptions of Shell, but also on regulatory issues. And eventually with success. By the end of 2009, the government decided that the Barendrecht project would continue. However, the government fell in 2010 followed by new elections. Early in 2011, the newly elected government eventually cancelled the project mentioning a lack of public acceptance as the main reason.

Shell considers the role of the government throughout the process a main cause of project failure and has openly stated her disappointment about the lack of an explicit governmental com-

mitment to CCS and to the Barendrecht project. However, it is Shell who decided to continue with the project plan even after it had become apparent that the national government was lagging behind. Shell and the national government share responsibility for the eventual outcome. From the start, it was clear that the municipality perceived to have but two choices: Be in favour or be against. The municipality had no formal power, the only course of action left was submitting a view to the EIA and motivating citizens to do likewise. The contra-expertise gathered on request of the municipality was kept out of the formal decision-making process. The only other way to influence the process was to seek media attention, which has happened continuously throughout the sequence of knowledge roundtables and which further entrenched stakeholders. In absence of alternatives to negotiate, stakeholder meetings only contributed to the deadlock and the discussions never moved beyond the level of arguments and counterarguments. As soon as the process of project development enters this stage, the outcome becomes very predictable. The project is either cancelled or is realized, but against a much higher price – in case of CCS in the Netherlands, a setback of yet unknown magnitude in realizing onshore CCS.

Beeskow

In Beeskow (for elaborate case analysis see Dütschke, 2010 and Desbarats et al 2010), Vattenfall has been trying to get explorations started in order to assess the suitability of several sites in the area of Beeskow for underground storage of CCS. Vattenfall is the main organisation, there was no consortium set up. The Vattenfall project team consists of a technical part and a part tasked with regular communication activities. During the initiating phase of the project, in the main office communication department of Vattenfall in Berlin, one person was fully dedicated to communication and engagement around the Beeskow plans, being supported by other staff members. This person worked in Berlin but was familiar with the Beeskow area where he had been working before as a journalist.

Vattenfall officially applied for an exploration permit at the end of March 2009. First ideas for the project probably took shape in mid-2008, in collaboration with the state-level Ministry for Economic and European affairs[14] who supported these ideas. The Brandenburg state government was in support of CCS as a way to decrease CO_2 emissions related to lignite use. Brandenburg has several areas dedicated to surface mining of lignite, e.g. around Jaenschwalde. In addition, before submitting their application for exploration, Vattenfall informed the permitting authority, the state-level authority for mining, geology and resources, about their intention to try to obtain the permits needed. A strategy for communication and further action were discussed by a closed circle of Vattenfall, the state government and the permitting authority.

The public was informed about the project a few days in advance to the submission of the application for the permit via a press conference which was widely covered by the media. All households in the area concerned were supposed to receive a letter and a flyer providing basic information about the project. Community mayors were informed in person by Vattenfall representatives one day prior to the press conference. Further stakeholders like members of the national and the Brandenburg parliaments, as well as other societal stakeholders who were regarded as relevant, e.g. from the church, NGOs, also received a letter and brochures informing them about the project.

Vattenfall had not involved local stakeholders when preparing the communication strategy, nor systematically inquired into the local context. It did perform a stakeholder mapping – needed to be able to contact all mayors and to sent out letters to all. The communication person had a general knowledge about the area but no activities like e.g. social site characterisation have been systematically undertaken. Vattenfall did not expect that people would be enthusiastic about the project but thought that they would be able to explain the importance of this project to combat climate change and to persuade local stakeholders.

Only in 2010 an advisory board chaired by the ministry representing several stakeholders was set up (e.g. political community leaders, church representatives, leaders of CCS-opposition groups,

[14] Ministerium für Wirtschaft und Europaangelegenheiten

NGOs), but by this time the relations had already deteriorated to such an extent that there was little willingness to start an open dialogue. People had taken their positions and appeared not willing to leave their trenches.

Vattenfall's vision of a storage project was still preliminary but they framed it as a project that would hardly change anything, that would hardly be intrusive. Moreover, they communicated a picture of the project as being beneficial for both environment and local employment. However, this employment argument counted for the area of Jaenschwalde (80 km away from Beeskow), where power plants and sites dedicated to surface mining are located. In contrast to the artificial landscape resulting from open mining in Jaenschwalde, as well as industrial activity, Beeskow is a very green area, with forests and few inhabitants. For Vattenfall, it may not have been apparent that local residents cherish Beeskow as a natural area unharmed by industry so far.

As Vattenfall had not inquired into local visions regarding the Beeskow area, it may have underestimated the strong feelings people had about their area. The arguments in favour of the project (employment for people in Jaenschwalde and combating climate change) did not resonate much with local stakeholders. People felt that the idea of CCS conflicted with their idea of 'untouched nature'. In addition, they felt that the whole plan had been developed by Vattenfall and the government, that the outcomes were already decided on regardless of the outcomes of the explorations. However, this assumption is in fact wrong.

The concrete options of the Vattenfall project were not yet clear as no explorations had been done yet. So Vattenfall indicated that it would be willing to negotiate things in a later stage (e.g. offering community benefits like financing children's' playground) but it was too early to start any negotiations like this for it might still turn out that the locations would be unsuitable for CO_2 storage.

In response to local resistance, Vattenfall continued with information provision: a series of public events were organised to present further information on the project and to offer the opportunity to ask questions. In July 2009, Vattenfall set up an information office at Beeskow and started to distribute information on the project, e.g. contacting local schools. Vattenfall also provides an internet site on CCS and local activities (incl. films and animations). A free telephone hotline is also available.

Some steps of the permitting process have been passed with success; however, even if the permits are acquired, then the next phase starts which is getting permission from landowners to do explorations on their lands. The permitting authority and the government of Brandenburg repeatedly asked Vattenfall to slow down the process, e.g. in expectation to new federal legislation. In addition, elections in fall 2009 slowed down things.

The coming months (second half of 2011) might turn out to be crucial. The Federal Government has presented a proposal for a law on CCS which includes an option for all German states to decide for themselves whether to support CCS or not. Brandenburg did support CCS so far, however always declared resistance to such an opt-out-option. Thus, they might end their support if many other states turn against CCS.[15]

Ketzin

The scientific research project "CO2Sink" at Ketzin (see also Dütschke 2010 and Desbarats et al., 2010) focuses on observation and analysis of the effects of injecting CO_2 into a reservoir. The project is coordinated by the GFZ, German Research Centre for Geosciences. The site is operated and owned by the Verbundnetz Gas (VNG). On the scientific side, numerous research institutions and universities from several countries are part of the consortium as well as the International Energy Agency (IEA) and a few representatives from industry. Communication activities were organised and conducted by some of the scientific members of the project team.

[15] At the time of finalising this report, CCS-legislation passed the German parliament, now including the possibility for the Federal states to opt out. This has resulted in widespread expectations that this is the end for all CCS-activities in Germany.

The CO2Sink project officially started in April 2004 with injection of CO_2 beginning in mid-2008. First ideas about the project came up before 2004. On the one side, the mayor of Ketzin says he had been actively looking for energy-related utilization of the former gas reservoir site and thereby, accidentally, came into contact with the initial project leader at the GFZ who was looking for a place to conduct the project. Once the GFZ obtained funding for the project and founded the consortium, it was presented to the town council and the public. Thus, while some stakeholders like the town mayor were included into the discussion from very initial stages, further stakeholders and the public learned about it once the plans became more concrete.

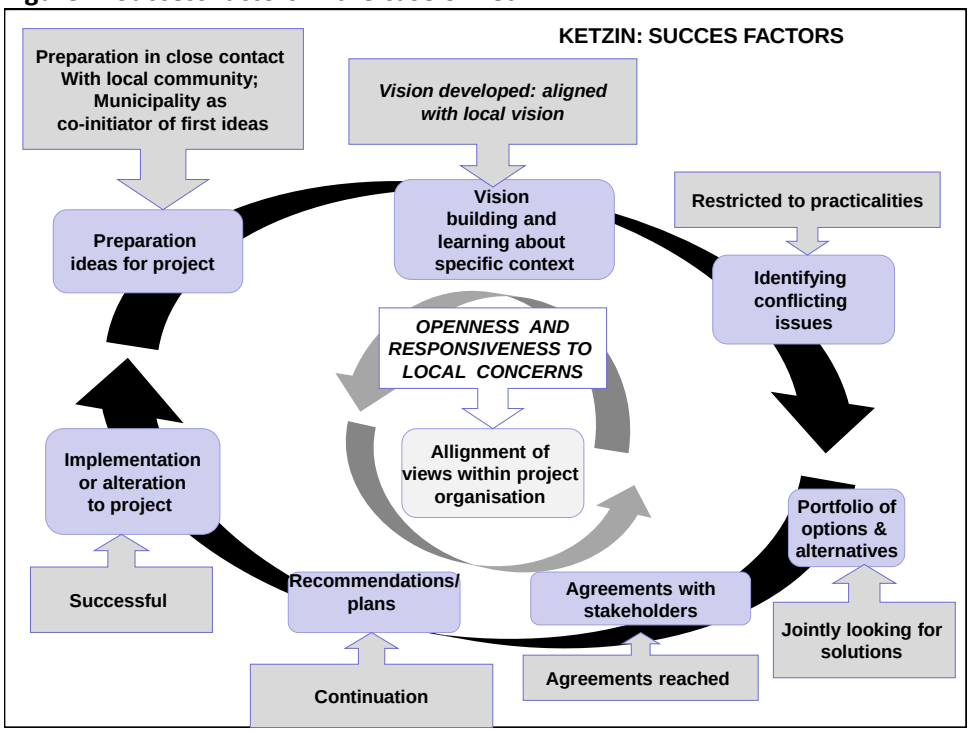
However, neither the GFZ nor any other institution prepared a specific communication strategy nor did anything like social site characterisation. They mainly trusted that due to their early contact to local key stakeholders that the public would also accept the project.

The GFZ's vision of the storage project was that the project itself would hardly be intrusive and mainly include the re-activation of the former gas storage which is lying outside the town of Ketzin. Solutions for gas transport – being the most intrusive issue – were sought together with the local public (finally settling on truck transport). Moreover the innovativeness of the project was communicated accompanied by creating the picture of making Ketzin known to the world – which is perceived to be fulfilled. Important is that from the side of the municipality (the mayor) there was also a clear vision regarding the utilisation of the gas reservoir site, so the vision of the storage project was not coming from 'outsiders' only.

The only conflict that ever needed to be solved was around gas transport where people at Ketzin feared that they will have to live with a high number of trucks constantly commuting to the project site. However, this issue could be solved as it turned out that the number of trucks will be low (two per day).

The GFZ project team always included the local community and its representatives when they felt that decisions to be taken would impact it. Additionally, at least to some degree, possibilities to get information about the project are offered via a website (only available in English) and via subscribing for site tours. Additionally, important events at the project site were usually organised including the local community, e.g. asking local clubs for offering catering.

Figure 4: Success factors in the case of Ketzin



The Ketzin project was successful in that it got implemented without raising a lot of resistance. This success related among others to the following factors (Dütschke, 2010)

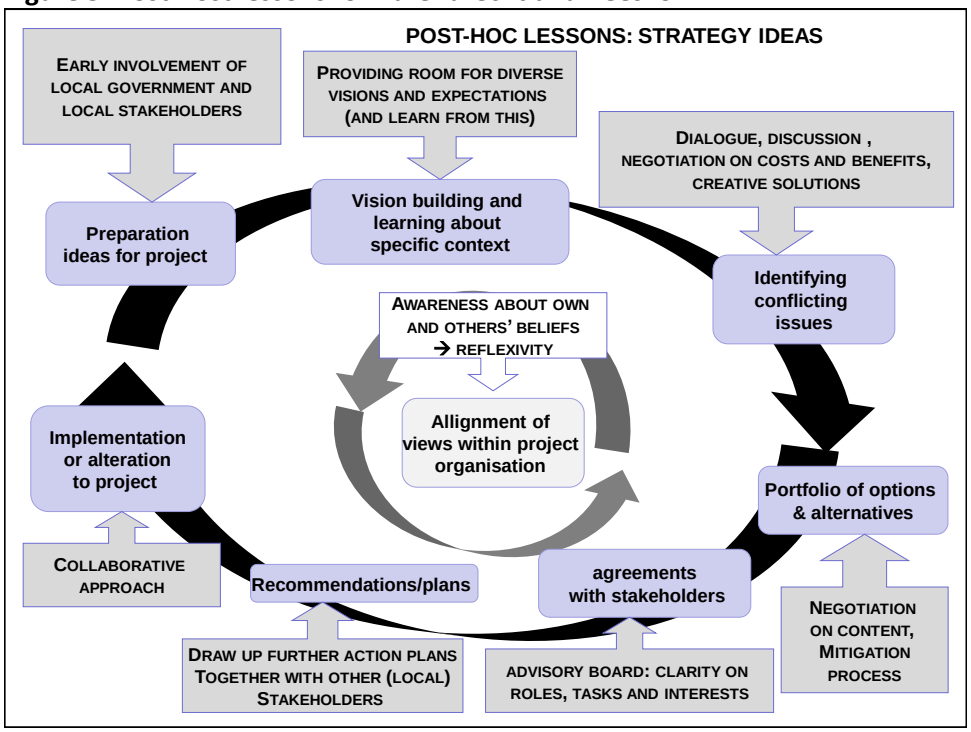
- To a certain extent the project could be framed as a *local* initiative – the municipality was a central partner from the outset. Which is a very different situation compared to e.g. the municipalities of Barendrecht and Beeskow that felt being 'overruled'.
- In addition, GFZ has a good reputation in the area. This, together with the municipal support, made that their proposal was not regarded as an 'outsider' plan, but a proposal that fitted rather well to the local context, also in the eyes of local stakeholders.
- The Ketzin project is temporary & for research purposes (non-commercial, small volume, people not being afraid that commercial interests might overrun risks).
- Possibly, because there was no serious 'clash of visions' (e.g. like in the Beeskow case, where the project developer had underestimated the local value attached to the natural unspoiled qualities; or like in Barendrecht where the project developer had underestimated the risk concerns), the conflicting issues did not pertain to the underlying value conflicts, but rather concerned concrete problems for which concrete solutions could be sought.
- GFZ was alert to local dissent, kept in close contact to local stakeholders to remain alert, and was open to negotiate those elements of the project that mattered to the people.

Hence, even if no elaborate communication efforts were set up like e.g. in Beeskow, the communication and engagement was effective because it was responsive to local concerns and there was a willingness to negotiate changes.

7.4 Ex-post suggestions for Barendrecht and Beeskow

Figure 5 below summarise suggestions for both cases, based on hindsight. The type of suggestions below give no guarantee for a particular outcome, nor do they encompass a full-fledged engagement and communication strategy. Rather they point to some issues that might have been taken up differently.

Figure 5: Post-host lessons for Barendrecht and Beeskow



0. Alignment of views within organisation

For both this and subsequent steps, an external consultant can be very helpful to facilitate the process. For step 0, this relate this consultant can help to encourage self-reflection, to try and look at one's own organisation through the eyes of others. Becoming aware of the organisational values and beliefs, as well as developing sensitivity to others' values and beliefs can result from organisational learning. For Shell, this might have thrown a different light on the strong belief in the technical feasibility of the project.

For Vattenfall, having an external consultant at an early stage could have supported the ability to view Beeskow from the point of view of local residents and learn about the qualities they attribute to this area. This could have helped in understanding the roots of opposition – it would have become clear that providing more and more information was not likely to solve local concerns.

In general, organisational learning helps to move away from thinking about communication and participation in terms of instruments used (means) to thinking in terms of needs of diverse stakeholders; and towards thinking about how communication and participation tools can address those needs.

Organisational learning is important throughout the project cycle, including a critical view on one's own role. This also allows for flexibility to adapt the project or process to changing circumstances and new insights.

1. Preparation ideas for project :

Learning about the local context can take place in several ways. For instance, having interviews early in the process with local policy makers and politicians in order to learn about the important local issues, histories, priorities, concerns, etc. not only generate useful knowledge for the project developers but also shows that the project developer has a genuine interest in views and visions of the local government. Moreover, having these interviews could have had the effect of informing local government also to think about this project from early onwards. Involving local stakeholders in the collecting of relevant information (e.g. through interviews, surveys, etc) means that ideas are being prepared with the involvement of local stakeholders – which is opposite to a Decide-Announce-Defend (DAD) approach that is based on presenting and defending a ready-made plan.

Vattenfall could have opened up at a much earlier stage to other stakeholders to become involved. That could have prevented the suspicion among some local stakeholders that everything had been decided upon already in advance.

2. Vision building and confrontation:
A vision is a longer term future perspective on what is desirable and realistic. It can emphasize the role of the planned CCS project in bringing economic or technological benefits to a locality or region, or emphasize how well a project fits within the existing activities and infrastructure in a region. A vision includes both values and facts – it is not plan. It may well be that there are alternative visions about a particular region, and then it is important that the existing visions are taken into account by the project developers.

For instance, in Beeskow, a vision already present was one that emphasized local natural beauty and landscape qualities – which also bring economic benefits since people come to the area for leisure outdoor activities. Active inquiry by Vattenfall into local expectations and visions could have resulted in a greater awareness and appreciation of this existing local vision. A confrontation and exchange of expectations and visions could have opened up room for alignment. Alignment of expectations of visions means that a process is started in which common ground is sought between these visions. When efforts are made in this direction, negotiations can take place as well. Such negotiations can prevent a stalemate situation between unconditional proponents and opponents, where both sides are unwilling to concede anything and where discussions are about general arguments rather than concrete project-related local concerns and expectations.

The identification of local visions can take place in local focus groups (broad selection, but relatively small groups) that results in a narrative or/and position paper indicating the conditions under which a CCS project could be acceptable (referring also to important local values). Next, a confrontation of visions would be part of a dialogue process that is not only about 'facts' but also about values/group identity. Again, this helps to prevent that the discussions get stranded in general pro- and con arguments. These activities stand in contrast with an approach in which only one vision is being explained over and again in order to persuade others (whose only choice is to accept or reject the vision).

3. Identifying conflicting issues
Based on the previous step, discussions of and negotiation on potential conflict issues can be taken a step further. This can address e.g. risk concerns, mitigation measures, process requirements, etc.
In addition, fine-tuning the EIA process with other parties and the municipality can be helpful: involving them in the choice of the actors that perform the EIA studies helps to prevent discussion about the legitimacy of these reports and continuation of argument-stride later on (which happened in the case of Shell).

In this situation there is something to actually negotiate about (instead of yes-versus-no situation whereby the proponents only keep on repeating the same message – often to no avail)
Instead of offering negotiations while not knowing what people would want to negotiate about and what will be negotiable, more insight in local concerns can result in a clarification of potential local conflicting issues.

4. Portfolio of options
Based on previous steps, a portfolio of alternatives can be presented in terms of project content, mitigation, cost-benefit distribution. Next, concrete issues and options can be further discussed and this can be done with a broad stakeholder participation.

5. Arriving at agreements
An advisory board that is trusted to represent all stakeholder interests can be established, whereby there is agreement on its status and role, and on the role, task and interest of each participating

stakeholders. This seems as giving away control but in fact enhances control, because participating stakeholders now also carry responsibility for the continuation of a good process. In other words, they cannot just say 'no' to anything but should present an alternative idea.

Based on the previous step, options can be compared and a decision taken (whereby all options should have equal chance to be selected, there is not one preferred option with which alternative options have to compete).

Getting to agreements can also pertain to agreeing on the further process. So even in the case of geological site explorations not having started, like in Beeskow, these things could have been taken up for discussion.

6. Recommendations for action

On the basis of 5, several plans can then be drawn up (e.g. addressing communication and engagement issues).

7. Implementation of or alterations of (parts of) the project

The previous steps can result in implementation or alteration of a particular project part (e.g. geological examinations). In addition they will benefit the overall project process.

We now continue with a more elaborate treatment of the steps for the Bełchatów case. On the basis of this case study (annex 2) an evaluation of the steps taken so far has been made, as well as a forward-looking formulation of strategy-ideas for the future.

7.5. Bełchatów: developments so far

The Polish Energy Group (PGE) is the main project developer of the CCS project in Bełchatów. PGE is a large energy company, known as PGE Mining and Conventional Energy. The company is active in most elements of the value chain of the power generation business (except for power transmission, which is dealt with by the company PSE Operator S.A.). The consolidation of the PGE Group is the largest consortium of this type in Poland. The following three sites within the Lodz region/province have been identified as part of a preliminary geological investigation undertaken by the company Geofizyka Toruń S.A.:

- Budziszewice – 60 km from the Bełchatów Power Plant
- Lutomiersk-Tuszyn – 45 - 60 km north of the Bełchatów Power Plant
- Wojszyce –about 115 km north from the Bełchatow Power Plant.

The Wojszyce area was initially identified as the most promising storage site. A final selection of the storage site is expected in the summer of 2011. At the moment, residents of Lutomiersk and Pabianice (the two locations within the potential Lutomiersk-Tuszyn storage site area), have expressed concerns regarding the underground storage of CO_2. The borough leader of Lutomiersk is critical about underground storage, but remains open to further discussions on the safety of storage. Pabianice residents established an anti- CO_2 storage association opposing both research activities and actual CO_2 injection in the surrounding area.

In terms of communication and outreach, PGE has an internal communication team of four people that is tasked with developing a communication strategy for the Bełchatów CCS project. They have a separate project budget and are engaged in communication activities with local authorities, residents and other stakeholders. Geofizyka and the Enterprise for Drilling and Mining Works from Warsaw also perform some outreach activities. The National Geological Institute assisted PGE throughout the development of their communication strategy (at meetings and conferences) by providing scientific expertise (assistance in preparing presentation materials for the meetings, answering

questions from the public and by giving presentations themselves). It also took on the role of communicating the geological risks of the CCS project to local authorities and to the public at large. In addition to PGE's own team, it has also hired a Public Relations company – whose name has not been disclosed yet - since June 2010.

0. Alignment of views within organisation

The PGE outreach team of 4 persons engage both in internal and external communication activities. They try to involve people from other departments and whatever they prepare for the further outreach strategy goes to a steering committee (consisting of the highest level of management at PGE). Overall, the outreach team feels supported and trusted by the overall management team. The importance of communication is widely felt. So internally, there appears to be both consensus and internal communication regarding the communication and participation strategy.

At the same time, the history of communications undertaken thus far indicates that PGE is preoccupied with presenting its own vision in rather technical terms, instead of trying to learn about different stakeholders and their main concerns, motivations etc. The uncritical support for Geofizyka in view of the conflicts that arose illustrates this. However, several local stakeholders want to consider the need and necessity of this project and this technology in the light of broader local and national considerations.

1. Preparation ideas for project:

We have identified some of the 'defining moments' (Raven et al, 2009, 2009a) of the early phases of the project describing the preparations of the project developer and related companies with regard to the Bełchatów CCS project.

The possibility to undertake CCS projects in Poland was initially considered by the Polish Committee for Electric Energy (PKEE) in the first half of 2007. At the EU level, The Climate Change and Energy Package was adopted by the European Council and the European Parliament in April 2009. In the same month, a Member of the European Parliament, Jacek Sayusz-Wolski, organised a conference in the province of Łódź describing the CCS project plans for Bełchatów. The Polish Ministry of Economy also published a policy paper in support of the future implementation of large scale CCS in 2009.

In October 2009, PGE applied for an Environmental Impact Assessment following consultation held with local stakeholders during a meeting at the office of the Marshall of Łódź in September 2009. The initial consultation took place as part of the first EIA. Poor attendance on the part of borough leaders (50-60 in total) at this consultation triggered concerns at the PGE office, prompting a decision to consult with them individually in order to raise their interest – which they in fact did. These meetings were held with borough leaders from the three potential storage sites: Budziszewice, Lutomiersk-Tuszyn and Wojszyce (end 2009-early 2010).

In February 2010, PGE organised workshops in Bełchatów to discuss safety issue (it is unclear who attended). From the end of March until mid April 2010, PGE held more individual meetings with borough leaders from the three potential storage areas. It was also in this period that Geofizyka's activities began to generate negative reactions from residents around one of the key locations for Geofizyka's research activities: the Jadwinin-Bychlew field within the Lutomiersk-Tuszyn storage area.

On March 16th, 2010, PGE EB together with Geofizyka Toruń S.A. sent an open letter to the local authorities and residents from all three selected areas, explaining that PGE EB was carrying out a CCS project which involved capture, transport and underground storage of CO_2. It underlined that geological research done by Geofizyka Toruń S.A. was necessary to ensure the future safety of CO_2 storage. The letter also stated that PGE EB was aware of emotions raised by the CCS project locally, realising that its communications campaign had failed to reach a significant number of local residents. This letter also pointed out that any final decision with regards to CO_2 storage could only be

made after thorough geological research was undertaken, and after compliance with the other permitting and communication processes foreseen to take place in 2012.

Despite this letter, a local politician from Pabianice stated that no information had been provided in relation to the CCS related geological research undertaken by either PGE EB or Geofizyka Toruń S.A. Letters were sent to the President of Poland and the Minister of Environment asking if Pabianice could be withdrawn as a location for underground storage, referring to perceived risks of the contamination of the underground geothermal waters, explosion, carbon leakage or contamination of soil with mercury.

In April 2010, Pabianice residents established an anti-CO_2 storage association known as the Committee against CO_2 Storage opposing both research activities and actual CO_2 injection in the surrounding area. The founder of this Committee accused Geofizyka of misleading the public; according to the Committee, Geofizyka had stated they were investigating geothermal waters and not exploring sites for CO_2 storage (Anonymous, 2011). In April 2010 the Committee against CO_2 Storage set up a meeting, where a local NGO called Center for Sustainable Development (CZR) and representatives of PGE EB and Geofizyka Toruń S.A were present. This meeting was well attended by local residents who raised concerns not only about the safety of the CO_2 storage site but also about its socio-economic implications – asking for instance whether CO_2 storage could become an obstacle to geothermal investment. Similar meetings were organised in Jadwinin, Pabianice and Lutomiersk. In the meantime, CZR also organised a meeting in Bychlew. A local television station in Łódź also broadcast a programme dedicated to the project, which featured representatives of PGE EB, the National Geological Institute, CZR and of the Committee.

Despite local concerns, Geofizyka accelerated its exploratory work in the area of Pabianice. By the end of April 2010 about 31 out of 179 of residents who had signed contracts with Geofizyka Toruń S.A. to give the company access to their land to carry out the research in Pabianice, requested terminations on the basis of misinformation. Some of the residents openly broke their contracts by refusing to allow the company's staff access to their land.

In July 2010 more than ten borough leaders from the area around Pabianice signed a petition to the Minister of Environment against CO_2 storage near Pabianice. Other community councils adopted a resolution stating that the company should stop its activities in the area, and openly denied the validity of the permit for geological research (also to no avail).

After the first communication activities in autumn 2009, namely the meeting for borough leaders, worries arose because of the low attendance. Another concern focussed on the notion that the national government was not active enough in supporting the uptake of CCS. PGE was concerned that if they – as main beneficiaries – would undertake all communication and outreach activities themselves, this would be regarded as biased by the borough leaders given that they are the project developer. In addition PGE expected that it would be difficult to make people understand the need for CO_2 reduction, because of 'climate change scepticism' in Poland

While considering and undertaking activities in relation to consultation and outreach, PGE did perform a proper inquiry into the nature of the local context in the earlier phases of project development. In 2009, PGE performed some stakeholder mapping activities, to get an idea of the relevant borough leaders, and in order to categorize other relevant stakeholders. In August 2010, the PR Company developed a more detailed profiling of relevant stakeholders in the area. This included survey research completed mainly by phone interviews in order to compare attitudes towards CCS in the communities where PGE engaged in communication of the issue, and in the communities designated as storage areas where PGE was not proactively involved in communication.

Furthermore, with regard to the problems with Geofyzika, PGE did not play a clear role in trying to resolve conflicts particularly by addressing local concerns. Most of the protests against Geofizyka's research and the carbon storage in the area of Pabianice took place in April/May 2010, but concerns and worries could have been identified in a timelier manner. PGE's inability to address these concerns and PGEs explicit support for Geofizyka throughout created a void which was subsequently used by CZR and the local Committee Against CCS to mobilize support against the prepara-

tions set in motion by PGE (namely the geological examinations). By taking over the initiative, these actors made it difficult for PGE to start or continue a communication and engagement trajectory on their own terms. PGE may have underestimated the capacity of existing local social networks in mobilizing support against the CCS activities. Lacking any social basis in these areas (which were remote from the power plant areas), PGE encountered a backlog of opposition that was difficult to overcome.

2. Vision building and confrontation

In an interview held with PGE in February 2011 (see annex 1), the PGE communications team openly stated that they expected resistance to CCS given its novel character and general public scepticism about the anthropogenic causes of climate change. Therefore they perceived the need to communicate 'the basics of climate science' to residents. In addition, they emphasised the need to refute false statements about the risks connected to carbon underground sequestration, which they anticipated to emerge during public meetings.

PGE was aware of having to deal with an agricultural community and related landownership issues and expected communication difficulties for two reasons (Anonymous, 2011a). Firstly, the farmers were not that familiar with PGE. For the town of Bełchatów itself, PGE is the main source of employment, and residents have benefited economically from PGE's presence over the past few decades. However, the further away from the plant, the less PGE's presence is likely to be considered beneficial (e.g. by farmers). Secondly, PGE also assumed that communication might be compounded by less internet use and a general lower educational level among farmers – compared to e.g. people working in industrial areas and for PGE's power plant. For farmers, concerns about safety played a role (e.g. water contamination) and some were worried that a CCS project would compete with plans for geothermal energy technologies in the region. In fact, this was not a worry of the farming community, but CZR and some local authorities showed interest in geothermal energy.

The NGO CZR was an active proponent of geothermal energy for local small scale applications. Also the national Polish Geothermal Association published its standpoint against CCS in 2008, warning against ecological and health-related risks. The NGO CZR adopted the role of trusted CCS expert, informing local authorities and members of the general public. Instead of further investigating the expectations of local stakeholders, and the motivation behind the opposition, PGE started to counter arguments brought forth by CZR in several scientific arenas.

Meanwhile, the Civic Committee against CO_2 Storage in Pabianice started communication in their local communities in the area of the Lutomiersk-Tuszyn research storage site. This Committee organised four consultation meetings (in April and May 2010) where representatives of PGE EB, the National Geological Institute, Geofizyka Toruń S.A., CZR and local authorities participated. Furthermore, it sent out two petitions against geological examinations to the Prime Minister and President, the Minister of Environment. This committee mobilised support by functioning as a forum for local stakeholders who wanted to express their concerns about risks related to CO_2 storage and potentially negative socio-economic consequences of the CCS project.

Hence, the void resulting from a rather passive engagement and communication approach was filled by the NGO CZR from Łódź and the Committee Against CO_2 Storage from Pabianice who cooperated closely with one another. Unlike PGE, they facilitated discussions regarding concerns and energy alternatives. Over time this committee became more involved in not just countering CCS, but transforming the Committee in to a group that would work on the development of regional strategies for alternative green energy technologies and energy efficiency – in fact developing alternative visions to the CCS vision as propagated by PGE.

3. Identifying conflicting issues

Borough leaders that opposed PGE's vision regarded CZR as their advisor (2009-end 2010). Challenges to PGE's vision were presented in a confrontational manner. PGE's response to this can be characterised as technocratic. At a Technical University in Łódź conference in November 2010, PGE

emphasised how all of CZR's arguments could be rebutted by scientists and experts. The journal of the National Geological Institute provided a similar response. PG was quite focused on arguing and proving that it was right e.g. that geothermal was not an option at all in the region. PGE actually narrowed the arena to a scientific one which was not accessible to most local stakeholders. Bringing back the dialogue to a scientifically based exercise was not helping the discussion about existing concerns and contentious issues for local stakeholders – rather they felt that their concerns were insufficiently addressed.

4. Portfolio of options

Very little has been done in terms of considering alternatives and solutions to conflicts in a collaborative fashion. Basically, PGE referred to the fact that as long as the storage site is not chosen, it would be of little use to discuss or negotiate costs and benefits. PGE and Geofizyka took a step-by-step approach in informing local stakeholders. Stating that they did not want to overload people with difficult information, they refrained from properly informing stakeholders about the whole project and the overall aims. This triggered concerns and fed rumours and people felt that information was being withheld from them.

The accusations towards Geofizyka can be seen as a consequence of this ad hoc approach focusing on the technical details and not on the overall purposes of the actions that were announced (e.g. the geological examinations). PGE remained supportive of Geofizyka, despite the frictions, which may not have added to the confidence of local stakeholders in PGE.

Opposition hence was also a reaction to the process. Apart from safety concerns, there was criticism regarding how people were being involved and informed. The discussion arena was not set in the context of local concerns but moved to a scientific setting (technical university conference and scientific journal). In addition, the overall communication with local stakeholders remained in a technical language, not addressing general concerns that people might have. At some point a telephone hotline was opened where people could ask their questions.

5. Getting to agreements

Between July and September 2010 PGE EB has organised meetings with local communities. Geofizyka Toruń S.A. and experts from the National Geological Institute accompanied PGE EB and explained the technicalities of geological examinations and CO_2 storage. According to the communication team from PGE EB, there was a high turnout at these meetings and the residents eagerly discussed the technical issues. Based on this experience, PGE EB published a folder with the frequently asked questions and answers concerning CCS. Experts from the National Geological Institute and Geofizyka Toruń S.A. also contributed to this publication.

As PGE focused on rebutting criticism, while gaining little additional insight into what sort of considerations – including values - were relevant for different types of local stakeholders (e.g. borough leaders, NGOs, farmers, citizens). Open discussions with a broader audience that started on the basis of local considerations (instead of scientific arguments) have not really taken place. Local concerns and values are real and valid for local stakeholders – even if they might not be valid from a scientific point of view.

Because of this, there was little room to actually develop alternatives – whereby alternatives may refer not just to the location, but also to the process, mitigation measures, changes in cost-benefit distributions, relation of CCS to other technologies like geothermal. The common ground for agreement needed to be able to overcome the main conflicting issues, so far has not been found.

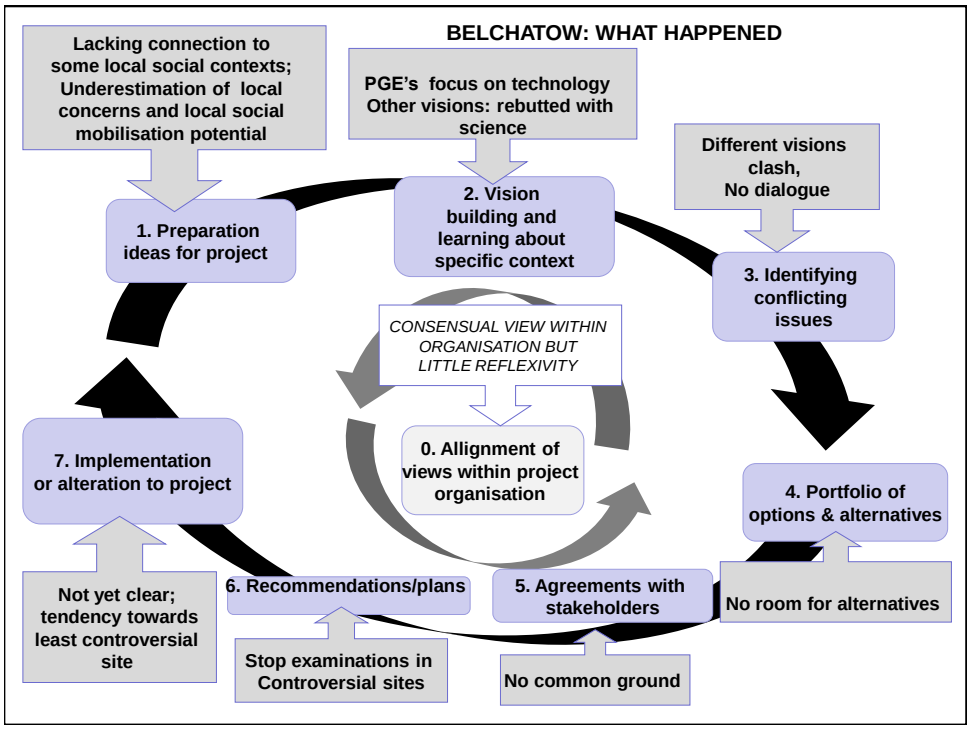
6. Recommendations for action

Further geological research in the area of Pabianice has been called off. Geofizyka started examinations in Dłutów and Dobroń on the border of the Lutomiersk-Tuszyn site. No protests or residents' petitions against Geofizyka's activities were organised in the new locations. The geological research was completed there. It is likely that when several sites appear suitable, the choice for a particular site will be made on the basis of expectations about the least amount of local opposition.

7. Implementation of or alterations of (parts of) the project

Although conflict emerged in several communities where potential suitable storage sites were identified, this was not the case in all communities and it may well be that the eventual site chosen will be characterised by a complete absence of conflict. That would offer PGE the opportunity to improve its engagement and communication strategy in such a manner that potential conflicts are well anticipated and opportunities for finding common ground are better exploited.

Figure 6: Flowchart Bełchatów



7.6. Bełchatów: ideas for engagement and communication strategy

Having discussed the initial phase of the Bełchatów project in rather general terms, we now continue by addressing the subsequent steps of the flow chart once more and discussing how these steps can be of relevance for the project developer PGE as part of an effective communication and participation strategy for the remainder of the project. By effective we mean meeting the needs of those targeted in the communication and participation strategy (local stakeholders, including borough leaders and NGOs). Hence, if a project developer has as the only aim to get the project implemented, several of the steps and activities are not going to be of much use. The ideas presented are not intended as tools to manipulate publics into accepting a ready-made plan, but rather to support communication and participation processes that are inclusive and that increase the chance that different perspectives become better aligned. By this we mean that different stakeholders better understand each other's viewpoints, including values and norms. We have seen in the several cases discussed above that a lack of understanding from the side of project developers can make it difficult for them to empathize with other stakeholders' complaints, concerns, worries and arguments. Instead of trying to understand these stakeholders, they then set themselves the task to make these stakeholders understand why a particular CCS project would be a good idea. However, it is important that the project

developer moves towards local stakeholders in order to better understand their concerns. A lack of alignment often results in deadlock situations where opposing parties fight each other with 'arguments'. In those discussions, there is little room for values, when these are also crucially important. Consider for instance the value people attach to a cherished landscape – that is something that cannot be objectively supported or rebutted by scientific arguments, but it can surely become a major issue. This is a central consideration, which already indicates that a purely instrumental approach to participation and communication – whereby the only aim is to get the project implemented – may not work out well in practice.

Although the approach suggested will not guarantee implementation, it does decrease the threat of a deadlock. Although proper engagement and communication seems costly and time consuming, it may actually result in lower unexpected costs if this approach results in implementation (in comparison with a situation in which a project is cancelled with reference to public resistance). It may furthermore result in improved trust in the developer, which benefits future relations. For the developer organisation itself, it can contribute to the discovery of new solutions to some problems as part of an open dialogue.

The choice for a particular approach or strategy may also need to consider the underlying political culture with regards to traditions of engagement and communication. In Poland, participation is not strongly institutionalized at the local level and Polish administration is considered technocratic and characterized by clientism (Gawin, 2004; Glinski, forthcoming; Wódz, 2005. However, the preceding pages have also showed that local stakeholders (or at least part of them) want to be involved in the planning and decision making process – and even take the initiative to organise discussions with several stakeholder to discuss the plans for CCS.

We would like to point out that it is not our intention to produce another toolkit. Chapter 5 clearly shows that several of these have been published in recent years. As will become clearer below, the ESTEEM, CCSI and WRI toolkits offer relevant concrete tools, techniques and activities to shape engagement and communication processes. We place most emphasis on the importance of attending to internal organisational learning processes (step 0), as that is something that has been inadequately addressed in most of the toolkits.

Any engagement and communication strategy needs to be tailored to the characteristics of the implementing organisation and to the context(s) in which the project is being planned. Therefore, the ideas below would need to be discussed, elaborated and improved in continuous interaction with the project developer. Ideally, an independent consultant would take up this task (as the ESTEEM and CCSI toolkit recommend). Within the scope of the NEARCO$_2$ project, this is not feasible and therefore, the strategy proposed below should be regarded as suggestions that could very well change based on more thorough interaction with the project developer PGE and other relevant stakeholders. What we propose is based on our current knowledge of the Bełchatów case. We follow a similar approach as in the preceding sections, namely providing recommendations in relation to the different steps of the flowchart.

Step 0. Alignment of views within organisation & organisational learning

This step remains important throughout the project process. Organisational learning is understood as a process of becoming aware of the type of organisation; backgrounds, skills, knowledge, resources, cultures. Next, it is about finding ways to align and manage internal expectations (aligning visions within the organisation). Several tools, activities and instrument can support organisational learning. But it all starts by actually reserving time to dedicate to internal organisational learning at regular intervals during the project cycle. Also after a project is finalised (or cancelled), reflection can help to improve future performance and prevent 'mistakes' in subsequent projects.

For the case of Bełchatów, an external consultant to support such a process of organisational learning could be very helpful. PGE company culture, while being crucial to the company's good performance, providing employees with a sense of identity and pride, can also result in company-wide

shared 'blind spots'. An outsider can help to identify and overcome these. This external consultant could support the following activities:

A) Jointly defining goals. Important to discuss and agree on:
What are the goals of the engagement and communication exercises in the Bełchatów CCS case? Next to the instrumental goals of getting the project accepted and implemented, are there other goals according to people from several parts of the organisation? Other goals could include for instance gathering local knowledge and insights that may affect the project plan or design (e.g. alternative visions, values, expectations, ideas); learning about and meeting local demands for participation in decision making that affects the local environment and communities; building support through local networks in view of future activities. Discussing the goals of engagement and communication helps to create awareness about the diverse motivations that may underlie engagement and communication. In addition, clarifying these goals internally can also help in explaining this to local stakeholders.

B) What will be the scope of the engagement and communication?
The answers formulated in the previous question will affect the answers on this question. For instance, if the goal of participation is only instrumental and nothing more than that, than the aim of communication is to persuade people into accepting the project. Learning about stakeholder concerns then merely serves to better tailor the communicated messages to improve the success chances in persuasion. Moreover, the scope of participation is also rather limited, for the inputs gathered will not result in adaptations to the project design or process. In that case, the participation is likely to involve not much more than what is legally required and the communication is aimed at 'selling' the project to the local community. Little power is shared with stakeholders in the planning and decision making. Setting up a stakeholder dialogue would be useless because there is no intention to adapt the project or process on the basis of the collected inputs. However, if the company adheres to some other goals, e.g. if PGE is interested in meeting some of the conditions that local stakeholders find important, then the scope of the participation is much broader because then there is something to discuss and negotiate on. Also the process itself can be object of discussion and negotiation. Here, it should be clarified what the scope of the participation is: what will be done with stakeholder inputs, will power be shared to some extent in the decision making process? Please note that at this point this is still part of the internal organisational discussion. Getting clarity on the goals of the participation and the scope will facilitate the choice of relevant instruments, tools and techniques later on – e.g. setting up some sort of community advisory board is of little use if there is no intention to use the advise brought forth by this board.

C) What is the mandate for those designing and implementing engagement and communication? The internal organisational discussion involves both employees that are tasked with communication and engagement, as well as employees at other departments – including people involved in the overall management and implementation of the Bełchatów project. The engagement and communication approach may be done partly by PGE employees and partly by an external consultancy. For both, the mandate should be clear and this follows from the answers to the previous questions. For instance, if a decision is taken to solicit input from local stakeholders in order to negotiate on the conditions of acceptability, then those responsible for these processes should be enabled to fulfil this task. Clarity on tasks, responsibilities and feedback moments helps to prevent confusion and internal disagreements within the organisation. At this point it might also be good to critically assess the available and needed resources in terms of finance, people, different sorts of expertise needed and time. The needed relevant competences and expertise should not be underestimated. For instance, a well-tailored communication strategy as part of an engagement approach is a very different undertaking from setting up a PR marketing campaign. Practice shows that companies often take up a marketing strategy rather than proper engagement and communication strategy. Having an external neutral

consultant is helpful to contribute with expertise and competence. In addition, such a consultant may also be regarded as more trustworthy by local stakeholders.

The discussion and the outcomes resulting from A, B and C should be captured in a brief report, that the all participants agree upon so that it can be referred to if needed later on in the process. This report also addresses indicators to evaluate effectiveness of the engagement and communication process.

D) What are key milestones and relevant evaluation moments and what will be subject to evaluation and change (if needed)?
On the basis of an existing toolkit for energy demand side project design, several tools have been elaborated that are useful. This toolkit defines milestones as "(...) predefined 'route markers' indicating where evaluations should take place during the course of your project. These route markers help you decide in which direction to continue, which path to take, and help to ensure that your project is on track."[16]
In order to track progress and assess the successes so far, a discussion with the project team can be conducted in order to fill in a table like Table 15 below. Obviously, if there appears to be strong disagreements on how to fill in some of the boxes, the team may also need to go back to the initial report as drafted on the basis of A, B and C and check if there still is overall agreement on the starting points or if these need to be changed or negotiated once more. In addition, the originally stated indicators for success may be reconsidered again as well. The external consultant can help to challenge some of the answers proposed by the organisation's members - e.g. challenging beliefs and convictions within the company and gearing attention towards alternative perspectives.

Table 15: Example of Checklist for mid-term self-evaluation

Questions	Answer	To do-list
Date:		
Questions related to strengths and weaknesses		
1. What are the three strongest aspects of your project?	1	
	2	
	3	
2. What are the three weakest aspects of your project?	1	
	2	
	3	
Questions related to gained knowledge and skills		
3. What new knowledge did you and your organisation gain from this project?		
4. How can you incorporate this new gained knowledge further into your project?		
5. What skills did you develop or improve through this project?		

[16] See http://mechanisms.energychange.info/knowledge-quick-bites/42.

6. How can you incorporate these skills further in your project?		
Questions related to interactions with stakeholders		
7. How could you improve your interaction with your target group?		
8. How could you improve your interaction with other stakeholders?		
9. How could you use feedback received from your target group and stakeholders to improve your project?		

(source: http://mechanisms.energychange.info)

Table 16 below offers a generic format to support discussions on how to move from self evaluation to improvements in practice. A format like this can be useful at several moments during the project preparation, planning and implementation. In addition, it can also serve to evaluate the project as a whole in the end, in order to improve future project processes.

Table 16: Format for evaluation and improvement

Your progress indicators				**Evaluate and Improve**			
Success criterion	***Indicators***	***Baseline***	***Milestones***	***On track: Yes/No***	***If not on track, what could you do to improve?***	***Feasible to correct in the current project: Yes/No***	***Lessons for future projects***

(source: http://mechanisms.energychange.info)

At the end of the project cycle, evaluation can help to better prepare future projects and make sure that future projects are in line with the organisational missions. Below, a checklist for this evaluation is shown in Table 17, to be addressed in a group discussion. The questions posed relate to the improvement of future projects, to enhancing organisational resources, to look critically at the organisational culture and to improving relations with relevant stakeholders.

Table 17 : Example of Checklist for end-term self-evaluation

Questions	**Answer (example)**
Questions related to improvement of future projects	
1. What lessons did this project provide for planning more effective projects in the future?	
2. What starting points (contacts, ideas, etc) did this project provide for future projects?	
3. Which new fields for action did this project open up for your or-	

ganisation?	
4. How were your core competencies enhanced by this project?	
5. Which of your organisational weaknesses and strengths were illustrated by this project?	
6. What new knowledge was created which is also valuable for other organisations?	
Questions related to enhancing your own organisational resources and culture	
7. How did this project contribute to the stability of your funding?	
8. How did this project help to increase the security, commitment and competence of your staff?	
9. What did your organisation learn from this project about technical, social, political, local aspects?	
10. How did this project contribute to your organisational culture by developing shared knowledge, values and tools?	
11. How did this project help to develop a clearer understanding of what success means to you?	
Questions related to enhancing your relations with stakeholders	
12. What new knowledge did you gain about end-users and other key stakeholder through this project?	
13. How did this project improve your relations with local stakeholders?	
14. How did this project improve your relations with national-level stakeholders?	
15. How did this project enhance the credibility of your organisation?	
16. What competencies were created outside your organisation through this project that are valuable for you?	
17. How did this project help your stakeholders to understand each other's positions better?	
18. What lasting networks of stakeholders were created by this project that will endure after the project?	

(source: http://mechanisms.energychange.info)

The ESTEEM toolkit and the NETL publication suggest integrating the engagement and communication strategy into the overall project management cycle. The NETL manual follows the technical stages of CCS projects; ESTEEM focuses more on process management cycles by addressing how ESTEEM can fit with EIA and EIS, risk analysis and risk management. We refer to both toolkits for further elaboration on that.

The report drafted on the basis of A, B and C can be supplemented by outcomes from D in the course of the project. Alterations and adaptations are also noted and in this way a 'project diary' is build up that gathers important starting notions, lessons learned and internal agreements with regard to the engagement and communication strategy. Such a document supports the preparation of future projects as well.

Having provided suggestions for the inner circle of the flow-chart, we now continue with broad suggestions for the steps in the outer circle of the flow-chart. For the Bełchatów case, it could be helpful to set up an internal outreach group (including people from several departments, not only communication experts). In addition, having an external consultant to support these steps is advisable. For step 0, we suggested some concrete tools (see the tables above) because the reviewed toolkits do not really offer this. For the steps below, we refer the reader to the toolkits reviewed, although we do point out some general ideas for activities or tools that may be of use in each of the steps. Furthermore, we would like to point out that any strategy should be flexible enough for adaptation to changes in the operating context. This means that no blueprints exist for a particular project. Each step will have to be considered in the light of the previous step and in other developments.

1. Preparation ideas for project:
As long as no site is chosen, multiple local contexts are relevant to consider and each of these may have its own characteristics. It is already clear that in different areas, people feel differently about PGE and the benefits this company might bring. Stakeholders living near the power plants are more familiar with, and economically dependent on PGE compared to farmers living further away.
The collection and documentation of relevant stakeholder information involves among others talks with local authorities, to try and get signals that indicate locally specific concerns. In addition to a stakeholder map, it can also be advisable to draw out networks between different stakeholders. This could start by addressing the borough leaders (as main links between the developer and the communities and other stakeholders like NGOs or other companies) to tap their insights an experiences with relevant organisations, people and local social networks. This could then give a first idea of existing local social networks and from these one could draw a bigger network of connections spanning several or tens of communities.

For instance, the strength of the CZR in the region and their ability to mobilise support against any CCS developments has been underestimated by the project developer. This is something that can be further inquired into – e.g. by finding out more about the reasons of other stakeholders to support this NGO. An open attitude is important here in order to understand the interests that this CZR represents and how this matches with other stakeholder interests. Apart from considering relevant stakeholders in the local context, attention needs to be paid to the history and perceived qualities of the local area – and values attached to these. More insight in this can be gathered through interviews and through research into the history of an area.

Furthermore, instead of assuming what stakeholders find important and assuming what they understand or not, it is advisable to go to these stakeholders and talk to them, asking them first about their worries, concerns, needs, expectations. In order to collect and map relevant stakeholder information, various tools and techniques can be used that have been presented in several toolkits, e.g. local surveys, interviews, focus groups, social and historical site characterisation (also addressing socio-economic, institutional, cultural, environmental aspects), stakeholder mapping and identification of networks and connections

Because the project preparations have already started, it is advisable to identify important moments in the project history so far – e.g. moments of interaction, dialogue and conflict with several local stakeholders and publics. With regard to the conflicts that may or have already risen, these need to be addressed as conflicts won't dissolve by themselves (except if these locations are no longer considered).

2. Vision building and confrontation
Based on the findings in 1, visions can be constructed, preferably in collaboration with relevant stakeholders identified in step 1. In order to learn how to align the project and process to the relevant local contexts, it is important that local expectations are taken seriously. Visions consist of both ideas based on factual knowledge (e.g. with regard to a CCS storage site), as well as values (e.g. with regard to the need to have such a CCS storages site; or in the sense of technical self-confidence on the part of the project developer). An external consultant can help the PGE team to look at the project through different lenses and hence improve the ability of PGE to understand alternative visions of how this CCS project would or would not fit in the local context. Probably the vision that places geothermal central also needs to be elaborated – rather than being discarded.

The ESTEEM toolkit suggests the writing of a future newspaper article for each vision. Such an article, being based on in-depth inquiries and collaboration with relevant stakeholders (step 1), conveys not just a project plan, but an image of how the project will become part of the local context. Next, when reading the different articles, the contentious issues are likely to become clearer. Another approach could be to set up working groups consisting of various stakeholders (including PGE), that inquires into and elaborates the diverse ideas, expectations, values and visions – aimed at developing a portfolio of options. This working group could play a role/take on the next steps as well.

3. Identifying conflicting issues

When different visions have been drawn up, the main contentious issues can be further inquired into. These may relate partly to the technology, e.g. in as far as some parties are not in favour of CCS or would rather see geothermal. The values and expectations that lie behind a 'geothermal vision' can then be assessed and confronted with the values and expectations behind a 'CCS vision'. Contention may also relate to this particular project, the project developer or associated partners. For instance, if the approach of Geofyzika is not appreciated by several stakeholders, this is something that needs to be further inquired into, so that scepticism about a project partner will not result in distrust towards the whole project. Conflicting issues may also relate to the process: we already saw that some borough leaders felt that they have not been involved sufficiently. Here again, the question is not so much if this is true or not, but how an atmosphere can be created that makes people feel that they are being involved, that their voice and opinion does matter.

What is important to realise is that framing the conflict in scientific terms, trying to separate facts from values in the discussions, is not helping the finding of solutions. Values and emotions are also valid reasons for people to support or oppose a particular development (think about e.g. cultural-historical values that some landscapes might represent and how people because of that prefer to keep such landscapes free of e.g. wind power projects). Of course, misinformation is something that can and should be countered (e.g. with regard to what CO_2 leakage could lead to). The ESTEEM toolkit offers a tool for conflict mapping, which helps to identify the extent to which the conflict issue is susceptible to negotiation and some sort of solution.

4. Portfolio of options

When conflicting issues are addressed as concrete and real concerns, then these can be addressed and negotiated. As such the discussion of a portfolio of options addresses the conditions under which a CCS project can become acceptable for different stakeholders. The room for negotiation offered by the project developer is crucial here of course (see step 0: the relevance of clarity on the goals of participation comes back here: what is subject to negotiation and change, what is not?).

Together with relevant stakeholders that represent the different visions, solutions and alternatives can be discussed. The options discussed are likely to reflect different ways of distributing costs and benefits in the broad sense – e.g. mitigation measured may also count as benefits. Different stakeholders may have different views on what costs and benefits are. For PGE, it is crucial to be open and transparent about the benefits for PGE – simply stating that the project is beneficial for combating climate change without admitting company benefits won't do here.

When several sites turn out to be suitable for storage, different options can be worked out for the different sites, so that in the further negotiations, the site is not chosen beforehand, but rather on the basis of an inclusive discussion about alternatives.

5. Getting to agreements

Next, after the work done in step 4, the arena for discussion can be further broadened to include larger numbers of stakeholders. Important is to make sure that the options developed represent the different viewpoints and expectations of the participants. Room should be allowed for additional ideas that have been overlooked in the previous steps. Seeking common ground and reaching agreements is then aimed at. Of course, in case there are stakeholders who are unwilling to discus at all, this will be difficult. On the other hand, if the previous steps have been performed in an open, inclusive and transparent manner, then the success of unconditional opponents in mobilising support is likely to be not very high. For instance, borough leaders who felt excluded may join in again when they feel that the process is also providing room for their ideas and aspirations.

In terms of tools, open discussions, facilitated by the external consultant (who has been involved in all previous steps) with a broad group of stakeholders is needed. Hence, an open public meeting is an instrument that is useful at this point in the process, whereby the public is not being

presented a ready-made plan about which they can ask questions, but where the public's ideas and concerns are actually represented in the plans discussed.

In case the previous steps are done in the proposed working group, the results can be presented at a larger meeting at this point. PGE could have a separate presentation to indicate what it has learnt from this process and what kind of solutions it is going to consider. There could again be some room for negotiations and for coming to an agreement. Local authorities should also be taking part in this phase. Some of the elaborated options could also crystallize into concrete projects to be carried out in the future – not necessarily by PGE.

6. Recommendations for action

What the outcomes are of the steps, collaborations, discussions and negotiations as set out above, cannot be predicted in advance. This depends on the process dynamics, ongoing developments and changes in the context, the role that relevant other stakeholders assume (including for instance government at several levels). Also, events at other locations or levels (e.g. CCS-related controversies, changes in the tone of the national political debates on climate change, changes in CO_2 emission trading schemes, etc) are likely to affect the process. The timing of the several steps may need to be adapted in response to the dynamics in the operating context.

However, at some points, further actions plans are drawn up, e.g.:

- A collaboration plan with a core stakeholder group (representing all interests in the area).
- A communication plan – to be discussed with this core stakeholder group.
- Further plans for e.g. environmental impact studies: also here it may be advisable to involve the stakeholder group in the selection of the experts performing these studies, so that the outcomes of these studies will not become controversial on the basis of accusations of biased researchers.
- A monitoring plan: this links up with the actions proposed in step 0.
- A further plan for engagement: that also states clearly what is and what is not negotiable.

7. Implementation of or alterations of (parts of) the project

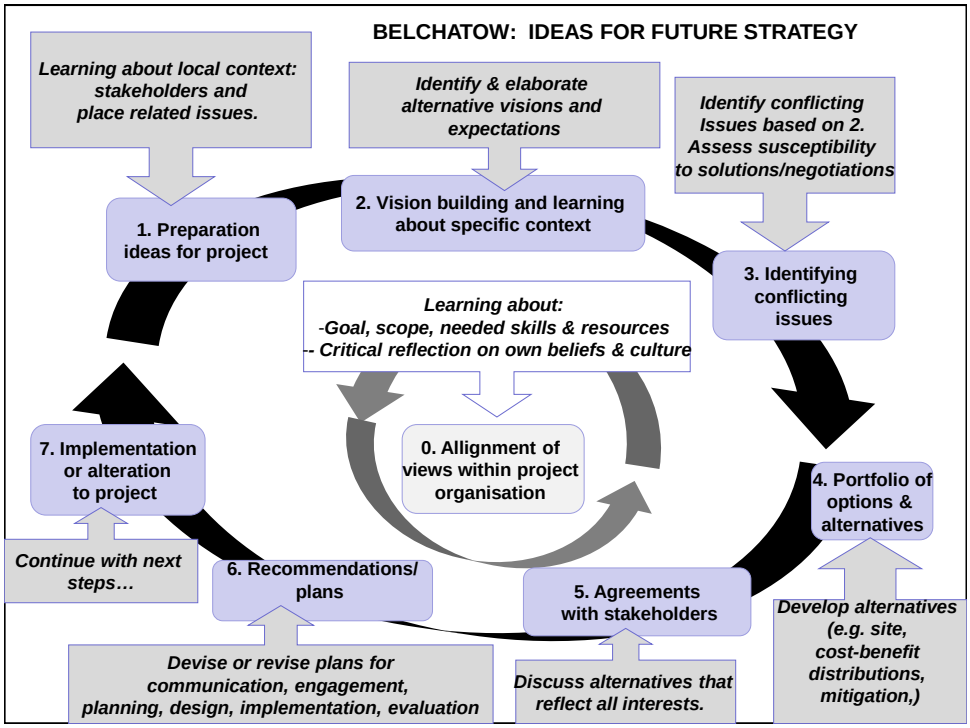
Having done the previous steps, the project developer can now look anew at some of its original plans, goals and criteria and adapt these where necessary. Here it is important that within the project developer organisation, agreement is reached on changes and adaptations.

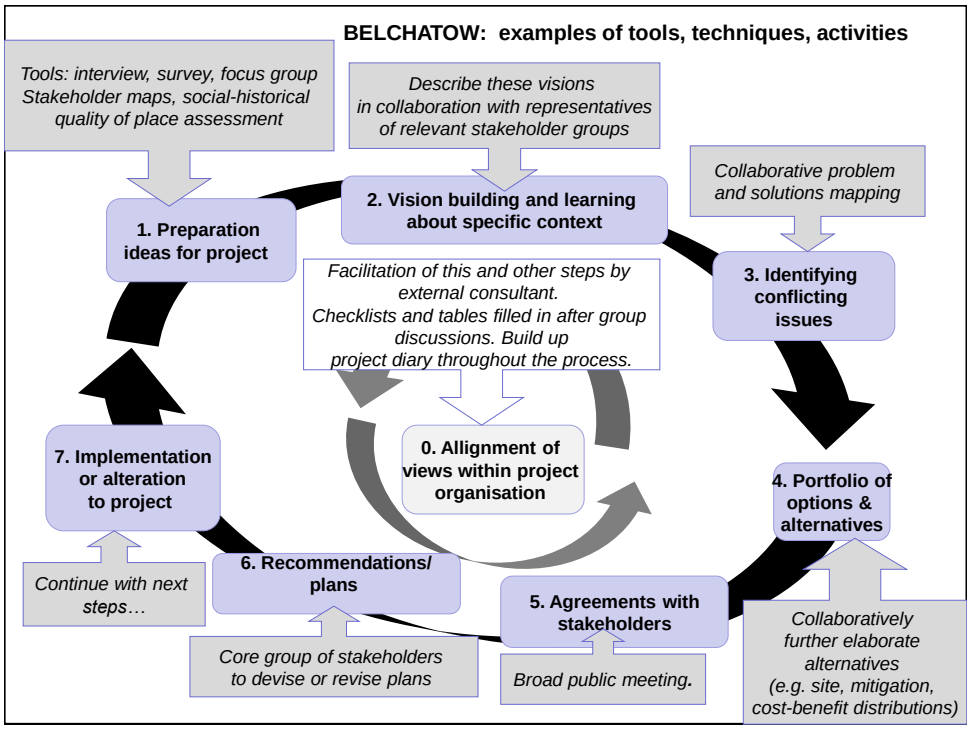
It may be that this step involves that a site is chosen, costs and benefits have been negotiated, so that the next steps will be about the further planning and implementation of the project.

This may furthermore be a good moment for mid-term self evaluation (see above, step 0). The cycle may then be partially started up again. For instance, if a site has been chosen, and agreements have been reached with e.g. farmers, borough leaders, NGO representatives and citizens, then a next step may be that these agreements are further elaborated through more in-depth discussions – e.g. supported by steps 2, 3, 4 again, but more focused on concrete costs and benefits.

As the steps above show, it is important that for each step, clarity is needed first about what each step entails and why it is relevant – e.g. learning more about the local context and stakeholders is relevant to better understand how this project may raise concerns, so that these can be addressed more effectively. Only then an instrument, tool or technique is chosen that helps to accomplish this step. Although it may sound like common sense, in practice often a tool or instrument is adopted while there is not clarity what the purpose really is. Discussing this and reporting this helps to get clarity on this.

Figure 7: Ideas future strategy Bełchatów





8. Evaluating the effectiveness of participation and communication strategies

8.1 Indicators: process, outcome and context

In order to develop indicators that can be used to assess the effectiveness of engagement and communication strategy, a clear definition of effectiveness is needed. In addition, the goal of the engagement and communication should be clear.

The goals of engagement or participation can differ, as we have seen before. Democratic goals, quality goals, instrumental goals have been distinguished. The most narrow definition is an instrumental definition, whereby getting the project accepted and implemented is the goal of participation. Within the NEARCO$_2$ project however, we have worked with the broadest definition, which also leaves room for democratic and quality goals. In line with this, effective has been defined in terms of meeting the needs (information and process related) of the involved stakeholders (including the 'general local public'). This differs from a definition of effective in the sense of achieving project implementation only.

A broad review of the different analytical approaches to evaluation of participation exercises as well as the challenges of developing indicators of effectiveness can be found in Abelson and Gauvin (2006) and Rowe et al. (2004). The latter emphasise that effectiveness is a multidimensional concept and an engagement approach may succeed in some aspects (e.g. early involvement of participants) but fail in another (e.g. generating trust in the organisations involved). Effectiveness is furthermore difficult to measure. Some methods inquire into participants' perceptions of the process while others may aim to produce an observational record of the process or future impacts.

Overall, two main perspectives can be distinguished (and combined) when evaluating a participatory exercise or strategy: those associated with the **outcome** of the process and those that emphasized the **process** (Chess and Purcell, 1999; Webler et al., 2001; Abelson and Gauvin, 2006). This then results in two main criteria for evaluation:

- Process indicators: these refer to different aspects related to the process and to the extent to which a process is considered fair by relevant local stakeholders (procedural justice). A strategy can be considered successful in terms of process criteria if it succeeded to address several steps that have been identified as crucial (e.g. if the context has become clear; if all actors with legitimate interest have been identified; if the engagement has started early enough in the decision-making process).
- Outcome criteria. these refer to the institutional and societal impacts of the process. Here, the effectiveness of a process depends upon the goals of the strategy. Moreover, if the process is considered fair, then this increases the chances that the outcomes are also regarded fair (outcome justice) (Gross, 2007).

Following Rowe et al., (2004) and Abelson and Gauvin (2006) we can exemplify some of the evaluation criteria more commonly used in evaluation studies in table 18 below.

Table 18: Commonly used criteria

Process Criteria	Outcome Criteria
• Representativeness • Inclusivity • Early involvement • Process fairness • Transparency • Structured decision making • Independence • Incorporation of values/beliefs into discussion	• Social impact • Influence on public • Cost effectiveness • Effect on staff and planning process • Conflict resolution • Restoring public trust in public agencies • Public views incorporated into decision making • Effect on public and plan support • Perceptions of consultation by public, media, etc.

(based on Rowe, Marsh and Frewer (2004) and Abelson and Gauvin (2006))

A third criterion developed by Abelson and Gauvin (2006), is the "contextual criterion". The main idea is that very often the success of an engagement and communication strategy (its process and its outcomes) depends on contextual factors. These can refer to organisational and decision-making factors (Abelson and Gauvin (2006). Several contextual elements are of influence and even if they are not used as evaluation criteria, they should be taken into account in the evaluation.

8.2 How to evaluate effectiveness?

There is no single instrument for performing effectiveness evaluations. Generally, social research instruments such as questionnaires, interviews and observations are used. Rowe, Marsh and Frewer (2004) suggest two instruments: a) questionnaires to collect participants' satisfaction with a specific participation exercise, and b) a evaluation checklist with multiple items for each criterion to be completed by an observer or evaluator. To be effective, the exercise should preferably score well on both instruments. Based on the above, we can establish a rough evaluation framework and check-list to be applied when evaluating engagement and communication strategies or exercises related to CCS projects. The check-list consists of various questions regarding the different process and outcome criteria and a final table summarizing the general criteria, rated from *very bad* to *very good* or *unsure*.

Table 19: checklist to evaluate process and outcome criteria

Indicators	***Yes***	***No***	***Unsure***
Was the scope of the strategy clear and appropriate?	❒	❒	❒
Were the overall goals and outputs of the strategy clear and appropriate?	❒	❒	❒
Were all persons with a legitimate interest in the issue (and therefore the outcome of the participation strategy) clearly identified?	❒	❒	❒
Whatever the intentions, was the group of participants actually representative (and stayed that way during the course of the strategy)?	❒	❒	❒
Was sufficient time available to run the strategy?	❒	❒	❒
Were there enough suitable resources to meet the needs of the strategy?	❒	❒	❒
Was the strategy well organised and managed on a practical level?	❒	❒	❒
Was the strategy flexible and adaptable, as necessary?	❒	❒	❒
Did participants have an appropriate level of control over the procedures and outputs of the strategy?	❒	❒	❒
Did facilitators have an independent role in the strategy?	❒	❒	❒
Was information available in an appropriate format, at the appropriate level of detail?	❒	❒	❒
Is it made clear how these findings will be used and who will be involved in determining these findings	❒	❒	❒
Were better specific decisions made as a result of the strategy?	❒	❒	❒

Did the strategy have a positive impact on corporate policy-making procedures?	❒	❒	❒
Did the strategy have a positive impact on public understanding of the project?	❒	❒	❒
Did the strategy have a positive impact on public trust on the organisations?	❒	❒	❒
Did the exercise bring a significant amount of constructive media attention on to the issues?	❒	❒	❒
Did the exercise take place early enough in the decision-making process?	❒	❒	❒
Was the benefit/cost ratio high?	❒	❒	❒
Did the characteristics and commitment of the organisation promote participation and involvement?	❒	❒	❒
Did researcher-decision maker relationship facilitate process and outcome success?	❒	❒	❒

Source: Adapted from Rowe, Marsh and Frewer (2004)

Table 20. Summary Evaluation

Evaluation criteria	**Check-list rating From *1- Very bad to 5- Very good***
Task definition	
Representativeness	
Resource accessibility	
Structured decision making	
Independence	
Transparency	
Influence	
Early involvement	
Cost-effectiveness	
Contextual issues	

Like there no “one-size-fits-all’ approach to devising an engagement and communication strategy for CCS projects, there also is no “one-size-fits-all’ approach to the evaluation of effectiveness of such a strategy. However, the inner circle in the strategy development flowchart (step 0) offers a process in which the goal of the engagement and communication, definitions and indicators of effectiveness can be developed and elaborated. During the process of developing, implementing, monitoring and adjusting the strategy, the development, evaluation and perhaps adaptation of indicators takes place as well. Hence, a set of indicators specified for a particular CCS project is first defined in step 0, whereby the examples in the tables 19 and 20 can be of help. Step 0 includes the following activities to arrive at indicators for the evaluation of effectiveness:

a- Clarifying the goals of engagement and communication; here the definition of ‘effectiveness’ can be formulated and/or sharpened
b- Clarifying the scope for engagement and communication. Answers to questions like: Why is stakeholder input solicited? What will be done with stakeholder inputs? Will power be shared to some extent in the decision making process? will help to further specify (sub)indicators of effectiveness.
c- a and b facilitate the choice of relevant instruments, tools and techniques for engagement and participation to be taken up – and that allows for a further refinement of indicators that are tailored to some of these instruments.
d- Clarity on tasks, responsibilities and feedback moments and how to evaluate these

e- Definition of key milestones and evaluation moments: here the evaluation of effectiveness is also further specified in terms of evaluation moments; instruments used to evaluate; flexibility to adapt the project in response to mid-term evaluation outcomes if these show that the strategy is not effective or can be improved in this regard (or if it turns out that some of the indicators need revision)

Step 0 ideally is reported on throughout the project-cycle (resulting in a 'project diary'), whereby the assessment of the goal, the definitions of effectiveness, the elaboration of indicators and the evaluation moments as well as instruments are taken up as well. A first version of this report should be compiled early on in the process.

9. Future challenges

9.1. Main outcomes and conclusions

Part I of this Deliverable aimed at improving our understanding of gaps between current and 'desired' practices of engagement and communication.

Research (and toolkits) have extensively addressed the recipient 'host communities'. Much less attention has been awarded to the implementing organisations (e.g. energy companies; oil industry; or industrial consortia) involved in CCS projects. Their internal institutional dynamics, organisational practice, characteristics, competences and resources affect their ability to devise an effective engagement and communication strategy. Moreover, not only the local stakeholders and publics that may need to adapt some of their expectations and views. Project developer organisations may also need to change some of its expectations and beliefs.

Therefore, chapter 3 explored what insights literatures on can bring us and these then provide the underpinning for the interviews with project developers (see chapter 4).

Being the prospective end-users of engagement and communication toolkits and guidelines, the project developer organisations (and consultants hired by them) were the focus of attention chapters 3 and 4 – in order to learn more about organisational practices with regard to engagement and communication. Conclusions on the basis of chapters 3, 4 and 5 (review of existing toolkits and guidelines) can be summarised as follows:

Internal alignment:

The toolkits reviewed lack explicit and elaborate attention to the fact that the prospective end-users of these toolkits come in many kinds, having different backgrounds, skills, knowledge, resources and cultures. CCS-consortia of project developers are often no unitary actors, but include different organisations or at least different units of a large organisation. This brings potential challenges:

- internal collaboration can be complicated because of different organisational cultures
- substantial differences in the visions on engagement and communication
- physical distance between departments (or organisations) based at different sites
- difficulty to express a coherent message

Different needs for different contexts of capture, transport and storage:

Different approaches might be needed for the capture, the transport and storage parts of the chain. The storage locations may confront the developer with largest challenges and may require most intensive efforts at engagement, as cost-benefit distribution is most problematic there because little benefits are offered while the storage is regarded as a burden by the local community.

Timing: early engagement

Even if respondents largely subscribed to the principle of early engagement and communication, in practice this is not done. Related to this is an issue that respondents struggled with in different ways:

what to do when conflict has already surfaced? How should that affect any further engagement and communication strategy? The toolkits do not offer advice for this.

Use of toolkits & guidelines
Engagement and communication toolkits and guidelines are said to be used to check whether the approaches chosen are consistent with those of others. However, little direct use is made of such guidelines and it has not really become clear why that is the case.

Ideas on the aim of engagement and communication
Most respondents (if not all) look at engagement and communication from a very instrumental point of view – intended to win support or at least gain acceptance of the project.

Scope for negotiating costs & benefits
Most toolkits/guidelines provide no or only limited support in getting clarity on the aims of engagement and participation – and in line with this, attention for the mandate and scope for engagement is also not present, except for the ESTEEM tool that states that this be clear and non-disputed. Toolkits furthermore offer no elaborate mechanisms for costs-benefit sharing, which is what negotiations should be about (aligning expectations should be followed by attempts to align interests).

The national context
Several respondents stated that national government should support CCS more explicitly, providing it legitimacy. None of the toolkits advises on how best to get involved in national debates (although ESTEEM offers tools to map the broader context in which a project is situated, including the national social-political debates.

Conclusions of part I are that there is need to address not only external but also internal communication. In addition, organisational learning prior to and during the whole project cycle is important, to arrive at an internal alignment of expectations and views. In this process, the needed competences and skills as well as potential organisational constraints should also be addressed.

We not only need to tailor the engagement strategy to the particular context. We also need to address the needs of the prospective end-user (the project developer) and internal organisational dynamics in order to be able to devise an effective engagement and communication strategy.

Whether communication is one-way information provision or about alignment of diverging perspectives, depends not on instruments used (e.g. dialogue workshop, focus group meetings, establishing a community board). It rather depends on what is being done with the stakeholder inputs gathered. If these inputs are mainly used to further fine-tune the message directed at the local stakeholders, then this is in line with a one-way communication strategy of informing, educating, reassuring and persuading people.

Part II elaborated the insights gathered into suggestions for the devise of effective communication and engagement strategies, including case studies, flowcharts and indicators.

There is no “one-size-fits-all’ approach to engagement and communication and the success of any approach is contingent on conditions that differ for each project. The exact choice and ‘content’ of the overall strategy of an engagement and communication approach needs to be tailored to the project’s specific aims and context, the project developer and a variety of relevant (local) stakeholders including the ‘general local public’.

Our point of departure for devising a strategy development approach is the ESTEEM toolkit that consists of a six-step process methodology. In addition, we have added a step (step 0) that reflects the organisational learning process and internal organisational alignment of views which is crucial for a good internal and external stakeholder engagement process. Because this step is an addition that addresses an important omission that we have identified in part I (the lack of attention for the project developer), we have elaborated most on this step, while remaining more brief with regard to the

other six steps. An external consultant can be helpful to manage the internal process of step 0, whereby attention should be paid to at least the following issues:

1. Jointly defining goals of the engagement and communication
2. The scope of the engagement and communication participation should become clear (& what is done with participants' input; e.g. is the project developer willing to negotiate some cost-benefit distributional issues?)
3. The mandate for those designing and implementing engagement and communication.
4. The skills and resources needed, timing and planning
5. Key milestones and relevant evaluation moments and what will be subject to evaluation and change (if needed)?

Step 0 will be reported on throughout the project-cycle, whereby the assessment of the goal, the definitions of effectiveness, the elaboration of indicators and the evaluation moments as well as instruments are taken up as well. A first version of this report should be compiled early on in the process, a final version at the end of the project evaluation. It will provide support in the definition of indicators in subsequent projects. The examples of both the WP1 cases and the elaboration of strategy steps for the Bełchatów project have illustrated how to translate the steps into a tailored strategy for engagement and communication.

9.2 Suggestions for further research and action

We have not addressed all the gaps that we identified as that simply was not feasible within the scope of Work package 3. We mention the gaps that need to be taken up in further research.

First, the further development of a conceptual framework that allow for more elaborate and in depth empirical inquiry into organisational practices with regard to devising and implementing engagement and communication strategies. Broad conceptual frameworks do exist and/or have been recently developed (e.g. Devine-Wright, 2010) and these can serve as a starting point for further theory development on specific parts of these broad frameworks (the developer organisational practices and internal institutional dynamics).

Second, further empirical inquiry is needed to attain more insight into how exactly (consortia of) project developers view the usefulness of toolkits and guidelines. Little direct use is made of such guidelines and it has not really become clear why that is the case. We can do some educated guesses (e.g. perceived lack of time; perceptions that knowing the tools and instruments that toolkits propose is sufficient to set up a good process, thereby neglecting the importance of having a good process; reluctance to hire an external process manager; strong belief in instrumental approach that is focused on education and persuasion, for which some instruments and tools seem useful but not a full toolkit) but further research on this would be needed.

Third, why respondents largely subscribed to the principle of *early* engagement and communication while not doing this in practice, is something that merits further attention as well. In addition, we have not gone in-depth into what can be done when conflict has already surfaced? How should that affect any further engagement and communication strategy? The toolkits do not offer advice for this but we have not addressed this omission either.

Fourth, as chapter 3 and 4 pointed out, several issues merit closer and subsequent investigation, like the process of allocating responsibility for decisions on external communication within organisations; lines of information flow and control and any differentiation by task and target audience; processed of interpreting of the meaning and purposes of engagement and communication within organisations.

Fifth, more attention for mechanisms for costs-benefit sharing would also be useful, since that is what negotiations should be about. Aligning expectations should be followed by attempts to align interests. Costs and benefits relate to more than financial gains. Benefits can also relate to e.g. employment opportunities, mitigation measures, changes in the design or exact location of a project,

compensation measures, quality of the further process. Costs refer not only to clearly defined and measurable costs, but also to concerns and uncertainties about risks, nuisance during examinations and construction, loss of landscape quality, etc.

Sixth, the connection between national (political) context and local project context is something pointed out in several interviews. A better understanding of what different stakeholders perceive the role and task of national government in providing legitimacy to CCS, and in addition to that how different stakeholders view the role and tasks of regional and local government, of project developers and other relevant stakeholders would be useful. This sixth gap could be addressed by setting up a multi-stakeholder dialogue that is aimed at articulating and confronting diverging perspectives. Several of the other gaps could be addressed with a more action-oriented method, whereby researchers are closely involved in a process in which a project consortium sets up and implements a strategy for engagement and communication as proposed in chapter 7. In such a setting, both researchers and practitioners can learn from each other. This can help to test and improve the proposed strategy approach, addressing content, accessibility, attractiveness, etc. And it can help in gaining insight into some of the organisational dynamics that are difficult to inquire into on the basis of interviews only.

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ANNEX 1: Detailed interview template

Topic	Topic questions and interview questions
1. History	**Topic:** What is the company's perspective on engagement and participation and how have past experiences affected their current perspective and approach? **Interview questions:** - What experience does the company have with engagement and communication in past projects? - Did these experiences change the companies perspective and policy on engagement and communication? If so, how? - Can you elaborate on the main element are of the companies perspective on engagement and communication? - And in relation to this specific CCS project?

2. Role interviewee	**Topic:** What were the accountability/responsibility chains and were there named individuals (through the consortium chain)?
	
	Interview questions:
	- What is your role in the project team/ consortium? (to whom do you report within your organisation?)
	- What is your role with regard to:
	  - Preparing and implementing a communication strategy for this particular project?
	  - Preparing and implementing an engagement strategy for this particular project?
	  - Building of support among (local) *community) stakeholders for the CCS project?
	- Are you responsible for the actual implementation of the CCS project?
	  - If so, how? With whom else? If not, who is/are and what is their role/position in his own organisation? To whom does he has to report to?
	- Was engagement contracted out or in-house, and how many people were allocated to the task and which departments were involved?
	- What were the co-ordination procedures (documented?) and resources allocated (% spend of the project total)
	
	B: What are the roles of important others (in respect to communication and participation) within the company?
	C: What are the roles of important (in respect to communication and participation) stakeholders?

3. Tasks and 4. goals	**Topic:** What is the task of the interviewed people? (E.g. Creating acceptance, communicating with stakeholders and public because of the legislation, informing the public,….)
	What were the goals of these tasks? Why were these tasks performed/ planned?
	
	Interview questions:
	- What is your task in this project? (as a member of the project team/ consortium)?
	- What were the goals that these tasks are aimed at?
	- What are the motivations behind and aims of the communication and engagement strategy?
	  - What were the objectives of the communications / engagement processes?
	  - How does the interviewee view the objective/purpose of engagement?
	- What actions and interventions have been undertaken in order to achieve these goals?
	  a. Why has he undertaken this actions?
	  b. Why has he **not** undertaken actions?
	
	B: What are other project team members' tasks? (if there is no project team, what sort of organisation is there, consisting of whom, with which tasks)
	C: Tasks of other stakeholders

5. Results	**Topic:** Were the desired results reached?
	Interview questions:
	- Have the actions and inventions been successful so far (and to what extent)?
	  - What were the results?
	  - In what way were the interventions successful? What did you accomplish?
	  ▪ In terms of the goals?
	  ▪ How did the success relate to the actions undertaken?
	  • How was the success related to the use of any tools? ….(nr. 8)
	  • Why do you think the actions and interventions were successful?
	  - In what way were the interventions **not** successful? What did you not accomplish?
	  ▪ In terms of the goals?
	  ▪ Why do you think the actions and interventions were not successful?
	  • How did the not having success relate to the actions undertaken?

	• How did the not having success relate to the use of any tools?
6. Needs	**Topic:** What are / were the needs the consortium had/have in the communication and participation process? **Interview questions:** - What are/were your (your firms'/consortiums') most important needs for setting up an effective engagement and communication trajectory? (e.g. in terms of finances, skills, knowledge, tools, time available (FTE and available time)
7. Resources	**Topic:** Did the consortium/ company have enough resources required for the communication and participation process? **Interview questions** - Did you have sufficient resources for preparing, elaborating and implementing an engagement strategy? - Could you elaborate on this? Did you hire consultants? Where did you get the expertise?

8. Tools	**Topic:** Awareness and usability of existing tools and guidelines
	Interview questions:
	- Are you aware of the existence of several guidelines and toolkits on engagement, participation and communication around potentially controversial projects like CCS projects?
	- Did you use any tools or guidelines to set up an engagement and communication strategy?
	- If not, why not?
	- If so:
	  - What kind of tools?
	  - Where they useful?
	  - Why did you choose to make use of *these* tools (and not others)?
	  - What could be improved to make the tools more useful?
	
	  - Has there been any use of particular techniques, approaches, check-lists?
	  - Has there been any stakeholder categorisation / targeting of types of material to particular categories?
	  - What methods have been used for communications: e.g. news media, own website, leaflets?
	  - Who was involved in producing the communication material?
	  - How did the company make any use of local knowledge (e.g. on biodiversity, social characterisation, ground conditions)?
	  - How did the company make any use of knowledge gained from previous projects, CCS or otherwise, theirs or others'?

9. Team dynamics (intern)	**Topic:** How was the (internal) collaboration/ process? **Interview questions:** - How would you characterize the collaboration within the project team? Within the consortium? With outside stakeholders that are important for the project? - Have any changes occurred in these collaborations? (e.g. more intensive/less intensive) If so, what caused these changes? - Who makes the major decisions when it comes to making a choice for an approach in engagement and communication?
10. Negotiation room (extern)	**Topic** Is there room for negotiations? Are the (local) stakeholders taken seriously? Can the give input in the process/ results? **Interview questions:** - How much room do you feel there is for e.g. making use of innovative engagement strategies? - How much room for maneuver is there in negotiation processes with local stakeholders and the local public? - How much room is there for re-negotiating local benefits for instance? - How do the outcomes of communication and engagement exercises feed into the decision-making on the project design, project planning, project implementation and project monitoring? (=intern process)
11. Underlying norms & values	**Topic:** What is the attitude of the company regarding communication? **Interview questions:** - What is the company's overall strategy (inc. any on-going horizon-scanning) to engagement (documented?) - Has the interviewee observed any differences in practices and attitudes towards engagement among supply chain companies? - What are the interviewee's views on how local opinion should be taken account of? (by what processes should outcomes be defined)? - Do they foresee any particular trends in planning law and company practice in relation to engagement? - Is there anything they would like to see changed in future, in this regard, inside or outside of the company?

ANNEX 2: Case Study: the Bełchatów CCS Project

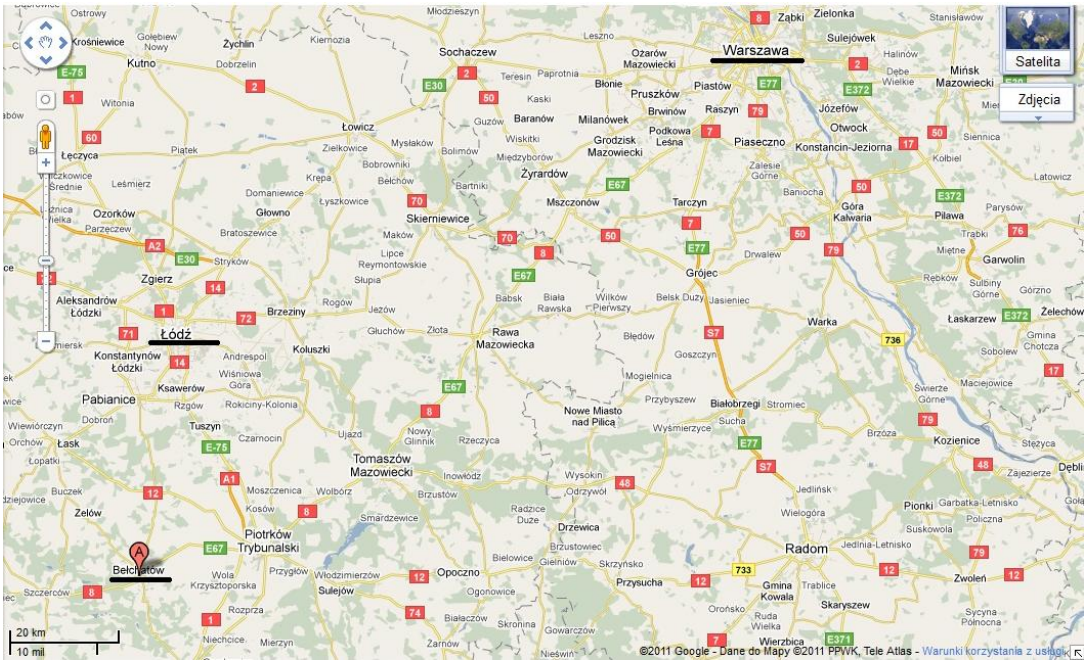
Aleksandra Lis (IEEP) and Jane Desbarats (IEEP)

1. Background to the Bełchatów CCS project

The Bełchatów power plant, owned and operated by the Polish Energy Group, (known hereafter as PGE EB – PGE Elektrownia Bełchatów) is a place of contradicting images and stigmas. PGE EB is the main source of employment for the town of Bełchatów, as well as a source of national pride given its successful transformation and modernization in the early 1990s.[17] Bełchatów is a town of around 62 000 inhabitants located in the Łódź Province 160 km southwest from Warsaw (see map 1). During a geological gas survey in the 1960s, vast seams of lignite were discovered in a nearby village, Piaski, culminating in a national decision in 1975 to build a coal mine and a power plant unit in Bełchatów.

Today, PGE EB is the largest brown coal thermal power plant in Europe with an installed capacity of 4440 MW (15% of installed power in Poland) and the ability to generate 27-28 TWh a year, good for 20% of Poland's power generation.[18] However, while this power plant is the source of the cheapest electricity in Poland, it also is a large emitter of CO_2 emissions.

Map 1. Location of Bełchatów in relation to Warsaw and Łódź



Poland heavily depends on coal for power generation. This has complicated Poland's ability to comply with greenhouse gas (GHG) emissions reduction targets and with renewable energy targets. Due to a rather flat landscape the potential for hydro power is limited. The share of other renewables in energy production is growing[19] but still relatively low compared to the share of coal in the final en-

[17] Currently the Bełchatów Power Plant (PGE EB) is one of the units of PGE Mining and Conventional Energy, with a total staff of 1101 people at the end of 2010 (See the official web site of PGE Elektrownia Bełchatów http://www.pgesa.pl/).

[18] Ibid.

[19] In March 2011 the installed capacity of renewable energy sources was 2780.079 MW - 87.773 MW from biogas, 399.05 MW from biomass, 0.104 MW from solar power plants, 1344.317 MW from wind and 948.835 MW from hydro (wnp.pl 2011).

ergy production, which is around 93%. In 2009 55.84% of electricity was produced from hard coal and 33.66% from lignite (wnp.pl 2010).

Not surprisingly, CCS has been welcomed by the government, the electricity and mining sectors as a way of continuing with the use of domestic coal. Global and European climate policies have positioned Bełchatów within a complex and often competing set of economic, environmental and technological priorities. The importance of coal to the Polish economy combined with the cost of complying with the European Union's Emissions Trading Scheme (EU-ETS) could raise energy prices by 100% for industrial consumers (Jankowski 2008).

Given this reality, and projected greenhouse gas emissions, the Bełchatów power plant would need to buy 20 million European Union Allowances (EUAs) by 2013 under a scenario where CCS is not adopted in order to comply with its target (Reuters 2008).

In October 2009, the European Commission allocated 180 mln Euro to the CCS project in Bełchatów under the European Economic Recovery Programme. In addition, PGE has sought additional funding through the Structural Funds, the New Entrant Reserve within the European Emission Trading Scheme and preferential loans offered both by the European Investment Bank (EIB) and the Environmental Protection Bank (Interview: PGE EB, July 2010).

In November 2009 the Polish Ministry of Economy adopted a new "Energy Policy for Poland to 2030", which plans an increase in the share of renewable energy resources in the final energy production up to 15% by 2020 and up to 20% by 2030. In addition to the need for energy efficiency and renewable energy, the document outlines the need for active participation in the initiative of the European Commission to construct large-scale CCS installations. Two CCS installations have been planned for Poland: one in Kędzierzyn and one in Bełchatów. The potential of the technology has been emphasized by a number of other high ranking political and scientific officials.[20]

In June 2011, the Geological and Mining Law was to amended to accommodate some of the legal questions related to implementation of the technology.

2 Case study method

The case study on the Bełchatow CCS project is based on a number of different sources, namely the Internet, academic publications, policy documents, newspaper and journal articles, and interviews with 15 relevant stakeholders (see table 1). These different sources have been used to reconstruct the chronology of events related to the Bełchatow CCS project up until May 2011. Attention has been paid in particular to the development of relations between the project developer and related companies on the one hand and members of the local community in several potential storage site areas on the other. The analysis of both interviews and other sources focused on the following issues:

- An overview of stakeholders
- An overview of the engagement process
- An overview of stakeholders' concerns
- Engagement experience
- The adequacy of the stakeholder engagement

Table 1. List of respondents interviewed

Number	Professional affiliation	Relation to the Bełchatów CCS project	Date
1.	EnergSys	An independent expert on power system analysis	March 2009
2.	PGE EB	Director of the CCS project	May 2009
3.	Trade union at PGE EB	Involvement in negotiating trade unions positions on the European Union Climate	May 2009

[20] During a conference of the Polish Chamber of the Liquid Fuels in October 2009, the Deputy Director of the Chamber, Marek Kucharski, called CCS one of the most promising technologies to reduce CO2 emissions particularly given that its utilization would still allow the polish economy to develop. This position is also supported by Dr. Henryk Jezierski, the country's chief geologist (ekobudowanie.pl 2009).

		Change and Energy Package in 2008	
4.	Trade union at PGE EB	Involvement in negotiating trade unions positions on the European Union Climate Change and Energy Package in 2008	May 2009
5.	Trade union at PGE EB	Involvement in negotiating trade unions positions on the European Union Climate Change and Energy Package in 2008	May 2009
6.	European Parliament	Rapporteur for the CCS Directive	June 2009
7.	PGE EB	Director of the CCS project in PGE EB	November 12th, 2009
8.	The City Council in Bełchatów	A supporter of the Bełchatów CCS project within the City Council	June 22nd, 2010
9.	An environmental NGO in Bełchatów	Skeptical towards the Bełchatów CCS project	June 22nd, 2010
10.	A local newspaper in Bełchatów	Responsible for the economic section of the newspaper	June 26th, 2010
11.	PGE EB	A member of the CCS Project Team in PGE EB	July 7th, 2010
12.	CZR NGO in Łódź	Directly involved in communication activities around the Bełchatów CCS project	February 24th, 2011
13.	PGE EB	A member of the CCS Project Team and of the CCS Communication Team in PGE EB	February 28th, 2011
14.	PBE EB	A member of the CCS Communication Team in PGE EB	February 28th, 2011
15.	City Council in Pabianice	One of the organisers of the Committee against CO_2 Storage	April 2nd, 2011

The interviews were semi-structured, based on a guideline developed in advance. All interviews focused on the Bełchatów CCS project, the information provided to the public and general public acceptance of CO_2 storage. All interviews were recorded and transcribed. Since anonymity was promised, we do not disclose names of our interviewees here. Unfortunately we did not manage to arrange interviews with Geofizyka Toruń S.A., a Member of Parliament from Zgierz (one of the initiators of the Committee against the CO_2 Storage), a Marshall from Łódź, a Director of the Environmental Department in PGE Mining and Conventional Energy in Łódź.

This case study report is structured as follows. The next section 3 provides some backgrounds on the Polish context for public participation. Section 4 starts with an introduction to the Bełchatów CCS project. Then, section 5 zooms in on the engagement and communication experiences in the Lutomiersk–Tuszyn area – one of the potential storage sites. The chronology of events, relevant stakeholders, engagement efforts by PGE and local stakeholder responses are addressed. Opinions that have shaped become clear and are summarized in the closing parts of section 5. Section 6 briefly discusses the adequacy of the engagement process in this area, followed by some general conclusions in section 7.

3 Polish context: permits, engagement and mobilisation of support

3.1 CCS and Permitting Requirements

In December 2009, the Ministry of Environment closed public consultation for an amendment to the Polish Geological and Mining Law Act in order to transpose the CCS directive (2009/31/EC). In summary, this amendment outlines what project developers will need to consider in undertaking CCS projects primarily with respect to selecting potential storage sites, CO_2 monitoring, and in terms of repairing the potential damage of CO_2 leakage from sites. Sequestration will require project developers to obtain a concession from the Ministry of Environment. A developer will have to present an Environmental Impact Assessment (EIA) report based upon which a decision to issue a permit will be granted. Storage will be monitored by the Ministry of Environment and the President of the Higher

Mining Office. A developer who obtains a concession to sequester CO_2 underground will be obliged to monitor the storage site and its geological structures, in addition to CO_2 purity of the injected carbon dioxide.

The exploration of geological structures for underground storage of carbon dioxide will be carried out within the designated search area outlined in the awarded concession. Companies testing and examining geological structures for underground CO_2 storage are charged with a fee which is then shared between the district government (60%) and the National Fund for Environmental Protection and Water Management (40%). Underground storage of CO_2 will therefore be confined to designated areas, to be entered in a mining registry overseen by the Geological National Research Institute. The concession will also indicate the maximum amount of CO_2 to be injected, the timeframe for which the license is granted and the long-term financial security of the project. The draft law also contains regulations concerning the conditions to change, refuse, transfer, terminate and revoke licenses.

The granting of concessions for the storage of carbon dioxide will be based on the opinion of the European Commission, and of the mayor or president of the city, or any other government official having jurisdiction within the concession area. Developers will be required to monitor the site for at least twenty years post-injection. Once long-term stability of the stored carbon dioxide has been demonstrated, the responsibility for monitoring the storage site will be taken over by the State. Closed storage sites will be administered by the Country's Administrator of Underground Storage Sites for CO_2.

The county level governments and borough leaders play a crucial role in the planning process as it relates to the approval of CCS projects. Although it is ultimately the provincial level government that approves projects, government officials at lower levels of government are consulted as part of the project approval process. Provinces are divided into *powiaty* (counties) – like the Bełchatów county with the *starosta* as its highest authority. *Starosta* is also entitled to issue construction permits for projects carried out within the county on behalf of the provincial government.[21] Counties are divided into *gminy* (communities or municipalities) with a *wójt* (borough leader) or *burmistrz* (mayor) as its main authority respectively. The borough leader is consulted and gives his opinion about projects carried out within the territory of his Community. Spatial development plans made at the higher administrative level (e.g. province) have to be taken into account at the lower administrative level (e.g. county or community). Major cities normally have the status of both gmina and powiat – like Bełchatów[22] (Prawo budowlane 1994).

Successful implementation of the entire project will require consultation with the general public for both areas selected for CO_2 storage, and for the areas through which CO_2 is to be transported. Public consultations required by law will take place in 2012 when PGE will be trying to obtain permits for exploiting the storage site and for constructing the transport pipeline.

3.2 Polish culture and engagement

Legislation with regard to issues like access to information, public participation in decision-making and access to justice in environmental matters has been discussed in Deliverable 1.1. of Workpackage 1 of the Near CO_2 project (Chiavari et al, 2009:44-50).

In general, Polish society is not highly engaged in public debates. According to Gumkowska et al. (2008:14), roughly 0.2 to 0.3 % of the Polish population have claimed to be involved in "social movements, global actions, campaigns addressed to large groups of citizens." Gliński (forthcoming: 11-22) points out that there is "an enormous distance between Polish society and other European societies as far as civic activity (measured in terms of organisational participation and/or member-

[21] According to the applicable Construction Law, Since 1999, the administrative division of Poland has been based on three levels of government. The territory of Poland is divided into *województwa* (provinces) – like the Warsaw and Łódź Provinces. The main authority of province is *wojewoda* and he or she issues construction permits for projects carried out within the territory of his or her province. The main authority responsible for organising work in the Province is *marszałek wojewódzki* (the province marshall).

[22] Poland currently has 16 voivodeships, 379 powiats (including 65 cities with powiat status), and 2,478 gminas.

ship) is concerned. The Poles declare the lowest civic participation among all 21 nations investigated by the European Social Survey."

He points out that despite the positive transformational changes, local communities rarely take the form of civic communities. Local government in Poland, especially at the county and provincial (voivodeship) levels, follow a 'self-government without participation' model (Gliński, forthcoming).

Public engagement on environmental issues in Poland should not be confused with the campaigning undertaken by international ENGOs (Environmental non-governmental organisation) with more sophisticated advocacy policies. Bełchatów has been targeted by ENGOs such as Greenpeace and WWF. The Bełchatów power plant ranked eleven in WWF's "Dirty thirty" (2007) and the local coal mine's devastating impact on the natural environment was described in a Greenpeace publication "The True Cost of Coal" (2008). In July 2007 several Greenpeace activists got on to the project site and painted "STOP CO_2" on a cooling tower to express their demand for a radical change in the Polish national energy policy. The case was taken to the local court and Greenpeace was fined 19,000 PLN to compensate for the damages of their action (Greenpeace 2007).

In terms of mobilising public opinion against CCS on a national scale, it is not clear whether Greenpeace is considered credible in the eyes of the Polish public. Their reputation was tarnished throughout the course of the EU Climate Change and Energy package debate. However, Greenpeace has a considerable potential to ally with various local NGOs in their protest actions and due to its capacity to quickly mobilize resources is often an important partner for them. For example, in 2009 it organised a protest against using new brown coal reserves in Poland together with many other Polish NGOs, one of which was the Center for Sustainable Development in Łódź (CZR) (Interview: CZR NGO, February 2011).

Referenda in Poland

According to Polish law, decisions to exploit new brown coal mines are taken at the local level. Referenda to seek input from the local population are in place when projects are considered controversial. In September 2009, in the region of Lower Silesia (with Wrocław as the main city in the region), a referendum took place during which the inhabitants of six districts – Lubin, Kunice, Ruja, Ścinawa, Miłkowice i Prochowice – could vote 'in favour of' or 'against' building a new open pit brown coal mine in the region. The referendum was preceded by a series of protests organised by the local public close to the site dedicated to open pit mine development.[23] Thirty three thousand people were entitled to vote. According to the applicable legislation, the referendum was valid given that more than 30% of eligible voting pool participated. In all districts, the inhabitants voted against the new investment (Energetykon.pl 2009, wnp.pl 2009). It is possible that a referendum will also be held once a storage site is selected for the Bełchatów CCS project.

4. Introduction to the Bełchatów CCS Project

CCS came on to the national policy agenda in 2009 when the Climate Change and Energy Package was adopted by the European Council and the European Parliament. In April 2009, the Member of the European Parliament, Jacek Saryusz-Wolski from Łódź, organised a conference in Łódź on the CCS project in Bełchatów. PGE Elektrownia Bełchatów (PGE EB) set out with its communication activities in September 2009 by organising a meeting in the Łódź Marshall's Office.

Table 2 Coverage of CCS in Polish media:

[23] According to a spokesman of the Lubin district, Janusz Łucki, building the open pit mine would involve the relocation of around twenty thousand people, would cause severe ecological degradation, and significant job losses. The coal deposit in this region is one of the richest in Poland, assessed at about 3 mln tonnes.

Three largest dailies:	
Rzeczpospolita	111 articles (from July 9th 2008 till May 26th 2011);
Gazeta Wyborcza	222 articles (from February 4th 2008 till May 26th 2011);
Dziennik	4 articles (from February 2nd till May 26th 2011);
Local daily in Bełchatów region:	
Polska the Times Dziennik Łódzki	20 articles (from 5th July 2008 till 26th May 2011);
Two largest weeklies:	
Polityka:	0
Wprost:	0
Business media:	
Gazeta Prawna	79 articles (from 20th May 2009 till 26th 2011)
WNP	343 articles (from 24th August 2006 till 26th May 2011)
Puls Biznesu	64 articles (from 24th August 2006 till 26th May 2011);

The development of the Bełchatów CCS project involves three key components: the installation of a Carbon Capture Plant, the construction of a CO_2 transport pipeline, and the designation of a CO_2 underground storage site. Actual and potential sources of finance for the Bełchatów CCS project are as follows (Interview: PGE EB, July 2011):

- European Economic Recovery Plan (EEPR) – 180 mln EUR – a contract signed May 5th, 2010 (30% of the estimated project cost);
- Emissions Trading Scheme (ETS) NER 300 Programme – an application submitted in February 2011 (20% of the estimated project cost);
- The Norwegian Financial Mechanism (NMF) – potential financing between 20–30 mln EUR (3% of the estimated project cost);
- Potential Polish government support within the Structural Funds;
- Commercial financing and own resources (47% of the estimated project cost);
- Potential support from the European Investment Bank;
- Potential support from the European Bank for Reconstruction and Development.

Installation of the Carbon Capture Plant

The installation of a Carbon Capture Plant (CCP) is to be integrated with a power generation unit of 858 MW. Based on the application of Advanced Amine Process technology (AAP), the facility will capture approximately 1.8 MT of CO_2 per year. The capture efficiency of the installation will be 80%. As part of the overall permitting process, PGE Bełchatów obtained a building permit on January 26th 2010 which became legally binding on February 22nd in the same year. For the capture component of the project, the Bełchatów Power Plant (BPP) cooperates with various companies. BPP cooperates with the Alstom Group in developing and applying the advanced amine technology, and with Dow Chemical in implementing the CO_2 absorbent.

Construction of a CO_2 Transport Pipeline

The second stage of the project requires installing a CO_2 transport pipeline and the related infrastructure necessary to transport compressed CO_2 to the storage site. This will involve obtaining a building permit by August 2013, with pipeline construction completed by December 2014. In completing the construction of the CO_2 transport component, PGE EB will work with Gazoprojekt a company that typically prepares feasibility studies for gas transport pipelines. The subcontractor for constructing the transport pipeline has not yet been selected. Three potential routes have already been taken into

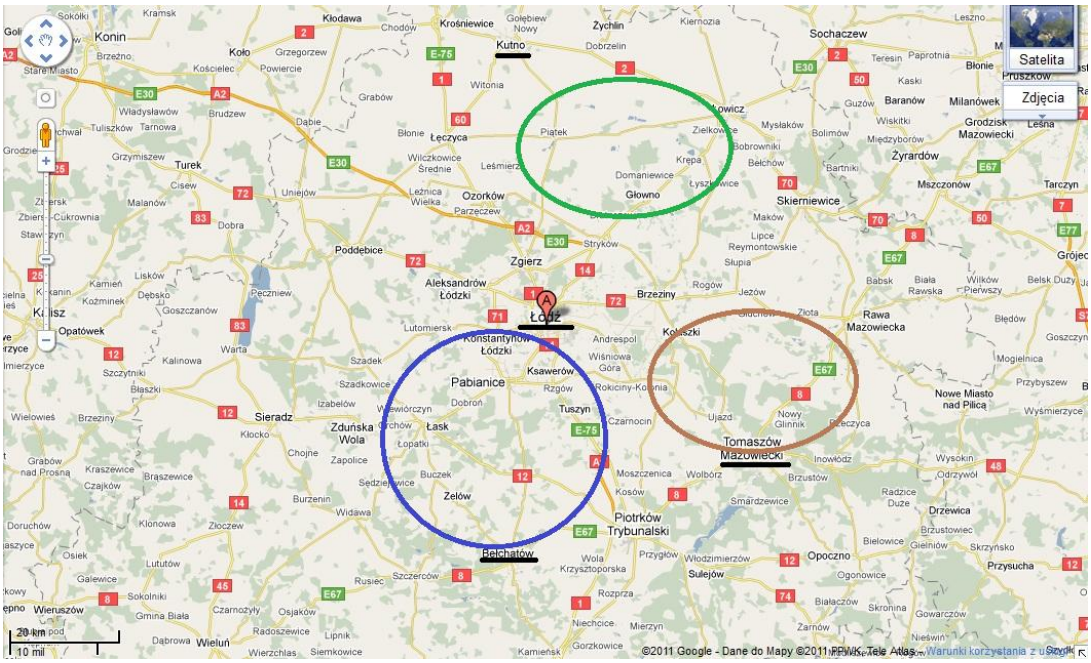
account in the spatial development plans of the Łódź Province (Interviews: PGE EB, November 2009; CZR NGO, February 2011). However, since the storage site has not yet been determined, there are no further concrete plans yet concerning the CO_2 transport route (and the issue of the CO_2 transport has not yet drawn much public attention).

Designation of CO_2 *Underground Storage Site*

The designation of a CO_2 storage site, which will allow for the injection of compressed CO_2 underground in to saline aquifers for permanent storage. Initially three potential storage areas were selected in (refer to areas circled in the map 2 below):

- Budziszewice – located 60 km away from the Bełchatów Power Plant (right hand lower circle);
- Lutomiersk-Tuszyn – located 45 - 60 km north of the Bełchatów Power Plant (left hand lower circle);
- Wojszyce – located about 115 km north from the Bełchatow Power Plant, this area was initially identified as the most promising one (top circle).

Map 2. Potential Storage Areas



The possibility to inject CO_2 in these areas would eventually need to be narrowed down to more specific project sites. In developing the storage component, PGE EB has worked with the National Geological Institute, Schlumberger and Geofizyka Toruń S.A. More partners will be selected through tenders. In 2010, geological surveys of the three potential storage structures have been carried out by Geofizyka Toruń S.A. and the National Geologic Institute. These activities involved characterising the geology of three potential underground storage sites. A final selection of the storage site is planned for summer 2011 (but not yet known at the time of writing).

5. Assessment of Public Acceptance in the Lutomiersk-Tuszyn storage area

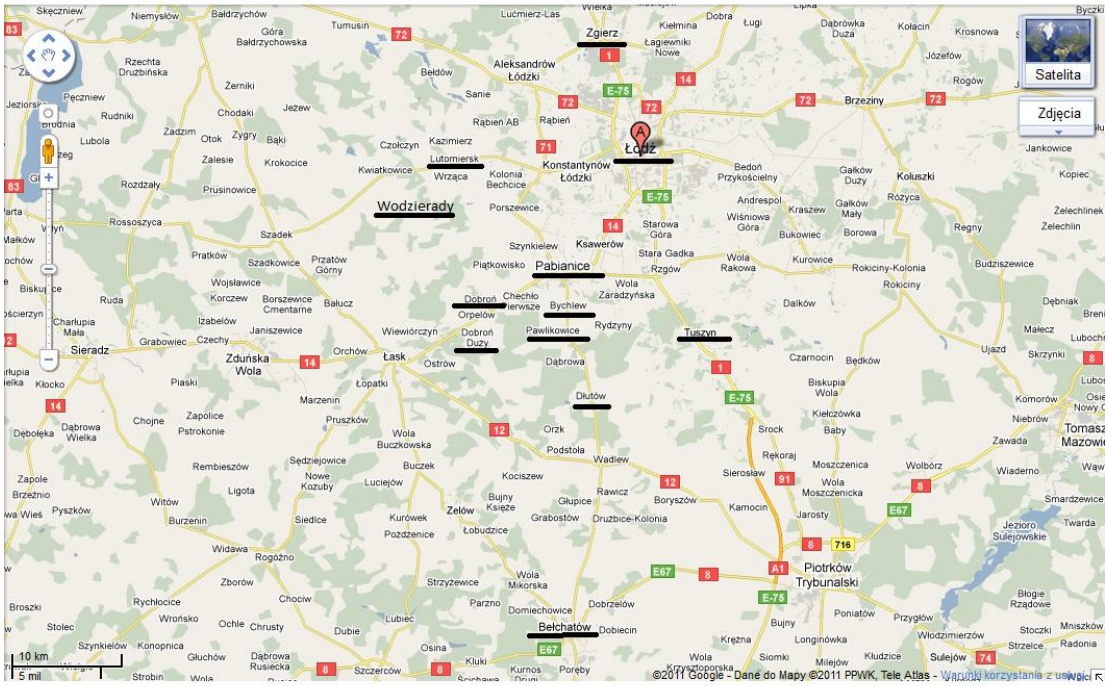
In the following, we provide an analysis of local responses to the Bełchatów CCS project for one of the potential storage sites, namely the Lutomiersk–Tuszyn geological structure examined by PGE EB as to its suitability for CO_2 storage. Of the three examined geological structures, this area is the clos-

est to the Provincial capital city Łódź and this site has been most widely covered by the media. We also show how local stakeholders were trying to reach to the national level stakeholders, for example the Ministry of Environment, in order to gain more leverage for their local claims.

5.1 Overview of Engagement Process within the Lutomiersk-Tuszyn Area

In September 2009 PGE organised a meeting in the Łódź Marshall's Office. The Łódź Marshall assisted PGE in organising this communications with the lower level authorities and borough leaders. PGE invited all borough leaders (50-60) from the area of the three potential geological structures for CO_2 storage (these boroughs are scattered in three encircled areas in Map 2 above) to this meeting. The attendance was very low and this might partly explain why many local residents in areas selected for geological examination were not properly informed about the Bełchatów CCS project. This may also have been the case in Pabianice, located within the Lutomiersk-Tuszyn storage area, where major opposition towards the CCS project arose. The Map 3 below Lutomiersk-Tuszyn site is encircled in Map 2. The towns underlined below in Map 3 are all located within this encircled area. Below we focus on this area in particular.

Map 3. The area of the potential Lutomiersk-Tuszyn storage site



End 2009, PGE applied for a building permit for the Carbon Capture Plant which was to be integrated with the newly-built 858 MW unit. In the preceding months PGE EB had met with officials of the Pabianice District, the Kutno District government and with the Krzyżanów Mayor.

PGE meets with stakeholders and borough leaders

On January 19th, 2010 PGE EG met with the Lutomiersk Community government. This meeting was also attended the National Geological Institute and by the leader of the NGO Center for Sustainable Development (CZR) in Łódź. CZR opposes CO_2 storage as an idea in general. In addition, the CZR leader also spoke on behalf of the Zgierz borough leader in opposing CCS (Interview: CZR NGO, February 2011). At that time Geofizyka Toruń S.A. had started geological examination within the Lutomiersk-Tuszyn storage area, in Jadwinin, Pawlikowice and Bychlew - villages and towns close to Pabianice. It is unclear whether CZR's opposing position also related to these activities by Geofizyka. On February 25th, 2010 a local daily referred to the unrest in Lutomiersk, stating that the meeting with

PGE in January 2010 had not calmed down the residents. It furthermore reported that the Lutomiersk borough leader had communicated his concerns about the CCS project plans to the Ministry of Environment (Bereszyński 2010a).

In early February 2010, PGE organised workshops in Bełchatów to discuss issues related to the safety of CO_2 storage. No information is available with regard to who took part in these meetings. From February until June 2010, PGE EB launched a series of individual meetings with borough leaders from the potential storage area: in the Dłutów Community, in the Pabianice Community Head Office, in Pawlikowice Community, in Bychlew.

Heated debate in media on CCS

On February 17th, 2010, the conservative daily *Nasz Dziennik* published an article (Austyn, 2010), arguing that Poland aims at becoming "the pioneer in storing liquefied carbon, thereby blocking investment in domestic geothermal". In order to support this argument, Professor Kozłowski from the Kraków Technical University was cited. Kozłowski states that developing CO_2 underground sequestration in Poland equals turning Poland into a "trash-dump of Europe". This phrase became catchy and was repeated by our interviewees from the CZR and the *Committee against* CO_2 *Storage*, as well as in other articles on CCS. He furthermore mentions risks of CO_2 storage, like groundwater water contamination or explosions.

Austyn (2010) also refers to a Law and Justice[24] Member of Parliament (MP), working in the Parliamentary sub-commission for the amendments to the Mining and Geological Law. This MP claims that by amending the Mining and Geological Law, the government is trying to give access to natural resources of Poland to some strangers. The relation of this statement to the CCS project is not clear. Perhaps the author confused CCS with shale gas exploitation projects, which became a hot topic for debate in Poland at the beginning of 2010. According to the article, the MP also pointed out that the new Mining and Geological Law would oblige county leaders to assist project developers in organising forced re-locations, if needed. Further in the text, the author also cites Tadeusz Rydzyk, the Director of the largest and very influential catholic radio station *Radio Maryja* who issues a warning with respect to the unforeseen consequences of CO_2 storage. Rydzyk was one of the first people in Poland to launch geological examinations for the exploration of geothermal energy in Toruń (Tvn24 2010). At the end of the article, the author cites an expert from the National Geological Institute in Warsaw, Dr Adam Wójcik, who states that CO_2 storage is in fact nothing new and has already been used as part of enhanced oil recovery. He also argues that from a geological point of view, CO_2 storage is not dangerous. The article quotes the borough leader from Lutomiersk – an opponent to CO_2 storage – who points out the planned investment in geothermal energy, which now interferes with plans to store CO_2 in the area of Lutomiersk. The vice-leader of the Eastern Łódź County adds that the supporters of CO_2 storage perceive geothermal waters as a perfect medium for storing CO_2. He points out that in the Koluszki Community is a borehole which in the future might be used for balneology – health treatment with geothermal waters. He underlines that, if CO_2 storage hinders geothermal investment, development plans of many communities in the Łódź Province will have to change. He concludes that the debate on CO_2 storage should be launched from scratch. According to him, one of the issues, which should be debated in the first place is the controversial issue of anthropogenic climate change.

This article was "re-printed" on twelve other internet portals – some of which are widely read[25]. The other web sites are niche news sources, discussion portals or blogs. Although *Nasz Dziennik*, the daily that published the influential article, is generally perceived as controversial and is regularly criticized or even ridiculed in the mainstream media, like *Gazeta Wyborcza*, it is quite influential in the eurosceptical, conservative and anti-globalist circles. Based on our interviews and on the analyzed media content, it seems that this article has set main frames for the anti-CCS debate:

[24] An opposition political party in the Polish Parliament called Prawo i Sprawiedliwość (PiS).
[25] www.wnp.pl, wyborcza.pl and www.radiomaryja.pl

- perceived opposition between CCS and geothermal (eagerly repeated in other articles[26])
- perceive potential threat of forced re-locations
- perceived risks like water contamination, explosions
- the limited influence of communities and their leaders on local development plans

Our interviewees from CZR referred to "what *Nasz Dziennik* wrote" and to "what Rydzyk in *Radio Maryja* said" (Interview: CZR NGO, February 2011). Moreover, Professor Kozłowski seems to have established himself as an expert voice of the anti-CCS defenders of geothermal projects in Poland. He was also cited in other articles and could be heard on the radio, where he among others rehearsed his statements on the conflict between CO_2 storage and geothermal investment as well as the threat of water contamination of geothermal waters (Alemiasto.pl 2010, Polskie Radio 2010). His discussion opponent, Professor Jóźwik from the Łódź Technical University rebutted Kozłowski's claims by pointing out that CO_2 storage and geothermal waters are located in different levels of the subsurface.

Geofizyka's activities trigger local concerns

In the meantime, research activities launched by Geofizyka Toruń S.A. in the area of Pabianice led to contention. The permit for geological examinations has been awarded to Geofizyka Toruń S.A. by the Ministry of Environment and local authorities had been informed about the company's plans to take up such activities. However, local authorities do not take a decision on whether or not a company is allowed to undertake research activities within a given territory. The landowners whose land a given company wants to access in order to carry out geological examinations give the final permission. Geofizyka Toruń S.A. had signed contracts with landowners in the area of Pabianice.

A politician from Pabianice stated that Geofizyka Toruń S.A. misled local residents as to the purpose of their research activities, claiming that the company had said to be investigating geothermal waters and not exploring sites for CO_2 storage (Interview: Member of the City Council in Pabianice, April 2011). Members of CZR argued similarly (Interview: CZR NGO, February 2011). One of the leaflets distributed by Geofizyka Toruń S.A. among local residents only described research activities to be undertaken, leaving the purpose of their examinations unclear (Geofizyka 2010). According to our interviewee (Interview: Member of the City Council in Pabianice, April 2011) as well as to the news articles (Bereszyński 2010c, Blewąska 2010), local residents in Pabianice were not aware of the connection between Geofizyka's activities and plans for CO_2 storage and this was the main basis for their complaints and concerns.

However, there was additional confusion. According to news articles (Życie Pabianic 2010c, Moje Miasto Pabianice 2010), there were two companies active in the area of Pabianice. Next to Geofizyka Toruń S.A. which signed about 200 contracts with local residents to access their land for geological and seismic inquiries, there also was the Enterprise for Drilling and Mining Works from Warsaw which made two boreholes – one in Jadwinin and one in the other site near Kutno. In order to make this borehole, the Enterprise erected a high drilling tower on one piece of land in Jadwinin. Thus triggered concerns among residents from Jadwinin, Pawlikowice and other places close to Pabianice and rumors rose about CO_2 storage in the area after the building of drilling tower (Życie Pabianice 2010c; Moje Miasto Pabianice 2010; Interview: Member of the City Council in Pabianice, April 2011). PGE EB employees tried to explain in vain that drilling carried out by the Enterprise and geological and seismic examinations carried out by Geofizyka Toruń S.A. are two separate things (Moje Miasto Pabianice 2010). In March 2010, negative reactions from borough leaders rose, primarily directed at Geofizyka Toruń S.A. The Enterprise was much less visible and rarely mentioned by our interviewees or in the press. The view of the drilling tower and the noise of drilling may have intensified negative emotions vis-à-vis Geofizyka (even though it was not their tower).

[26] *Dziennik Łódzki*, February-September 2010

Drilling 2,500 meters underground in Jadwinin close to Pabianice

Source: http://fs1r.wrzuta.pl/obraz/powieksz/8kRCEDyhx3i

According to the interviewee from CZR, the borough leader from Lutomiersk issued a complaint to the Minster of Environment asking him to withdraw the permit obtained by Geofizyka Toruń S.A. for geological screening in the area of Lutomiersk. The Ministry replied that the borough leader was not a party in that matter. The borough leader appealed to the administrative court, which replied that borough leaders were entitled to act on behalf of local residents despite some of the legal technicalities. Some community councils also adopted a resolution stating that the company should stop its activities in the area. A borough leader from Wodzierady adopted a resolution and issued an announcement stating that the permit for geological research obtained by Geofizyka Toruń S.A. from the Ministry of Environment was not binding for the Wodzierady area. The Ministry of Environment directed her to the Local Government Appeal Committee and she lost the case (Interview: CZR NGO, February 2011).

On March 1st, 2010, a member of the City Council of Pabianice sent a letter to the President of Pabianice – underlining risks like contamination of the underground geothermal waters, explosions, CO_2 leakage or contamination of soil with mercury. The letter asked for investigating whether Pabianice could be withdrawn from the project of underground storage (Co2.krunet.pl 2010a). The President replied that he had not been informed about the plan to store CO_2 in the area of Pabianice and promised to investigate into this matter and report back to the City Council (Co2.krunet.pl 2010b).

On March 16th, 2010, PGE EB together with Geofizyka Toruń S.A. sent an open letter to the local authorities and residents from all three areas selected for geological research. The letter explained that PGE EB was carrying out a CCS project, which involved capture, transport and underground storage of CO_2. It emphasized that geological research done by Geofizyka Toruń S.A. was necessary to ensure the future safety of CO_2 storage. The letter also stated that PGE EB was aware of emotions

raised by the CCS project locally. PGE EB stated that it realized that its communication campaign had failed to reach a significant number of local residents. The letter pointed out that the final decision about storing CO_2 could only be made after thorough geological research and after compliance with other permitting and communication processes foreseen to take place in 2012 as regulated by the Environmental Protection Law and by the Construction Law (PGE, Geofizyka Toruń S.A. 2010).

By the end of April 2010 the *Committee against* CO_2 *Storage*[27] invited the CZR from Łódź as an independent expert on CCS so that they could participate in their first meeting in Pawlikowice (Interview: Member of the City Council in Pabianice, April 2011). Representatives of PGE EB and Geofizyka Toruń S.A. came to this meeting, which was well-attended by local residents who raised concerns not only about the safety of the CO_2 storage site but also about its socio-economic implications. For example, they asked whether the storage area could become a mining area under the supervision of the National Mining Institute and whether CO_2 storage could become an obstacle to geothermal investment (Interview: Member of the City Council in Pabianice, April 2011). According to the politician from Pabianice and members of CZR, these broader socio-economic concerns have never been sufficiently addressed by PGE EB (Interviews: CZR NGO, February 2011; Member of the City Council in Pabianice, April 2011).

Similar meetings of the *Committee against* CO_2 *Storage* were organised in Jadwinin at the drilling tower, in Pabianice and Lutomiersk. According to the founder of the *Committee against* CO_2 *Storage*, the meeting in Pabianice was not very well attended. The interviewee justified it by saying that Geofizyka's examination activities were a bit more remote from Pabianice and thus the residents were hardly interested in it or emotional about it (Interview: Member of the City Council in Pabianice, April 2011). That meeting was joined by a MP residing in Zgierz and Pabianice from the Law and Justice Party (PiS).[28]

In the meantime, CZR also organised a meeting in Bychlew of which we know very little. A local television station in Łódź also broadcast a programme dedicated to the project, which featured representatives of PGE EB, the National Geological Institute, CZR and of the *Committee against* CO_2 *Storage*. In April 2010 Geofizyka Toruń S.A. accelerated its work in the area of Pabianice (Interviews: CZR NGO, February 2011; Member of the City Council in Pabianice, April 2011) and extension of Geofizyka's working hours until late in the evening resulted in residents complaining about constant noise (Interview: Member of the City Council in Pabianice, April 2011).[29] At the end of April 2010 about 31 out of 179 of residents who had initially signed contracts with Geofizyka Toruń S.A. to give the company access to their land requested terminations on the basis of misinformation (Bereszyński 2010b, Bereszyński 2010c). Some residents openly broke their contracts by refusing to allow the company's technical staff access to their land (Bereszyński 2010c, Bereszyński 2010d, Interview: Member of the City Council in Pabianice, April 2011). Adam Skawiński, one of the residents demanded termination of the contract based on the arguments that the contract did not state the dates of Geofizyka's activities and their purpose (Bereszyński 2010c). Most of the protests against Geofizyka's research and potential CO_2 storage in the area of Pabianice took place in April/May and June 2010. Also then posters against CO_2 storage appeared on people's fences in Jadwinin (Interviews: PGE EB, February 2011; CZR NGO, February 2011; Member of the City Council in Pabianice, April 2011; co2.krunet.pl 2010). People were also afraid that geological examinations would result in re-naming of their territory into a mining area, which would lower the investment attractiveness of the region (Naszemiasto.pl 2010).

[27] The Committee was launched in April 2010 by several local politicians from Pabianice to protest against geological examinations and future CO_2 storage in the area.

[28] The latter got involved in this debate already in February 2010 when he posed a question concerning the Bełchatów CCS project to the Minister of Environment (see Matuszewski 2010).

[29] Here again there was confusion between Geofizyka and the Enterprise. According to news articles, it was the Enterprise which intensified its drilling activities (Moje Miasto Pabianice 2010b).

Translation: "Once they pump CO_2 underground, there will be no seeds"

Translation: "Land for the people, not for CO_2"

Source: http://co2.krunet.pl/?page_id=16

On April 29th 2010, the borough leader from Zgierz organised a conference entitled "CO_2 storage – Benefits and Threats". It was attended by PGE, the National Geological Institute, CZR and borough leaders from the Łódź Province. In early May, this borough leader initiated a petition against the in-

vestigation undertaken by Geofizyka Toruń S.A. and against CO_2 storage was signed by many local borough leaders. The addressee of this petition was the Minister of Environment. The President of Pabianice and an MP from Pabianice were among the signatories (Moje miasto Pabianice 2010a; Interview: CZR NGO, February 2011).

On June 4th, 2010 an internet web site was launched with a petition against CO_2 storage in the Pabianice county, addressed to the Prime Minister (Michalak 2010). Up until May 2011 202 people have supported the petition.

At the end of June 2010, individual meetings with borough leaders were organised by PGE EB, addressing plans to have a series of local meetings with residents in July, August and September 2010 (Interview: PGE EB, February 2011). In June 2010, the National Geological Institute organised a conference to which it invited all borough leaders, CZR and the highest level of management at PGE. Some of the borough leaders gave presentations about the CCS project as seen from a local perspective.

In June 2010 Geofizyka Toruń S.A. suspended its activities in Pabianice. *Dziennik Łódzki* writes that in the mid-July 2010 the residents of Bychlew, Jadwinin and other small places in the area of Geofizyka's investigations, together with more than ten borough leaders, issued a protest petition to the Ministry of Environment against CO_2 storage in the area of Pabianice (Bereszyński 2010d). This petition was handed over by the Minister of Environment to PGE EB. Around August 20th, 2010, PGE officially announced that Geofizyka Toruń S.A. will not resume the suspended geological examinations in the area of Pabianice and will not fine those who broke their original contracts (Naszemiasto.pl 2010).

In July and August 2010 PGE met with authorities responsible for the geological research structure within the limits of Lutomiersk-Tuszyn geological structure (Kukieła 2011). On August 11th, 2010, PGE and Geofizyka Toruń S.A. met with the county authorities in the Bełchatów County Office (Fakty 2010). PGE EB assigned Geofizyka Toruń S.A. new areas for examination in Dłutów and Dobroń – on the border of the Lutomiersk-Tuszyn site (Kukieła 2011, Bereszyński 2010d). According to *Dziennik Łódzki* (Bereszyński 2010d), no protests or residents' petitions against Geofizyka's activities were organised in the new locations (Bereszyński 2010d, Naszemiasto.pl 2010).

Between July and September 2010, PGE EB organised meetings with local communities which, according to the PGE EB's CCS Communication Team, were a big success (Interview: PGE EB, February 2011). Geofizyka Toruń S.A. and experts from the National Geological Institute accompanied PGE EB to these meetings and explained the technicalities of geological examinations and CO_2 storage. According to the communication team from PGE EB, there was a high turnout at these meetings and the residents eagerly discussed the technical issues. Based on this experience, PGE EB published a folder with the frequently asked questions and answers concerning CCS. Experts from the National Geological Institute and Geofizyka Toruń S.A. also contributed to this publication (Interview: PGE EB, February 2011).

In September 2010 a Facebook page called "No for CO_2 storage near Pabianice" was created by the Law and Justice (PiS) party from Pabianice – but there is little activity on the site since from January 2011. Also in September 2010, a web site co2.krunet.pl was launched which did become quite a vibrant space for anti-CCS discussion. It was created under the patronage of the Law and Justice Party (PiS) from Pabianice, two local activists whose affiliation is not known to us, and an Association Supporting Local Initiatives Victoria. The web site published articles, photos and documents related to the CCS investment in Bełchatów. In May 2011 the co2.krunet.pl web site did not exist anymore.

On September 30th, 2010 the Law and Justice Party (PiS) organised a meeting with Professor Kozłowski who had earlier featured in the article from Nasz Dziennik published in February 2010 (see Austyn, 2010). The meeting was also attended by the leader from CZR NGO, Zbiniew Tynenski and the founders of the co2.krunet.pl web site (Życie Pabianic 2010d). Geofizyka finally ended its work in that area in October 2010 (Bereszyński 2010d).

In November 2010, the Technical University of Łódź organised a regional conference on CCS. As PGE states in the CCS network report "all arguments against the CCS technology presented by a local NGO were rebutted by scientists and experts from Polish Geological Institutes" at this meeting.

Table 3 Overview of key stake-holders in Lu-tomiersk-Tuszyn area Key actors	**Their role in the CCS project**	**Their communication engagement**
PGE Elektrownia Bełchatów	Chief developer of the CCS project.	PGE's CCS Communication Team is composed of four people tasked with developing and implementing a communication strategy for the Bełchatów CCS project. It has a separate project budget. It engaged in communication activities with local authorities, residents and other stakeholders.
Geofizyka Toruń S.A.	Subcontracted by PGE EB for delivering geological services	Geofizyka Toruń S.A. has not succeeded in creating a reliable image in the area of its work in Pabianice – where many local residents felt either misled or misinformed.
The National Geological Institute	The main research partner of PGE EB for the CCS project.	The National Geological Institute was PGE EB's main expert assisting PGE EB in their communication processes. It assisted PGE EB's CCS Communication Team in most of their meeting and conferences and provided with scientific expertise and argumentation. It was communicating to local authorities and to the public about geological risks of the CCS project.
Alstom	The main partner of PGE EB for constructing the capture equipment	Not involved in the communication processes
Schlumberger	PGE's subcontractor for modeling data on three potential geological structures for storing CO_2.	Not involved in the communication processes
Ministry of Environment	The permitting institution for geological research	The Ministry of Environment granted permission to Geofizyka Toruń S.A. for carrying out geological research in the selected sites for potential CO_2 trorage. It was the main addressee of local petitions against geological works carried out by Geofizyka Toruń S.A. in the Łódź areas. It was not directly involved in communicating about the Bełchatów CCS project. An inter-Ministerial CCS communication team has been established, but has not yet been involved in any concrete communication activities.
The Marshall in Province of Łódź	The Marshall is the chairman of the Province - the executive body of the Provincial government.	The Provincial Marshall is the highest representative of each Province and as such responsible to facilitate communication between the developer active in the Province and the Provincial communities. Played a neutral role by organising meetings between the PGE EB CCS Communication Team and the community level authorities.
Community level authorities	Borough leaders and the members of the community councils.	Their level of engagement ranged from support, disinterest in the CCS project, passive acceptance, manipulation of information about the CCS project, to an open conflict with the developer and the regulator.
NGO for Sustainable Development in Łódź (CZR)	An opponent of CCS promoting investment in geothermal energy	Played the role of expert advisor on CCS both for some local authorities and for the general public. CZE got involved in the communication process from early onwards and managed to fill in the communication void created by the relatively passive stance of PGE EB in the first half of 2010.
A Civic Committee against CO_2 Storage in	Opponents to CO_2 storage established	It was established as a response to geological works of Geofizyka Toruń S.A. in the area of Lutomiersk-Tuszyn potential storage site.

Pabianice	by local residents from Jadwinin and Pawlikowice and local authorities from Pabianice.	It organised four consultation meetings including representatives of PGE EB, the National Geological Institute, Geofizyka Toruń S.A., CZR and local authorities. It sent out two petitions against geological works of Geofizyka Toruń S.A. to the Prime Minister and President, the Minister of Environment. It provided a forum for local stakeholders with worries about risks related to CO_2 storage and potentially negative socio-economic consequences of the CCS project. Later in time the Committee transformed into a group working on developing regional strategies for alternative green energy technologies and energy efficiency
Law and Justice from Pabianice (PiS Pabianice)	Political party opposing CO_2 storage.	Enlisted to the camp of opponents to CO_2 storage through a local Member of Parliament, Marek Matuszewski from PiS. PiS Pabianice launched a facebook web site against carbon storage in Pabianice and a web site www.co2.krunet.pl with information about the threats of carbon storage and about the local opposition to CCS. PiS Pabianice framed the CCS project as a project of the governing party Civic Platform (PO) Party.
Professor Kozłowski from the Technical University in Kraków	Opponent of CO_2 storage and a defender of geothermal projects in Poland.	Became an often-cited expert defending geothermal projects in Poland framing it as opposition towards CCS.

5.2 Overview of Stakeholder Concerns

Both the Bełchatów power plant and the adjacent brown coal mine are strong bastions of labour unionism and CCS has also been endorsed by the local trade unions (Interviews with trade union leaders in PGE EB, May 2009). The Bełchatów CCS project itself is rather unlikely to have an impact on the local labor market, since the labor force for building the installation will most probably come from abroad (Interviews with trade union leaders in PGE EB, May 2009). However, the unions agree that CCS could help the power plant develop while sustaining the current level of employment in the coal industry[30].

Nonetheless, CCS faces opposition from a number of different interest groups, including advocates of geothermal energy, who have expressed concerns about the volatility of the underground storage of CO_2.[31]

We have presented the opinions of a number of different stakeholders in relation to the implementation of the CCS project, and the actions of the project developers involved. It has become clear that the NGO CZR managed to establish itself as an independent local expert on CCS to many borough leaders, local politicians and local residents concerned about the CCS project plans. CZR also became a partner of and an expert for the *Committee against* CO_2 *Storage* in Pabianice. One could even say that CZR managed to fill in the communication void created by PGE EB's inability to reach local residents. Many of the concerns raised by the borough leaders, the residents and by the *Committee against* CO_2 *Storage* were first consulted about with CZR. Given that residents were primarily

[30] Miners and energy workers' unions from Bełchatów were active during debates on the allocation of CO_2 emission quotas for both second and third phases of the EU-ETS, and in relation to the negotiation of the EU climate change and energy package (Interviews with trade union leaders at PGE EB in May 2009).

[31] In 2008, before the European Council's final decision on the Climate Change and Energy package, the Polish Geothermal Association published its position on CO_2 sequestration (Energetyka 2008). The association warned against the EU's plans to store CO_2 underground that might result in an ecological and health catastrophe comparable only to the effect of weapons of mass destruction (Energetyka 2008).

informed by this one organisation, their opinions were relatively homogenous with most respondents focusing on either technological and environmental risks, or socio-economic risks.

These perceived risks centred around: the potential for CO_2 leakage; earthquakes; underground explosions; suffocation of humans and animals; the risk that the ground could rise; drinking water contamination; soil contamination and the souring of underground waters. These concerns were quite extensively addressed by the PGE EB's and the National Geological Institute's experts at different meetings with the local authorities and the general public. They were also addressed in the printed communication materials prepared by PGE EB. The National Geological Institute also issued a reply to CZR's concerns in its professional journal, providing evidence disputing their claims.

Perceived socio-economic risks of the CCS project focused on: potential land de-valuation within the storage area; potential relocation of the population from the area designated for storage; the potential to convert the area designated for storage into a mining area to be regulated by the National Mining Institute; the potential conflict between the CCS project and geothermal projects in the area designated for storage; and the potential increase in electricity prices. Those respondents critically about the CCS project indicated that these concerns have not always been addressed in a satisfactory manner by PGE EB and its partners (Interviews: CZR NGO, February 2011; Member of the City Council in Pabianice, April 2011).

As to the residents' concerns regarding a potential conflict between the CCS and geothermal projects, PGE EB argued that geothermal waters in the Łódź region were not hot enough to make geothermal projects economically viable on a larger scale (Interview: PGE EB, February 2011). However, CZR argued against this in September 2010, by publishing information on its web site that according to the organisation's source, drilling in Jadwinin in the Pabianice Community resulted in the discovery of low-mineralized geothermal waters of temperatures of around 70 degrees Celsius suitable for drinking, health and touristic purposes.[32]

There was a third category of concerns regarding the overall quality of communication relating the CCS project to a broader public. Stakeholders from the CZR NGO and the politicians from Pabianice not only complained about the quality of PGE EB's engagement activities, but also about the Polish government's failure to engage in discussions related to the implementation of low-carbon technologies in Poland. They pointed out that decisions crucial to Poland's economy were being made at the highest government level without making any effort to communicate it well in advance to the public (Interview with CZR, February 2011).

5.3 Overview of Engagement Experience

The CCS project developed by PGE EB was a new frontier for local residents and authorities. There certainly was and still is a great need to exchange information and debate various concerns including those that are non-technical. Therefore, all opportunities provided by PGE EB for locals to discuss the CCS project, to challenge each other's views and to publicly raise concerns were received positively by the local stakeholders. However, the way in which PGE EB engaged with stakeholders, particularly in terms of the timing, has been criticized. CZR members expressed great disappointment with the lack of public consultation undertaken in relation to the Bełchatów CCS project throughout the early planning stage (Interview: CZR NGO, February 2011).

What was most criticized by both CZR and the politician in Pabienice, was the information provision by Geofizyka Toruń S.A. in the Pabianice area in relation to the purpose of the geological research carried out. We do not know whether similar events occurred in the two other locations where Geofizyka was conducting research activities. One reason for these misunderstandings may have also been the absence of the borough leader from Pabianice at the October 2009 meeting held at the Łódź Marshall's Office organised by PGE EB. However, despite this fact, neither Geofizyka To-

[32] http://www.czr.org.pl/

ruń S.A. nor PGE EB have subsequently made a serious effort to visit the residents of Pabianice or to check in any other way whether the residents had been informed well enough.

There were also negative experiences on the side of PGE EB. Communication experts from PGE EB were disappointed with a low interest in the CCS project on behalf of local authorities. Some of them never appeared at meetings organised by PGE EB and others never passed information on the CCS project over to the local residents or delayed it substantially. Moreover, CCS was used by some of the local politicians during the local election campaign to escalate people's fears, while promising to end the controversial investment once they got elected (Interview: PGE EB, February 2011).

Distrust and conflicts between PGE EB and some of the local stakeholders were apparent in particular in the Lutomiersk-Tuszyn area. This may have negative consequences for the CCS project in the future when PGE EB reactivates its communication with local stakeholders and the public at the selected storage site. The CCS opponents (CZR and the *Committee against* CO_2 *Storage*) are now well organised and communicate with each other. They have launched a regular working group consulting potential green technology providers in the community. They have been successful in framing the CCS project as a plan that is "enforced" by the European Commission and big capitalist interest groups supported by the Polish government. A local alternative to CCS is proposed in the form of development of potential geothermal technology.

Table 4: Reconstruction of opinions actors expressed about other actors (based on interviews, press articles, and petitions).

	PGE EB	**Geofizyka Toruń SA**	**Borough leaders**	**CZR**	**Committee against** CO2 **Storage**
PGE EB		Geofizyka Toruń S.A. did everything well. People did not react rationally to Geofizyka's activities.	Some are cooperative, some used CCS as a political tool in elections. They learn quickly. Borough leaders are not always interested in the topic; they tend to be late in passing information on to the residents.	CZR manipulates information. CZR raises irrational concerns which raise unnecessary worries among people about the CCS project plans.	n.a.
Geofizyka Toruń SA	n.a.		n.a.	n.a.	n.a.
Borough leaders	PGE EB did not communicate with all borough leaders about the project plans.	Some borough leaders had problems with the way in which Geofizyka Toruń SA was behaving and wanted the company to stop its activities.		For some borough leaders, CZR was regarded a good ally and reliable expert with regard to the CCS plans.	In the area of Pabianice the Committee is trusted and good in mobilizing support against CCS.
CZR	PGE is not open about the costs of the CCS project. PGE it looks down on people and is not honest about all the risks that a CCS project involves.	Geofizyka Toruń S.A. was not honest to people about the real purpose of geological research.	Borough leaders are a bit lost and relatively powerless against the state and private investors, they need support from independent experts. They		The Committee is an important ally of CZR, it shows that people are concerned and need support.

			also need tools for better engagement and legal advice on their rights, but they learn quickly.		
Committee	PGE EB is passive in its communication about the CCS project, it does not address all the concerns expressed by people	Geofizyka Toruń SA was not honest about the real purpose of their research activities,	Borough leaders need support and guidance, they are often lost and they can be easily manipulated (e.g. by PGE EB).	CZR is a valuable source of independent expertise on the CCS technology and on alternative low-carbon energy sources.	
Residents	varying opinions about PGE EB	Varying opinions. Some residents from the Pabianice area found Geofizyka Toruń S.A. dishonest.	n.a.	They have varying attitudes to CZR.	Some of the local residents of Pabianice trust the Committee.

6. Adequacy of the Engagement Process

The engagement process was adequate in relation to the legal framework. This framework is in itself is not very conducive to a broader uptake of stakeholders' concerns and opinions. Before the project started, an independent company prepared an Environmental Impact Assessment report for the three components of the CCS project: capture installation, CO_2 transport and CO_2 storage. This document was made available to the public for consultation. The EIA document was accepted without major changes. Once the actual storage site has been selected, two more EIA reports will be prepared: one for the selected storage site and one for the selected CO_2 transport route. These documents will again be made available to the public for consultation.

In general the consultation process exceeded the minimum requirements required by law (these minimum requirement involve the public consultation in relation to the EIA). According to PGE EB's CCS Communication Team, the "local campaign" launched by PGE EB in the Summer of 2010 was the most successful, it involved organising local meetings with residents in their communities and explaining the technicalities of the project. We do not know whether broader socio-economic implications of the CCS project have been addressed at these meetings, however no severe protests have arisen in association with the PGE EB "local campaign."

The overall adequacy of the engagement process can be evaluated in relation to the example of the engagement processes in the area of Pabianice. This example shows the inadequacy of PGE EB's efforts and a failure to generate trust in the developers in the course of carrying out geological research activities in that area. It is difficult to assess why in other locations, conflict between Geofizyka Toruń S.A. and the residents did not materialise. We tentatively hypothesise that one of the reasons why the conflict in the Lutomiersk-Tuszyn area was so strong, was due to specific interest in the area on the part of CZR. In 2006, CZR invested a lot of energy in developing "green" investment projects in this area usually based on the use of geothermal waters. One of their flagship projects is the "Rogóźno project", a geothermal complex located on the border of the Lutomiersk-Tuszyn structure. Therefore, CO_2 storage in this area could become a major obstacle for CZR's plans.

The overall adequacy of the engagement process can also be evaluated in relation to the communicated information. The stakeholders interviewed complained about the technocratic approach of PGE EB and its partners, who mostly addressed the technical aspects of the CCS-related risks. PGE EB did not send a clear message about the socio-economic implications of the project – about the implications for the living standards in the areas designated for potential storage sites and in relation

to future geothermal investment. The misunderstanding about Geofizyka's activities has contributed to creating a negative image of CCS locally.

From CZR's viewpoint, the engagement process was inadequate also in terms of discussing the actual nature of the engagement process itself, and in relation to some of the higher-level geopolitical issues. According to CZR, engagement with the local public should have taken place at a much earlier stage of project development when decisions were being made about having the CCS project in Bełchatów. CZR managed to frame the conflict as one of opposing interests between "European" (enforced, outsider) CCS and "domestic" or "local" geothermal projects.

7 General Conclusions

So far, the engagement process can be characterised as a "not always successful attempt to establish a dialogue". PGE EB took up a technocratic approach rather than a participatory one, while the latter could have generated more trust in the project and the developer. PGE's approach conforms to the nature of Polish society, which is often characterized as distrustful towards state institutions and private companies. The latter often try to avoid engaging "common people" who are perceived as an obstacle for efficient project implementation. Participatory approaches to investment and siting processes are hardly encouraged by national policy, which tend to narrow down the scope of situations in which citizens may legally express their opinions on infrastructure projects. An example of this is the adoption of a "special act" which decreases the formally guaranteed level of public participation – intended to accelerate highway construction. One expert for organising communication campaigns for the Polish Ministries, during a conference devoted to developing CCS in Poland, expressed regret that in case of CCS Poland will unfortunately not adopt a similar "special act" (Warsaw, April 2011).

This kind of communication void created by the state and often by the project developers themselves may in the future be more and more eagerly filled in by non-governmental organisations, politicians or residents in particular localities. The growing quality of internet access in Poland provides people with the possibility to learn about new technologies, exchange opinions and mobilise common actions. The establishment of the *Committee against* CO_2 *Storage* in Pabianice, its cooperation with CZR from Łódź and launching of the web site co2.krunet.pl are good examples of how the Internet can be used to mobilise the public. The description of public engagement at the Lutomiersk-Tuszyn area, illustrates how the Internet was used to mobilize the support of actors based in the central, biggest city in the Province – Łódź – and a couple of smaller cities located close to Łódź – Pabianice and Zgierz.

While civil society is still considered to be relatively weak and poorly organised in Poland, over twenty years of democracy provided conditions for some organisations to develop and root themselves well into their local environments. CZR is a good example of such an organisation, which, with its almost ten-year-long experience and local engagement, established itself as a locally important player with interests in developing particular local projects and promoting some technologies over others. Such organisations, usually more trusted by residents than private developers, may be particularly important actors to be addressed by the private developers and engaged in a more equal dialogue.

Last but not least, the economic viability of the CCS project in Bełchatów and access to external funding for constructing new installations will be crucial for the future of this technology in Poland. In particular, the impact of CCS on electricity prices in Poland will be vital for its general public acceptance. If electricity prices increase considerably, CCS may become an important point on political agendas, especially during election campaigns.

The following issues may need to be considered by PGE EB as the project advances. PGE EB will need to promote a two-way dialogue more thoroughly, which includes a less technocratic approach towards concerned stakeholders. PGE EB should furthermore consider working through an impartial organisation in communicating information with the public. Continued outreach efforts on the part

of PGE EB might not be well received by the public given existing dissatisfaction with its sub-contractor for example. PGE should take on a more proactive approach in terms of information provision, trying to improve the timing of the consultation process for the remainder of the project. The initial reaction to storage site exploration, indicates that PGE EB did not adequately inform the public with respect to the impacts of the project.

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