



Guidelines for public consultation and participation in CCS projects

November 2009

Introduction

The implementation of carbon dioxide capture and storage (CCS) projects is challenging not only from a technical perspective, but also due to the way that CCS technology touches on controversial subjects. These include human health and safety, climate change, power plant construction, use of fossil fuel resources, risk perception, and several social issues that do not necessarily relate directly to CCS technology.

Companies looking to move forward with large-scale demonstration projects face difficult choices regarding when, how and where to begin a public outreach programme. A CCS project is a local project but is carried out within the context of national and even international debate. This means that the group of stakeholders or potentially interested parties is considerably broad.

This social process of creating support for a CCS project moreover, must occur in parallel with that of storage site selection. Knowledge of regional geology *and* social factors within local communities is required to execute projects successfully. A proactive approach to education and an outreach programme designed to identify real and perceived risks, whilst engaging stakeholders, can build public trust through transparency and information delivery.

Although the type of risks involved will vary at each stage of a CCS project, the main challenge from a community engagement perspective lies in the storage component. Nevertheless, understanding all the technologies - capture, transport and storage - is important from a public education standpoint and it is not advisable to isolate storage when communicating with the public.

Each project will have different dimensions:

area : local – national – global,

technology: capture – transport – storage,

project stage: studies – construction – injection – post-closure.

The purpose of the Guidelines for Public Consultation and Participation of CCS Projects is to set out preliminary recommendations for the development of safe and effective projects. As such, the CCS Public Participation Guidelines are directed towards those who may be involved in decisions on a proposed project: developers, regulators, financiers and project operators. Specifically, public consultation and participation is based on consultation, public involvement and information sharing procedures which allow stakeholders to have an input into the decision-making process.

Summary Guidelines

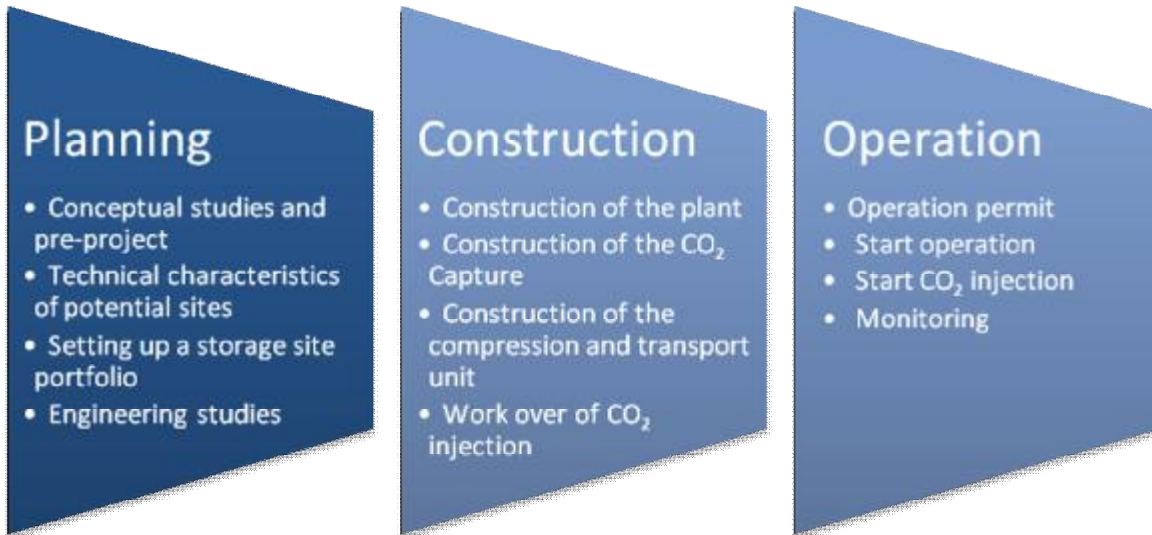
Bellona believes that the creation of public confidence in individual CCS projects is most effective when addressed in parallel with the technical aspects of each project. Below is an indication of how different steps of the technical progression of projects have “social” equivalents to build public confidence. However, most of these social activities have to be undertaken at an earlier stage than the technical steps (see next section).

Summary Guidelines

Technical	Social	Note
Conceptual studies and pre-project	Conceptual communications strategy	Identify the different approaches needed to communicate effectively at each level. Framing in the context of Climate change, options for mitigation and adaptation, and part of a portfolio of solutions (RE and EE). Energy security in coal and gas areas.
Technical characteristics of potential sites	Preliminary social site characterization	Insights into the factors contributing to risk perception at the area. Who are the stakeholders or interested parties at the area? What factors may drive their perceptions of and attitudes towards CCS?
Setting up a storage site portfolio	Setting up the public information campaign	Developing materials and strategies. Conveying clear, simple and accurate descriptions and illustrated materials. Creating models and print materials.
Internal approval	Conducting the public information campaign	
Engineering studies	Direct engagement with local stakeholders	Meetings or face-to-face interviews. Having experts at meetings, showing the questions are taken seriously. Explaining the general objectives of the project ensuring their fairness. Identify the questions the public has about different issue. Provide the opportunity to debate the issues openly and to reach their own informed judgments.
Construction of the plant	Construction of public support	Improve public understanding of the issues. Attending public meetings, giving general presentations and conducting briefings. Can be important to have a social science professional moderator.
Construction of the CO ₂ capture/compression/transport units	Construction of public support	Promoting trust using procedures for the involvement of stakeholder, for dialogue and reaching consensus. Perception of risks and benefits. Visits to the sites.
Work-over of CO ₂ injection well/Risk assessments	Acceptance of the storage risk	Communicate that risk to the local environment, public health; social factors relevant for the local communities can be managed. Natural analogues examples.
Application for Permit to Operate/ Administrative authorization	Social permit to operate	Building positive attitudes towards the technology. Negative claims and framings will have to be answered with positive or solution-oriented messages to balance the influence in public opinion of negative messages. Commitment to take account of the results of public dialogue.
Start of CO ₂ injection/Monitor of CO ₂ injection	Monitoring	Keep the stakeholders informed. Creation of mechanisms designed to exchange update information, with clear ways of attaining public comments and monitoring public opinion.

The main steps of a CCS project, for both the technical and social processes, can be classified as Planning, Construction and Operation.

Technical Process

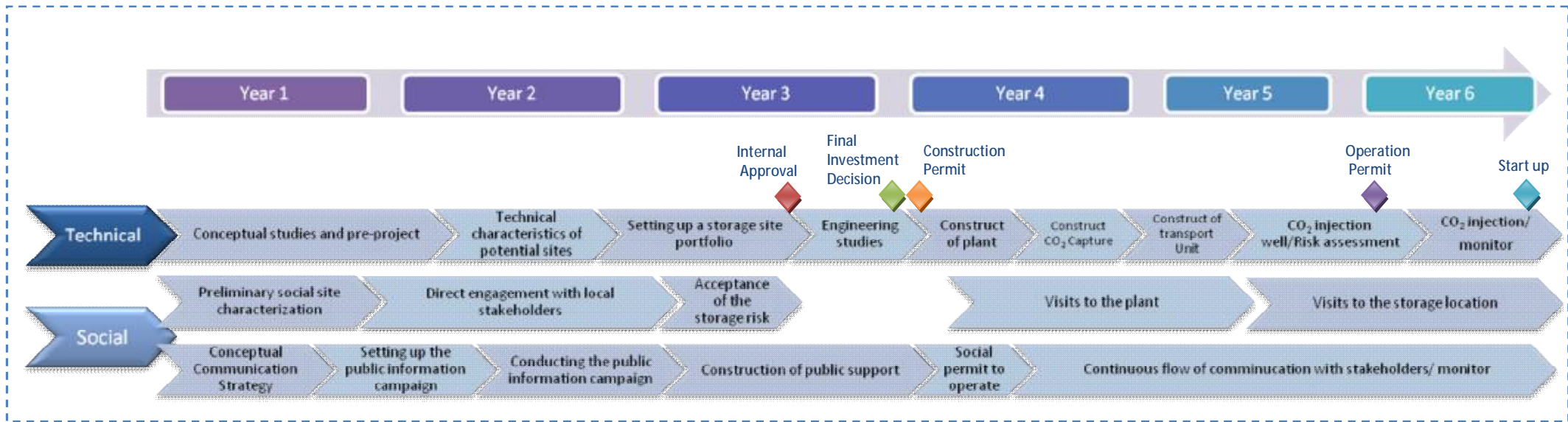


Social Process



The two processes do not run in parallel: Most of the steps of the social process are taking place before the internal approval of the project. The feedback gained through public engagement process should be considered during the final stage of project design.

Time Schedule



The social steps are continuous with some overlapping in time and are concentrated in years 1 to 3. These should be followed by steps that provide stakeholders and general public with regular updates on project progress and timetabling. It is extremely important to provide full, honest and clearly expressed information about the project, to facilitate knowledge sharing and to enable discussion with and amongst all stakeholders.

Interactions between the social and the technical processes

There should be clear interaction between the social and technical processes – in particular before the time of internal approval of the project, when the feedback gained through all the public engagement process should be considered. Poor understanding of these interactions can result in unrealistic projects and thus mislead the assessment of a particular aspect of a CCS project, such as site selection (CO2CRC, 2008). The range of interactions is presented in the following table.

		Technical			
		Conceptual studies and pre-project	Technical characteristics of potential sites	Setting up a storage site portfolio	Internal approval
Social	Conceptual communications strategy	Ö	Ö	Ö	ÖÖ
	Preliminary social site characterization	Ö	Ö	ÖÖ	ÖÖ
	Setting up the public information campaign	ÖÖ			
	Conducting the public information campaign		Ö	ÖÖ	ÖÖ
	Direct engagement with stakeholders to construct public support		Ö	ÖÖ	ÖÖ
	“Social permit” to operate (acceptance of the storage risk)	Ö	Ö	Ö	Ö

ÖÖ = are required by; Ö = are desirable by

If some of the desirable steps are not finalized by the time that the internal approval of the project is to take place, it might be preferable or even necessary to delay internal approval as well as the initiation of the engineering studies.

Links to useful documents

In the last five years several reports, scientific papers, books and presentations have been published detailing different perspectives on public consultation and participation in CCS projects. In the following table there are links to useful documents that can be used to help define a strategy. All of these publications are listed on pages 7 and 8.

Social	note
Conceptual communications strategy	Identify the different approaches needed to communicate effectively at each level. Framing in the context of Climate change, options for mitigation and adaptation, and part of a portfolio of solutions (RE and EE). Energy security in coal and gas areas.
Preliminary social site characterization	Insights into the factors contributing to risk perception at the area. Who are the stakeholders or interested parties at the area? What factors may drive their perceptions of and attitudes towards CCS?
Starting the public information campaign	Developing materials and strategies . Conveying clear, simple and accurate descriptions and illustrated materials. Creating models and print materials.
Direct engagement with local stakeholders	Promoting meetings or face-to-face interviews . Having experts at meetings, showing the questions are taken seriously. Explaining the general objectives of the project ensuring their fairness. Identify the questions the public has about different issue . Provide the opportunity to debate the issues openly and to reach their own informed judgments.
Construction of public support	Improve public understanding of the issues. Attending public meetings, giving general presentations and conducting briefings . Can be important to have a social science professional moderator.
Construction of public support / Building trust	Promoting trust using procedures for the involvement of stakeholder, for dialogue and reaching consensus. Perception of risks and benefits.
Acceptance of the storage risk	Communicate that risk to the local environment, public health; social factors relevant for the local communities can be managed. Natural analogues examples.
Social permit to operate	Building positive attitudes towards the technology . Negative claims and framings will have to be answered with positive or solution-oriented messages to balance the influence in public opinion of negative messages. Commitment to take account of the results of public dialogue.
Monitoring	Keep the stakeholders informed . Creation of mechanisms designed to exchange update information, with clear ways of attaining public comments and monitoring public opinion.

References

Ashworth, P., Cornisha, S.C., Boughena, N., Thambimuthub, Kelly (2009) Engaging the public on carbon dioxide capture and storage: Does a large group process work? *Energy Procedia* 1, 4765-4773. <http://dx.doi.org/10.1016/j.egypro.2009.02.302>

Ashworth, P, Wade, S., Reiner, D., Daamen, D., Itaoka, K (2009) Recent developments in public attitudes and acceptance of CCS: An overview of research activities and results in recent years *Earth Environ. Sci.* 6 (2pp) <http://dx.doi.org/10.1088/1755-1307/6/17/172011> and <http://www.co2captureandstorage.info/docs/Copenhagen/12.%20Peta%20Ashworth%20%5BCop.CCS%5D%2011-03-2009.pdf>

Community outreach strategy for CO₂ capture and storage projects, Asia-Pacific Economic Cooperation Community APEC Energy Working Group Project EWG 03/2004T March 2005, The Delphi Group Alberta Research Council.

CO2CRC (2008) Storage Capacity Estimation, Site Selection and Characterisation for CO₂ Storage Projects, Report No: RPT08-1001 https://extra.co2crc.com.au/modules/pts2/download.php?file_id=2144&rec_id=1033

Core Values of Public Participation http://www.oregon.gov/OWEB/BiennialConference08/Presentation_Materials/WCWAGA-IAP2CoreValues.pdf

de Coninck, H., Flach, T., Curnow, P., Richardson, P., Anderson, J., Shackley, S., Sigurthorsson, G. and Reiner, D. (2009) "The acceptability of CO₂ capture and storage (CCS) in Europe: an assessment of the key determining factors: Part 1. Scientific, technical and economic dimensions" *International Journal of Greenhouse Gas Control*, 3(3): 333-343 <http://dx.doi.org/10.1016/j.ijggc.2008.07.009>

Ekman, J. (2007) Understanding risks associated with deployment of carbon capture and storage - Project risk assessment for carbon capture and storage, Leonardo Technologies, Inc http://www.cslforum.org/publications/documents/15_UnderstandingRisksDeploymentCCSEkmanOct192007.pdf

Greenberga, S. E., Leetarua, H. E., Krapaca, I. G., Hnottavange-Telleenb, K., Finleya, R. J. (2009) A Multi-Level Approach to Outreach for Geologic Sequestration Projects *Energy Procedia* 1, 2009, Pages 4707-4713. <http://dx.doi.org/10.1016/j.egypro.2009.02.294>

Heiskanen, E. Jolivet, E., Raven, R., Mourik, R., Feenstra, Y. (2007) CREATE ACCEPTANCE – development of a research-based multistakeholder tool for managing the societal acceptance of sustainable energy technology projects http://www.createacceptance.net/fileadmin/createacceptance/user/docs/Heiskanen_etal_SlConference.pdf

LACQ CO₂ capture and geological storage pilot project - total's commitment to stakeholder consultation <http://www.total.com/static/en/medias/topic2627/Consultation-charter.pdf>

Malone, E. L., Bradbury, J. A., Dooley, J. J. (2009) Keeping CCS Stakeholder Involvement in Perspective, *Energy Procedia* 1, 4789–4794. <http://dx.doi.org/10.1016/j.egypro.2009.02.305>

METI (2007) Building Confidence in Geological Storage of Carbon Dioxide http://www.co2captureandstorage.info/docs/METI%20012007/DS2_Building%20Confidence0610rev.pdf

Reiner, D.M. (2008) "A looming rhetorical gap: a survey of public communications activities for carbon dioxide capture and storage technologies." *Electricity Policy Research Group Working Papers*, No.0801. Cambridge: University of Cambridge. <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2008/11/eprg08012.pdf>

Risk Communication and Carbon Capture and Storage. C2S2RN Workshop
http://www.climatechangecentral.com/files/CCSWorkshop_Final_Report.pdf

Shackley, S., Reiner, D., Upham, P., de Coninck, H., Sigurthorsson, G. and Anderson, J. (2009) "The acceptability of CO₂ capture and storage (CCS) in Europe: an assessment of the key determining factors: Part 2. The social acceptability of CCS and the wider impacts and repercussions of its implementation." International Journal of Greenhouse Gas Control, 3(3), 344-356 <http://dx.doi.org/10.1016/j.ijggc.2008.09.004>

Stephens, J. C., Bielicki, J., Rand, G. M. (2009) Learning about carbon capture and storage: Changing stakeholder perceptions with expert information, Energy Procedia 1, 4655-4663. <http://dx.doi.org/10.1016/j.egypro.2009.02.288>

The European Technology Platform for Zero Emission Fossil Fuel Power Plants (ZEP) - Strategic Deployment Document (2007)
<http://www.zero-emissionplatform.eu/website/docs/ETP%20ZEP/ZEP%20SDD%20-%20draft%2012.pdf>

TOTAL Lacq basin CO₂ capture and storage pilot project results of stakeholder consultation (2008)
http://www.total.com/static/en/medias/topic2627/results_stakeholder_consultation.pdf

Vercelli, S., Lombardina, S. (2009) CCS as part of a global cultural development for environmentally sustainable energy production Energy Procedia 1, 4835-4841 <http://dx.doi.org/10.1016/j.egypro.2009.02.311>

Wade, S., Greenberg, S., (2009) Afraid to Start Because the Outcome is Uncertain?: Social Site Characterization as a Tool for Informing Public Engagement Efforts, Energy Procedia 1, Pages 4641-4647.
<http://dx.doi.org/10.1016/j.egypro.2009.02.286>

Wright, I., Ashworth, P., Xin, S., Di, L., Yizhong, Z., Liang, X., Anderson, J. Shackley, S., Itaoka, K., Wade, S. Asamoah, J. Reiner, D., (2006) CO₂ CAPTURE PROJECT- Public Perception of Carbon Dioxide Capture and Storage: Prioritised Assessment of Issues and Concerns- Summary for Policy-Makers, UK Department of Trade and Industry.