



WP 9.4

Review of public acceptance challenges and current regulations



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Definitions of social acceptance

1. “Social acceptance is the result of a **process** in which the stakeholders together define the **minimal conditions** that are needed to enable a project to be **harmoniously integrated into a unique natural and human environment** at a given time”*

2. Social acceptance is a **judgmental process** :

The impacted individuals are the **project actors**.

The individuals will **compare** the perceived conditions

They will **decide** whether these conditions are acceptable or not.

If not, they will shift to a more favorable alternative.

“**Social acceptability**” is then defined as the conditions that lead to “**social acceptance**”.

* Caron-Malenfant & Conraud (2009)



Overview of existing tools

- Several guidances



Good practices inventories

- Several existing guidances
 - GCCSI, CSIRO, CO2SINK, Sitechar,...
 - Key determining factors have been determined
 - Common process :
 - Analysis of the project context
 - Identify stakeholders and characterize stakeholder's perception
 - Prioritise stakeholders issues
 - Implement Stakeholders engagement
 - Evolution in the consideration of the stakeholders
 - “decide, announce and defend”
 - “engage, interact and co-operate”



Overview of existing tools

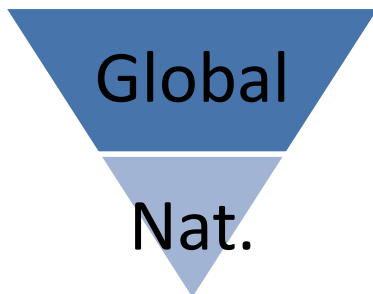
- Existing regulations

International Legal Framework for CCS



International regulatory instruments:
Kyoto protocol, London Protocol...

- Mechanisms for climate policy:
 - Emissions Trading System (ETS)
 - Clean Development Mechanism (CDM)
 - Joint Implementation (JI)



Distinct national measures to limit or reduce
greenhouse gas emissions

→ **distinct national regulatory developments**



Distinct national regulatory developments

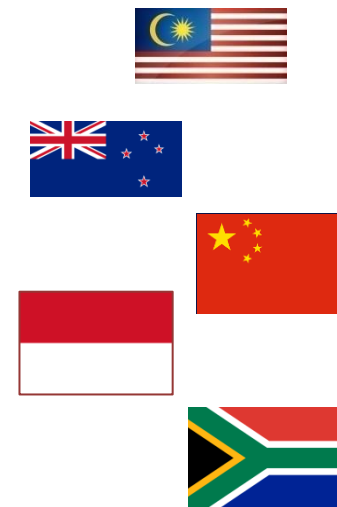
Leaders in the development and the implementation of law and regulation for CCS

- States of Australia
- States of the USA
- Provinces of Canada
- M. states of the EU



Second generation of regulators

- Malaysia
- China
- New Zealand
- Indonesia
- Japan
- Arab States
- South Africa
- ...





EU Directive (2009/31/EC)

- CCS Directive entered into force on 25th June 2009
+ 4 guidance documents (March 2011)

Art.26 : Information to the Public – Member state should make available to the public environmental information relating to CCS

Slightly correlated with the Aarhus (1998) convention which establish a number of rights of the public

L 140/114	EN	Official Journal of the European Union	5.6.2009
DIRECTIVE 2009/31/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 (Text with EEA relevance)			
THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,			in the context of the envisaged global reduction of greenhouse gas emissions of 50 % by 2050, a reduction in greenhouse gas emissions of 30 % in the developed world by 2020 is required, rising to 60 %-80 % by 2050, that this reduction is technically feasible and the benefits far outweigh the costs, but that, to achieve it, all mitigation options must be harnessed,
Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,			
Having regard to the proposal from the Commission,			
Having regard to the opinion of the European Economic and Social Committee (1),			(4) Carbon dioxide capture and geological storage (CCS) is a bridging technology that will contribute to mitigating climate change. It consists of the capture of carbon dioxide (CO ₂) from industrial installations, its transport to a storage site and its injection into a suitable underground geological formation for the purposes of permanent storage. This technology should not serve as an incentive to increase the share of fossil fuel power plants. Its development should not lead to a reduction of efforts to support energy saving policies, renewable energies and other safe and sustainable low carbon technologies, both in research and financial terms.
After consulting the Committee of the Regions,			
Acting in accordance with the procedure laid down in Article 251 of the Treaty (2),			
Whereas:			
(1) The ultimate objective of the United Nations Framework Convention on Climate Change, which was approved by Council Decision 94/69/EC of 15 December 1993 (3), is to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.			(5) Preliminary estimates, carried out with a view to assessing the impact of the Directive and referred to in the impact assessment of the Commission, indicate that seven million tonnes of CO ₂ could be stored by 2020, and up to 160 million tonnes by 2030, assuming a 20 % reduction in greenhouse gas emissions by 2020 and provided that CCS obtains private, national and Community support and proves to be an environmentally safe technology. The CO ₂ emissions avoided in 2030 could account for some 15 % of the reductions required in the Union.
(2) The Sixth Community Environment Action Programme established by Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 (4) identifies climate change as a priority for action. That programme recognises that the Community is committed to achieving an 8 % reduction in emissions of greenhouse gases by 2008 to 2012 compared to 1990 levels, and that, in the longer term, global emissions of greenhouse gases will need to be reduced by approximately 70 % compared to 1990 levels.			
(3) The Commission Communication of 10 January 2007 entitled 'Limiting global climate change to two degrees Celsius – The way ahead for 2020 and beyond' clarifies that			(6) The Second European Climate Change Programme, which was established by the Commission Communication of 9 February 2005 entitled 'Winning the Battle Against Global Climate Change' to prepare and examine future climate policy in the Community, set up a Working Group on Carbon Capture and Geological Storage. The Working Group's mandate was to explore CCS as a means of reducing climate change. The Working Group published a detailed report on the topic of regulation, which was adopted in June 2006. It stressed the need for the development of both policy and regulatory frameworks for CCS and urged the Commission to undertake further research into the subject.
(1) OJ C 27, 3.2.2009, p. 75.			
(2) Opinion of the European Parliament of 17 December 2008 (not yet published in the Official Journal) and Council Decision of 6 April 2008.			
(3) OJ L 33, 7.2.1994, p. 11.			
(4) OJ L 242, 10.9.2002, p. 1.			



What can be observed ?



Observations

- Consultation phase :
 - Lack of communication between the Project Developers and the stakeholders
 - everybody had stuck to their positions :
 - CCS project sites : **no will to engage** any consultation neither allocate significant resources on communication plans to stakeholders.
 - Environmental NGO : **lack of confidence** of the stakeholders toward industry can prevent any further dialogue or consultation between both parties

One agreement : the need of an independent and impartial referee to allow a debate at a national level as well as a local level.

→ *develop a regulatory frameworks and apply monitoring, verification and liability regimes that can win long-term public acceptance*



Public expectations



Important notions to understand public expectations

- Notion of trust
- Level of knowledge
- Increase of awareness on climate issues
- Different public
- Attitudes are function of the closeness of the CCS site



Public concerns

- **Technological Risks***

- risk of leakage
- contamination of an aquifer
- primer impurities present in future stored CO₂ (heavy metal traces, chlorinated by-products, gases)
- Secondary impurities : disturbance of the geochemical balance (complexation of metallic traces, organic micropolluants, acidification..)

Emergent technology → feedback quite limited

*INERIS report may 2013



Public concerns

- **Financial and technical viability of CO2 storage**
 - Economics of CCS are often discussed in terms of mitigation costs
 - In cost terms, “more power plants will have to be constructed to compensate the loss of energy used to catch the combustion fumes”.
 - The EU : “expects that in 2035, CCS should begin to contribute in a wider measure, to the reduction of CO2 emissions of the industrial facilities of Europe.”



Public concerns

- Question of liability during the storage and post-closure
 - **impact of CO2 leakages will also be economic**
 - **cost of CO2 will inevitably rise**
- Post-closure liability remains very controversial :
 - Who will be responsible for compensatory or restorative damages in the case of leakage after post-closure site and how?
 - Within the EU regulatory framework. → art. 18 not practicable
- Reserving funds to meet liabilities will it arise over centuries?”



Public expectations on CCS regulation

- How can legal framework meet public expectations?
 - doubt will remain present if :
 - the risk is not controlled
 - the questions of liability are not raised (during the storage and post-closure)
 - the economic and environmental expected objectives are not raised (if CO2 emissions remain superior to the stored amounts)
 - it is also the role of the regulatory framework to meet the expectations of all the citizens



Recommendations



Recommendations

A large citizen public debate is needed to enable the policies to position on:

- **Stakes in safety long-term** → need of regulation
- **Frame and normalization of the risk of leakage** → define a threshold?
- **Stake in energy and climatic policy**
- **Effective risk communication** by all makers is vital for public acceptance → An independent third party
- **Full transparency and careful evaluation of results.**
- **Effective social characterization and analysis of the stakeholders commitment**



Recommendations

- Some good practices already exist → use them!
- **a mature regulatory framework** for CCS has to include :
 - effective risk communication to engage the public
 - build confidence in the institutions governing CCS and should involve all stakeholders in risk-related decisions.
 - A possible solution : the need of an independent and impartial referee to allow a debate at a national and local level.