



Joint Task Force on Risk & Liability of Geologic Storage of CO₂

IEA, Paris July 10 - 11

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Task Force Workshop



***Purpose:* To improve the understanding of geological risks associated with CO₂ storage and their relationship to financial liabilities.**

- This information is needed by governments and industry to make decisions.
- The workshop also discussed how risk and liability information can be communicated effectively.

Overview



- *Organized by CSLF Joint PG-TG Task Force:* workshop organization supported by CSLF Secretariat (J. Price)
- *Joint sponsorship:* CSLF, GCCSI, IEA (host)
- *Location:* IEA, Paris; 10–11 July 2012
- *Participants:* 62 representatives from governments, industry, academia/research, multilateral institutions, law firms, financial institutions, NGOs, and consulting firms
- *Structure:* 5 sessions (geologic risks, industry perspective, economics of liability, government and policy responses, “How safe is safe enough?”)
- *Report:* Workshop report posted on CSLF website

Workshop Agenda



July 10

1. Sponsor Scene Setting
2. Geological Risks
3. Industry Perspective
4. Economics of Liability
5. Government and Policy Responses

July 11

6. How Safe is Safe Enough?
 - What will make the public be and feel safe and comfortable
 - What will make investors comfortable?
7. Wrap up and Next Steps

Sponsor Scene Setting



- Deployment of CCUS is a critical global need.
- CCUS deployment faces significant business challenges.
- It is vital to balance risks and opportunities in order to ensure deployment.
- Progress toward deployment is too slow, but can be put back on track.
- Risk communication is critical.
- Information on geologic risks is needed for liability decision making.

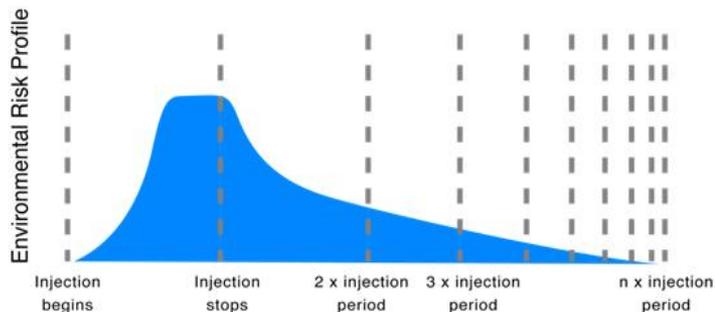
Geologic Risks

- Geoscientists have a specific definition of risk.

$$\text{Risk} = P_{\text{event}} \times C_{\text{event}}$$

- Risk may change as a function of time.

Schematic profile of environmental risk (Benson, 2007)



- Risks and initiatives to address them differ regionally.
- Public perception is very different from how geoscientists estimate risks.

Industry Perspective



- Risk analysis and management must cover entire project life cycle.
 - Risk analysis is an inherent part of site characterization and selection.
 - Many independent safeguards must be in place, some passive and others active.
- Liabilities cannot be either unlimited in size or indefinite in term.
- Immaturity of CCUS practice is a constraint.
 - Regulatory risks are greater when regulatory frameworks are immature.
 - CCUS value chains and how these allocate business risks have yet to be developed.
 - International standards may help develop confidence in CCUS.
- Trust and credibility are critical to public support.



Economics of Liability

- Probability of leakage from properly-selected storage formation is not great
 - Methods exist to deal with leaks.
 - EOR with CO₂ is better understood and has lower costs than geologic storage.
- Methods exist to quantify the potential financial damages.
- If CCUS is high risk and low return, it will not be viable.
 - Lenders will not take unquantified liability risks on storage.
 - There are operators who will store CO₂ for a fee.
- Some insurance coverage is available.
 - Operational phase coverage is new and premiums are coming down.
 - Insurance can cover many aspects of storage, but not long-term, post-closure storage.
 - Risk mitigation after closure has to be financed from money set aside earlier.

Government and Policy Response



- Governments are working to address issues of risk and liability.
 - Each in a way that reflects local circumstances, legal-regulatory frameworks and risk tolerances.
 - Liability relief is a form of subsidy, but it is a very modest one.
- Multilateral development banks have not yet been asked to fund CCUS projects.
 - They are working with client countries to build capacity and assess opportunities.
 - Long-term liability will have to be addressed in any projects they finance.
- Any standards should promote efficiency and reduce costs.
- If the carbon price were right, we would have no problem financing CCS projects.

How Safe is Safe Enough?



For the Public

- “Safe enough” is what people believe it is.
 - Public expectations about an “acceptable” leakage rate are for none.
 - CCUS will be judged on its worst performers.
- Communications
 - Engage communication professionals.
 - Transparency and dialogue are important.
 - There is no unique “public.”
 - Proponents need a common message.
- NGOs: well trusted but diverse views.

For Investors

- Only “perfectly safe” will make investors comfortable.
- Risk and liability issues don’t matter unless without an assured revenues.
- Energy companies regularly deal with risk.
- Geoscientists can provide information needed for investment decisions.

Workshop Recommendations



- ✓ Take all opportunities to highlight that risks of storing CO₂ can be managed.
- ✓ Conduct another workshop on risk and liability in the Asia-Pacific region.
- ✓ Continue and expand capacity building for regulatory institutions.
- ✓ Consider the role of international or national standards for geologic storage of CO₂.
- ✓ Conduct dialogue with the insurance industry about coverage for geologic storage.
- ✓ Consider ways to enhance and support public outreach on geologic storage.
- ✓ Conduct further RD&D to resolve remaining geologic storage uncertainties.