



IEAGHG Risk Assessment network

**IEAGHG - Joint network,
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- *Summary*

- *Main topics and main results from the 3 former meetings*

- *Where do we are regarding the RA network?*



Main topics and main outcomes (1)

> Risk communication

- Participatory process pivotal in RA, particularly for community assets
 - Importance of building trust
 - Benefits and impacts - Not just numbers
- Need for translation of RA outputs to common language

> Regulatory development

- Need to address adequacy of existing and emerging regulations. Take an active role => new ISO TC 265
- Provide information for regulators: in depth training
- Gap => Translation of outputs for laymen/policy makers



Main topics and main outcomes (2)

> Methodologies

- Objective of RA method more important than method itself (though noting process used)
- RA should be systematic, evidence based: collective judgment
- Use analogues to understand processes in addition to models
- Methodologies should be consistent with ISO standard
- Gaps:
- How can acceptable levels of risk be defined?
- Further work on metrics for quantification of risk
- Comparative analysis of RA methodological outputs : need for benchmarking
 - Is a real test site possible? or a synthetic case?



Main topics and main outcomes (3)

> Risk profiles

- Need data from more demonstration projects to improve understanding of risk profiles (knowledge sharing)
- Gap: Further work on evolution of risk through time (long term risk management)

> Impacts

- Understanding underground water and biosphere impacts
- Gap: Detailed assessment of induced seismicity
 - understanding earthquake rupture in a reservoir,
 - apply seismic hazard assessment methods
- Gap: Consideration of effects on other resources



Main topics and main outcomes (4)

> Risk & incident management

- Baseline data crucial
 - For natural seismicity, geochemical heterogeneity etc.
 - What is baseline data?
- Gap: Collation of experiences and knowledge of Incident management

> Monitoring

- Risk based => already included in several regulations
- Need for more information on monitoring performance => more interaction needed between Risk Assessment Network and Monitoring Network



Other knowledge needs

- > **Assessment of remediation/mitigation techniques**
 - Leaking wells, faults ...
 - Controlling plume migration etc.

- > **Need to understand microbial response and geochemical changes**

- > **Expert elicitation process**

- > **Dealing with UNCERTAINTIES**



Where do we are regarding the RA network?

Appendix 1: Original Network Objectives

The objectives of the Risk Assessment as set out in 2005:

- *Overall aim:* To bring together key groups working on risk assessment for CO₂ storage from around the world to share knowledge and experiences. Emphasis on potential regulatory requirements with regard to CCS safety and impact assessment.
- *Specific aims and objectives:*
 - Develop an open and transparent process to allow different risk assessment approaches and associated results to be understood;
 - Provide a forum where different approaches to risk assessment can be compared;
 - Provide an ‘umbrella group’ for international collaboration;
 - Identify knowledge gaps and determine actions required to close these gaps;
 - Act as an informed body on risk assessment and to maintain dialogue with regulators and NGO’s



Questions about the network objectives

- > **Can we go deeper to promote international collaborations? Sharing data?**
- > **Corrective/remediation measures: within the RAN or creating a specific group? (*one more!*)**
- > **Broaden Network**
 - Regulators => *already done*, but NGOs?
 - Invite risk management experts from other areas:
 - nuclear waste => *already done in 2010: Mike Stenhouse* ,
 - seasonal gas/energy storage, geothermics etc.
 - Feedback with insurance: *special session in 2009*
- > **Update objectives by ranking CCS generic risks that deserve work?**

