



## IEAGHG Information Paper; 2012-IP11: Second IEAGHG Joint Network Meeting

### Background: First Joint Network Meeting, held in New York, USA, June 2008

The Joint Network Meeting co-ordinates all four of the geological storage networks, Risk Assessment, Monitoring, Modelling, and Wellbore Integrity, and the Environmental Impacts of CO<sub>2</sub> Storage Workshop Series. The 2<sup>nd</sup> IEAGHG Joint Network Meeting was held on 19<sup>th</sup> - 21<sup>st</sup> June 2012 in Santa Fe, New Mexico, hosted by Los Alamos National Laboratory, and sponsored by Los Alamos National Laboratory, Sandia National Laboratory, and Schlumberger.

The aims of the meeting were to:

- Ensure the Networks are working in the most efficient way without duplication or gaps,
- Identify cross-cutting issues and their consequences; requiring input from more than one network,
- Set the framework for the future direction of the networks.

In reviewing the progress made since the 1<sup>st</sup> Joint Network Meeting in 2008, the Networks each reviewed the developments in their own areas. The attendees also heard from real large-scale projects and how these are now achieving progress and success on cross-network issues previously identified. The regulatory environment is maturing, with fairly stringent regulations in place in many regions, and the knowledge and techniques exists in the storage area so that there seem to be no significant technical barriers to CO<sub>2</sub> meeting these requirements. The meeting also assessed the external influence of the Networks, for example peer reviews of the CO<sub>2</sub>CRC Otway Project and US EPA Vulnerability Evaluation Framework, and in providing significant input to the UNFCCC Technical Workshop, Abu Dhabi 2011, which aided development of rules for CCS in the CDM.

Current cross-cutting issues were identified and discussed:

- Uncertainty in simulations forming parts the permits (e.g. risk assessment, reactive transport in storage reservoirs).
- Model updating (history match) consequences for validity of operational license?
- Corrective Measures Plans / Remediation Plans.
- Completeness of observation and quantification of leakage, especially in shallow and surface monitoring. (Public wish for a guarantee that there is no risk and any deviation from planned behaviour can be detected before damage occurs).
- Monitoring Plan – site specific and based on risk assessment and potential migration pathways.
- Protection of shallow groundwater resources, especially against displaced brines from saline aquifers.
- Link between monitoring results and (mandatory) operational consequences (e.g. thresholds, conditions for site abandonment).

In addition, a session was held to discuss the Zoback paper on induced seismicity. This concluded:

*The topic of induced seismicity and the Zoback paper was discussed by the international gathering of experts at the IEAGHG Joint Network Meeting, and the majority agreed: "Induced seismicity is important to consider for CO<sub>2</sub> geological storage and has already been the subject of extensive research and risk assessment for current CCS projects. There is not sufficient information available to justify the conclusions drawn in the last sentence of the abstract of the paper by Zoback".*



Each Network identified its areas for future focus, the priorities, and also ways of working with other Networks.

In conclusion, areas of common need were:

- Systematic iterative links between risk assessment, monitoring, verification, best practices,
- Dealing with uncertainty, consequences, mitigation plans,
- Defining criteria, thresholds, acceptable deviations from trends.

The final recommendations were:

- More Network to Network collaboration,
- Virtual meetings on hot topics (such as the Zoback paper),
- Topic-based workshops e.g. performance assessment, remediation,
- Risk Assessment Network to expand to Risk Management, including mitigation and remediation actions,
- Steering Committees to be refreshed,
- Further activities in between meetings,
- Interaction with the Social Research Network,
- For 2013, Combined meetings of the Monitoring and Environmental Impacts meetings; and the Risk and Modelling meetings.

## **Conclusions**

An overall conclusion that can be drawn from the meeting is that, with a maturing regulatory environment, the technical knowledge and methods now exist in the area of storage so that there seem to be no significant technical barriers to projects meeting the requirements from the fairly stringent regulations in place in many regions. The IEAGHG Research Networks have contributed to this move from research to application. Also, the Research Networks are highly appreciated by their members who wish them all to continue.

Tim Dixon, 25/7/12