

Status Report from the Task Force to Identify Gaps in MMV of Geological CO₂ Storage

CSLF Technical Group

New Delhi, India

April 3, 2006

Overview

- Task Definition
- IEA Gap Analysis
- IEA Report on Permitting Issues
- Discussion Points
- Recommendations

Task Components

- Conduct a gap analysis on IPCC SRCSS
 - IEA Review of IPCC SRCSS Gaps in Knowledge – January, 2006
- Develop material on science behind regulation
 - Permitting Issues for CCS – January, 2006

Gap Analysis on IPCC SRCSS

- IEA GHG actively involved in 5 of 9 chapters
- IEA GHG Technical Studies upon in many of the chapters
- IEA GHG organizes the GHGT conference series
- Well qualified for gap analysis
- Decision made to rely IEA efforts

Aim of Analysis

- Identify the relative significance of the gaps identified in implementing technology
- Identify key research needs that the IEA GHG can conduct or their members can undertake as part of their research activities

Methodology

- Reviewed development of SRCSS
- Recognized that some info now dated
- Gaps in TS limited to headline gaps only
- No overview of gaps
- Gaps in the main report were those reviewed

Review

- Appendix lists the gaps for each Chapter
- IEA GHG provided commentary on relevance of each gap
- Each gap rated on a scale of 1-5
 - Very important and needs to be urgently addressed to move technology towards full scale implementation
 - Important and needs to be addressed with some urgency
 - Less important but needs to be undertaken
 - Not important – CCS can be implemented
 - Unimportant – gap does not need to be addressed

Results

- Gaps focussed on technical issues relevant to the individual chapter
- No “big picture” for CCS implementation
- Most gaps technical in nature
- Many gaps now being addressed since drafting process for report began

Results (cont'd)

- Two main priorities
 - Need for full scale commercial demo of a post combustion plant
 - Need for demo of a fully integrated system
- Also identified need for improved data for storage capacity estimation worldwide
- Recognized CSLF efforts to develop standard methodology for storage capacity assessment

Results (cont'd)

- Gaps summarized in matrix format
- Horizontally (Comments, Work Underway, Priority, IEA GHG Action)
- Vertically (Capture of CO₂, Transport, Geological Storage, Ocean Storage, Mineral Carbonation, Costs and Economic Potential, Implications of CCS for GHG Inventories and Accounting)
- Total of 73 individual items identified

Permitting Issues for CCS

- Large scale projects will require permits for a wide range of activities (plant, pipeline, wells, reservoir development)
- To ensure successful deployment in required timescales, need to identify permitting issues and resolve them

Study Approach

- Main principles of regulation fairly common around the world
- Actual regulation specific to countries, regions and localities
- Four regions examined – Australia, Canada, Europe and the USA
- Consultant asked to identify all permitting issues a major CCS project may encounter

Methodology

- Study divide into three temporal phases:
 - Planning and construction
 - Operation
 - Closure and decommissioning
- Also into four elements in the CCS chain:
 - CO₂ Capture plant
 - CO₂ Transport
 - CO₂ injection and storage to point of well closure
 - Long term stewardship of storage reservoir

Results

- No significant or only minor issues for capture and transport (minor issues in planning and construction)
- Significant issues in operation phase for long term stewardship
- Significant issues and gaps in planning and construction phase of injection and storage as well as P&C phases and C&D phases relating to long term stewardship

Points to Ponder

- CSLF has no resources to conduct studies
- Many studies/issues being addressed on other for a where resources are available
- We may wish to reconsider our mandate, role and structure to ensure continued relevance
- May wish to modify structure of joint meetings to ensure meaningful dialogue with policy group

Recommendations

- Upon approval of reports, request permission of IEA GHG to post reports on CSLF website
- Advise the policy group of policy implications in reports and engage in a dialogue between the policy and technical groups