# Task Force on Monitoring of Geologic Storage for Commercial projects

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**Technical Group Meeting, Perth, Australia, October 25, 2012**

# History of the Task Force

- At the CSLF Ministerial Meeting in Beijing, China, in September 2011, the CSLF Technical Group decided to establish an Action Plan with twelve Actions
- Action Plan 6 to address “Monitoring of Geologic Storage for Commercial projects”
- Norway volunteered to chair the Task Force for Action 6
- A call for membership was issued February 24, 2012
- By October 2012 the TF has 16 persons on mailing list

# Task Force Mandate

- The Task Force shall perform initial identification and review of standards for storage and monitoring of injected $CO_2$.
- The application of such standards should inform $CO_2$ crediting mechanisms.
- Economic and policy issues are outside the scope of the Task Force, as these are policy matters and belong to the Policy Group

# Task Force Work Plan

- Identify and review existing standards for geological $CO_2$ storage and monitoring on an annual basis;
- Identify shortcomings and/or weaknesses in standards/guidelines;
- Communicate findings to the ISO Technical Committee 265 that has been established for CCS;
- Produce annual summaries of new as well as updated standards, guidelines and best practice documents regarding geological storage of $CO_2$ and monitoring of $CO_2$ sites; and
- Follow the work of other task forces related to $CO_2$ storage, such as TF 7 and TF1
- On hold: Guidelines for communication with and engagement of involved communities and regulators

# Deliverables

- An annual interim report by the end of 2012;
- A report with recommendation on continuation or termination of the task force to the CSLF Ministerial Meeting, 3Q 2013.
- Further deliverables to be decided after the decision gate in 3Q 2013.
- Possibly annual reports that coincide with CSLF Annual Meetings in 2014 and 2015 and final report in 2016

# Task Force Timeline

- Early Sept 2012: Draft of initial compilation of standards, etc. √
- Mid Sept. 2012: Comments from task force members √
- Late Sept. 2012: Initial compilatin completed and provided to Secretariat √
- Late Oct. 2012: Report on activities to CSLF Annual Meeting √
- Mid Dec. 2012: Interim report completed
- Mid May 2013: Draft report of compilation of standards, guidelines, etc.
- Early July 2013: Comments from task force members on draft report
- Mid Sept. 2013: Report finalized and provided to Secretariat
- 3Q 2013: Report on activities to CSLF Ministerial Meeting

# Content of initial compilation

- Identified BPMs and standards, update of CO2CRC report (2011)
  - Waiting for release of Weburn BPM
  - Canada/US Standards manual on CCS (*Canadian Standards Association (CSA) Z741 – Geological Storage of Carbon Dioxide)*
- Guidelines to regulations
- In appendices (wishes/comments from members)
  - Legislation
  - Monitoring tools and techniques in selected projects
  - Risk Assessment BPMs
  - Storage atlases
  - BPNs related to regulatory issues, community engagement and communication
  - BPMs on storage capacity
  - BPMs on pipelines

# Task Force Membership

- Rob Arts, Netherlands
- Andre Bocin-Dumitriu, EC
- Grant Bromhal, USA
- Andy Chadwick, UK
- Niels Peter Christensen, Norway
- Tim Dixon, UK/IEAGHG
- Bin Gong, China
- Qi Li, China
- Xiaochun Li, China
- Jacques Monne, France
- Niels Poulsen, Denmark
- Jeroen Schuppers, EC
- Martin Streibel, germany
- Evangelos Tzimas, EC
- Trygve Riis, Norway
- Lars Ingolf Eide, Norway

# Initial assessment of scope and content of BPMs

| BPM | Pre-feasibility | Site selection | Simulation and modelling | Construction | Operation | Closure | Monitoring and verification | Risk assessment |
|---|---|---|---|---|---|---|---|---|
| CO2STORE | Basic | Technical | Technical | - | Basic | Detailed | Technical | Detailed |
| CCP | - | Basic | - | Detailed | Detailed | Basic | Technical | Basic |
| DNV CO2QUAL | Detailed | Detailed | Basic | - | Detailed | Detailed | Basic | Detailed |
| DNV CO2WELLS | - | Technical (exiting wells) | - | - | - | - | - | Technical (existing wells) |
| DNV RP-J203 | Basic | Detailed | Basic | Detailed (wells) | - | - | Detailed | Detailed |
| GEOSEQ | - | Basic | Basic | - | - | - | Detailed | - |
| NETL MVA | - | - | - | - | Technical | Technical | Technical | Basic |
| NETL GS | Technical | Technical | - | - | - | - | - | - |
| NETL SS | Basic | Detailed | Basic | - | - | - | - | Technical |
| NETL RA | - | - | Technical | - | - | - | - | Technical |
| NETL WM | - | - | - | Technical | Technical | Technical | - | - |
| WRI CCS | Basic | Detailed | Basic | Basic | Basic | Detailed | Detailed | Detailed |
| IEA Weyburn | NA | NA | NA | NA | NA | NA | NA | NA |
| IPACCO2/CSA | NA | NA | NA | NA | NA | NA | NA | NA |
| AU1 | - | - | - | - | - | - | - | - |
| AU2 | - | - | - | - | - | - | (Very) Basic | - (Env. risk, very basic) |
| EC1 | - | - | - | - | - | - | - | Detailed |
| EC2 | - | Detailed | Basic | - | - | - | Detailed | - (only corrective part) |
| OSPAR | Basic | Basic | - | - | - | - | - | Basic |
| EPA | - | - | - | - | - | Basic | Basic | Basic |

| | | | |
|---|---|---|---|
| - | Not covered specifically | Technical | Provides technical details of projects, generally comprehensive |
| Basic | Briefly covered in a generic way | NA | Information is not available |
| Detailed | Comprehensive discussion, generally generic | | |

# Preliminary conclusion

- None of the identified documents cover all topics listed.
- Site selection, monitoring and verification and risk assessment are best covered by existing standards, BPMs or guidance documents

# Next step

- Identify of shortcomings and/or weaknesses in standards/guidelines;
  - Issued call for volunteers
- Communicate findings to the ISO CCS working group that has been established.

# Report outline

- Foreword, executive summary
- Introduction
- Basic review of BPMs (update of initial report)
- Status, need for additions and other improvements for the following issues
  - Pre-feasibility
  - Storage capacity estimation (unless a separate task force is formed)
  - Site selection
  - Simulation and modelling
  - Construction
  - Operation
  - Closure
  - Monitoring and verification
  - Risk assessment
- Summary, conclusions and recommendations

# Comments?

# Thank you!