



# **Interim Report on Task Force on Reviewing Best Practices and Standards for Geologic Storage and Monitoring of CO<sub>2</sub>**

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**CSLF Technical Group Meeting  
Washington DC, USA  
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# Task Force Mandate



- The Task Force shall perform initial identification and review of standards for storage and monitoring of injected CO<sub>2</sub>.
- The application of such standards should inform CO<sub>2</sub> 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

# Deliverables



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

# Proposed Task Force Timeline



- Finalize draft report by the Task Force by May 31<sup>st</sup>, 2013 (it includes a few iterations)
- Submit the draft report to the Secretariat by June 14, 2013, for distribution to all Technical Group delegates for review
- Receipt of Member Countries comments by September 9, 2013 (to account for the summer vacation season)
- Finalize report by October 15, 2013 and submit it to the Secretariat for distribution ahead of the Ministerial meeting in Houston on November 4-8, 2013
- 4-8 November 2013: Decide continuation or termination.

# Report outline



- Executive summary
- Background
- Scope
- Identified standards, BPMs and guidelines for CO<sub>2</sub> storage
  - Basic assessment of scope and content of identified BPMs review of standards/ BPMs/guidelines
- ISO TC265 on carbon capture and Storage
- Recommendations for follow-up
- Appendices A- H

# Standards, BPMs and guidelines identified in initial compilation



Table	Table content
2 Documents from CO2CRC report (2011):	CO2STORE; CCP; DNV CO2QUAL; GEOSEQ; NETL Monitoring, verification and accounting (MVA); NETL Classification of formations; NETL Site screening, WRI Guidelines for CCS
3 Documents published after CO2CRC (2011)	CSA Z741-12; DNV CO2Wells; DNV RP-J-203; DNV DSS-402; NETL Risk Assessment (RA); NETL Well management (WM); NETL MVA update; IEA Weyburn; DNV CO2RISKMAN
4 Guidelines to regulations	Australian regulations, European Commission, OSPAR, London Convention and Protocol, EPA
5 Summary assessment	Gives a high level overview of which document addresses planning, site screening, simulation, wells, operation, closure, monitoring and verification and risk management.

Additional information in Appendices: Regulations, monitoring tools in projects, risk assessment BPMs, storage atlases, BPMs on storage capacity, BPMs on regulatory issues and community engagement and BPMs related to CO<sub>2</sub> pipelines.

# Initial assessment of scope and content of BPMs



BPM	Planning/pre-feasibility	Site screening, selection and characterisation	Simulation and modelling	Well construction/integrity	Operation	Closure	Monitoring and verification	Risk management, incl. 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 (existing wells)	-	-	-	-	-	Technical (existing wells)
DNV RP-J203	Basic	Detailed	Basic	Detailed	-	-	Detailed	Detailed
DVN CO2RISKMAN	-	-	-	-	-	-	-	Detailed
GEOSEQ	-	Basic	Basic	-	-	-	Detailed	-
NETL MVA	-	-	-	-	Technical	Technical	Technical	Basic
NETL GS	Technical	Technical	-	-	-	-	-	-
NETL SS	Basic	Detailed	Basic	-	-	-	-	Technical
NETL RA+update	-	-	Technical	-	-	-	-	Technical
NETL WM	-	-	-	Technical	Technical	Technical	-	-
WRI CCS	Basic	Detailed	Basic	Basic	Basic	Detailed	Detailed	Detailed
IEA Weyburn	-	Technical	Technical	Technical	-	-	Technical	Technical
CSA	Basic	Detailed	Detailed	Detailed	Basic	Detailed	Detailed	Detailed
AU1	-	-	-	-	-	-	-	-
AU2	-	-	-	-	-	-	(Very) Basic	(Env. risk very basic)
EC1	-	-	-	-	-	-	-	Detailed
EC2	-	Detailed	Basic	-	-	-	Detailed	(only corrective part)
OSPAR	Basic	Basic	-	-	-	-	-	Basic
London	-	Very basic	-	-	-	-	Very basic	Very basic
EPA	-	-	-	-	-	Basic	Basic	Basic

The following assessment grades have been used. Some BPM have limited cope and the assigned "grade" applies to the topic of the BPM.

-	Not covered specifically	Technical	Provides technical details of projects, generally comprehensive
Basic	Briefly covered in a generic way	Detailed	Comprehensive discussion, generally generic

# The initial compilation shows that:

- Site selection, monitoring and verification and risk assessment are well covered by several existing documents
- By September 2013, only one standard on CO<sub>2</sub> storage has been identified, the Canadian CSA Z741-12. It is also the document that appears to cover most topics related to storage and monitoring CO<sub>2</sub> in geological formations
- There is a need to
  - identify the applicability of the documents to various stakeholders
  - identify shortcomings of the various documents



# Recommendations



- Provided sufficient members volunteer contributions the Task Force 6 carries its work into a Phase 2. The objective of this phase will be to:
  - Suggest a web solution for annual updates by an operative organization (to be decided)
  - Identify the applicability (and the shortcomings) of the various BPMs
  - Communicate the results to ISO TC265 (ISO committee for development of a set of CCS standards)
- Further work on BPMs related to regulatory issues etc is excluded from the work of Task Force 6.



# Deliverables and schedule

- Deliverables
  - Update of the report including a section that describes the relevance of the various BPMs to guidelines and existing standards on CO<sub>2</sub> storage and various stakeholders
  - A proposal for the structure of a web based solution
- Schedule
  - Approval of further work: November 2013
  - Commitment from Task Force members: End 2013
  - Draft Deliverables: CSLF spring meeting 2014
  - Final deliverable: CSLF Fall meeting 2014.

# 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



**Comments?**

**Thank you!**