



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

*Lars Ingolf Eide, Norway*

Technical Group Meeting, Rome, Italy, April 17, 2013

# 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
  - **Action:** The Technical Group will identify and review standards for CO<sub>2</sub> storage and monitoring.
  - **Outcome:** Identification 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
- Norway volunteered to chair the Task Force for Action 6
- Name “Reviewing Best Practices and Standards for Geologic Storage and Monitoring of CO<sub>2</sub>”

# 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

# Task Force Work Plan



- Identify and review existing standards for geological CO<sub>2</sub> storage and monitoring on an annual basis;
- Identify shortcomings and/or weaknesses in standards/guidelines;
- Communicate with the ISO CCS working group (Technical Committee 265, TC 265) that has been established;
- Produce annual summaries of new as well as updated standards, guidelines and best practice documents regarding geological storage of CO<sub>2</sub> and monitoring of CO<sub>2</sub> sites; and
- Follow the work of other task forces related to CO<sub>2</sub> storage, such as TF 7 (Technical Challenges for Conversion of CO<sub>2</sub> EOR to CCS) and TF1 (Technology Gaps Closure )

# Deliverables

- An annual interim report by the end of 2012;
- By Ministerial November 2013
  - Initial compilation
  - Recommendation on continuation or termination of.
- Further deliverables to be decided after the decision gate in 3Q 2013.

# 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

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# Content of initial compilation



- Identified BPMs and standards
  - CO2CRC report (2011) updates include
    - Weburn-Midale BPM
    - Canada/US Standards manual on CCS (*Canadian Standards Association (CSA) Z741 – Geological Storage of Carbon Dioxide*)
    - NETL post 2010
    - DNV post 2010
- Guidelines to regulations

# Initial assessment of scope

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
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



# Contents of initial compilation



- In appendices (tabulated, mainly as suggestions from members)
  - Legislation
  - Monitoring tools and techniques in selected projects
  - Risk Assessment BPMs
  - Storage atlases
  - BPMs related to regulatory issues, community engagement and communication
  - BPMs on storage capacity
  - BPMs on pipelines

# Next step



- Review of selected standards/BMs, including shortcomings and/or weaknesses in standards/guidelines:
  - Issued call for volunteers
  - One response, four reviews included in last version
- Streamline report
- Look at possible web solution (PIRT knowledge sharing hub)
- Communicate findings to the ISO CCS working group that has been established.

# Report outline



- Executive summary
- Introduction
- 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
- Other related documents
- ISO TC265 on carbon capture and Storage
- Summary, conclusions and recommendations

# Proposed Task Force Timeline



- Submit summary to the Secretariat by July 1, 2013
- Finalize report by September 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.



**Comments?**

**Thank you!**