

Carbon Sequestration Leadership Forum

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MEETING SUMMARY

Projects Interaction and Review Team (PIRT) Meeting
Regina, Saskatchewan, Canada
15 June 2015

Prepared by the CSLF Secretariat

LIST OF ATTENDEES

PIRT Active Members

Australia:	Clinton Foster (Chair), Maxwell Watson
Canada:	Eddy Chui
European Commission:	Jeroen Schuppers
France:	Didier Bonijoly
Japan:	Ryozo Tanaka
Mexico:	Jazmin Mota
Netherlands:	Paul Ramsak
Norway:	Trygve Riis, Lars Ingolf Eide
Saudi Arabia:	Hamoud Alotaibi
South Africa:	Landi Themba
United Kingdom:	Brian Allison
United States:	Mark Ackiewicz
GCCSI:	Neil Wildgust

Other CSLF Delegates

Canada:	Kathryn Gagnon, Geoff Murphy
Korea:	Chong Kul Ryu, Chang Keun Yi
Saudi Arabia:	Khalid Abuleif, Farad Almuhaish
United States:	Stephanie Duran

CSLF Secretariat

Richard Lynch, Adam Wong

Invited Speaker

China: Jinfeng Ma, Department of Geology, Northwest University

Observers

Canada:	Farhang Abdollahi, George W. Sherk, Simon O'Brien, Bill Zeng
China:	Zhiwu Liang, Gao Ruimin, Hong Wang, Wei Wang, Xiangzeng Wang, Haike Yuan
Norway:	Britta Paasch, Åse Slagtern
United Kingdom:	Aatif Baskanderi, Bill Buschle

1. Welcome and Review of PIRT Functions

PIRT Chairman Clinton Foster welcomed participants to the 23rd meeting of the PIRT and briefly reviewed the PIRT's functions. These fall into two categories, one being "Business as Usual" which includes review of projects seeking CSLF recognition, monitoring of projects already recognized, and organizing future CSLF Technology Workshops. A second category of PIRT functions is "CSLF Technology Roadmap (TRM) Activities" which includes monitoring TRM priority actions and summarizing progress for these actions, collaboration with other CCS-related organizations as needed, and preparation of the 2015 TRM Interim Report and the 2017 TRM.

Dr. Foster ended his opening remarks by noting that this was the second meeting under the PIRT's revised Terms of Reference, and briefly summarized the procedures for how the PIRT now examines projects nominated for CSLF recognition:

- Project proposals should be circulated to PIRT Active Members by the CSLF Secretariat.
- No later than ten days prior to PIRT meetings, Active Members are asked to submit a free-text comment, either supporting or identifying issues for discussion, on each project nominated for CSLF recognition.
- At PIRT meetings or via proxy through the PIRT Chair, individual country representatives will be required to comment on projects nominated for CSLF recognition.
- Recommendations of the PIRT should be reached by consensus with one vote per Active Member country only.

2. Introduction of Meeting Attendees

PIRT meeting attendees introduced themselves. In all, thirteen CSLF delegations were represented at the meeting.

3. Approval of Meeting Summary from Warsaw PIRT Meeting

The Meeting Summary from the October 2014 PIRT meeting in Warsaw was approved as final with no changes.

4. Report from CSLF Secretariat

Richard Lynch provided a multi-part report from the Secretariat, which covered the status of CSLF-recognized projects, PIRT consensuses and action items from the October 2015 meeting in Warsaw, and the initial draft of a TRM Interim Report that had been prepared by the Secretariat for the current meeting.

Concerning the portfolio of CSLF-recognized projects, Mr. Lynch stated that as of the beginning of 2015 there were 31 active projects and 12 completed projects, spread out over five continents. Since then there has been notification that the CO₂ Capture Project Phase 3 has concluded and that the CO₂ GeoNet Project may soon conclude. The status of the Lacq Project in southern France has not been ascertained. For the current meeting, the Jingbian CCS Project has been nominated by China and Australia for CSLF recognition.

Mr. Lynch reported that the lone consensus from the Warsaw meeting was that the PIRT recommended approval by the Technical Group of the Norcem CO₂ Capture Project, and that did occur at the next day's Technical Group meeting. There were five action items

from the October 2014 meeting, all of which are now complete. Three of these completed Actions were related to the draft TRM Interim Report.

Concerning the draft TRM Interim Report, Mr. Lynch stated that this document is an outgrowth of the 2013 TRM which had been launched at the 5th CSLF Ministerial in 2013. An objective of the 2013 TRM was to answer three key questions:

- What is the current state of CCS technology and deployment, particularly in CSLF member countries?
- Where should CCS be by the year 2020 and beyond?
- What is needed to get to these advanced stages of development and deployment, while also addressing the different circumstances of developed and developing countries?

The 2013 TRM identified ten technology needs areas, and to gauge progress the Secretariat developed a template (which was approved by the PIRT Chair) for gathering information about these ten areas. The template was provided to Technical Group delegates, who then sent it to representatives of organizations within their countries which are working on CCS. Mr. Lynch stated that as of May 2015, a total of 24 completed templates had been returned, representing viewpoint in 12 countries / 4 continents. This information was used to prepare graphical representations of the perceived progress, and PIRT members wrote one-page summaries describing movement for each of the ten areas. The Secretariat wrote an introduction and a conclusions section and assembled these plus the ten technology sections into the draft TRM Interim Report. The intention is for a final version of this report to be a deliverable at the upcoming 6th CSLF Ministerial in November.

Mr. Lynch closed his presentation by providing some conclusions and recommendations from the TRM Interim Report:

- Except for a very few niche industrial sector applications, for 1st generation technologies, none of the ten technology needs areas perceived as progress being 'fast moving'.
- Progress for developing and demonstrating 2nd and 3rd generation technologies were perceived as proceeding at an even slower rate.
- Economic, policy, and technology barriers are inhibiting achieving the timeframe goals for large-scale demonstration of CCS technologies.
- Concerning economic barriers, governments should urgently consider methods to assist stakeholders to significantly drive down the cost of CCS deployment, since it is the stakeholders who will be making the majority of the financial investments.
- Concerning policy barriers, governments should review institutional regulatory policies to identify how these barriers to CCS deployment may be reduced.
- Concerning technology barriers, stakeholders should increase their mechanisms for sharing best practices, particularly regarding communications, regulation and cost reduction, and pledge to engage in public-private partnerships to encourage the development of additional demonstration projects and facilitate the development of CCS projects internationally.

5. Review of Initial Draft of 2015 TRM Interim Report

Dr. Foster led an extended discussion that provided some clarity on how to improve the TRM Interim Report. The initial draft was deficient, as Neil Wildgust pointed out, because perceived progress in any of the ten technology needs areas was being inaccurately described due to adverse influences by economic and policy barriers. For instance, the TRM Interim Report, taking into account all kinds of barriers, indicates that 1st generation technologies to conduct large-scale CO₂ storage were perceived as showing only very slow to moderate progress for being developed and implemented. However, from a purely a technical viewpoint, actually there are no significant technology barriers in this area. Didier Bonijoly further emphasized this deficiency with a presentation concerning technical progress in non-EOR utilization of CO₂ that was much more optimistic than the TRM Interim Report.

Given that the Technical Group as a whole would be taking up this topic during their next day's meeting, there was general agreement that no immediate action from the PIRT was needed for addressing the problems with the TRM Interim Report. A remedial plan would instead be put in place by the Technical Group. However, PIRT delegates were still requested to provide any comments and suggestions that would lead to a better document.

6. Review and Approval of Project Proposed for CSLF-Recognition: Jingbian CCS Project

Jinfeng Ma, representing Northwest University of China, gave a presentation about the Jingbian project. This integrated large-scale pilot project, located at a coal-to-chemicals company in the Ordos Basin of China's Shaanxi Province, is capturing CO₂ from a coal gasification plant via a commercial chilled methanol process, transporting the CO₂ by tanker truck to a nearby oil field, and utilizing the CO₂ for EOR. The overall objective is to demonstrate the viability of a commercial EOR project in China. The project includes capture and injection of up to about 50,000 tonnes per year of CO₂. There will also be a comprehensive measurement, monitoring and verification (MMV) regime for both surface and subsurface monitoring of the injected CO₂. This project is intended to be a model for efficient exploitation of Shaanxi Province's coal and oil resources, as it is estimated that more than 60% of stationary source CO₂ emissions in the province could be utilized for EOR.

Outcome: After a comprehensive discussion, there was unanimous consensus by the PIRT to recommend approval of the Jingbian CCS Project by the Technical Group.

7. Future PIRT Activities concerning the TRM

Dr. Foster led a discussion on the future of the TRM, specifically concerning what the future revisions of TRM should look like and who will be the intended audience. Dr. Foster opined that the principal stakeholder is government, and given that it may be worth considering a different format for future TRM revisions. Khalid Abuleif and Lars Ingolf Eide both stated that progress of commercialization for CCS technologies has been and should remain the key focus of the TRM, with Mr. Eide further adding that future TRM versions should perhaps focus on barriers to implementation, not the readiness of the technologies themselves.

Concerning what a future TRM should look like, Jeroen Schuppers suggested that if the principal stakeholder is indeed government then a status report rather than a TRM would

be more valuable to Ministers. Trygve Riis, on the other hand, stated that the CSLF TRM in its current format is different and arguably more useful from all other global CCS roadmaps because of its focus on technologies and their commercialization. Mr. Riis also concurred with Mr. Eide's earlier comment that technology readiness is becoming less of an issue compared to implementation of technology, and in that regard it might be time for the CSLF to be thinking more in terms of preparing a roadmap, not a TRM. To that end, Mark Ackiewicz noted that there needs to be mechanisms of some kind so that new learnings and issues can be captured and brought into future roadmap updates.

In the end there was agreement to postpone further discussion about the format and frequency of future TRM updates until the next PIRT meeting, during the 6th CSLF Ministerial. There was also agreement that involvement of outside organizations in the TRM process could be beneficial.

8. Adjourn

Dr. Foster then thanked the attendees for their participation, noting their high level of interaction, and adjourned the meeting.

Summary of Consensuses

- The PIRT recommends approval by the Technical Group for the Jingbian CCS Project.
- The PIRT will decide the format and frequency of future TRM updates at its next meeting.