



TECHNICAL GROUP

Planning Document: Technical Gaps Closure Task Force

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PLANNING DOCUMENT:
TECHNICAL GAPS CLOSURE TASK FORCE

Note by the Secretariat

Background

At the 4th CSLF Ministerial Meeting, at Beijing, China in September 2011, the Technical Group approved a new multi-year Action Plan. “Technical Gaps Closure” is one of the twelve Actions that comprise the Action Plan, and Australia has volunteered to lead a new Task Force that will focus on identification and review of new updated critical technology gaps and opportunities for CO₂ capture transport, storage, and environmental monitoring and verification. This paper is a Planning Document for the new Task Force that describes its mandate, scope, goals, timeframe, and expected outcomes.

Action Requested

The Technical Group is requested to review and approve this Planning Document.

Planning Document for Action Plan #1 Technology Gaps Closure

Background

The Carbon Sequestration Leadership Forum (CSLF) has had a significant focus on encouraging and facilitating research, development, demonstration and deployment of effective, low-cost CO₂ capture, utilization and storage (CCUS) technologies. If CCUS is going to be applied broadly, at large scale, it is essential that the technology is refined to deliver safe, low-cost, efficient storage in a wide range of situations. As a contribution to the global effort on CCUS the CSLF will focus attention on the gaps and opportunities associated with the technology, with a view to speeding up the technology delivery at a global level and getting more focus on the critical gaps and opportunities that can make a significant difference by 2025.

As the global effort on CCS moves increasingly to large scale demonstration, there is an increasing amount of effort going into research and development and an increased number of governments and companies tackling pilots and demonstrations. This is complimented by a growing offering of technology and technology support for CCUS. On the capture side the traditional amine capture technology is being installed or planned on large projects. A number of Original Equipment Manufacturers (OEMs) have developed their own technologies and are offering either enhancements on the amine technologies or new technologies, particularly insolvents.

On the transport and storage side, global experience and knowledge is growing. The decades of experience in enhanced oil recovery, combined with many project-years operating experience in carbon storage projects such as Sleipner, Snøhvit, and In Salah as well as the exploration and planning work that has been undertaken for projects such as Gorgon, Boundary Dam, ROAD, Decatur, etc. represent a substantial body of global knowledge. Research institutions around the world and their associated demonstration projects have also built a strong basis in the science and subsurface engineering.

It is clear however that, despite the efforts and developments in capture, storage and monitoring and verification to date, driving down the costs is still an overriding imperative. This can only be achieved by developing and refining more efficient technology and integrating the learning that comes from deployment in pilot and demonstration facilities around the world.

Mandate

At the CSLF meetings in Beijing, China (September 19-23, 2011) the CSLF Technical Group agreed that the Secretariat should circulate, by the end of the first week of October, a listing of the twelve actions of its five years Action Plan to Technical Group delegates with the request that that each CSLF Member provide a ranking by priority of importance. Delegates were asked to respond within three weeks and the results were then compiled by the Secretariat. Results from this survey were used to decide which actions to undertake immediately and which ones to defer. The Secretariat was also asked to solicit ideas for additional actions from the delegates.

Specifically, the prioritized actions of the five-year plan include Action Plan 1: Technology gaps. The formation of a task force to implement Action Plan 1 was proposed.

Membership

Australia has agreed to lead or co-lead the task force. Membership of this task force is open to CSLF member countries and interested parties. *[Note: those interested in participating on the task force as a member or co-lead should contact the CSLF Secretariat or Dr. Richard Aldous of CO2CRC, Australia (raldous@co2crc.com.au)]*

Outcome

The outcome of the Technology Gaps Task Force will be the identification and review of new updated critical technology gaps and opportunities for CO₂ capture transport, storage, and environmental monitoring and verification. The identification of the significant gaps and opportunities should be of interest to governments, companies and researchers and technology developers around the world. It may be of particular value to those organizations looking to foster international collaboration and optimization of the technology effort.

Action and Scope

To obtain this outcome, the Task Force will identify and review the spectrum of technologies and emergent technologies, looking for any critical gaps but also identifying the opportunities to substantially reduce costs and get better operational and environmental outcomes.

Suggested Approach

1. Identify 2-3 participants interested in each of:
 - a. Capture technologies
 - b. Transport technologies
 - c. Storage(sub surface issues and MMV) technologies
 - d. Environment monitoring, including submarine monitoring technologies
2. Define an agreed process to assemble information using an agreed standardized template on each major aspect or sub-element for each of the above technology areas, for example:
 - a. **Technology dimension** : eg Adsorbent technologies or new solvents etc
 - b. **Current status of technology** advanced technology developments only (eg already at pilot scale as a minimum)
 - c. **Who are the main players** in this area
 - d. **Technology shortfalls gaps risks and opportunities** associated with the technology
 - e. **Potential for a major breakthrough** deliverable to market by 2025, (high, medium, low)
 - f. **Potential for a deliverable cost reduction** in the next 10 years stated as percentage improvement against of a benchmark CCS system.
 - g. **Estimated cost to deliver improvement or cover gap**
 - h. **Collaboration potential**
3. **Synthesize data from the above into a report** to be delivered by June each alternate year starting in 2013.

4. **The reports will** set out high level gaps and opportunities, with recommendations on how the global technology development pathway could be sped up or enhanced to further drive down costs and get better outcomes.