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TECHNICAL GROUP

Summary of the Report by the CSLF Task Force on CCS Technology Opportunities and Gaps

Background

At the September 2011 CSLF Ministerial Meeting in Beijing, the Technical Group approved a new multi-year Action Plan to identify priorities and provide a structure and framework for conducting Technical Group efforts through 2016. To that end, a task force (led by Australia) was formed to address the "CCS Technology Opportunities and Gaps" Action in the Plan. The task force mandate was to identify and monitor key CCS technology gaps and related issues, to determine the effectiveness of ongoing CCS RD&D for addressing these gaps, and to recommend any RD&D that would address CCS gaps and other issues. The final report of the task force has been issued. This paper is a summary of the findings of the task force's report.

Action Requested

The Technical Group is requested to review the summary of findings from the CCS Technology Opportunities and Gaps Task Force.

Summary of the Final Report of the CCS Technology Opportunities and Gaps Task Force

- At a high level there are no major technology gaps or impediments to CCS; the technology is available and can be effectively deployed.
- The focus of the technology development is now on driving down costs and securing more efficient operational, monitoring and regulatory outcomes.
- Current commercially available capture technologies will evolve by building more projects. This typical "learning by doing" phenomenon is common with many technologies and is already happening in CCS.
- For the next generation of capture technologies, that promise much lower costs, more attention needed. Investment in the early stages of development has been significant with a number of promising emerging technologies. However with little or no market for CCS (e.g., CO_2 price or emissions reduction mandate) the market pull for this next crop of technologies is weak. Getting next generation lower cost technologies into large scale pilots and demonstration is important and requires governments to act to ensure that much lower costs of capture are available for deployment by 2030 and beyond.
- Technologies for capturing CO_2 from natural gas combustion are a priority, as low cost shale gas will encourage more gas combustion as the need to reduce emissions increases.
- Pipeline transporting of CO2 is a mature technology, but more experience is need in planning and designing large scale transport hubs managing a diverse supply of CO_2 with different impurity concentrations. Large scale transport of CO_2 by ship offers promise and needs to be demonstrated as scale.
- On storage, the significant body of knowledge from the oil and gas industry combined with what is now 10-15 years of R&D on the behaviour of CO_2 in deep rock formations underpins a strong consensus that safe CO_2 storage is possible today
- The Lead times from initiating exploration through to approvals and construction will often be 10-15 years. The rate at which exploration is incentivised to start will have a profound impact on the degree to which CCS can contribute to reaching 2050 global reduction targets. This will increase the ability to deploy CCS more rapidly and will in turn affect the rate of technology improvement. There is a strong recommendation to start or incentivize more exploration for storage.
- Monitoring, measurement verification (MMV) for stored CO_2 continues to progress well. Low cost continuous high resolution subsurface monitoring is being refined and may be valuable in some situations. An important new front is developing MMV technologies and strategies for MMV on storage in offshore environments.
- It is recommended that Governments continue to look to support and incentivise international technology collaboration and researcher exchange to spark faster developments and the diffusion of new CCS technology.