



## **TECHNICAL GROUP**

### **Revised Draft Minutes of the CSLF Technical Group Meeting**

**Beijing, China  
20-21 September 2011**

Barbara N. McKee  
Tel: 1 301 903 3820  
Fax: 1 301 903 1591  
[CSLFSecretariat@hq.doe.gov](mailto:CSLFSecretariat@hq.doe.gov)



MINUTES OF THE CSLF TECHNICAL GROUP MEETING  
BEIJING, CHINA  
20-21 SEPTEMBER 2011

*Note by the Secretariat*

Background

The Technical Group of the Carbon Sequestration Leadership Forum held a business meeting on 20-21 September 2011, in Beijing, China. Initial draft minutes of this meeting were compiled by the CSLF Secretariat and were circulated to the Technical Group delegates for comments. Comments received were incorporated into this revised draft. Presentations mentioned in these minutes are now online at the CSLF website.

Action Requested

Technical Group delegates are requested to approve these revised draft minutes.



**REVISED DRAFT**  
**Minutes of the Technical Group Meeting**  
**Beijing, China**  
**Tuesday & Wednesday, 20-21 September 2011**

## LIST OF ATTENDEES

### Technical Group Delegates

Australia:	Niki Jackson
Brazil:	Beatriz Espinosa, Viviana Coelho
Canada:	Stefan Bachu, Eddy Chui
China:	Sizhen Peng, Jiutian Zhang
European Commission:	Jeroen Schuppers
France:	Didier Bonijoly
Germany:	Jürgen-Friedrich Hake
Italy:	Giuseppe Girardi, Sergio Persoglia
Japan:	Ryo Kubo, Shingo Kazama
Korea:	Chang-Keun Yi
Netherlands:	Harry Schreurs
Norway:	Trygve Riis (Chair), Jostein Karlsen
Poland:	Janusz Michalski
Saudi Arabia:	Khalid Abuleif, Ali Al-Meshari
South Africa:	Tony SurrIDGE (Vice Chair)
United Kingdom:	Philip Sharman
United States:	Joseph Giove, George Guthrie

### CSLF Secretariat

John Panek, Adam Wong, Matt Gerbert

### Observer Participants

Gary Kirby, Principal Geologist, British Geological Survey, United Kingdom  
Li Zheng, Professor, Tsinghua University, China  
Mike Miyagawa, Projects Advisor, Global CCS Institute  
Tim Dixon, Manager for CCS and Regulatory Affairs, IEA Greenhouse Gas R&D Programme

## Tuesday, 20 September

### 1. Technical Group Chairman's Opening Statement

The Chairman of the Technical Group, Trygve Riis of Norway, called the meeting to order and welcomed the delegates and observers to Beijing. Mr. Riis introduced Vice Chair Tony SurrIDGE of South Africa and noted that Vice Chair Clinton Foster of Australia was unable to attend. He expressed his appreciation to the Ministry of Science and Technology, and the National Development and Reform Commission of the People's

Public of China for hosting this meeting. Mr. Riis provided context for the meeting with a brief summary of the previous CSLF Technical Group Meeting in May 2011 in Edmonton, Alberta, Canada. Four new projects have been nominated and will be reviewed for CSLF recognition. Two other projects were already nominated and reviewed for CSLF recognition at the meeting in Edmonton, and will be brought to the Policy Group later today. Mr. Riis will go to the Policy Group to present all six projects for CSLF recognition. Another topic that will be discussed today is the Technical Group's Five-Year Action Plan, in which 12 proposed Action Plan Components will be ranked by priority for the future.

## **2. Introduction of Delegates and Observers**

Technical Group delegates and observers present for the session introduced themselves. 17 of the 25 CSLF members were present at this meeting, including representatives from Australia, Brazil, Canada, China, the European Commission, France, Germany, Italy, Japan, Korea, the Netherlands, Norway, Poland, Saudi Arabia, South Africa, the United Kingdom, and the United States. Observers representing Brazil, Canada, China, Hong Kong, Japan, the Netherlands, the United Kingdom, and the United States were also present, along with representatives from the Global CCS Institute, IEA GHG, and UNIDO.

## **3. Adoption of Agenda**

The Agenda was adopted with one minor addition. Item 16 on the agenda was amended to include two presentations: one by the Global CCS Institute and one by the IEA GHG.

## **4. Review and Approval of Minutes from Edmonton Meeting**

The Technical Group minutes from the May 2011 meeting in Edmonton, Alberta, Canada, were approved as final with no changes.

## **5. Review of Edmonton Meeting Action Items**

John Panek of the CSLF Secretariat reported that all action items from the Edmonton meeting had been completed or were in progress.

## **6. Report from CSLF Secretariat**

Mr. Panek gave a presentation that provided an update on CSLF Secretariat activities. The 2011 CSLF Technology Roadmap has been developed and was distributed during registration for this meeting. The document can also be found on the CSLF website. Another document is the September 2011 CSLF Strategic Plan Implementation Report (SPIR), found in the conference book. The document includes updates and reports from CSLF recognized projects, task forces, and a variety of other activities.

Based on recommendations from the Technical Group at the Edmonton meeting in May 2011, the In Salah CO<sub>2</sub> Storage Project, Algeria; the Sleipner CO<sub>2</sub> Project, North Sea; and the Weyburn-Midale CO<sub>2</sub> Project, Canada; will each receive a CSLF Global Achievement Award during the 2011 CSLF Ministerial Meeting Opening Ceremony. The CSLF has also received project submission forms from four projects for CSLF recognition. This is in addition to the two projects that were received prior to the Edmonton meeting and approved by the Technical Group at that meeting. That brings the total number of projects up for CSLF recognition to six.

Attendees were also encouraged to go to the CSLF website to sign up for daily updates from the CSLF on carbon capture, utilization and storage (CCUS) activities. Mr. Panek then noted that in the September 2011 CSLF Strategic Plan Implementation Report (SPIR), there are several photographs from the recent CSLF Storage and Monitoring Projects Interactive Workshop held in March 2011 in Saudi Arabia. Ten CSLF recognized projects participated, and their presentations can also be found on the CSLF website. Mr. Panek thanked Saudi Arabia for hosting such a wonderful event.

## 7. Approval of Projects Nominated for CSLF Recognition

### Rotterdam Opslag en Afvang Demonstratieproject (ROAD) Project

Harry Schreurs of the Netherlands gave a presentation about the Rotterdam Opslag en Afvang Demonstratieproject (ROAD), nominated by the Netherlands and the European Commission. The goal of ROAD is to demonstrate that an industrial-scale, integrated carbon capture and storage (CCS) chain (i.e., capture on a coal-fired power plant and offshore storage) can be applied in a reliable and efficient way within a 10-year timeframe (by 2020) and can make a substantial contribution to climate change objectives. The project will share knowledge and experiences with other industries, countries, general public, NGOs and other stakeholders. ROAD is one of the six large-scale CCS demonstration projects within the European Energy Programme for Recovery (EEPR). Captured CO<sub>2</sub> will be transported via pipeline and injected into depleted gas reservoirs under the North Sea. After brief discussion, there was consensus by the Technical Group to recommend CSLF recognition for this project.

### CGS Europe Project

Gary Kirby, Principal Geologist, British Geological Survey, United Kingdom, gave a presentation about the CO<sub>2</sub> Geological Storage (CGS) Europe Project, nominated by France, Italy, Norway, and the European Commission. CGS Europe is a collaborative project involving extensive structured networking, knowledge transfer and information exchange, and is designed to facilitate the large-scale demonstration and deployment of CCUS, and to support implementation of the Directive on geological storage of carbon dioxide in all relevant EU Member States and associated countries. Building on the sound basis of the CO<sub>2</sub> GeoNet Association, the CGS Europe Project will create a pan-European network of experts in the geological storage of CO<sub>2</sub> and a centralized knowledge base which will provide an independent source of information, research and advice for national, European, and international stakeholders. It will enable access to the most up-to-date results of CO<sub>2</sub> storage studies, the sharing of experiences and best practices, support of implementation of regulations, the formulation of relevant new research and the development of appropriate new projects. After brief discussion, there was consensus by the Technical Group to recommend CSLF recognition for this project.

### SaskPower Integrated CCS Demonstration Project at Boundary Dam Unit 3 Project

Stefan Bachu of Canada gave a presentation about the SaskPower Integrated CCS Demonstration Project at Boundary Dam Unit 3 Project, nominated by the Canada and the United States. The goal of this project is commercial co-production of electricity and CO<sub>2</sub> for sale using indigenous coal resources. The Boundary Dam ICCS Demonstration Project is expected to be the first application of full stream flue gas treatment for a pulverized coal unit. Operations of the highly integrated system will demonstrate not only CO<sub>2</sub> capture technology, but its interaction and optimal thermodynamic integration with the heat power cycle and with power production at full commercial scale. The

captured CO<sub>2</sub> will be used for Enhanced Oil Recovery. After brief discussion, there was consensus by the Technical Group to recommend CSLF recognition for this project.

### CO<sub>2</sub> Capture Project – Phase 3

Philip Sharman of the United Kingdom gave a presentation about the CO<sub>2</sub> Capture Project – Phase 3, nominated by the United Kingdom and the United States. The CO<sub>2</sub> Capture Project (CCP) is a partnership of several major energy companies working together to advance the technologies and to improve operational approaches in order to reduce costs and accelerate the deployment of CCUS. The CCP is currently in its third phase of activity – CCP3 (2009-2013). During the course of CCP3, the program will culminate in at least two field demonstrations of capture technologies and a series of monitoring field trials which will provide a clearer understanding of how to better monitor CO<sub>2</sub> in the subsurface. After brief discussion, there was consensus by the Technical Group to recommend CSLF recognition for this project.

## **8. Report from Projects Interaction and Review Team (PIRT)**

The Acting PIRT Chair, Stefan Bachu, gave a presentation that summarized the PIRT's recent accomplishments. At the Edmonton meeting, the PIRT reached an agreement that the Task Force on Assessing Progress on Technical Issues Affecting CCS should be separated from the PIRT, and report directly to the Technical Group. Also at the Edmonton meeting, the PIRT approved two projects for CSLF recognition: the Janschwalde Project and the Zero Emission Porto Tolle (ZEPT) Project. The PIRT also discussed the need to simplify the CSLF Project Submission Form and Gaps Analysis Checklist.

At the previous day's PIRT meeting, the four projects that were just approved by the Technical Group were initially reviewed and approved by the PIRT. After approval by the Technical Group, the projects then go for review by the Policy Group. A discussion regarding the level of detail on the CSLF Project Submission Form also occurred. While some argued that the forum should be simpler, there were other arguments to keep it as detailed as possible, particularly if there is a need to uncover what the projects will do and what gaps in knowledge will be address. There was no resolution to the issue, and thus it will be brought up again during the next PIRT meeting.

Dr. Bachu stated that there are now four categories of CSLF recognized projects:

1. Completed Projects
2. Active Projects
3. Inactive Projects
4. Projects that were Withdrawn by Sponsor

Dr. Bachu also briefly mentioned the PIRT's discussion on the Technical Group's Five-Year Action Plan. A decision was made at the PIRT meeting to divide the 12 proposed activities into two categories. One category would be for items taken up by other organizations. The other category would be for items identified by only the CSLF. The PIRT would like to establish a priority list for urgency and importance of these activities within two months. Afterwards, volunteer delegates would be needed within a month after to jumpstart these activities in preparation for the next Technical Group meeting in the first part of 2012.

The PIRT also made recommendations for the 2011 CSLF Technology Roadmap. The PIRT recommends updating the Technology Roadmap every three years. The main



content should include an introduction over the current status of CO<sub>2</sub> capture and storage technologies. The module on ongoing activities should be removed and become a web-based document that can be updated annually by delegates and member countries by request of the CSLF Secretariat.

The PIRT was pleased with the recent CSLF Technology Workshop held in Saudi Arabia. Regarding future technology workshops, the PIRT recommends that workshops should be held opportunistically in conjunction with other events, preferably, CSLF meetings. For example, if the next CSLF Technical Group meeting is going to be in Bergen with a visit to the Mongstad Test Center, then that is an opportunity to have a workshop on CO<sub>2</sub> capture.

At the conclusion of the presentation, Mr. Riis opened the floor for questions or comments. Philip Sharman added his thoughts on the CSLF Project Submission Forum. Mr. Sharman stated that while a more simplified list may help at the project approval stage, a longer and more in-depth list is needed at the project evaluation stage and would be useful to refer to. He believed that a full list is more useful to have at the beginning, and that it is more useful to have the project proponent's view of what their project is aiming to assess, even if the CSLF must simplify the list during the approval process.

Chairman Riis announced that during a recent Technical Group Executive Committee teleconference, it was decided that the next CSLF workshop would be organized, in co-sponsorship with the Global CCS Institute, on November 3, 2011 in London, United Kingdom. This workshop is being organized in conjunction with an IEA GHG Executive Committee meeting. Invitations to participate in the workshop will be sent out to relevant large-scale CCS projects which involve integration, as this will be the topic of discussion.

Mr. Panek added that a list of CSLF recognized projects with a strong integration component had been sent to the Global CCS Institute and that invitations would be sent out within the next two weeks. In anticipation of the projects receiving recognition at this meeting, those projects proposed for recognition were included on the list.

Chairman Riis mentioned that the goal is to have about one workshop each year. At the next Technical Group meeting in Bergen, Norway in June 2012, the plan is to have a CSLF workshop on capture in conjunction with the meeting. The third topic to eventually have a workshop on is CO<sub>2</sub> transportation.

Vice Chair Tony Surridge noted that South Africa plans to have a workshop on transportation towards the end of 2012, in October or November. He suggested that it would be another opportunity to hold a CSLF workshop on CO<sub>2</sub> transportation in conjunction with this meeting.

## **9. Report from Risk Assessment Task Force**

The Task Force Chair, George Guthrie of the United States, gave a brief update on the Risk Assessment Task Force (RATF). The RATF meeting earlier in the day discussed three main topics. The first was on interactions with the IEA GHG risk assessment network. The RATF also reviewed the status of their Phase 2 activities, and then discussed the Joint Policy Group and Technical Group Task Force on Risk and Liability.

Dr. Guthrie provided a background to the RATF. The Task Force was initiated in 2006 to examine the risk assessments, standards, procedures, and research activities. A Phase 1 report was completed in 2009 and is available on the CSLF website. Phase 2 activities were initiated in the fall of 2010. With Phase 1, there were several recommendations that the RATF took action on, and some of these led to Phase 2 activities. Dr. Guthrie then

reviewed the status of the recommendations. The first recommendation was the notion that risk assessment should be considered in the context of outreach with stakeholders. This recommendation was passed to the Policy Group. The RATF also approved five outreach documents from the Policy Group, which were then approved by the Technical Group at the Pau, France meeting in March 2010. Those documents are available at the CSLF website. During the RATF meeting, a discussion focused on a need for additional outreach activities or outreach documents. The second recommendation out of Phase 1 was that the link between risk and liability should be recognized and considered because of the liability tie on this. RATF felt that this was a Policy Group activity, and thus recommended it to the Policy Group. This led to the formation of the new joint Policy and Technical Group Task Force on Risk and Liability. The RATF is also on the action plan number five of the list of 12 actions from the PIRT. The final recommendation out of Phase 1 was the notion of storage integrity goals, and whether or not there was any possible path forward on developing acceptable risk levels for sites. A paper was developed, which Dr. Guthrie promised to discuss later.

With Phase 2, there were three main tasks. The first task was on the gap assessment relative to CCS tools. Various approaches were used. One of those was leveraging the IEA GHG risk assessment network activities. This has been a good link for the CSLF, as the RATF has received good information back from the workshops, and has had the opportunity to talk at their workshops about the CSLF and its interest in risk assessment. Two short overviews were developed in response to the gap assessment. One of them looked at gaps that were specific to risk assessment in the context of enhanced oil recovery. The second one is a short overview on risk issues related to various phases of CCS projects. The first one will be completed by the end of this year for review by the RATF and will be a room document at the Bergen, Norway meeting in June 2012. The second one on CCS project phases is to prepare for the liability piece coming from the Policy Group in recognition that there could be different phases of liability for a project. The RATF wanted to identify the different risk issues that feed into that liability. The second task for Phase 2 is a feasibility assessment of looking at general technical guidelines for risk assessment that could be applied to specific sites. A document on performance based standards for CO<sub>2</sub> site performance, safety, and integrity was prepared by colleagues in France. This document has had an extensive number of reviews, and comments, and is now ready to also be included in the Phase 2 report. The final task in Phase 2 was to gather further information on what various organizations are doing in the area of technical risk. The RATF decided that this issue should be set aside right now, as this issue would go beyond the scope of what the RATF had for Phase 2, and it was not clear what contribution the CSLF could make to this. This is being considered as a possible activity for Phase 3. However, it has not been resolved whether or not there is a need or for a Phase 3 for the RATF, as this should not be forced as a way of continuing the Task Force.

Dr. Guthrie then showed the status and timelines for Phase 2 documents. The final report should be ready by the spring of 2012. A similar time path is being used for the overview of projects and phases. The paper on performance based standards will be sent out at the same time. The RATF also discussed a proposed path forward for the Joint Policy Group and Technical Group Task Force on Risk and Liability. The proposal was submitted to the Secretariat. Dr. Guthrie showed the five proposed steps that are in the proposal, which will be recommended during the Joint Policy and Technical Group Meeting later in the week. The proposal includes five activities. The first one to establish the Joint Task Force has been completed. The group would have an individual that would then be



carrying out a lot of the work for the Task Force. This includes a background activity of looking at analysis and critical review of prior work on liability, and comparison of liability frameworks that have been established to date. That would then lead into a more detailed interview of key experts from various disciplines to try to get a better understanding of perspectives on risks, damages, and liabilities. The results of the interviews would then need to be assessed. These would all be used to feed into a set of facilitated workshops that would bring experts together to identify gaps, and methods to address those gaps. The three activities would be combined to propose a path forward for a Phase 2 version of this Joint Task Force, the goal being to have a report in a Phase 2 path forward proposed at the Joint Policy and Technical Group Meeting in 2012.

Didier Bonijoly of France suggested releasing the document from France on performance based standards for CO<sub>2</sub> site performance, safety, and integrity earlier, as it would become less relevant later. After a brief discussion, it was decided that the report will go out immediately to all Technical Group members with a 14-day cycle and, if hearing no objections, will be considered adopted by the Technical Group.

## 10. Report from Task Force to Assess Progress on Technical Issues Affecting CCS

Stefan Bachu, as Acting Chair of the Task Force to Assess Progress on Technical Issues Affecting CCS, gave a presentation that summarized the Task Force's recent meeting. The main topic discussed was the working groups on covering gaps in knowledge. There was agreement by the Task Force that it will no longer cover scientific gaps, but instead, focus on technical and deployment issues.

The Leader of the Working Group on CO<sub>2</sub> Transportation (Harry Schreurs of the Netherlands) reported that he has contacted the three CSLF-recognized projects that have transportation components and the replies indicated that the projects have information on:

- Selection of the transportation corridor;
- Obtaining rights of way; and
- Handling public concerns.

Mr. Schreurs also suggested that CO<sub>2</sub> Transportation should be the subject of a future CSLF Technical Workshop.

Discussion ensued about CO<sub>2</sub> compression should be considered part of the capture process or part of transportation. It was agreed that CO<sub>2</sub> compression is actually part of both since it occurs first at the capture facility ("behind the plant gate") but it may occur also along the transportation pipeline (booster stations) and in some cases it may occur at the storage site before injection.

Dr. Bachu, as Leader of the Working Group on CO<sub>2</sub> Storage and Monitoring, gave a progress report on the Working Group's activities. A questionnaire has been sent to all 25 CSLF-recognized projects that have a storage component and responses have been received from 17 projects. Based on responses, it appears that there are no show-stopper gaps in knowledge, with only technical issues to be addressed/resolved. The major emerging issue from the responses is that CO<sub>2</sub> capture and storage would be a major cost that would put the respective operators at a significant disadvantage compared to those in the same industry that would continue to vent the CO<sub>2</sub> into the atmosphere. A preliminary conclusion from the survey is that the Project Submission Form should be simplified and should reflect more technical and deployment aspects of CCUS and less scientific aspects.

## 11. Schedule and Plan for 2012 CSLF Technology Roadmap Update

A discussion occurred on the plans for the next CSLF Technology Roadmap (TRM). Acting PIRT Chair Stefan Bachu stated that the PIRT recommends that the roadmap be updated every three years, making the next major update in 2013 instead of 2012 (the last major update was in 2010; the 2011 update was minor and concerned only Module 2 of the TRM). The PIRT also believed that the update regarding projects and country activities should be taken out and produced separately as a standalone web-based document to be updated annually at the request and reminder of the Secretariat. This would remove the need for annual TRM updates and will allow the TRM to focus on CCS achievements, challenges and the road ahead. Dr. Bachu also suggested that the table of contents be revised by the Secretariat and be reviewed by a small group of delegates. During ensuing discussion, suggestions were made to release the TRM with each Ministerial meeting. However, some delegates objected to this suggestion, pointing out that time intervals between Ministerial-level meetings are irregular and dictated by other considerations and, therefore, it is unsure when each Ministerial meeting would occur. For example, Ministerial-level meetings were held in 2003 (CSLF founding), in 2004, in 2009, and now in 2011. Ultimately, Chairman Riis announced that a smaller group would be formed to consider this subject and make a decision before the next Technical Group meeting.

## 12. Technical Group Five-Year Action Plan

Chairman Riis opened the floor for a discussion regarding the Technical Group Five-Year Action Plan, in which 12 Actions were listed. Phillip Sharman believed that a number of the 12 Actions have been addressed by other organizations. Thus, maybe the CSLF can consider the work of other organizations that are already making good inroads into these topics and are producing reports. Therefore the CSLF can focus on looking at the lessons learned and perhaps sharing some of the issues in workshops.

Joseph Giove of the United States wanted to seek a point of clarification on the language in two of the actions: #6 and #7. Action #6 states that the Technical Group will “recommend standards” and Action #7 states that the Technical Group will provide “identification and recommendation of requirements.” Mr. Giove pointed out that “recommends” fell outside of the purview of the group. John Panek stated that the Secretariat would adjust the language. Mr. Panek also noted that for Action #2, the Global CCS Institute has agreed to have the CSLF projects on their mapping website so that the CSLF will have a section of projects which they can maintain. Dr. Bachu again emphasized that the PIRT would like to divide the 12 proposed actions into two categories. One category would be for items taken up by other organizations. The other category would be for items identified by only the CSLF.

Chairman Riis then summarized the discussion. The Secretariat, together with the Technical Group Executive Committee, will review the text and make improvements, such as removing words like ‘recommends’ and ‘standards’. Afterwards, the edited Technical Group Five-Year Action Plan will be sent to delegates for final comments. The delegates are to rank each of the Actions based on level of importance (with 1 as highest priority and 12 as lowest), with one ranking list per CSLF Member. Mr. Riis also requested for volunteers to lead each of the Actions. To that end, Dr. Bachu stated that Canada would like to lead the Action on “Technical Challenges for Conversion of CO<sub>2</sub> EOR to CCS” and Mr. Giove stated that the United States would like to lead the Action on “CO<sub>2</sub> Utilization Options”. Dr. Bonijoly stated that France would like to lead the

Action on “Competition of CCS with Other Resources” (subject to confirmation from the home office). It was understood that, after ranking, any Actions that did not have volunteers to lead would most likely not be acted on.

### **Wednesday, 21 September**

#### **13. Summary of Previous Day’s Session**

Chairmen Riis felt that in order to save time, no summary of the previous day’s session was necessary.

#### **14. Guidelines for Safe and Effective CCS in China**

Li Zheng, Professor at Tsinghua University, China, gave a presentation on China’s technology and implementation of CCS. Dr. Zheng provided a context of CCS in China, discussing the various challenges and issues faced. He provided information, including pictures, on various CCS demonstration projects in China. Led by a joint partnership between Tsinghua University and WRI, China has successfully conducted a practice for CCS knowledge transfer in a systematic way. The group believes that CCS is not purely a technical issue, and understanding its multi-dimensional characters is essential to ensure its final application. Dr. Zheng stated that CO<sub>2</sub> capture projects should start from the easy ones and proceed to the difficult ones, and that utilization, such as enhanced oil recovery, should be prioritized to ease early CCS development. A book will soon be released that includes seven chapters on knowledge points across CCS technical chain and chronological project chain, and 19 sets of guidelines giving recommendations for important issues in conducting a safe and effective CCS project.

#### **15. Work Plan to Support CCUS Action Group Recommendations**

Chairman Riis stated that at the Edmonton meeting, the Technical Group discussed how to proceed and proposed to have an informal meeting with representatives from IEA, IEA GHG, and Global CCS Institute. The organizations were contacted, but no meeting has occurred. The action is currently being monitored, but at this time, there is no clear plan for further action from the Technical Group.

#### **16. CSLF Collaborative Activities**

Mike Miyagawa of Global CCS Institute stated that in September, the Global CCS Institute opened a regional office in Tokyo, Japan. This is in addition to their regional offices in Paris, France and North America. The new Japanese office will not only cover Japan, but also neighboring countries like Korea and China.

Tim Dixon of IEA GHG gave a presentation of IEA GHG and its activities. The IEA GHG is a collaborative research programme founded in 1991 as an IEA Implementing Agreement financed by its members. The goal of the organization is to provide its members with definitive information on the role that technology can play in reducing greenhouse gas emissions. IEA GHG activities include publication of more than 120 studies and reports, sponsorship of ten research networks, and co-sponsoring the biennial Greenhouse Gas Technologies (GHGT) conferences, and an annual summer school on CCS for graduate students. Mr. Dixon then discussed various work the IEA GHG has done with the CSLF. The first study idea, originated by the CSLF Technical Group and undertaken by the IEA GHG, was on storage capacity coefficients. The CSLF also provided two additional study ideas in 2010. The first was on CO<sub>2</sub> storage in basalts, and

the second was on the effect of shale gas and shale oil production on CO<sub>2</sub> storage. The suggested studies were approved by IEA GHG Executive Committee in 2011, with the second one being expanded to cover the interaction between CO<sub>2</sub> storage and other resources. Mr. Dixon invited the CSLF to submit additional new study ideas by December 2011. Mr. Dixon then briefly showed the IEA GHG’s current studies and networks.

**17. Next CSLF Technical Group Meeting**

Chairman Riis stated that the next Technical Group Meeting would be in Bergen, Norway. The meeting will include a visit to the Technology Center in Mongstad, which has been CSLF recognized and will officially open at the end of 2011. Mongstad is a one hour drive from Bergen. In addition, the plan is to also hold a CSLF workshop on capture. The original plan was to hold this meeting during the first week of June 2012. However, there was a request to move it to the second week of June. The final dates for the meeting will be determined and announced within the next month.

**18. New Business**

Tony Surridge of South Africa announced that South Africa will be hosting a CCS week from the 24<sup>th</sup> to the 28<sup>th</sup> of October. The week will include, on Monday, a CCS project workshop. On Tuesday and Wednesday there will be a conference to disseminate local work being done in South Africa. On Thursday there will be a policy regulatory workshop sponsored by of the Department of Energy. And on Friday there are two workshops: one on risk and the other on public outreach. Details and registration are available online at the South African Center for Carbon Capture and Storage (<http://www.sacccs.org.za/>). The CCS week is being supported by the CSLF Capacity Building program as well as the South African Center for Carbon Capture and Storage.

**19. Current Meeting Action Items and Next Steps**

John Panek gave a presentation on the action items from the meeting. Four projects were approved for CSLF recognition and sent to the Policy Group, where they were also approved. Other action items from the meeting are as follows:

Item	Lead	Action
1	Secretariat	Add category for withdrawn projects – “Withdrawn by Sponsor”
2	PIRT	Decision to keep current project submission form
3	Delegates	Proposal to endorse proposed activity “Risk and Liability Assessment for Geologic Storage of Carbon Dioxide – A Proposed Work Plan for CSLF”
4	Technical Group Executive Committee	Consensus for Technical Group Executive Committee to appoint a group to develop a Technology Roadmap Schedule (3 year cycle) <ul style="list-style-type: none"> <li>• Module 2 to be web based and removed from Roadmap</li> </ul>

Item	Lead	Action
5	Secretariat	Secretariat will adjust language of Action Plan to remove “recommendation” <ul style="list-style-type: none"><li>• Technical Group Executive Committee will ask Technical Group for additions and priorities</li><li>• Request volunteers to take lead on individual Actions (Canada - #7, France - #8, &amp; United States - #12 already volunteered)</li></ul>
6	Secretariat	Risk Assessment report will be provided to the Secretariat. Report will go out to all Technical Group members with a 14-day cycle and, hearing no objections, will be adopted by the Technical Group.

## 20. Closing Remarks / Adjourn

Chairman Riis thanked the delegates, observers, and Secretariat for their hard work. Mr. Riis expressed his appreciation to the Ministry of Science and Technology, and the National Development and Reform Commission of the People’s Public of China for hosting this meeting. Mr. Riis gave a special thanks to Harry Schreurs of the Netherlands for his years of active work in the CCS community. Mr. Schreurs will be retiring in March 2012. Chairman Riis then adjourned the meeting.