Carbon Sequestration Leadership Forum (CSLF)
Minutes of the Technical Group Business Meeting

Oslo, Norway
01-02 April 2009

LIST OF ATTENDEES

Technical Group Delegates

Australia:	Clinton Foster
Brazil:	Paulo Cunha
Canada:	Stefan Bachu
Denmark:	Søren Frederiksen
European Commission:	Jeroen Schuppers
France:	Bernard Frois, Didier Bonijoly, Christian Fouillac
Germany:	Jürgen-Friedrich Hake
India:	Ishraq Ahmad, D.K. Dubey
Italy:	Sergio Persoglia
Japan:	Makoto Akai, Shinichi Terada
Korea:	Chang-Keun Yi, Chong-Kul Ryu
Netherlands:	Harry Schreurs
Norway:	Trygve Riis (Chairman), Jostein Dahl Karlsen
Saudi Arabia:	Khalid Abuleif, Abdulmuhsen Al-Sunaid
South Africa:	Fred Goede
United Kingdom:	Nick Otter
United States:	Joseph Giove, George Guthrie

CSLF Secretariat

John Panek, Pete Herz

Speakers

Robin Kåss, Deputy Minister of Petroleum and Energy, Norway
Tore Amundsen, Gassnova SF, Norway
Petter E. Røkke, SINTEF, Norway
Antonio Pflüger, International Energy Agency

Observers

Edlyn Gurney, Australia
Claudia Vivalda, France
Nobumichi Morishita, Japan
Marius Gjerset, Norway
Helle Mostad, Norway
Reidar Müller, Norway
Abdullah Al-Sarhan, Saudi Arabia
Ali Al-Meshari, Saudi Arabia
Rajesh Pawar, United States
Judd Swift, United States

Wednesday, 01 April 2009

1. Opening Remarks

The Chair of the Technical Group, Trygve Riis of Norway, called the meeting to order and welcomed the delegates and observers to Oslo. Mr. Riis stated that the major purpose of the meeting was move forward the CSLF Technology Roadmap and thanked Nick Otter and his team from the Global Carbon Capture and Storage Institute (GCCSI) for their work on preparing the current draft of the Roadmap.

2. Host Welcome

Robin Kåss, Deputy Minister of Norway's Ministry of Petroleum and Energy, welcomed the Technical Group meeting attendees to Oslo. Mr. Kåss stressed the need to combat climate change, provide energy security, create jobs and deal with financial unrest, and that many approaches are needed. He noted that it will not be possible to combat climate change without carbon capture and storage (CCS), and that international collaboration is vital to meet the challenge. Mr. Kåss also stated that Norway is committed to moving CCS forward and noted that the commitment of the G8 to implement 20 large scale CCS demonstrations by 2010 highlights the importance of the technology and increasing international cooperation in this area. Mr. Kåss credited the CSLF and the International Energy Agency (IEA) for much of this emphasis.

3. Introduction of Delegates and Observers

Technical Group delegates and observers present for the session introduced themselves. Seventeen of the 22 CSLF Members were represented at this meeting, including representatives from Australia, Brazil, Canada, Denmark, the European Commission, France, Germany, India, Italy, Japan, Korea, the Netherlands, Norway, Saudi Arabia, South Africa, the United Kingdom, and the United States. There were 13 observers attending the meeting, representing six countries. Invited speakers represented the Norwegian government, two Norwegian projects, and the IEA.

4. Adoption of Agenda

The Agenda was adopted with one change, the inclusion of a presentation from Australia that is described in Item 14 below.

5. Review and Approval of Minutes from Washington Meeting

The Technical Group minutes from the November 2008 meeting in Washington D.C., United States, were reviewed and approved as final with no changes.

6. Assessment of Progress on G8-IEA-CSLF Recommendations

Discussion under this item began with some background on CSLF's efforts to date on recommendations contained in the G8-IEA-CSLF report on results from the 3rd Workshop on Near-Term Opportunities for CCS. Chairman Riis noted that the goal now is to coordinate this effort between the CSLF Policy and Technical Groups. The following four recommendations were tasked to the Technical Group:

No.	Recommendation
2	Governments and the private sector are encouraged to undertake and fund Research Development & Demonstration of carbon dioxide capture technologies with the objective of reducing costs and improving overall system efficiencies.
4	Governments are encouraged to provide technical assistance, either individually or via appropriate international bodies, to assist developing countries to produce mapping and capacity estimates.
5	Further work is required to understand and define the concept of "capture and storage ready" plants and its value as a viable mitigation strategy
14	Governments working with stakeholders need to develop performance-based standards for storage site safety and integrity.

Nick Otter of the United Kingdom provided an overview of the GCCSI and stated that a key element of the CSLF Technology Roadmap will be its alignment with the G8 recommendations and that they are complementary in nature. Mr. Otter noted that some members of CSLF are not in the IEA, so the CSLF must be mindful of those members as it addresses these recommendations.

One of the high-level recommendations from the Workshop was for the G8 to commit to the deployment of 20 fully integrated industrial-scale CCS projects by the year 2020. Jostein Dahl Karlsen of Norway noted that establishing and reporting on the progress of the 20 projects and related milestones is an important factor in the upcoming G8 summit. The attention paid to this issue will be great, and the process for determining the rationale regarding these projects needs to be transparent. The criteria sent to the G8 should therefore have broad consensus.

Fred Goede of South Africa provided an update on the status of South African activities related to the G8 recommendations (especially nos. 2, 4, and 5). A Carbon Capture and Storage Center has been set up, to be officially inaugurated in September 2009. A South African storage capacity atlas has also been set up, and is expected to be completed by end of next year. A storage project is expected to be implemented by 2020. Mr. Goede also stated that, as a developing country, South Africa finds much value in the CSLF's capacity building activities.

Jürgen-Friedrich Hake of Germany suggested that the Technical Group should concentrate on the technical issues of the recommendations. Positioning between IEA, CSLF, and other groups is not the task of the Technical Group. Mr. Riis agreed, but noted that some discussion among these institutions is required.

Antonio Pflüger of the IEA noted that coordination with CSLF has been growing in the last several months. The exchanges of information and coordination should be continued in future events.

Jostein Dahl Karlsen of Norway noted that the Technical Group has to stay within its mandate, and where there may be gray areas clarification should be sought from the CSLF Policy Group.

Joseph Giove of the United States agreed with Mr. Hake that the focus should be on technical issues and not the issues that are more political in nature. The topics in the G8 recommendations should be viewed in draft, and some of the topics that have been assigned to the Technical Group should be up for discussion. Recommendation no. 5, for

example, should not have been assigned to the Technical Group as written. The Policy Group needs to assign more specific direction or questions on the technical content of these issues to the Technical Group.

Stefan Bachu of Canada noted that a mandate is not evident for the Technical Group. He observed that an inventory of projects has already been done by the IEA Greenhouse Gas R&D Programme (IEA GHG), so it is not clear what the CSLF or Technical Group needs to do. Dr. Pflüger noted that the final eight G8 recommendations make explicit reference to the larger set of recommendations from Calgary. The G8 has acknowledged the Calgary recommendations and asked IEA and CSLF to monitor their implementation. However, the G8 really cannot give a mandate so it is up to the CSLF and IEA to decide how to proceed. Mr. Riis noted that if the Technical Group comes up with a strong Technology Roadmap and plan, support from GCCSI and other groups will come.

Clinton Foster of Australia agreed that the recommendations are very broad and that the Technology Roadmap will assist in narrowing the focus. Mr. Otter agreed that the Roadmap will address recommendation nos. 2 and 4.

On recommendation no. 5, there was consensus that it is not the Technical Group's role to be the lead. Abdulmuhsen Al-Sunaid of Saudi Arabia noted that the concept of "CCS ready" focuses on technology that is in the future and economic implications could change between now and when the technology is implemented. Dr. Bachu agreed that the issue is entirely political. Mr. Giove added that the word "define" in the recommendation makes it a topic for the Policy Group, because the issues in creating a definition of "CCS ready" are not solely technical in nature.

Mr. Goede and Dr. Foster noted that permitting for coal plants is now more frequently requiring a capture ready plant, and leaders are looking for technical ways to characterize that. Mr. Otter pointed out that there are technical issues associated with the idea of "CCS Ready". For example, what has to happen to the plant, and to transportation and other infrastructure to be deemed CCS ready? Mr. Karlsen noted that there is a carbon "lock-in" going on around the world, and this is an important issue that needs to be addressed.

John Panek of the CSLF Secretariat indicated that the original plan for a "capture ready" workshop for May has been rescheduled. The new date has not yet been determined.

7. Report from Projects Interaction and Review Team (PIRT) on CSLF Technology Roadmap

PIRT Chairman Nick Otter provided an update on the PIRT's activities in updating the CSLF Technology Roadmap. There are several key areas in which the current draft of the Roadmap differs from the original 2004 Technology Roadmap document.

- Key technology needs in capture, transport, and storage have been updated. Forward-looking milestones were mapped from 2009 to 2020 and beyond. Integration and demonstration milestones were included. The Technology Roadmap has been focused and correlated to CSLF/IEA/G8 milestones. The suggested project areas address identified gaps. In the revised Roadmap, these are set out as boxed text.
- There are substantial revisions on storage, focused on the technical details and gaps analysis. The description of geological storage in Module 3 has been expanded to provide more details on geological storage types, such as deep saline formations,

unmineable coal beds, and depleted oil and gas reservoirs. Also, diagrams have been updated to reflect a greater range of storage options.

- Updates and analysis of performance and costs of CCS options have been revised. More recent studies on performance and costs have been referenced, and the text and figures have been updated. However, because of various factors, significant variations exist between referenced sources. The review team tried to focus on the most credible sources, but there is still a lot of work to be done in this area.
- The revised Roadmap reviews global activities in CCS since 2004. The original 2004 version of the Roadmap showed project locations for projects that were current or proposed at that time. In the new revision, maps have been revised to show the increase in activity levels between 2004 and 2008. Project lists were consolidated, additional projects were provided by PIRT members, and website links were included to allow for "live" navigation.
- The new revision includes a broader focus on several other emitters, such as industrial processes and oil & gas production, and not just stationary electricity generation.

There are several key actions resulting from the 30 March - 01 April 2009 PIRT meeting.

- Costs of CCS options must be updated, with attention paid to the current global financial crisis, especially on material and fuel costs. The GCCSI drafting team will work with United States contributors on this.
- The Roadmap must be better aligned with the CSLF Strategic Plan, which is currently being refined towards the Calgary recommendations, but with the recognition of additional areas that could need addressing if deemed appropriate (e.g., capture of CO_2 from mobile sources).
- The headings and subheadings of Module 1 ("Status of CCS Technology") need to be reorganized for a more logical flow and to establish a better balance of approach across wider CCS application areas.
- Module 2 ("Ongoing Activities in CO_2 Capture and Storage") should be expanded to include CCS R&D actions in different countries, in particular CSLF Members. Short detailed descriptions and website references will be included. This input is needed by 17 April.
- Module 3 ("Gap Identification") should be refined, especially around the integration/demonstration issue.
- Module 4 ("Technology Roadmap") on CSLF Actions needs to be focussed on technology-related issues.

Other key messages emerged from the PIRT meeting. It was emphasized that the focus needs to be on where true knowledge gaps exist rather than gaps due to inertia or inactivity. There was an identified need to coordinate with other groups in this area to achieve a common outcome. The importance of integration was stressed: CCS needs to be considered as a complete package, not as a set of independent, discrete elements. This message has been expanded in the "suggested project areas" and the Roadmap table. Finally, compliance and consistency with the IEA Roadmap for CCS and coordination is required.

CSLF action items on the Roadmap were to: 1) encourage transfer of technology; 2) encourage work to address the filling of the technology gaps and meeting the identified priority areas; and 3) address how to ensure that the appropriate level of resource be identified and provided necessary to achieve the goals. A schedule was also presented outlining next steps for the Roadmap.

8. Update of CSLF Technology Roadmap

Chairman Riis then asked for general comments on the Roadmap. Stefan Bachu expressed concern about the recommendation to coordinate the Roadmap with the GCCSI. He noted that there are other institutions or groups that the Roadmap could be coordinated with as well. Bernard Frois of France commended the work done on the roadmap by the PIRT and noted that research should be clearly spelled out and industrial sources should also be considered. The Roadmap should be seen as a living document and a key document that will go in some way to the G8. Dr. Frois also agreed with Dr. Bachu's concerns about GCCSI coordination.

Fred Goede complimented the team on the update, but noted that the wording for the list of projects is inconsistent in terms of scale. Mr. Goede also voiced concern that there is no information in the report about where the technology is heading in the longer term, 2030 and beyond. The question remains, how will the scale fit into global solutions to climate change?

Søren Frederiksen of Denmark noted that it is not accurate to say there are no other uses for deep saline formations. The Technology Roadmap should describe competing uses, but should explain that they are not really competing uses because of the different structural requirements for CO_2 storage.

The Technology Roadmap was then marked up, module by module, in real time with additional comments from the Technical Group delegates.

Thursday, 02 April 2009

9. Reconvene Meeting

Chairman Riis called the meeting to order and thanked the Norwegian Ministry of Petroleum and Energy for its hospitality and for hosting the delightful dinner that concluded the previous day's activities.

10. CSLF Technology Roadmap

A new timetable was proposed for ongoing efforts with the Technology Roadmap.

- Collect comments and inputs from Technical Group at its meeting in Oslo on 01-02 April.
- Issue an interim draft to the Technical Group and PIRT incorporating most of the comments and changes, but not all of the new R&D inputs, by 17 April.
- Comments on the interim draft are to be received by 23 April.
- Issue a final draft by 30 April to the Technical Group, with a request for approval.
- Responses from Technical Group members will be due by 7 May. A failure to reply by that time will be regarded as acceptance of the final draft as written.

- If no agreement on changes can be reached, then an "emergency iteration" will be included.
- An additional draft will be issued on 12 May, with response and agreement due by 15 May.
- The final draft will be sent to the CSLF Secretariat by 18 May.
- The final version of the Technology Roadmap will go to the Policy Group (and to Technical Group for reference) by 27 May and will be presented to the Policy Group for review and endorsement at its June 2009 meeting in San Francisco
- The Technology Roadmap will then be tabled at the CSLF Ministerial Meeting in October 2009 in London.

This timetable for Roadmap changes was approved.

11. Performance-Based Standards for CO_2 Storage/ISO

Jostein Dahl Karlsen introduced this topic by stating that the former Technical Group Task Force for Review and Identification of Standards for CO_2 Storage Capacity Estimation has done excellent work in this area, but that the Technical Group should consider taking these results one step further. The International Organization for Standardization (the ISO), has not yet (as far as is known) addressed the topic of underground CO_2 storage. Stefan Bachu pointed out that in regard to safe and secure sites, the IEA GHG commissioned a study on site selection, which is now in review and will be available soon. Safety and security at an injection site during operation and after closure are issues needing to be addressed, including risk assessment, monitoring, and remedial actions. Dr. Bachu felt that the CSLF Task Force on Risk Assessment provides adequate coverage and addresses this issue.

Fred Goede stated that the International Council of Chemical Associations is beginning a study of CO_2 as a chemical, and its associated safety, health, and environmental issues. This study will probably provide useful input on addressing risks associated with CO_2. Abdulmuhsen Al-Sunaid noted that American Petroleum Institute may have some standards that could be used.

Harry Schreurs of the Netherlands pointed out that two projects are starting in the Netherlands that have to produce extensive Environmental Impact Statements (EIS). A Dutch government office is looking at the issue, and the results of their investigation may be useful. Stefan Bachu mentioned that regulatory agencies in each jurisdiction bear ultimate responsibility. The CSLF Technical Group can issue guidelines or reviews of procedures being used, but it can't make decisions about what to do. Dr. Bachu also pointed out that there is extensive experience within North American regulatory agencies with acid gas disposal issues, and that these also could apply.

Jürgen-Friedrich Hake suggested a new working group be formed to collect available information to allow the Technical Group to determine how to proceed. The working group could be temporary and less formal. Stefan Bachu recommended that such a group include a representative from the United States because of its extensive body of enhanced oil recovery (EOR) experience, as well as Canada and European representatives. Delegates from France, Japan, the Netherlands, South Africa, and the United States agreed to participate. There was consensus to form this working group with France as lead.

Mr. Schreurs noted that there is a non-CSLF North Sea countries working group, the North Sea Basin Task Force (comprised of Norway, the United Kingdom, the Netherlands, and Germany), that is working on similar issues. There was agreement that results from this working group should also be brought into the discussion.

12. Committee Reports

Risk Assessment Task Force (RATF)

The Chair of the Risk Assessment Task Force, George Guthrie of the United States, gave a brief presentation of the RATF's recent activity. The RATF is currently in Phase I of its activities, which involves drafting a report covering risk-assessment standards, procedures, and research activities relevant to unique risks associated with the injection and long-term storage of CO_2. Recent work to edit and revise the report has focused on expanding the summary of ongoing risk assessment activities. A final draft will be sent to the Secretariat in mid-April for circulation to the Technical Group for review. Dr. Guthrie mentioned that there were two areas regarding risk assessment that the Technical Group should consider passing on to the Policy Group for its consideration. The link between risk assessment and liability should be recognized and the use of risk assessment to ensure successful performance at storage sites should be considered in the context of stakeholder outreach and communication.

Dr. Guthrie also stated that a form has been sent by the Secretariat to Technical Group delegates requesting information about ongoing risk assessment activities and projects. Completed forms have been returned by Australia, Canada, France, Germany, Japan, the United States, and the IEA GHG. Additional risk assessment needs being considered by the RATF include:

- Development of a gap assessment to identify CCS-specific tools and methodologies to support risk assessment. This analysis should be considered by PIRT as it identifies research areas that the CSLF should encourage.
- Development of technical guidelines for risk assessment practices that could be adapted to specific sites and local needs.

Fred Goede noted there is a need to communicate technical risks, and was concerned that the RATF plan doesn't explain how this will be done. Dr. Guthrie and Stefan Bachu both responded that the RATF recognized that there were technical issues, but that activities related to outreach and communication are the domain of the Policy Group. Bernard Frois reinforced that the RATF is a very important group, because sooner or later, risk assessment will become imperative as CCS technology is taken to a large scale. Harry Schreurs pointed out a news item where poor communication resulted in the closing of a CO_2 injection project, and emphasized the importance of having the right message for a non-technical audience. Didier Bonijoly of France and Dr. Bachu agreed with Mr. Schreurs, noting that responsibility for such communications lies with governments, not scientists. Therefore, the issue of communication of risk should be led by or coordinated with the Policy Group. There was consensus that Chairman Riis recommend to the Policy Group, at its next meeting, that a joint Policy and Technical Group Task Force centered on "Communication of Risk" be formed. Delegates from Australia, France, Germany, Japan, the Netherlands, Norway, and the United States expressed interest in participating.

Working Group on Student Body Initiative

Clinton Foster gave a summary of efforts of the Working Group on Student Body Initiative. The purpose of this initiative is to develop an information exchange structure or mechanism that would encourage international interaction and networking, discussion, and collaboration between students and/or professionals on CSLF-related topics. At a meeting in February 2009, the IEA GHG indicated it might provide resources for a website that could be utilized for this purpose. Since then, some website plans have been developed, and more work is actively underway. Jurgen-Friedrich Hake advised that students participating in summer school in Germany organized by the IEA GHG have developed a platform for maintaining such contacts. Stefan Bachu suggested that other similar events for students are taking place in North America and elsewhere, and that the Working Group should expand future reporting beyond the IEA GHG. Didier Bonijoly agreed, and stated that the CO_2 GeoNet program is also participating in a summer school program. Dr. Foster responded that information on other programs is appreciated and other programs are invited to participate. There was consensus for continued cooperation with the IEA GHG group in this area.

Working Group on Projects

Stefan Bachu, speaking on behalf of the Working Group on Projects, gave a brief report of the Working Group's activities. The Working Group would like to assemble a portfolio of about 10 projects that can achieve CSLF recognition in time for the upcoming London Ministerial meeting. The intention is to identify three or four projects each from North America, Europe, and the Asia/Pacific region to assure good geographic balance and distribution. At the PIRT meeting in Oslo, it was agreed that any interested project sponsors should submit a completed Project Submission Form (which is available at the CSLF website) to the Secretariat by the beginning of June. This would allow sufficient time for review and processing by the Secretariat, review and approval by the PIRT, and approval by the Technical Group, so that the Policy Group can consider the project for recognition at its meeting in San Francisco at the end of June. The Secretariat would facilitate this approval process via email.

Nick Otter agreed that PIRT needs appropriate documentation for all projects proposed for CSLF recognition. He noted that the potentially high visibility of the ministerial meeting is a good selling point to get projects interested in gaining CSLF recognition.

13. Brief Updates of CCS Projects

Technology Center Mongstad

Tore Amundsen of Gassnova SF gave a short presentation on the Technology Center Mongstad Project, which aims to develop and test technologies, reduce capture costs, and encourage market adaptation of carbon capture technologies. Project partners Gassnova, StatoilHydro, and Shell are forming an entity called Technology Center Mongstad DA (TCM DA) to operate the facility, and Mr. Amundsen has been asked to serve as the Managing Director. The facility will use a combined heat and power plant (CHP) and a refinery catalytic cracker (RCC) as CO_2 sources. Flue gas from either source can be routed simultaneously to two capture systems, a chilled ammonia plant and an amine plant. A space and infrastructure plan is also being developed for a third future capture technology to be installed. The facility has the capacity to capture approximately 100,000 tonnes per year of CO_2 but for now the CO_2 will be vented to the atmosphere. When the full scale plant is eventually built at Mongstad, all of the CO_2 from the test center will be

included in the transport and storage system. The Mongstad project is expected to cost NOK 4.2 billion, with an operating cost of NOK 150 to 250 million per year.

Dynamis

Petter Røkke of SINTEF Energy Research gave a short presentation on the Dynamis project. Dynamis is the first phase of the multifaceted Hypogen program, which will result in construction and operation of an advanced commercial-scale power plant with hydrogen production and CO_2 management, with the goal of operation and validation in the 2012-2015 timeframe. Dr. Røkke's presentation focused on the structure and phases of the project, technical component choices, definitions of H_2 and CO_2 purity, case studies, storage infrastructure and reservoir assessment, hydrogen prospects, EIS issues, efficiency gains from heat cycle integration and distributed hydrogen/industrial heat load, societal basis and impacts, project economics and financing, and public acceptance. The Dynamis project was completed in February 2009, and the final product of the study, a public brochure with the main findings from the project and recommendations on further use of the results, is in progress.

14. Greenhouse Gas Storage Acreage Release – Australia

Clinton Foster briefly described recent developments in Australia. On 27 March, the Australian Government formally released acreage blocks for offshore CO_2 storage; this was a world first. Geoscience Australia, in conjunction with relevant state authorities, is responsible for the technical aspects of the release and assessment of the work program bids for blocks when submitted. Permits for assessment are being issued for an initial 6 years with a possible extension of a further 3 years, prior to granting of an injection license. The release occurred under Australia's Offshore Petroleum and Greenhouse Gas Storage Act of 2006. There are 10 permit areas for assessment covering five basins; further details can be found at:
http://www.ret.gov.au/resources/Documents/ccs/Guidance_notes_for-applicants.pdf

15. Report from CSLF Secretariat

John Panek gave a short presentation on upcoming CSLF meetings and past CSLF Capacity Building Workshops. The next Policy Group meeting will be in San Francisco on 29-30 June 2009 and the upcoming CSLF Ministerial meeting will be held in London on 12-14 October 2009. Information about both meetings is now online at the CSLF website. Mr. Panek also described features of the newly-redesigned CSLF website, including a new daily email news clipping service called "CSLF News".

Mr. Panek also stated that an election for Technical Group Chair and Vice Chairs will be held at the next Technical Group meeting, in October in London. In July the Secretariat will be sending information about the upcoming election to Technical Group delegates with a request for nominations.

16. Ministerial Meeting Planning – Technical Group Activities

Chairman Riis reiterated that Technical Group delegates should make a strong effort to locate new projects that can be submitted for CSLF recognition. Only three projects have been recognized by the CSLF since the Berlin meeting in 2005, and several projects that have already received CSLF recognition are complete or are close to being completed.

Mr. Riis mentioned that the CSLF Ministerial Steering Committee has asked the Technical Group to come up with some actual physical models and exhibit-type materials and demonstrations to enable effective communication of CCS technologies and processes to meeting attendees. Jeroen Schuppers of the European Commission noted that the CO_2 Sink project has a CO_2 compression/critical point demonstration that could be suitable. Didier Bonijoly described a physical model for CO_2 storage, about 1.5 meters long, built by Total and connected to the Lacq project, but the availability of this model needs to be confirmed. Nick Otter noted that physical demonstrations are very difficult to find. Computer models such as the movie in the Mongstad presentation are excellent, and the CSLF may want to use them. Mr. Otter suggested that BP, In Salah, Vattenfall and Schwarze Pumpe might have something to offer. Mr. Riis and Mr. Otter agreed to take responsibility for collecting materials, including computer simulations and set a deadline of the June Policy Group meeting for suggestions of exhibits, demonstrations, and models that could be used at the Ministerial meeting.

17. GCCSI Update

Nick Otter, representing the Global Carbon Capture and Storage Institute, gave a presentation on the GCCSI. The goals of the organization are to:

- Accelerate the global adoption of safe, commercially and environmentally sustainable CCS;
- Drive co-operation to deliver a diverse portfolio of 20+ fully integrated industrial scale demonstration projects by 2020, across a range of emitters, technologies, and the entire capture, transport and storage chain;
- Work in concert with existing bodies to overcome barriers to broad industrial scale deployment of CCS; and
- Be responsible for effective sharing of non-proprietary knowledge of CCS among shareholders and interested parties.

Since being announced by Australian Prime Minister Kevin Rudd in September 2008, the GCCSI has rapidly built up its organization, membership (85 Founding Members including 18 governments), and alliances. Mr. Otter described 2009 as a very important year for CCS, and the GCCSI can help in ensuring that CCS is fully embraced as an important element of tools to mitigate impact of climate change. The Australian government has committed a budget of approximately A$100 million per year to the GCCSI.

The GCCSI is holding its first meeting of all Foundation Members on 16-17 April to share and get guidance on the direction of GCCSI. The Institute is actively encouraging new participants and seeks to address the international CCS landscape. Mr. Otter noted that public perception of CCS is rapidly being defined, and that the global community needs to act to ensure the perception is an accurate one.

18. Action Items and Next Steps

John Panek briefly summarized action items from the meeting, as follows:

Item	Lead	Action
1	Technical Group Chair	On Assessment of Progress on the G8-IEA-CSLF Recommendations, report to the Policy Group that the Technical Group has taken the position that it will not take the lead on recommendation no. 5, which states that "Further work is required to understand and define the concept of 'capture and storage ready' plants and its value as a viable mitigation strategy."
2	France	Form and lead a new Working Group (also including Canada, Japan, Netherlands, South Africa, and the United States) to collect available information about performance-based standards for CO_2 storage. Inform the Secretariat of the names of the Working Group members.
3	Technical Group Chair	Take to the Policy Group the recommendation that a combined "Communication of Risk" Task Force be established including members of both the Technical Group and the Policy Group
4	Technical Group Delegates	Provide suggestions for demonstrations, displays, and models that can be used at the CSLF Ministerial meeting to the PIRT and Technical Group Chairs before the June 2009 CSLF Policy Group meeting.
5	Secretariat	Send information, including a request for nominations, to Technical Group delegates for the upcoming election of Technical Group Chair and Vice Chairs.

19. Closing Remarks/Adjourn

Chairman Riis congratulated the group for a productive two days, thanked them for their hard work, thanked the host hotel, and adjourned the meeting.