



CSLF-T-2005-13

**Carbon Sequestration Leadership Forum
Minutes of the Technical Group Meeting
Berlin, Germany
27 September 2005**

LIST OF ATTENDEES

Official Delegates

Australia:	John Bradshaw, Peter Cook
Brazil:	Paulo Cunha, Paulo Rocha
Canada:	Bill Reynen (Vice Chair), Stefan Bachu
Denmark	Niels Peter Christensen, Fleming Ole Rasmussen
European Commission:	Denis O'Brien, Lars Stromberg
France:	Christian Fouillac, Pierre Le Thiez
Germany:	Jürgen Hake, Hubert Höwener
India:	R.R. Sonde
Italy	Giuseppe Girardi, Claudio Zeppi
Japan:	Makoto Akai
Korea	Chang-keun Yi
Mexico:	Maria Elena Sierra Galindo
Netherlands:	Daniel Jansen, Erik Lysen
Norway:	Jostein Dahl Karlsen (Vice Chair), Hans-Roar Sorheim, Trude Sundset
Russia	Gurgen Olkhovsky
Saudi Arabia	Khalid Abulief
South Africa	Fred Goede, Roger Wicks
United Kingdom:	Philip Sharman, Nick Otter
United States:	Peter Rozelle (Chair), Howard Herzog

CSLF Secretariat

John Panek
Samuel Porter

Invited Speaker

Helmut Geipel (representing Germany's National Organizing Committee)

SUMMARY OF PROCEEDINGS

1. Opening Remarks

The Chair of the meeting, Dr. Peter Rozelle, called the meeting to order, highlighted the items to be covered and thanked Germany for hosting the meeting.

2. Welcome Address of Host Representative

Mr. Helmut Geipel, Assistant Director of Energy Research, Federal Ministry of Economics and Labour, delivered the welcoming address. Mr. Geipel welcomed the delegates to Berlin and expressed wishes to the group for a successful meeting.

3. Introductions

The Chair began this portion of the Agenda by recognizing the delegates from new members of the CSLF, including Denmark, Korea, the Netherlands and Saudi Arabia. Following this, the Technical Group Delegates introduced themselves.

4. Adoption of the Agenda

The Technical Group had been provided with an Agenda that had been developed by the Secretariat. The Chair asked for thoughts on the Agenda and Australia mentioned that the proposed Project Initiation and Review Panel (PIRP) discussion had used a considerable amount of time at the previous Technical Group Meeting in Oviedo, Spain, and motioned that the PIRP discussion in Berlin be moved to the end of the Agenda. Canada seconded and the motion carried. As such, the sequence of items covered in these Minutes will reflect the sequence in which they were actually covered in the Berlin meeting. Additionally, the Chair asked that the Technical Group attempt to cover all required Agenda items in a timely fashion and that this could yield some time during the afternoon where each delegation could briefly discuss aspects of the future work program of the Technical Group.

5. Chairman's Statement

At the Chairman's request, this portion of the Agenda was yielded to Mr. Roger Wicks of South Africa for remarks regarding a developing country's perspective on the CSLF. Mr. Wicks referred to International Energy Agency information which suggests that a significant amount of global CO₂ emissions are likely to originate in developing countries. He also noted that some of the projects to be considered at the meeting include developing country participation and that more of these are needed.

6. Review and Approval of Minutes from Oviedo Meeting

The Chair noted that some comments had been received on the Minutes from the Oviedo Meeting, notably the need to include South Africa on the attendees list. The UK suggested that on page 9 of the Minutes, under Item 10 (Discussion of New Projects and Member Updates) that seven rather than six new projects had been presented for consideration and that the Minutes should reflect that fact and that the corresponding section of the Minutes' Summary should also reflect that fact. The UK also asked that the portion of the Minutes referring to the In Salah Project (also Item 10) refer to the "In Salah CO₂ Storage Assurance Project", which was a more accurate reference to the project being considered for recognition.

Germany asked that the first two sentences of Item 9 of the Minutes be deleted and that the passage be replaced with "Due to unforeseen circumstances, Dr. Lars Stromberg (the leader of the CO₂ Capture and Transport Task Force) could not attend the meeting and the German Delegation stepped in to initiate the discussion and outlined the content of the Discussion Paper."

The Chair motioned that the Minutes be accepted with the changes suggested by the UK and Germany. South Africa seconded and the motion carried.

7. Overview of Technical Group Activities

Mr. Jostein Dahl Karlsen, the Vice Chair from Norway, gave a brief overview of the Technical Group's activities. Mr. Dahl Karlsen noted that there would be more in depth discussions of current Technical Group activities to follow later on the Agenda. He mentioned the functions of the Technical Group. He noted the wide range of carbon capture storage projects being undertaken worldwide and that work in the Technical Group has been focused on identifying technology gaps and potential areas of collaboration. Of note was that in 2004, the Technical Group had developed and adopted a Technology Roadmap and had recommended 10 projects that were ultimately recognized by the CSLF. For 2005, the Technical Group had developed Gaps Analysis Discussion Papers through three Task Forces and would be considering new projects at this meeting. He also noted the upcoming discussion on the proposed Projects Initiation and Review Panel.

The Chair asked for comments on the activities of the Technical Group. The Vice Chair from Canada noted that the recognition of projects by the CSLF should not place an unnecessary burden on the projects and that participation in CSLF activities (for example workshops, etc.) should be on a voluntary basis. The Vice Chair from Canada also

suggested that the Technical Group representatives should act as the single point-of-contact for technical activities in their respective countries.

8. Reports from Technical Group Task Forces

Task Force to Identify Gaps in CO₂ Capture and Transport

The first report was from the Task Force to Identify Gaps in CO₂ Capture and Transport. The discussion was opened by Prof. Lars Stromberg of the European Commission, the leader of that Task Force. Prof. Stromberg noted the constructive comments that had been received from the Technical Group and these had largely been included in the draft of the Paper being considered and that further comments had been received (from the UK and the United States). Prof. Stromberg asked that the additional comments also be reflected in the paper.

During discussion of this paper, Germany noted that it had been circulated to representatives of German industry and that there may be additional suggestions for the paper regarding gas processing. The UK asked that in order to avoid technology advocacy, the word “promising” be removed from the Paper. India noted that other sorbents for post-combustion capture should be considered in addition to amine.

Australia asked Prof. Stromberg whether the conclusions in the Discussion Paper were consistent with those of the Report of the Intergovernmental Panel on Climate Change (IPCC). Prof. Stromberg noted that, in general terms, differences between the Task Force’s Discussion Paper and the IPCC Report were minimal. He also noted that the IPCC Report compiled literature data, while this Task Force was also introducing perspectives based on industrial experience.

The UK suggested restructuring the parts of the report relating to transport technology to include a section titled 'Transport Technology Overview' to include the majority of the text currently included in the section titled 'Transport Technology R&D Needs', leaving just the last paragraph in that section. This would then be consistent with the capture technology sections. The UK also requested that, since it had been decided at the Oviedo Meeting that this analysis should review rather than rank technologies, the first conclusion of the report should be modified to remove the sentence ranking oxyfuel and IGCC higher than post-combustion scrubbing. Korea added that the CSLF target for CO₂ capture was too high. Korea also stated that chemical looping is likely to encounter problems in terms of particulates.

The Chair asked for a motion to adopt the paper with the discussed changes. Denmark and the United States seconded and the motion carried.

The Chair mentioned that a recurring concept in the discussion paper was associated with process integration issues associated with the engineering of new power cycle technologies. Prof. Stromberg noted that examinations of technologies for gasification and oxy-fuel power cycles have demonstrated that process integration is essential and can ensure reliable operation and that, in addition to efficiency, plant availability is an area where substantial gains are to be made.

The Chair suggested reviewing literature on existing plants using new technologies and identifying areas related to process integration where research and development activities

could be beneficial. Prof. Stromberg suggested that the activity would be beneficial. The UK suggested that increased interaction among Task Force members would be required.

The European Commission motioned that the following three activities be undertaken by the Task Force as follow-on activities:

- Reviewing literature on existing plants using new technologies and identifying areas related to process integration where research and development activities could be beneficial,
- Identifying any differences between the Discussion Paper and the IPCC Report and providing a discussion of why the differences exist, and,
- Updating the Technology Roadmap in light of the above points.

Norway and Australia seconded and the motion carried.

Task Force to Review and Identify Standards for CO₂ Storage Capacity Measurement

Dr. John Bradshaw, the leader of this Task Force acknowledged the Members that had participated on the Task Force and highlighted the need for better estimates of CO₂ storage capacity. Dr. Bradshaw proposed a continuation of the activities of the Task Force with Canada taking over, rotating the leadership of the Task Force to Canada and adding the UK as a participant on the Task Force. The Task Force, whose discussion paper had been accepted by the Technical Group at the Oviedo Meeting, proposed developing a descriptive analysis of means through which storage capacity should be estimated or calculated, across a range of formations and trapping mechanisms. Outcomes would include more consistent and reliable capacity estimates and the development of guidelines. Hopefully this would evolve into validation and certification that could be useful to other groups.

This activity would also, over time, need to incorporate actual results from geologic sequestration projects as they become available. Interim results of these activities would be reported at the subsequent two Technical Group meetings. The Task Force would also nominate outside resource persons to peer review the results, in conjunction with Technical Group delegates and the IPCC Report. These results would also be linked back to the IEA Greenhouse Gas Programme Review on this subject.

The Netherlands expressed an interest in joining this Task Force.

It was noted by the UK and Norway that identifying new tasks for existing Task Forces needed to be balanced with new business priorities.

The Task Force proposed to have a new draft report of results to present to the Technical Group in 18 months.

Norway commended the Task Force on its work and suggested that guidelines be developed after the other next steps had been taken by the Group. Dr. Bradshaw agreed with this.

The UK motioned that the next steps for the Task Force be approved by the Technical Group and Norway seconded. The motion carried. A copy of the next steps for this Task

Force (Dr. Bradshaw's Phase 2 Proposal presentation) is included in this document as Appendix 1.

Task Force to Identify Gaps in Measurement, Monitoring, and Verification of Storage

The Vice Chair from Canada, Mr. Bill Reynen, briefly highlighted the results of the Discussion Paper from this Task Force and acknowledged Dr. Malcolm Wilson from Canada, who was the co-leader of the Task Force. This paper had been accepted by the Technical Group at the Oviedo Meeting.

Canada suggested that as a next step, the Task Force could provide a discussion of the scientific basis behind existing Measurement, Monitoring, and Verification regulatory requirements associated with geologic CO₂ storage. Additionally, it was agreed that this Task Force would also identify any differences between the discussion paper and the IPCC Report. Australia motioned that the Task Force continue with these next steps and India seconded. The motion carried.

9. Discussion of Existing Projects

The Vice Chair from Canada, Mr. Bill Reynen, led this discussion and noted that the projects were presented on posters outside the meeting room. Comments were sought from the project representatives present and none were received.

10. Presentation of Proposed Projects

Eight new projects had been proposed to the Technical Group for recommendation for CSLF recognition prior to the Meeting. As noted in the Minutes from the Oviedo Meeting, the Task Force for review of the projects against the CSLF Project Recommendation Guidelines had been convened and, as a result of this review process, objections were submitted by Australia and Canada.

As a result of clarifications provided prior to the meeting, objections remained only in regard to the two projects proposed by India. The main objections were that both projects were not started yet and that in one case there was not a second sponsor country, in addition to India, therefore, they did not meet the criteria for project recognition. Both projects were discussed and India clarified that one of the projects actually was funded and started since the previous Technical Group meeting held in April 2005. As a result, the United States motioned that seven of the nominated projects be recommended by the Technical Group to the Policy Group for CSLF recognition. The European Commission, France and the UK seconded and the motion carried. The projects recommended by the Technical Group at this meeting were as follows:

- CO₂ GeoNet (nominators: the European Commission and the United Kingdom)
- Demonstration of Capture, Injection and Geological Sequestration of CO₂ in Basalt Formations of India (nominators: India and the United States)
- Development of China's Coalbed Methane Technology / Carbon Dioxide Sequestration Project (nominators: Canada, China, and the United States)
- ENCAP (nominators: the European Commission, France and Germany)

- Geological CO₂ Storage Assurance at In Salah, Algeria (nominators: Norway and the United Kingdom)
- Regional Carbon Sequestration Partnerships (nominators: Canada and the United States)
- Regional Opportunities for CO₂ Capture and Storage in China (nominators: China and the United States)

The eighth project considered was as follows:

- Anoxic Microbial Sequestration of Carbon Dioxide Present in Flue Gases to Methane/Methanol/Other Biomass (nominators: India)

Substantial discussion of this project, which originated from India and had no other sponsor country, followed. The focus was on its technical merit and its consistency with the CSLF Charter and Project Guidelines in terms of collaboration. Brazil, France and South Africa expressed interest in this project. The UK motioned that the Technical Group ask India to refine and resubmit the project for future consideration by the Technical Group, with collaboration by other CSLF members. Canada and the European Commission seconded and the motion carried.

This Agenda Item also featured consideration of new project ideas for possible future CSLF recognition. During the discussion, several delegates, including the Chair and Vice Chairs, noted that the process for considering projects by the Technical Group could be improved. The Chair specifically noted that one function of the CSLF Technical Group is to make recommendations to the Policy Group. It was also pointed out that the CSLF Project Recommendation Guidelines were drafted prior to the adoption of the CSLF Technology Roadmap and one or more additions to these Guidelines may be considered at a future Technical Group Meeting for recommendation to the Policy Group.

11. Discussion of Potential Areas for Enhanced Cooperation through CSLF Projects

Dr. Niels Peter Christensen of Denmark began with a presentation on efforts within the European Commission aimed at promoting international collaboration, including results of consultations with European stakeholders. On the CO₂ storage side, these included timescales, liability issues, leakage issues, remedial response options and technical standards for monitoring and verification. Dr. Christensen highlighted the need for accurate capacity assessment standards, site selection criteria and cited concerns from environmental NGO's about sound site selection.

Dr. Christensen highlighted the need for more collaborative demonstration projects and also intellectual property on the CO₂ capture side, as a limiting factor in cooperation and noted that means may exist to overcome these limitations.

Also highlighted was the upcoming Seventh Framework R&D Program within the European Commission.

Dr. Denis O'Brien of the European Commission noted that a recent meeting had been held with European stakeholders and that ideas had been solicited from these

stakeholders on opportunities for collaboration within the context of the CSLF. Mr. Nick Otter of the UK pointed out that for technology suppliers intellectual properties rights can be a delicate issue, but, that in some instances, these issues have been handled successfully in Europe.

Prof. Lars Stromberg of the European Commission stated that from the power industry standpoint, for example, European power companies only compete in Europe and that cooperation can be beneficial among power companies for technology demonstrations. As such, intellectual property rights may be less of an issue for power companies as compared to technology suppliers.

12. Discussion of Work Plan

Mr. Philip Sharman of the UK began this Agenda Item with a presentation of G-8 Gleneagles Communiqué, which had been issued in July. Mr. Sharman noted that the Gleneagles Meeting had been joined by Brazil, China, India, Mexico and South Africa and that participated in that meeting were CSLF members. He presented the Plan of Action resulting from the Gleneagles Meeting that was applicable to the activities of the CSLF Technical Group. One key point from this Plan of Action called for exploration of the potential for carbon sequestration in developing countries. Toward meeting this challenge, the Chair motioned that the Technical Group establish a Task Force to Explore the Potential for Sequestration in Developing Countries. India seconded the motion, which carried. The following members volunteered to be on the Task Force:

- Australia
- Brazil
- Canada
- European Commission
- France
- India
- Mexico
- Norway
- South Africa
- United Kingdom
- Colombia (volunteered subsequent to the Meeting)
- Saudi Arabia (volunteered subsequent to the Meeting)
- China was not in attendance, but would be offered the opportunity to participate.

Australia suggested that the Task Force should coordinate efforts with other international cooperation activities in the sequestration area.

At this point, the Chair asked each Technical Group delegation to provide comments in turn. These comments could include ideas for new work for the Technical Group, new

projects for consideration by the Group, or any other subject that a delegation would find to be of interest. The resulting dialogue was as follows:

Australia

Australia discussed the Ottway demonstration project and noted that it had been held up due to liability issues. However, nomination of that project for CSLF recognition could follow the initiation of activities. The Low Emission Technology Fund was also covered, which will be leveraged with private funds for demonstration projects. Australia also suggested submitting abstracts for the Technology Gaps Discussion Papers for a dedicated CSLF Session at the 8th International Conference on Greenhouse Gas Technologies (19-22 June 2006 in Trondheim, Norway).

Brazil

Brazil restated the importance of carbon sequestration to their country and that they are seeking new opportunities for international collaboration on the subject.

Canada

Canada raised the point that there are some regulatory issues of sequestration technologies and that some are based on technical aspects. Canada suggested that the Technical Group take a more proactive approach on the subject.

Denmark

Denmark noted that at the 8th International Conference on Greenhouse Gas Technologies, papers must be submitted for peer review. Denmark also noted that it would be hosting a large flue gas CO₂ capture project and invited Technical Group delegates to the site.

European Commission

The European Commission suggested that a CSLF project could result from the Developing Countries Task Force.

France

France mentioned their new National Agency for Research Program, which counts energy as one of its priorities, including a CO₂ capture and storage component. Approximately nine projects are expected to be funded under the new program. Additionally, a new demonstration project by Total was briefly covered.

Germany

German activities under the carbon capture and storage are primarily under the COORETEC program. Germany also noted a new activity by the German Ministry of Education and Research in the geologic storage arena (GEOTECHNOLOGIEN program).

India

India raised a concern that in the process of identifying CO₂ storage in the host country as a part of international collaborative project, some sensitive information may get generated and a mechanism must be in place to create enough safeguard to protect this, otherwise member countries may not be forthcoming for participation in such potential geological storage program.

Italy

Italy presented the Zecomix and CoHydrogen projects, which may be nominated for CSLF recognition in the future. Toward this end, Italy will be seeking additional collaborators for these projects.

Japan

Japan noted that while there had been some discussion of regulatory issues within the Technical Group, activities by the Technical Group in this area must be coordinated closely with the Policy Group.

Korea

Korea expressed interest in getting involved in existing or new CSLF projects and discussed some Korean areas of interest, including chemical looping, sorbents and membranes.

Mexico

Mexico discussed plans to nominate projects for CSLF recognition, possibly to include the Carmito Project, which was first presented to the CSLF for information at the 2004 Meeting in Melbourne.

Netherlands

The Netherlands presented the CATO Program, which covers several aspects of carbon sequestration. Also covered was Dutch participation (through CATO) in other carbon sequestration activities, including some CSLF Projects.

Norway

Norway mentioned two new measures in the carbon sequestration field that were established after the CSLF Meeting in 2004 in Melbourne. The first is linked to a new technology fund for short term demonstrations (GASNOVA). The Norwegian Petroleum Directorate had also launched a study of CO₂ flood enhanced oil recovery off the Norwegian Continental Shelf, with a conclusion that the CO₂ capture cost must be reduced in order to make to concept economically attractive.

Russia

Russia highlighted elements of its national program for power systems development, including efficiencies that are attained through the use of combined heat and power installations. Russia is launching new activities related to carbon capture (pre- and post-combustion carbon capture and chemical looping). Additionally, investigation of sources and sinks is of interest and a workshop on the subject took place earlier in the year, with participants from the European Commission.

South Africa

South Africa has major sources of CO₂ and is looking at storage options and stated that the European Commission discussions of stakeholder involvement provided an excellent model for this type of activity. Also mentioned was a need to refine the CSLF Project Recommendation Guidelines.

United Kingdom

The UK mentioned its recently announced Carbon Abatement Technologies Strategy for Fossil Fuels, which was launched in June 2005. Also mentioned was the new UK program addressing carbon abatement technologies and hydrogen issues. Upcoming CO₂ storage capacity mapping in the UK was also mentioned. The UK also expressed support for the refinement of the CSLF Project Recommendation Guidelines.

13. Discussion of the Projects Initiation and Review Panel

The Projects Initiation and Review Panel (PIRP) was first proposed by the European Commission at the 2004 Meeting in Melbourne. A proposal with Draft Terms of Reference was considered by the Technical Group at the Oviedo Meeting and the European Commission was asked to further refine the proposal. The refined PIRP proposal was considered. Several suggestions were received from the group for refining the concept. The delegate from India suggested that the proposed project be evaluated by the PIRP as per project selection criteria approved by CSLF Policy Group and suggested that there be at least one iteration of the PIRP with the project proponent before sending it to the Technical Group for recommendation.

A motion was made by Denmark that the Draft Terms of Reference be accepted by the Technical Group, including the changes suggested and changing the name of the concept to “Projects Initiation and Review Team” (PIRT). The United States seconded and the motion carried. A copy of the PIRT Terms of Reference appears as Appendix 2 of these Minutes.

The following CSLF Members volunteered to participate on the PIRT:

- Australia
- Canada
- Denmark
- European Commission
- Germany
- India
- Norway
- United Kingdom
- United States

Subsequent to the Meeting, the UK volunteered Mr. Nick Otter to lead the PIRT, if so agreed by the Technical Group.

Summary

The CSLF Technical Group Meeting of September 27, 2005, was held in Berlin, Germany. Broadly, the primary items covered in the meeting were as follows:

- Consideration of the accomplishments of three Technical Group Task Forces, which provided the CSLF with technology gaps analyses and an improved analysis of the evaluation of geologic CO₂ storage capacity. Two of the papers had been previously approved at the Oviedo Meeting, on the subjects of Measurement, Monitoring, and Verification and CO₂ Storage Capacity Estimation. The third paper, on the subject of CO₂ Capture and Transport, was approved at the Berlin Meeting. The Technical Group determined that the Task Forces would be kept intact (with some personnel changes), in order to accomplish some follow-up on activities.
- The concept of the Projects Initiation and Review Team (originally proposed as the Projects Initiation and Review Panel) was accepted with some changes at the Berlin Meeting. The Team will be tasked with evaluating projects for CSLF recognition, as well as developing reports on how the results of CSLF recognized projects feed into the needs identified in the CSLF Technology Roadmap.
- Eight new projects were considered by the Technical Group for recommendation to the Policy Group for CSLF recognition. Seven of these were recommended. India was asked to improve and resubmit with a co-sponsor the eighth project to the Technical Group at a future meeting.
- The Technical Group, as a response to the Gleneagles Plan of Action released as a result of the Gleneagles G-8 Meeting in 2005, decided to form a Task Force to Explore the Potential for Sequestration in Developing Countries
- There were multiple suggestions at this meeting that the CSLF Project Recommendation Guidelines be refined to reflect technology needs identified in the CSLF Technology Roadmap. The Technical Group will explore recommendations for this prior to the next meeting.

A summary of actions arising from this meeting appears as Appendix 3.

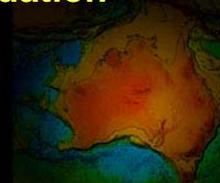
APPENDIX 1

Discussion Paper on CO₂ Storage Capacity Estimation (Phase 1)
Phase 2 Proposal

Presented by Dr. John Bradshaw

Proposal

- **Reconfirm Phase 1 acceptance**
- **Propose continuation of Taskforce**
- **Have defined Phase 2 report to naturally flow on from initial findings from Phase 1**
- **Propose to rotate Leadership to Canada**
- **Acknowledge new participant – UK**
 - **government reserve/resource validation and regulatory expertise**



Phase 2 Report

- **Aim**
 - To document a descriptive analysis of the way in which storage capacity should/can be estimated / calculated across a range of geological formations and trapping mechanisms?
- **Outcomes**
 1. To enable future storage capacity estimations at regional to prospect levels to be more consistent and reliable
 2. Commence the process of developing guidelines for storage capacity estimation
 3. Propose directions that ultimately might evolve into suggestions of storage capacity estimation validation and certification
 4. Incorporate relevant results and learning's from CSLF projects into Taskforce deliberations
- **Timing**
 - Report on status over next two meetings
 - Allow for public dissemination and comment on work (external stakeholders – important to get external uptake)
 - Draft for CSLF consideration in 18 months



Appendix 2

Terms of Reference for the “CSLF Projects Interaction and Review Team” (PIRT)

Background

One of the main instruments to help the CSLF achieve its goals will be through the recognition of CSLF projects.

By responding to the gaps and priorities identified in the CSLF technology roadmap, the CSLF projects will be a key element in generating and exploiting the knowledge that may lead to improved CCS technologies.

It is therefore of major importance to have appropriate mechanisms within the CSLF for the recognition, assessment and dissemination of projects and their results for the benefit of the CSLF and its Members.

To meet this need it is proposed to create a CSLF advisory body which will report to and be under the supervision of the CSLF Technical Group.

The CSLF Projects Interaction and Review Team

The team will have the following functions:

- Assess projects proposed for recognition by the CSLF in accordance with the project selection criteria approved by the Policy Group. Based on this assessment, make recommendations to the Technical Group on whether a project should be accepted for recognition by the CSLF.
- Review the CSLF project portfolio and identify synergies, complementarities and gaps, providing feedback to the Technical Group and input for further revisions of the CSLF roadmap.
- Identify technology gaps where further RD&D are required.
- Foster enhanced international collaboration for CSLF projects, both within individual projects (e.g. expanding partnership to entities from other CSLF members) and between different projects addressing similar issues.
- Promote awareness within the CSLF of new developments in CO₂ Capture and Storage by establishing and implementing a framework for periodically reporting to the Technical Group on the progress within CSLF projects and beyond.
- Organize periodic activities to facilitate the fulfillment of the above functions and to give an opportunity to individuals involved in CSLF recognized projects and other relevant individuals invited by the CSLF, to exchange experience and views on issues of common interest and provide feedback to the CSLF.
- Perform other such tasks which may be assigned to it by the CSLF Technical Group.

Members of the Projects Interaction and Review Team

The Team would consist of (Per Section 3.2 (e) of the CSLF Terms of Reference and Procedures, the Technical Group may designate resource persons):

- A Core Group consisting of the Chair and Vice Chairs of the Technical Group, and other delegates as designated by the Technical Group.
- A Floating Group comprising relevant subject area experts and, as appropriate, representatives of CSLF recognized projects with overall management responsibility in the project (e.g. Project Manager). Members of this Floating Group would be invited to participate in the Team activities on an issues and topic related basis (e.g. Pre-combustion, Post-combustion and Storage).

The Team Chair should rotate annually and be approved by the Technical Group.

Operation of the PIRT

- The Team will establish operational procedures to be endorsed by the Technical Group.
- The Team will coordinate with the Technical Group on the agenda and timing of meetings.
- The Team should meet periodically, possibly before Technical Group meetings, to which they should report at least once a year.
- Recommendations of the Team should be reached by consensus of the Core Group members.

Most of the activities of the Team should be conducted electronically.

APPENDIX 3

Action Items from the Berlin Technical Group Meeting

Item	Action	Lead	Due Date
1	Resubmit Discussion Paper on Gaps in CO ₂ Capture and Transport, with approved changes, to the Secretariat.	Task Force on Gaps in CO ₂ Capture and Transport	November 27, 2005
2	Name a Leader and electronically convene the Projects Initiation and Review Team.	Australia Canada Denmark EC Germany India Norway United Kingdom United States	November 27, 2005
3	Report on review of literature on existing plants using new technologies, with identified areas related to process integration where research and development activities could be beneficial.	Task Force on Gaps in CO ₂ Capture and Transport	February 4, 2006
4	Identify any differences between the CO ₂ Capture and Transport Discussion Paper and the IPCC Report and to provide a discussion of why the differences exist.	Task Force on Gaps in CO ₂ Capture and Transport	February 4, 2006
5	Submit a draft discussion on the scientific bases behind Measurement, Monitoring, and Verification regulatory requirements associated with geologic CO ₂ storage.	Task Force on Gaps in Measurement, Monitoring, and Verification of Storage	February 4, 2006
6	Name a Leader and electronically convene the Task Force to Explore the Potential for Sequestration in Developing Countries.	Australia Brazil Canada Colombia EC France India Mexico Norway Saudi Arabia South Africa United Kingdom	February 4, 2006
7	Development of Phase II Report on CO ₂ Storage Capacity Estimation.	Task Force on CO ₂ Storage Capacity Estimation	March 27, 2007