



## Minutes of the Policy Group Meeting

Washington, D.C., USA  
Tuesday, 06 November 2013

### LIST OF ATTENDEES

**Chair** Christopher Smith (United States)

### **Policy Group Delegates**

Australia:	Ann Boon, Zoe Naden
Brazil:	Ernesto Hentique Fraga Araújo
Canada:	Claude Gauvin, Eddy Chui
China:	Sizhen Peng, Jiutian Zhang
European Commission:	Marisa Atienza Morales, Jeroen Schuppers
France:	Bernard Frois, Didier Bonijoly
Germany:	Peer Hoth
Italy:	Giuseppe Girardi
Japan:	Kei Miyaji, Takashi Yamada
Korea:	Chong Kul Ryu
Mexico:	Javier Flores, Moisés Dávila
Netherlands:	Paul van Slobbe
Norway:	Tone Skogen, Jostein Dahl Karlsen
Poland:	Pawel Pietrasieński
Saudi Arabia:	Khalid Abuleif, Ali Al-Meshari, Hamoud Al-Otaibi
South Africa:	Gina Downes, Milingoni Robert Phupheli
United Kingdom:	Louise Barr, Philip Sharman
United States:	Julio Friedmann, Jonathan Pershing

### **CSLF Secretariat**

Jarad Daniels, Jay Braitsch, John Panek, Richard Lynch, Steve Geiger, Adam Wong

### **Invited Speakers**

Trygve Riis, CSLF Technical Group Chair, Norway  
George Guthrie, CSLF Risk and Liability Task Force Co-Chair, United States  
Klaus Lackner, Director, Lenfest Center for Sustainable Energy, Columbia University,  
United States  
Ramón Treviño, Project Director, Bureau of Economic Geology, University of Texas,  
United States  
Richard Zechter, Coordinator, Carbon Partnership Facility, The World Bank

## **Stakeholders Roundtable Participants**

Barry Worthington, Executive Director, United States Energy Association  
 Raj Barua, Executive Director, National Regulatory Research Institute, United States  
 Sarah Forbes, Senior Associate, World Resources Institute

## **Observers**

Australia:	Richard Aldous, Clinton Foster
Canada:	Stefan Bachu, Sean McFadden, Frank Mourits, Jeff Walker, Tim Wiwchar
Chinese Taipei:	Linda L.H. Chen, Shoung Ouyang, Ren-Chain Wang
European Commission:	Stathis Peteves
Japan:	Ryozo Tanaka
Korea:	Mijeong Han
Netherlands:	Paul Ramsak
Norway:	Lars Ingolf Eide, Bjørn-Erik Haugan, Vegar Stokset
Poland:	Tomasz Sowa
South Africa:	Tony SurrIDGE
United Kingdom:	Kate Adlington, Mark Crombie
United States:	Chris Babel, Martin Considine, Mark de Figueiredo, Fred Eames, John Grasser, Dietrich Gross, Neeraj Gupta, Deborah Harris, Jerry Hill, Arthur Lee, Philip Marston, Manuel Quinoñes, Jeff Price, Katherine Romanak, Kimberly Sams, John Sicilian, Sharon Sjostrom, Judd Swift, Thomas Weber, James Wood
Global CCS Institute:	Victor Der, Pamela Tomski
IEA:	Juho Lipponen
IEA GHG:	Tim Dixon
The World Bank:	Alexandra Platonova

## **1. Chairman's Welcome and Opening Remarks**

The new Chairman of the Policy Group, Christopher Smith, called the meeting to order and welcomed the delegates and observers to Washington. Mr. Smith stated that, prior to his current position as Acting Assistant Secretary for Fossil Energy at the United States Department of Energy, he had worked for more than a decade in the energy industry.

Mr. Smith stated new commercial-scale projects that are in development and operation are now the foundational elements of CCS deployment and will contribute the knowledge and expertise necessary for the successful commercialization of CCS. These projects will also provide a key foundation to key decision makers in government and industry. This is a key reason why international collaboration through the CSLF is vital. The overall success of the CSLF will depend on how closely the Policy and Technical Groups work together, and how they share information.



Christopher Smith

Mr. Smith provided context for the meeting by briefly describing some of the challenges to commercialization, one of the most difficult being economic barriers. Those, along with other issues such as risk & liability and capacity building, would be discussed during the current meeting as a lead-in to the next day's Ministerial Conference.

## **2. Introduction of Delegates**

Policy Group delegates present for the meeting introduced themselves. Eighteen of the twenty-three CSLF Members were present at this meeting, including representatives from Australia, Brazil, Canada, China, the European Commission, France, Germany, Italy, Japan, Korea, Mexico, the Netherlands, Norway, Poland, Saudi Arabia, South Africa, the United Kingdom, and the United States.

## **3. Adoption of Agenda**

The Agenda for this meeting was adopted as final.

## **4. Approval of Minutes from Perth Meeting**

The minutes from the Policy Group and the Joint Policy and Technical Group meetings of October 2012 in Perth, Australia, were approved as final.

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

Jarad Daniels provided a brief review of the action items from the October 2012 Policy Group meeting. All have been successfully completed or are ongoing.

## **6. Report from CSLF Technical Group**

Trygve Riis, Chair of the CSLF Technical Group, reported that the previous day's Technical Group meeting had been very constructive, including presentations by three new projects that are being proposed for CSLF recognition and reports from five task forces. There was a review of the Technical Group's Action Plan and formation of a new working group to review any existing documents and other materials relevant to the unaddressed Actions Plan items and recommend (at the next Technical Group meeting) what activities are worth pursuing for these actions. Additionally, a new task force was formed to review CO<sub>2</sub> storage efficiency in deep saline aquifers.



Trygve Riis

Mr. Riis stated that the Technical Group has now officially launched the 2013 CSLF Technology Roadmap (TRM). Key messages from the TRM are that:

- First-generation CO<sub>2</sub> capture technology for power generation applications is available today (albeit expensive).
- CO<sub>2</sub> transport is an established technology.
- CO<sub>2</sub> storage is safe provided that proper operating, closure, and post-closure procedures are developed and followed.

- Data collection for site characterization, qualification and permitting currently requires a long lead-time (3-10 years) mostly before an investment decision on detailed design work and then construction for a large new capture facility.
- There are no technical challenges *per se* in converting CO<sub>2</sub> enhanced oil recovery (EOR) operations to CCS, although issues like availability of high quality CO<sub>2</sub> at an economic cost, infrastructure for transporting CO<sub>2</sub> to oil fields; and legal, regulatory and long-term liability must be addressed for this to happen.
- There is a broad array of non-EOR CO<sub>2</sub> utilization options that, when taken cumulatively, could provide a mechanism to utilize CO<sub>2</sub> in an economic manner. These options are at various levels of technological and market maturity
- There is a need for plain language communication to allay any public fears and concerns that may arise from transport and geologic storage of CO<sub>2</sub>.

One recommendation from the TRM is that nations should work together in the near term to ensure that CCS remains a viable greenhouse gas mitigation option, through:

- Collaboration via international networks;
- Demonstration projects for gaining large-scale experience with CCS technologies and their integration;
- Agreement on common standards/specifications/best practices for CO<sub>2</sub> transport and storage, and also screening and selection of CO<sub>2</sub> storage sites;
- Developing regional opportunities for CCS, including impact assessments of large-scale CCS implementation as part of an energy mix with renewable and fossil fuels; and
- Continuing R&D and small-scale testing of promising non-EOR CO<sub>2</sub> utilization options.

Another recommendation from the TRM is that towards the year 2030, nations should work together to move 2<sup>nd</sup> generation CCS technologies through demonstration to commercialization, implement large-scale CO<sub>2</sub> transport networks, demonstrate large-scale CO<sub>2</sub> storage and monitoring, qualify regional and cross-border CO<sub>2</sub> storage reservoirs, and demonstrate (at large scale) non-EOR utilization options.

Mr. Riis also stated that the Technical Group has provided a set of messages and recommendations to the Policy Group, based on outcomes from some of its task forces. These include:

- Capturing CO<sub>2</sub> from natural gas combustion should be a priority.
- More work to locate and characterize CO<sub>2</sub> storage sites is needed.
- More attention is needed on next-generation CO<sub>2</sub> capture technology. Much lower CO<sub>2</sub> capture cost is needed for 2030.
- CO<sub>2</sub>-EOR is not being applied on a large scale outside the United States due to cost, unavailability of high-purity CO<sub>2</sub>, and lack of infrastructure. These barriers should be investigated and further defined.
- There is sufficient operational and regulatory experience for the conversion of CO<sub>2</sub>-EOR to CCS to be considered as being mature. There are no specific technological barriers or challenges *per se* in transitioning a pure CO<sub>2</sub>-EOR operation into a CO<sub>2</sub> storage operation. The differences between the two types of operations are legal, regulatory, and economic in nature. The Policy Group

should consider establishing a task force for addressing these policy, legal, and regulatory challenges.

- There is a wide range of CO<sub>2</sub> utilization options available in addition to CO<sub>2</sub>-EOR, and these can provide economic return for the capture of CO<sub>2</sub>. These can also serve as a mechanism for early deployment of CCS.
- For commercially and technologically mature non-EOR options, efforts should focus on demonstration projects. For use of CO<sub>2</sub> as a fracturing fluid in enhanced gas recovery (EGR), the focus should be on field tests for validation and understanding the dynamics of CO<sub>2</sub> interactions in the reservoir.
- More detailed technical, economic, and environmental analyses should be conducted to better quantify potential impacts and economic potential of CO<sub>2</sub> utilization technologies and to clarify how R&D could potentially expand the market for these utilization options.

Mr. Riis concluded his report by mentioning that he had represented the CSLF at a United Nations Framework Convention on Climate Change (UNFCCC) workshop in Bonn, Germany. The UNFCCC Secretariat had invited the CSLF to give a presentation on CCS in connection with its Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP). The CSLF is seen by the UNFCCC as a neutral international organization on CCS and had requested the presentation for informational purposes.

Ensuing discussion centered on the relevancy of the Technical Group's activities in the broad context of CCS worldwide. Zoe Naden thanked Norway for supporting the development of the TRM and mentioned that the TRM is a very comprehensive document and highlights a lot of issues that also are very relevant to the Policy Group. Julio Friedmann also thanked Mr. Riis and the Technical Group, and suggested an additional CO<sub>2</sub> utilization option is use of CO<sub>2</sub> for extracting energy from methane hydrates, which would also capture the CO<sub>2</sub>. Khalid Abuleif congratulated the Technical Group on its accomplishments and suggested that the CSLF promulgate these key messages and recommendations further than just this meeting. Mr. Riis said he was very much concerned with the need for outreach for the Technical Group and its activities, but there were not yet any clear plans for that. Dr. Friedmann suggested that the Policy Group might be able to find ways to assist in this area. Marisa Atienza Morales mentioned that Mr. Riis's presentation at the UNFCCC event is the type of opportunity that the CSLF should look for to better communicate the CSLF mission, activities, and accomplishments.

## **7. Review and Approval of Proposed Projects**

Trygve Riis also gave a presentation about the five projects that the Technical Group was recommending for CSLF recognition.

- The Uthmaniyah CO<sub>2</sub>-EOR Demonstration Project, located in the Eastern Province of Saudi Arabia, is a large-scale EOR project which will capture, transport, and store approximately 800,000 tonnes of CO<sub>2</sub> per year from a natural gas production and processing facility. The project was nominated by Saudi Arabia and the United States.
- The Alberta Carbon Trunk Line, located in Alberta Province of Canada, is a large-scale fully integrated project which will collect and transport CO<sub>2</sub> from two industrial sources to hydrocarbon reservoirs for EOR. When in full operation, this

will be the world's largest CCS project in terms of capacity. The project was nominated by Canada and the United States.

- The Midwest Regional Carbon Sequestration Partnership (MRCSP) Development Phase Project, located in the north central United States, is a large-scale project which will inject approximately 1 million tonnes of CO<sub>2</sub> over a four-year span into oil and gas fields in various lifecycle stages in order to gain knowledge about use of these formations for CO<sub>2</sub> storage. The project was nominated by the United States and Canada.
- The Southeast Regional Carbon Sequestration Partnership (SECARB) Phase III Anthropogenic Test and Plant Barry Project, located in Alabama in the United States, is a large-scale fully integrated pilot project which will capture, transport, and store CO<sub>2</sub> in order to gain knowledge about CO<sub>2</sub> transport, storage and monitoring mechanisms and technologies. The project was nominated by the United States, Japan, and Canada.
- The Kemper County Energy Facility, located in Mississippi in the United States, is a large-scale project that will capture up to 3 million tonnes of CO<sub>2</sub> per year from a lignite gasification-based power plant. The CO<sub>2</sub> will be used for EOR which will yield an expected 2 million barrels of petroleum annually. The project was nominated by the United States and Canada.

There was consensus to grant CSLF recognition to all of these projects.

## 8. Report on Capacity Building

Tone Skogen, Chair of the CSLF Capacity Building Governing Council, provided a brief progress report on CSLF capacity building activities. The CSLF's Capacity Building Fund was established at the 3<sup>rd</sup> CSLF Ministerial Meeting, in London in October 2009. Contributions totaling US\$2,965,143 were donated by Australia (via the Global CCS Institute), Canada, Norway, and the United Kingdom, with these monies focused on assisting emerging economy CSLF Members with CCS-related projects and activities based on criteria developed by the CSLF Capacity Building Task Force. To date, a total of US\$1,984,409 has been committed for this purpose, which has supported 13 capacity building projects in four countries (Brazil, China, Mexico, and South Africa). Funded projects have included training programs, internships, workshops, studies, knowledge base development, website development, regional financing roadmap development, and introduction of CCS into academic programs. In addition, an amount of US\$250,000 has been reserved for a potential project in India and US\$32,541 has been reserved for a future activity in Mexico. Ms. Skogen stated that the Governing Council will welcome submissions for remaining available funds not yet committed.



Tone Skogen

## 9. Report on The World Bank's CCS Capacity Building Program

Richard Zechter, Coordinator of The World Bank's Carbon Partnership Facility, gave a presentation that described The World Bank's CCS-related activities. The World Bank oversees a CCS Trust Fund which is supporting the strengthening of capacity building

and knowledge building about CCS in developing countries. Trust Fund activities have included integration of CCS into low-carbon growth strategies, assisting the restructuring of legal and regulatory frameworks at the national level, and support of capacity building through pilot and demonstration activities. The Trust Fund has received contributions totaling US\$52 million from Norway, the United Kingdom, and the Global CCS Institute. Mr. Zechter stated that the current work program consists of country-level activities focused on specific projects and analyses of regional regulatory/economic/financial frameworks. Future work will leverage present capacity building activities by supporting CCS pilot-scale projects in developing countries.



Richard Zechter

Ensuing discussion centered on how The World Bank and the CSLF might better coordinate their activities. Julio Friedmann commended The World Bank on its proactiveness and stated that The World Bank has also supported a series of capacity building study tours which have succeeded in getting industrial and governmental participants to recognize the potential range of CCS-related activities that are of value as well as facilitating international business-to-business connections. In that context, Dr. Friedmann suggested that there may be opportunities for tighter coordination between The World Bank's and the CSLF's capacity building activities (as well as similar activities of individual CSLF member nations) and, if so, these should be pursued. Mr. Zechter was supportive of this suggestion.

## 10. Report on Financing CCS

Bernard Frois, Chair of the CSLF Financing CCS Task Force, gave a short presentation on the mission and activities of the task force. The task force was formed in October 2009 with the objective of investigating incentives and investments for CCS in both developing and developed countries, which will allow the CSLF a new means of engaging financial and multinational entities. Dr. Frois stated that the task force has organized several workshops on project financing over the past three years, with participants representing project developers, government agencies, investment banks, global industry associations, and technology advocates. Outcomes from these workshops have helped to clarify the types of barriers that now inhibit large-scale CCS development and also possible ways of addressing these barriers.



Bernard Frois

Dr. Frois stated that one of the outcomes of these workshops was the realization that CCS needs a *raison d'être* – a narrative lens to help shape public view. This can include the idea that CCS development can be financeable if there are additional revenue streams (such as sale of CO<sub>2</sub> for EOR) and/or policy incentives. Projects involving value-added components such as polygeneration would therefore be good candidate first-movers.

Additionally, the opportunity for large-scale CCS will not realistically exist without government support for the first-of-a-kind commercial projects. And in the long run, CCS competitiveness will depend on and support a carbon-efficient economy. Dr. Frois stated that CCS policies should be designed to accommodate local environments and financial realities – an example of this is that CO<sub>2</sub> for EOR is the primary driver for CCS development in North America. Overall, the general consensus seems to be that investors are confident that the cost of CCS will decrease as more large-scale projects come online, as industry learns from experience and new technologies become mature. Project sponsors are also learning how to develop innovative financing mechanisms; governmental policy toward CCS needs to similarly evolve.

Dr. Frois closed his presentation by mentioning that another CCS Financing Roundtable will be convened in Paris in 2014, to be hosted by Société Générale. Alternative financing mechanisms and regulatory incentives will be discussed in more depth at this event.

## **11. Development of Policy Group Action Plan**

Christopher Smith led a discussion about the possible future agenda for the CSLF Policy Group. To preface the discussion, Mr. Smith stated that the Policy Group consists of experienced and senior policy people in more than twenty governments, and that any forward action plan should aim at finding ways to more effectively amplify and communicate key messages that increase the CCS knowledge base, advances the financing environment for large-scale CCS, and, in the end, helps get projects built. Ensuing discussion mainly centered around two broad topics: improved communications and increasing the knowledge base.

Concerning communications and public outreach, Paul van Slobbe stated that there is a great amount of public opposition to on-shore CO<sub>2</sub> sequestration, due in part to ineffective outreach. The majority of people do not yet know much about CCS and that CO<sub>2</sub> can be effectively stored in a safe manner, and are therefore against any CO<sub>2</sub> storage projects near populous areas. Peer Hoth added that public perception seems to be that CCS is not needed if more money is instead spent on renewable energy, and that there is a fear that storing CO<sub>2</sub> underground would result in contamination of underground resources such as fresh water aquifers. Both Mr. van Slobbe and Dr. Hoth endorsed the idea that a future CSLF meeting should host a public perception roundtable, including both proponents and opponents of CCS, as this would allow better understanding on why the public is so reluctant to accept that CCS is both necessary and safe. Louise Barr agreed that there should be a role for the CSLF in increasing the awareness about CCS. Khalid Abuleif offered that the Policy Group needs to have a good communications strategy, and stated that not enough is being done to promulgate knowledge from the CSLF Technical Group. Mr. Smith agreed, adding that the Policy Group should more effectively get information and recommendations from the Technical Group to decision makers in government. Juho Lipponen suggested that the IEA's Greenhouse Gas R&D Programme (the IEA GHG) has a social research network about CCS and could collaborate in any CSLF activities involving public outreach and communications.

Concerning increasing the overall CCS knowledge base, Julio Friedmann proposed several new initiatives for consideration by the Policy Group. Two of these, establishment of an international CCS test center network and investigation of offshore geologic storage options, have been mentioned in the "Moving Forward" section of the Ministerial Communiqué. In addition, Dr. Friedmann suggested that the Policy Group

could sponsor a coordinated international science program, in order to understand not just the broad-based scientific and technical issues concerning large-scale CCS projects but also important operational issues as well. Up to now, any such activities have been done mostly in an *ad hoc* fashion. Dr. Friedmann also proposed that the Policy Group consider a large-scale joint international CCS project, even given that there would be many issues (e.g., governance and funding) that would first need to be solved. Dr. Friedmann stated that even though it would seem to be a hugely ambitious undertaking, projects of this nature always start with a dialogue like the current one. Ensuing discussion resulted in support for the international science program concept. Tone Skogen offered that this could be taken a step further, to coordinate and collaborate on various policy-related issues. Building on that idea, Ms. Barr stated that the Policy Group could perhaps find common threads among all the existing large-scale projects that might assist new projects' efforts to gain financial closure.

To close out the discussion, Mr. Smith observed that to maintain momentum, it would be beneficial if the Policy Group met more often than just once a year. Also, future Policy Group meetings could be focused on specific themes, such as communications or financing. However, Trygve Riis cautioned that there are other organizations, such as the Global CCS Institute and the IEA GHG, that are also active in many areas concerning CCS and that the CSLF should not only maintain good contact and coordination with these organizations, it should be careful not to duplicate what they are doing. Mr. Riis also stated that the CSLF Technical Group has been successful, in part, because it has established an Executive Committee (consisting of the Chair, Vice Chairs, task force chairs, and the CSLF Secretariat) which holds frequent teleconferences to make sure all activities are on track and to come up with plans for future meetings and workshops. Mr. Riis offered that the Policy Group could possibly benefit from a similar strategy.

Mr. Smith stated that further discussion on the future of the Policy Group and its activities would be deferred until after the remaining items on the agenda have been completed, and that there would be an effort to come up with consensus on a way forward during the "New Business" item.

## 12. Report on Risk and Liability

George Guthrie, Co-Chair of the CSLF Task Force on Risk and Liability, gave a short presentation on the mission and activities of this task force. The task force is jointly led by Bernard Frois in the Policy Group and Dr. Guthrie in the Technical Group and builds on the results from the Technical Group's Risk Assessment Task Force. That Technical Group task force had the mission to examine risk assessment standards, procedures, and research activities relevant to the unique risks associated geologic storage of CO<sub>2</sub>, and produced two reports before the conclusion of its activities. One of the recommendations was that the link between risk assessment and liability should be recognized and considered, and to that end a new Risk and Liability Task Force was formed at the 2010 CSLF Annual Meeting and with the co-sponsorship of the IEA and the Global CCS Institute, held a workshop on risk and liability in July 2012 at the IEA



George Guthrie

offices in Paris. The focus of this workshop was to improve the understanding of geologic risks associated with CO<sub>2</sub> storage and their relationship to financial liabilities.

Dr. Guthrie stated that one of the findings from the workshop was that risks of geologic CO<sub>2</sub> storage are manageable, and a key recommendation was that the CSLF and other organizations should draw attention to this conclusion. Additional recommendations were to open a dialog with the insurance industry concerning geologic CO<sub>2</sub> storage, to consider the role of national/international standards for geologic CO<sub>2</sub> storage, to conduct further R&D to resolve any remaining geologic storage uncertainties, and to consider ways to enhance and support public outreach on geologic CO<sub>2</sub> storage. A second workshop planned for the Asia-Pacific region has not been held. Dr. Guthrie concluded his presentation by requesting guidance on the future of this task force and its activities.

Julio Friedmann commented that this is an immensely important topic and that the technical work being done by the CSLF on risk assessment really does weigh in on questions concerning financing and liability, and ultimately public acceptance as well. Dr. Guthrie replied that the CSLF Technical Group is anxious to work with the Policy Group in this area. Christopher Smith suggested that this should be one of the items included in the upcoming discussion on the future of the Policy Group and its activities.

### 13. Report on CCS in the Academic Community

Klaus Lackner, Director of the Lenfest Center for Sustainable Energy at Columbia University, gave a presentation that described the National Science Foundation's Research Coordination Network (RCN). This is a program which is allowing researchers and educators to communicate and coordinate their research, training, and educational activities across disciplinary, organizational, geographic, and international boundaries. The RCN provides opportunities for new partnerships to form and for new ideas on networking strategies. Dr. Lackner stated that one of the missions of the RCN is to build a trans-disciplinary group on carbon capture, utilization and storage (CCUS) that will facilitate research collaborations and training across the gamut of natural sciences, engineering, and social/economic sciences. Proposed outcomes of the RCN-CCUS would include innovative collaborations on CCUS technologies among researchers from different fields and improved communication with the public about the aspects and benefits of CCUS. RCN-CCUS activities will include academic workshops on specific themes, summer school programs led by graduate students, linkages to existing conferences, and utilization of social media to reach out to the younger generation. The RCN-CCUS will also develop and share educational content for graduate and professional certificate programs.



Klaus Lackner

Dr. Lackner concluded his presentation by stating that the RCN-CCUS has been in existence since February 2013, and so far includes participants in ten countries. The first annual meeting will be in New York City in April 2014. Dr. Lackner suggested that there are synergies between the CSLF and the RCN-CCUS, and that the RCN-CCUS could help move forward some of the common ideas that exist for the two organizations.

## 14. Possibilities for Offshore Carbon Storage

Ramón Treviño, CCS Projects Director at the Bureau of Economic Geology of the University of Texas, gave a short presentation that proposed a new task force for investigating sub-seabed CO<sub>2</sub> storage possibilities. Dr. Treviño noted that many nations have little or no on-shore CO<sub>2</sub> storage potential, and other nations have situations where the on-shore storage potential does not match up well with where large stationary sources of CO<sub>2</sub> are located. Use of offshore sub-seabed storage sites would therefore be a possible option for both of these situations.



Ramón Treviño

Dr. Treviño stated that the projected scope of the proposed new task force would include policy-related issues such as cost, economic drivers, and strategic deployment optimization, and also technical issues such as geologic characterization and monitoring, viability of offshore EOR, and possible collaboration opportunities with existing projects. One of the goals of the proposed task force would be to support and develop field tests in order to demonstrate global feasibility for offshore sub-seabed CO<sub>2</sub> storage. The success criteria for such a task force would be the ability to accelerate deployment of offshore field tests.

Ensuing discussion centered on the idea that this could be a crosscutting task force, as there are both technical and policy aspects involved. Trygve Riis noted that Dr. Treviño had given a similar presentation in the previous day's Technical Group meeting, and the Technical Group is taking it under consideration. However, as the proposal contained policy-related and potential funding issues, there was no immediate consensus to move forward on it. One thing that would therefore need to be worked out is how such a task force would be organized. Christopher Smith noted that offshore CCS is an area of interest to many countries, and is mentioned in the "Moving Forward" section of the Ministerial Communiqué. Mr. Smith noted that that this would be one of the items included in the upcoming discussion on the future of the Policy Group and its activities.

## 15. Report from Stakeholders

Barry Worthington, Executive Director of the United States Energy Association, led a Stakeholders panel that also included Sarah Forbes, Senior Associate at the World Resources Institute, and Raj Barua, Executive Director of the National Regulatory Research Institute. Mr. Worthington began by stating that the Stakeholders at this meeting represented a wide range of interests including corporations, business associations, regulatory associations, and environmental organizations. A series of roundtables had been held on the previous day, and a series of executive addresses earlier in the current day. The outcome from these sessions was a set of recommendations that have been grouped into four themes: recommended actions on the part of



Barry Worthington

governments, recommended actions on the part of Ministers personally, recommended actions on the part of the CSLF, and recommended actions on the part of stakeholders.

Concerning governmental actions, Mr. Worthington reported the following four recommendations:

- Governments should consider methods to assist stakeholders to drive down the cost of CCS deployment, since it is the stakeholders who will be making the majority of the financial investments.
- Governments should consider establishing ambitious targets and milestones for CCS deployment, and in particular should consider budget mechanisms that would offer further support for demonstration projects.
- Governments should allow CCS to compete on a level playing field in the marketplace with other low carbon options.
- Governments should review institutional regulatory policies to identify how barriers to CCS deployment may be reduced.

On the topic of Ministerial actions, Mr. Worthington reported the following recommendations:

- Ministers should be champions of CCS, and should ensure that they understand how critical CCS is to reaching target goals for CO<sub>2</sub> emissions, and that CCS deployment will create and preserve jobs.
- Ministers should be advocates for CCS demonstration projects, both within their countries and internationally. International collaboration is needed not only on projects, but also in the area of capacity building.
- Ministers should clarify the potential for CCS in their countries, based on the knowledge base developed over the past decade. This would include understanding the importance and impact of energy diversity, the impact on energy prices, and the impact on the economy and employment if CCS is not available as an option to meet climate goals.
- Ministers should recognize the contribution that CCS can provide in terms of energy security.

Mr. Worthington provided the following recommendations for the CSLF itself:

- The CSLF should emphasize more forcefully the importance of communications and public outreach, and determine if the CSLF has a role to play in coordinating global communications on CCS. The CSLF should also consider re-invigorating its own Communications Task Force.
- The CSLF should continue to focus on the role of regulation, particularly economic regulation, in both regulated and competitive power generation markets, and also in regard to environmental regulation on a global basis.
- The CSLF should expand its outreach to include additional governments, particularly in developing countries, institutions, NGOs, corporations. And the CSLF should include additional stakeholders in the CSLF process.
- The CSLF should consider creating a framework for governments and stakeholders to better share knowledge and learnings, particularly related to cost reduction. While this may be difficult, it is achievable and it must be done in a way that protects proprietary information.

To conclude his report, Mr. Worthington provided recommendations that are the responsibility of stakeholders.

- Stakeholders should continue and increase their mechanisms for sharing best practices, particularly regarding communications, regulation, and cost reduction.
- Stakeholders should commit to operate openly and transparently with governments, regulatory entities, the media, international organizations/NGOs, and the general public about issues impacting CCS development.
- Stakeholders should pledge to engage in public-private partnerships to encourage the development of additional demonstration projects and facilitate the development of CCS projects internationally.
- Stakeholders should pledge to continue to participate in the CSLF. Stakeholders should willingly and proactively share their experiences, observations and knowledge on their projects, and their efforts to launch new CCS projects.

Ms. Forbes stated that some of these recommendations were designed to address issues, such as the time it takes to plan/build/permit a project, that are now slowing the progression of CCS. Dr. Barua added that economic and environmental



Raj Barua and Sarah Forbes

regulators in different jurisdictions need to

coordinate among themselves to ensure the success of CCS. The way to do that is to have appropriate regulations that follow standards applicable to CCS, and to harmonize these regulations and standards internationally.

Jonathan Pershing inquired why the Stakeholders did not focus more on the topic of financing. Mr. Worthington replied that there had been a financial roundtable as part of the Stakeholders meeting, which included several representatives from commercial financial institutions. The main outcome was the realization there is plenty of capital available for good energy projects worldwide, but there needs to be more work to reduce both cost and risk, and long term liability for stored CO<sub>2</sub> is still an issue.

## 16. Review of 2013 CSLF Ministerial Communiqué

Policy Group delegates conducted a line-by-line review of the draft Communiqué. Edits were made in several areas, in preparation for the next day's Ministerial Conference. *(Note: the final version of the Ministerial Communiqué is available at the Washington meeting page of the CSLF website.)*

## 17. Election of Policy Group Vice Chairs

There was consensus to elect China, Saudi Arabia, and the United Kingdom as Policy Group Vice Chairs.

## 18. New Business

Julio Friedmann proposed that the Policy Group form an Exploratory Committee that would identify topics of interest from which an action plan can be developed. Dr. Friedmann stated that the Committee would form an outline of potential actions and, within two months, issue a report to the Policy Group on recommendations for near-term activities. After ensuing discussion, there was consensus to form the Exploratory Committee. Australia, Canada, the IEA, Norway, Saudi Arabia, and the United States all volunteered to participate, and there was understanding that other countries may also participate after first consulting with their Ministries. To expedite the process, Christopher Smith requested that the CSLF Secretariat send an email that would notify all Policy Group delegates about date, time, and call-in information for first teleconference of the Policy Group's Exploratory Committee.



Julio Friedmann

Khalid Abuleif inquired if there had been any consideration on which country would be hosting the next CSLF Annual Meeting. Mr. Smith responded that there had not been, and requested that the Exploratory Committee solicit interest and determine a host for the next meeting.

## 19. Closing Remarks / Adjourn

Prior to adjourning the meeting, Christopher Smith thanked the delegates, Stakeholders, speakers, and Secretariat for their hard work and active participation, and also thanked the United States Energy Association for its support and assistance in organizing the meeting. Mr. Smith noted that much of interest had been covered by the meeting, and that the reports from the Technical Group, task forces, and stakeholders were very informative and useful. Mr. Smith closed by noting that important strides in promulgating CCS have been made over the ten years of the CSLF's existence, and it was essential the Policy Group use its creativity and influence to find ways to continue to push innovations in CCS forward.

## SUMMARY

### **Consensus was reached for the following:**

- The Uthmaniyah CO<sub>2</sub>-EOR Demonstration Project, the Alberta Carbon Trunk Line Project, the Kemper County Energy Facility, the SECARB Phase III Anthropogenic Test and Plant Barry CCS Project, and the MRCSP Development Phase Project are approved by the Policy Group for CSLF recognition.
- China, Saudi Arabia, and the United Kingdom are elected as Policy Group Vice Chairs.
- The Policy Group will form an Exploratory Committee to identify topics of interest from which an action plan can be developed.

**Action items from the meeting are as follows:**

<b>Item</b>	<b>Lead</b>	<b>Action</b>
1	CSLF Secretariat	Notify all Policy Group delegates about date, time, and call-in information for first teleconference of the Policy Group's Exploratory Committee.
2	Exploratory Committee	Determine a host for the next CSLF Annual Meeting.