



## Minutes of the Policy Group Meeting

London, United Kingdom

Thursday, June 30, 2016

### **LIST OF ATTENDEES**

#### **Policy Group Delegates**

Australia:	Paul Trotman, Andrew Barrett
Brazil:	Gustavo Rosas
Canada:	Kathryn Gagnon
European Commission:	Jeroen Schuppers
France:	Bernard Frois, Paul Bonnetblanc
Japan:	Takashi Kawabata, Takuro Okajima
Korea:	Chong Kul Ryu, Chang-Keun Yi
Mexico:	Jazmin Mota
Norway:	William Christensen, Stig Øyvind Uhr Svenningsen
Saudi Arabia:	Hamoud Al-Otaibi (Vice Chair)
South Africa:	Tony Surridge
United Kingdom:	Brian Allison (Vice Chair)
United States:	Jarad Daniels (Chair)

#### **Representatives of Allied Organizations**

Global CCS Institute:	Victor Der, Andrew Purvis
IEA:	Tristan Stanley

#### **CSLF Secretariat**

Stephanie Duran, Richard Lynch, Adam Wong, Stephanie Hutson

#### **Invited Speakers**

John Gale, IEA Greenhouse Gas R&D Programme  
Jon Gibbins, UK Carbon Capture and Storage Research Centre (UKCCSRC)  
Tom Howard-Vyse, Communications Consultant  
Chris Littlecott, E3G  
Scott McDonald, Archer Daniels Midland  
Theo Mitchell, Carbon Capture & Storage Association  
Philippa Parmiter, Scottish Carbon Capture & Storage  
Åse Slagtern, Technical Group Chair, Norway  
Keith Whiriskey, The Bellona Foundation  
Barry Worthington, United States Energy Association

### **1. Welcome and Opening Statement**

Jarad Daniels, Policy Group Chair, United States, called the meeting to order and thanked the Department of Energy and Climate Change of the United Kingdom for hosting.

## **2. Meeting Host's Welcome**

Brian Allison, Department of Energy and Climate Change, United Kingdom, welcomed the attendees and provided the host country remarks.

## **3. Introduction of Delegates**

Policy Group delegates introduced themselves. Thirteen of the twenty-five CSLF Members were present, including representatives from Australia, Brazil, Canada, European Commission, France, Japan, Korea, Mexico, Norway, Saudi Arabia, South Africa, the United Kingdom, and the United States.

## **4. Adoption of Agenda**

The Agenda was adopted without change.

## **5. Review and Approval of Minutes from Riyadh Meeting**

The Minutes from the CSLF Policy Group Meeting on November 3, 2015, in Riyadh, Saudi Arabia were approved without change.

## **6. Review of Riyadh Meeting Action Items**

Stephanie Duran, CSLF Secretariat, provided a brief summary of the action items from the CSLF Policy Group Meeting on November 3, 2015, in Riyadh, Saudi Arabia. All action items have been completed or are currently in progress.

## **7. Outcomes from the 2015 United Nations Climate Change Conference (COP21)**

John Gale, IEA Greenhouse Gas R&D Programme (IEAGHG), spoke on the key outcomes from the 2015 United Nations Climate Change Conference (COP21). At COP21, a truly global agreement was reached by 195 countries to set tough goals and get below the two degree Celsius target. Major economies like the U.S. and U.K. are reducing emissions, while China has announced that emissions will peak before 2030. In order to reach these goals, countries will need a concerted action on low carbon technologies. The establishment of Mission Innovation was another key outcomes from COP21, which will double research and development budgets in participating countries. While CCS was also mentioned in some of the 187 submitted INDCS (representing 94% of global emissions), there is not much interest currently in CCS, especially from developing countries.

IEAGHG also hosted a side meeting at COP21 that included messaging and participation from groups such as Statoil, Sleipner, SaskPower, and small scale projects in Europe. Over 200 participants, many from developing countries, generated a lot of interests in CCS.

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

Åse Slagtern, Technical Group Chair, Norway, provided a summary of the Technical Group activities. The Technical Roadmap Working Group, chaired by Australia, plans to refresh the Technical Roadmap instead of rewriting it. The plan is for these updates to incorporate the outcomes from COP21, while also modifying time horizons (2020, 2025, 2035), and incorporate new areas such as bio-CCS. The target is to complete the Technical Roadmap in time for the CSLF Ministerial Meeting in 2017. No new projects were proposed for CSLF recognition, and the existing taskforces are all making progress. New taskforces are to be considered at October meeting.

## **9. Summary of Carbon Capture & Storage Association (CCSA) Workshop**

Theo Mitchell, Carbon Capture & Storage Association, provided a summary of the previous day's workshop, hosted by the Carbon Capture & Storage Association (CCSA). The workshop generated great interest and participation, while also covering a variety of topics. There was a particular focus on the importance of commercial value and industrial involvement, with a key aspect of making CCS valuable to business and policy communities. Moving forward, it was agreed that the CSLF has a role to play to engage and put forward a new dialogue on CCS, and to help create a new narrative and re-articulate the argument. The CSLF has been, and needs to continue, to be instrumental in sharing knowledge and leading the way forward.

## **10. Report from the Communications Task Force**

Hamoud Al-Otaibi, Vice Chair, Saudi Arabia, presented an overview of the CSLF Communications Task Force. The task force under the CSLF has engaged the services of a new consultant, to lead the development of a new strategy and several products. Tom Howard-Vyse has experience in public relations in the climate sphere, and provided his perspective on the CSLF and the CSLF website, including messaging, branding, and engagement. There will be a work plan set out between this meeting and the Annual Meeting in October 2016, with the development of several items. The Policy Group chair requested that Mr. Howard-Vyse and the Communications Task Force to flesh out a press kit and core messages policy kit.

## **11. Report from the Global Collaboration on Large-Scale CCS Projects Task Force**

Jarad Daniels, Policy Group Chair, United States, provided an update from the Global Collaboration on Large-Scale CCS Projects Task Force. Having completed the first two phases of its work, the Task Force is now moving on to a new phase 3 initiative. It was proposed, and agreed by the Policy Group, that the Large-Scale Saline Storage Project Network (Network), which was announced at the 2015 CSLF Ministerial Meeting in Riyadh, Saudi Arabia, would also include projects that do not meet the definition of a large-scale integrated CCS projects but are still important potential partners. Current ongoing R&D collaboration under the Network included the Shell Quest project. Potential other opportunities for collaboration include the Illinois Industrial CCS Project, done by Archer Daniels Midland (ADM). Scott McDonald, ADM, spoke on the need to develop confidence with regulators, and that there is an interest in developing technology that aligns with modeling to show conformance, precision, etc. The desire is to utilize and automate technology that can be deployed, and there are advances in various models, with the hope to find less intrusive methods. The Network will proceed with actively seeking partners for the Illinois Industrial CCS projects.

## **12. Report from the Supporting Development of 2<sup>nd</sup> and 3<sup>rd</sup> Generation CCS Technologies Task Force**

Kathryn Gagnon, Canada, provided an update from the Supporting Development of 2<sup>nd</sup> and 3<sup>rd</sup> Generation CCS Technologies Task Force. This Task Force, led by Canada and Norway, had a goal to help find opportunities to accelerate deployment of second and third generation CCS technologies. The results included a joint study conducted by Canada and Norway, and the findings were presented at the 2015 CSLF Mid-Year Meeting with an executive summary, available on the CSLF website. Conclusions were that there are 30 groupings of emerging technologies, along with 11 test facilities identified around the world. Currently barriers include the lack of market and high costs. The Task Force also provided seven recommendations for consideration by the CSLF

Ministers. Since that meeting, there have been enhanced collaborations and an expansion of the International Test Centre Network. Moving forward, the Task Forces hopes to further enhance networks, expand online tools such as through the development of the CSLF website, enhance research collaboration, and leverage the Mission Innovation mechanism, where 17 of the 21 Mission Innovation countries are also CSLF members.

### **13. Report from the Financing for CCS Projects Task Force**

Bernard Frois, CEA, France, presented on the Financing for CCS Projects Task Force, and highlighted the progress the task force has made in engaging the finance industry, as well as some of the difficulties projects have faced. He provided an update on the task force's events and work plan, and the status of engagement with the finance sector. He emphasized the need for clarity and certainty to encourage investment and interest, and the need for greater advocacy, an area in which the CSLF Secretariat can play a strong role. Ongoing initiatives and key events can be leveraged to encourage greater engagement and progress.

### **14. Report from the Capacity Building Governing Council**

William Christensen, Capacity Building Governing Council Chair, Norway, summarized the status of the CSLF Capacity Building Program. The CSLF Capacity Building Fund was established by the CSLF Ministers at the 2009 CSLF Ministerial in London, and contributions committed total US \$2,965,143.75, with donors from Australia (via the Global CCS Institute), Canada, Norway, and the United Kingdom. To date, the Governing Council has approved 19 capacity building projects in 6 countries, with 12 projects completed, 3 projects in progress, 3 projects approved recently at the 29 June 2016 Governing Council Meeting, and 1 project on hold.

The Terms of Reference for the Governing Council was recently revised and is to be revisited for further revisions. Additionally, the Governing Council proposed for the Policy Group to disband the inactive Capacity Building Task Force. The total estimated remaining after accounting for pending and approved projects is AU\$1,077,225.23 (exchange rate as of 2 June 2016). The Governing Council welcomes submissions for remaining available funds for CSLF members. The Policy Group approved the Governing Council's recommendation to disband the Capacity Building Task Force.

#### **a. Report from CSLF Capacity Building Event: International Academic CCS Summit**

Philippa Parmiter, Scottish Carbon Capture & Storage (SCCS), presented a report from the CSLF Capacity Building Event: International Academic CCS Summit. The SCCS is a partnership of universities, funded by the Scottish Funding Council. SCCS connects research, industry, academia, and other sectors in research that covers full CCS chain and uses, along with externalities. The Summit was funded and supported by U.K.'s Foreign & Commonwealth Office, Natural Resources Canada, and the CSLF Capacity Building Program. The Summit was held in February 2016, and included 18 research institutes from 10 countries. The main aim of the event was to increase networking, discussions, collaborations, and identify possible funding opportunities from each country. An output report was available, and SCCS would like to follow up on activities with a potential for an international academic network. The objectives of an international academic network would be knowledge sharing and collaboration, and to maximize value from existing injection and storage research, along with pilot facilities.

**b. Report from CSLF Capacity Building Event: Offshore Storage Works**

Tony Surridge, South Africa, provided a report from CSLF Capacity Building Event: Offshore Storage Works. This international workshop on offshore geologic CO<sub>2</sub> storage was organized by the University of Texas in Austin from April 19-21, 2016. The goal of this workshop was to facilitate sharing of knowledge and experiences, and 13 countries attended, including 7 developing countries. Representatives included experts who currently do offshore storage, including Brazil, Japan, the Netherlands, Norway, and the U.S. Future research opportunities include risk assessment, management, mitigation, and MRV. The meeting also included attendance and some interest from representatives from Nigeria and Ghana. Conclusions reached are that each country is in different place and different stages, but with a common interest. There is a benefit of using depleted oil and gas wells. The workshop recommendations included additional workshops and trainings, a taskforce on infrastructure, and a study on project successes and failures.

**15. Report from the CCS in the Academic Council**

Jon Gibbins, UK Carbon Capture and Storage Research Centre (UKCCSRC), provided a report from the CCS in the Academic Council, which held a meeting on June 27 at Imperial College. The Academic Task Force agreed to move forward on academic collaboration efforts, with a motivation toward a coordination of effort. The Council has performed a baseline survey, and some initial priority areas have been set up. However, leadership must come from the CSLF Academic Community Task Force. There is a need to leverage and set actions and priorities, and to ultimately finalize a plan of action to present to the Policy Group at the 2016 CSLF Annual Meeting. This action plan will link deliverables and resources, and include primarily recommendations and actions in the next year with a budget to tag on. The Academic Council recommended the need to utilize existing resources and linkages where possible, as the leverage of established connections, programs, and entities will help avoid duplication of efforts to maximize effectiveness of additional resource inputs. The Council will also foster new connections between existing facilities, experts, and sectors, while also streamlining and focusing on best practices. The CSLF can act as a global repository for information and showcase talent and technologies. The main focus of the Council has been on priority areas of training and academic resources, and communications and capacity building.

**16. International Energy Agency (IEA) CCS Activities Update**

Tristan Stanley, International Energy Agency (IEA), presented on CCS activities within the International Energy Agency, and the need to focus on the recent outcomes from the COP21 Conference in Paris in late 2015. He focused on several areas of potential, including retrofitting of older power plants, negative emissions technologies, BECCS, and the use of hubs and clusters. The IEA is exploring these areas and concepts, and the role CCS will play in a stronger push toward the lower emissions scenarios.

**17. Global CCS Institute Update**

Andy Purvis, Global CCS Institute, presented on the progress of projects globally, and the priorities for the year ahead. GCCSI will continue its advocacy role, and push for authoritative knowledge sharing. There are several milestones on the horizon, but there is a need to remain focused and become more proactive at the regional level. Political and industrial engagement will also remain important, in both emerging and developed economies. GCCSI is hosting its Annual CCS in Europe Forum in Norway later this year. GCCSI has also produced special reports on Industrial CCS and Hubs and Clusters.

## **18. CO<sub>2</sub> Market Makers for Strategic European CCS Hubs & Clusters**

Keith Whiriskey, from the Bellona Foundation, presented on the need to continue advocating for CCS, and highlighted the role it plays in deeper cuts to emissions following COP21. He focused on the role of hubs and clusters, especially within heavily industrialized parts of Europe such as the Ruhr region and Rotterdam. CCS needs a policy assurance mechanism and a market maker to provide certainty and encourage investment. Industry and government, regionally, nationally, and at the EU level, all need to be engaged to ensure successful deployment. Overall, less time for action remains, as delays have dampened development.

## **19. Reclaiming CCS in the Public Interest: Perspective from Environmental Non-Governmental Organization (NGO) Community**

Chris Littlecott, E3G, highlighted the role of the Environmental NGO community in advocating for CCS. He highlights the delays in development, citing a “lost decade” for the community. Specifically, bad policy and bad luck contributed to an environment that was not conducive for CCS, especially in Europe. CCS needs to be seen as useful beyond coal and fossil fuels, especially its image as an apologist for this sector. It also needs to be recognized as an important part of a decarbonization plan for countries and sectors. He focuses on the challenges that remain for development and deployment globally, highlighting the situation in Europe as an example. Various technologies and developments will play a role in defining success for the industry.

## **20. Report from CSLF Stakeholders**

Barry Worthington, Executive Director of the United States Energy Association, provided a CSLF Stakeholders’ Message to the Policy Group. Last year on November 4, 2015 in Riyadh, Saudi Arabia, the Stakeholder’s Message reminded the Ministers that our global energy industry is expected to more than double its service to our customers by 2050. This needs to be done with energy production, distribution and utilization being safe, affordable, reliable and clean. Dramatically increased consumers demand will be met by a broad portfolio of resources and technologies, which needs to be accomplished while reducing greenhouse gas emissions, globally by 50% and in OECD countries by 80%. It is clear that we need to attract private capital to CCS & CCUS projects. Supportive government fiscal policies are essential to interest private sector investors. Thus, a message of policy parity for CCS is important. The stakeholders also advocated the importance of supporting the academic community, which supplies much of the human resources and talent needed to support the CSLF mission.

## **21. CSLF Website Update**

Stephanie Duran, CSLF Secretariat, updated the Policy Group on the CSLF website, and provided a request that the Policy Group endorse a Plan of Action for revamping website. These changes would be primarily to the home page, and require a request for action from each member country to updates their profile page. The CSLF Secretariat also requested photos, resources, testimonials, and other items to showcase. There is a desire to tie and link the website to the Global CCS Institute’s database. Other changes include a new feature that highlights recent policy and technical developments, along with an upcoming events area that will highlight other meetings. The website will also include a news feed feature, plus drop-down options to explore features, such as events, member pages. The CSLF Secretariat also hopes to update the overview of CCS 101 documents and other items available on the media page.

## **22. Mission Innovation / Clean Energy Ministerial**

Jarad Daniels, Policy Group Chair, United States, provided a summary of the recent Mission Innovation and Clean Energy Ministerial (CEM) Meetings in San Francisco, California, United States. For these events, the CSLF provided papers, including the recent 2015 CSLF Ministerial Meeting Communiqué and an industrial CCS white paper. Many of the countries in attendance at the CEM, checked the box for CCS so it was adequately represented and listed alongside other low carbon options. Some countries are exploring other areas such as net negative emissions technologies and BECCS. The CSLF should continue to engage globally, and the next CEM will be hosted by China.

## **23. Upcoming Election of Policy Group Vice Chairs**

Stephanie Duran, CSLF Secretariat, talked on the upcoming election of Policy Group Vice Chairs, to be held at the 2016 CSLF Annual Meeting. The last election of the Policy Group Chair and Technical Group Chair and Vice Chairs were at the Riyadh meeting in November 2015 for a three-year term through end of 2018. In order to align all leadership roles on the same cycle, it was proposed that the upcoming election of Policy Group Vice Chairs at the 2016 CSLF Annual Meeting will be for a two-year term through the end of 2018. This would bring the elections in sync with the election cycle for the Policy Group Chair and Technical Group Chair and Vice Chairs. The Policy Group approved this change.

## **24. Future CSLF Meetings**

Stephanie Duran, CSLF Secretariat, led the discussion on future CSLF Meetings. Takashi Kawabata, Japan, described the upcoming 2016 CSLF Annual Meeting, to be held in October in Tokyo, Japan. Registration for the meeting is available until September 2, and the meeting will include a site tour of the Tomakomai CCS Demonstration Project, which will begin injection in April 2016.

For future 2017 CSLF Meetings, locations are still to be determined. Keeping in mind the strategy of aiming for a regional balance between meetings, 2017 meetings could take place in Europe and Asia. Jeroen Schuppers, European Commission, offered to gauge possibly hosting the 2017 CSLF Ministerial Meeting in Brussels, as the appetite for CCS and the political situation may improve. As the European Commission will also be hosting CEM in 2018, there is a possibility to dovetail the CSLF Ministerial Meeting with CEM in 2018. However, the negative is that there are no real CCS projects in Belgium for a potential site visit. The CSLF Secretariat agreed to take the action of having conversations and coordinate with members on potential hosts for the 2017 CSLF Meetings. The aim is to have an agenda item on this in time at the 2016 CSLF Annual Meeting.

## **25. Open Discussion and New Business**

No new business was discussed.

## **26. Action Items and Next Steps**

Stephanie Duran, CSLF Secretariat, provided a summary of the day's Policy Group Meeting, and noted the significant agreements and action items. The Policy Group reached a consensus on the following items:

- Moving forward, the Global Collaboration on Large-Scale CCS Projects Task Force will include smaller saline storage projects in the Large-Scale Saline Storage Network, when appropriate, as a subset

- The Capacity Building Task Force has been formally disbanded
- Endorsed the proposal for and planned updates to the CSLF website.
- Agreed on a two-year Vice Chair term for the upcoming Policy Group Vice Chair elections to bring the elections in sync with the election cycle for the Policy Group Chair and Technical Group Chair and Vice Chairs

Action items from the meeting are as follows:

Item	Lead	Action
1	Saudi Arabia, Global CCS Institute, IEA	Under the Communications Task Force, develop a press kit and a detailed communications strategy at the CSLF Annual Meeting to include a schedule for upcoming events, a concept for a TED talk on CCS, and recommendations to improve the CSLF website
2	CSLF Secretariat, Canada	Under Supporting Development of 2 <sup>nd</sup> and 3 <sup>rd</sup> Generation CCS Technologies Task Force, work to explore website functionality in tandem with the CSLF website update
3	CSLF Secretariat	Work with the Capacity Building Governing Council to develop a strategy for providing capacity building to developing countries not currently members of CSLF, including strategies for increasing CSLF membership. Strategy will be presented at the CSLF Annual Meeting.
4	Academic Council	Present a final action plan with concrete recommendations for approval at the 2016 CSLF Annual Meeting
5	CSLF Secretariat	Develop a strategy for how best to engage at COP22 in Morocco and at other upcoming international events and present the strategy at the 2016 CSLF Annual Meeting
6	CSLF Secretariat	Work with CSLF members to find a hosts for the 2017 CSLF Meetings

## 27. Closing Remarks / Adjourn

Jarad Daniels, Policy Group Chair, United States, closed the meeting by thanking all of the participants for their input, and by thanking the government of the United Kingdom for hosting the event.