



IEAGHG Information Paper: 2015-IP21; Report on London Convention meeting LC-37 / LP-10. Very poor progress on the export amendment for CCS

It was the 37th meeting of the London Convention and the 10th meeting of the London Protocol on the 12th – 16th October 2015, the global treaties that protect the marine environment. The detailed work on CCS was completed in 2012 (see IEAGHG 2013-IP26 and 2014-IP19), but outstanding is the ratification of the 2009 CO₂ export amendment which is a barrier to transboundary projects offshore, and there is an ongoing request for information and experiences with offshore CCS.

In terms of ratification of the CO₂ export amendment, UK and Norway had previously ratified, and the Netherlands announced at this meeting that they have now also ratified. There were no reports of progress by other countries, although last year Korea, Canada and Australia and Sweden announced they are working on ratification. So it appears there is very poor progress given that two thirds of the 45 Parties to the London Protocol need to ratify the export amendment for it to come into force.

In the plenary, the UK delegation gave an update on the UK demonstration projects, and both UK and Norway reminded the participants of the need for CCS according to IPCC and IEA. Nigeria spoke of their new interest in offshore CO₂ storage. The US gave an update on their offshore storage assessment solicitation, with four projects being announced in July to assess offshore storage potential in the Gulf of Mexico and East Coast Atlantic.

IEAGHG gave the intervention given in Annex 1 to this Information Paper, covering activities by IEAGHG, IEA, CSLF and the IJGGC. It was important to highlight that there is considerable progress being made with offshore CCS, not least to counter Greenpeace's claims that the lack of CCS projects offshore means that the London Protocol moved too fast on CCS. There was specific interest in the results of the IEAGHG Networks meeting held at the National Oceanography Centre (this had been promoted at the London Convention Scientific Group in April resulting in attendance by London Convention participants) and in the "Review of Monitoring for Offshore CCS Projects" report and forthcoming webinar.

Greenpeace asked for examples of application of the London Protocol's CO₂ Specific Guidelines, as there were no examples being shared for assessment of meeting London Protocol requirements.

On marine geoengineering, the geoengineering amendment from 2013 (see 2013-IP27) is also slow in being ratified so far (none so far), but UK, Norway and Sweden announced they were now working on it. Interestingly, there was some feedback that this amendment was actually deterring further research on ocean fertilisation.

A paper was co-authored by IEAGHG and IMO for GHGT-12 on "Update on the London Protocol – Developments on Transboundary CCS and on Geoengineering" (2014) and is published open access from Elsevier on Science Direct.

In the margins I learnt that OSPAR, the treaty for the North East Atlantic, is recommencing some work on CCS. OSPAR's Environmental Impacts of Human Activities Committee will be reviewing work on environmental impacts of CCS offshore, to report in 2016.

In conclusion, poor progress on transboundary CCS, but continuing interest in offshore CCS, and IEAGHG and IEA continue to be a primary information source on CCS in the London Protocol.

Tim Dixon, 16th October 2015



Annex 1. IEA and IEAGHG Intervention in Plenary to the LC-37/LP-10 agenda item “6.2 Experiences with CO₂ Sequestration Technologies and their application”.

The International Energy Agency (IEA) and IEAGHG’s work on policy and technical issues associated with Carbon dioxide capture and storage (CCS) has been ongoing since the last meeting.

IEA analysis continues to highlight the importance of CCS as a technology that allows us to meet the challenge of reducing emissions while meeting growing energy demand around the world. The 2015 edition of *IEA Energy Technology Perspectives (ETP 2015)* highlights the role for technological innovation in meeting the challenge of climate change and the importance, in particular, of near-term opportunities for continued development of CCS. This analysis supports the goals of the IEA 2013 CCS Roadmap, which also includes ratification of the LP export amendment as key action for CCS.

The IEA continues to support governments in implementing enabling policies and regulatory frameworks for CCS, including those that pertain to sub-seabed storage of CO₂. The main vehicles through which the IEA supports its member and non-member governments in this area are the *IEA International CCS Regulatory Network* and its regular update on CCS regulation, the *IEA Carbon Capture and Storage Legal and Regulatory Review*. The most recent meeting of the Regulatory Network was held in April 2015, a [meeting report from which is available](#) from the IEA website.

IEAGHG runs several Research Networks relevant to CCS and the marine environment. There has recently been a combined meeting of the **Risk Management Network and the Environmental Research Network**, with an offshore theme and hosted by the National Oceanography Centre in Southampton, UK. The sixty attendees discussed over 38 presentations on the latest work on topics including risk assessment methodologies, mitigation strategies, projects’ risk management plans, impacts of CO₂ in the ocean, natural variability in marine environments, pipeline environmental impacts, formation fluid release, overburden features, international initiatives, and Environmental Impact Assessments. Of particular note was a session on formation fluid release into the marine environment, and the development of sensors for marine monitoring. Great advances in offshore monitoring are being developed and applied, and there are significant developments in understanding environmental aspects in the marine environment. The meeting concluded that the risk assessment for CO₂ geological storage is maturing, recognising that with leaks from storage if they occur are likely to have low environmental impacts. Wellbore issues are still the predominate risk, an area of known technology solutions but more work to test and apply these was suggested. Presentations and a meeting report will be available at <http://www.ieaghg.org/networks/environmental-impacts-of-co2-storage>

Given the recent advances in offshore monitoring, IEAGHG undertook a comprehensive review of offshore monitoring techniques. The report is now published “**Review of Monitoring for Offshore CCS Projects**” IEAGHG report 2015/02 July 2015 (see <http://www.ieaghg.org/publications/technical-reports/2015-technical-reports/49-publications/technical-reports/590-2015-02-review-of-offshore-monitoring-for-ccs-projects>). A **webinar** to present a summary of its results will be held on Friday 23rd October 14.00 BST and presented by James Craig, IEAGHG. Registration can be made through the following link <https://attendee.gotowebinar.com/register/4133762768414808065>

The **Carbon Sequestration Leadership Forum (CSLF)** has started an Offshore Task Force, to assess the global potential for offshore storage, and identification of technical barriers and challenges as well as RD&D opportunities and opportunities for global collaboration. This work is led by the USA DOE and supported by University of Texas Bureau of Economic Geology (BEG) including providing the background assessment, and IEAGHG is a member of this task force. The draft report has been published in time to be considered at the CSLF Ministerial Meeting in Riyadh, Saudi Arabia. The comprehensive report makes recommendations specific to storage capacity assessment, transport



infrastructure, CO₂-EOR, environmental impacts, monitoring, and a general recommendation for international knowledge sharing by international workshops and collaborative projects. The report is available at:

http://www.cslforum.net/publications/documents/riyadh2015/tg_OffshoreSubSeabedStorageTaskForceFinalReport-Riyadh1115.pdf .

Following on from this CSLF general recommendation, there are plans to hold such an **international workshop on offshore CCS**, organised by the University of Texas BEG. The objective is to share knowledge between countries undertaking offshore CO₂ geological storage and those countries who have potential and are interested, particularly developing countries, and there may be support for developing countries to attend. The timing is likely to be in the autumn of 2016, location Austin Texas. For interest in this workshop please contact tim.dixon@ieaghg.org.

The **QICS** project, a controlled release of CO₂ in seabed sediments, has recently published more detailed papers in a dedicated version of the International Journal of Greenhouse Gas Control. The main analysis of the results has now been completed and 21 papers have just been published in a special issue of the International Journal of Greenhouse Gas Control (Volume 38, July 2015). The papers are now available on www.sciencedirect.com (some are open access also). The **ECO2** project, a European collaborative R,D&D project looking at environmental aspects of CO₂ geological storage offshore, has now concluded and published a “Best Practice Guidance for Environmental Risk Assessment” as well as other project reports on their website www.eco2-project.eu (IEAGHG was on the Stakeholder Board for this project). IEA and IEAGHG are participants in the **ISO Technical Committee on CCS TC 265**. The working group on geological storage of CO₂ is using the joint Canadian-US Standard for CO₂ geological storage (CSA Z741-12) as a seed document and updating and expanding it to ensure it will be applicable offshore as well as onshore. Finally to note that Shell have published a very detailed “Offshore Environmental Statement” for the UK’s Peterhead project, available at <http://www.shell.co.uk/energy-and-innovation/the-energy-future/peterhead-ccs-project.html> .

For more information on IEA activities contact sean.mccoy@iea.org or visit their website <http://www.iea.org/> , and for more information on IEAGHG activities contact tim.dixon@ieaghg.org or visit the website <http://www.ieaghg.org/> .

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