

2nd IEF - Global CCS Institute Symposium on Carbon Capture and Storage

31 May – 01 June 2010, Hotel El Aurassi, Algiers, Algeria

Concluding Statement by IEF Secretariat and Global CCS Institute

The 2nd IEF - Global CCS Institute symposium was held in Algiers, Algeria, 31 May-01 June 2010, hosted by the Ministry of Energy and Mines, with the participation of representatives from oil and gas industry, government, research centres, financial and international institutions.

Building on messages developed in the 1st symposium in Beijing, participants at this 2nd symposium reviewed recent progress, shared views on the challenges of development, and addressed technological, economic and regulatory issues facing carbon capture and storage (CCS) to build global support at government and industry levels and developed messages that may feed into the CCS and climate change international fora. They made the following statements and recommendations:

1. Long-term energy demand is projected to increase with a prevalence of fossil fuels in the future energy mix. In light of climate change concerns, both producers and consumers of energy must move towards a more sustainable, lower carbon emissions energy future.
2. Carbon capture and storage is expected to play a vital role in the reduction of greenhouse gas (GHG) emissions. As it is the key technology available to mitigate GHG emissions from large scale fossil fuel power plants and industrial facilities, there is a pressing need to accelerate and support CCS as a necessary part of a suite of required energy technologies, including renewable energy, energy efficiency, fuel switching and nuclear energy. To achieve confidence for commercial deployment, CCS needs to be demonstrated across a range of industries and storage types in both developing and developed countries.
3. Addressing barriers to CCS deployment requires stronger joint and coordinated efforts and sustained commitment of all stakeholders. CCS stakeholders need to work to communicate the value of CCS projects and the urgency of deployment.
4. There is an urgent need to develop a strategy to educate the broader public to increase awareness of and support for CCS. Gaining general acceptance of CCS technologies will be necessary to demonstrating that CCS is a safe and environmentally acceptable option. Safety of CO₂ storage is a particular concern for local communities. There is also a need for a local value proposition of each CCS

project. CCS stakeholders must better address public concerns and perceptions and educate and communicate more effectively on large scale CCS deployment. Recent events around the world show how important energy safety is.

1 – CCS technology, latest developments and challenges ahead

5. The progress of CCS to date is encouraging; however there are still a number of technical, economic and legal and regulatory barriers to large scale CCS deployment. The cost of implementation and the need to increase scale and efficiencies in the capture, transportation and storage of CO₂ are among obstacles still to be overcome before CCS technology attains commercial viability. Technological improvements combined with financial incentives and regulatory measures should help accelerate CCS deployment.
6. The oil and gas industry possesses the technology and know-how to use gas to improve recovery rates of existing mature oil and gas fields. Transportation of the captured CO₂ is not a significant challenge for the oil and gas industry. The oil and gas industry's knowledge and experience in enhanced oil recovery (EOR), enhanced gas recovery (EGR) and gas transport and storage needs to be leveraged to accelerate CCS deployment. In particular, EOR offers strong potential for early commercial scale CCS projects.
7. Reliable measuring, monitoring, and verification (MMV) schemes are required to verify the amount of CO₂ injected and to confidently predict and demonstrate that CO₂ will remain permanently sequestered.
8. The technologies involved in CCS have been proved independently, the big test facing governments and industry is integration that is safe, at a reasonable cost and on a large enough scale to make a meaningful reduction in global CO₂ emissions.
9. Investors in CCS technologies and processes need to have confidence in the regulatory framework surrounding their industry. Regulatory issues, particularly those related to liability of storage will need to be resolved. Regulatory frameworks at national and international levels are also needed to clarify long term rights, liabilities and institutional structures. Governments were encouraged to support the role out of IEA's Model Legal and Regulatory Framework once development is finalised, noting that work will need to be done to ensure that the framework can be tailored in a country specific manner.

2 – Funding, a structural challenge

10. Cost and funding are key challenges facing CCS deployment. Current costs levels and technology risks are a serious barrier to large scale commercial deployment of CCS. For projects to be economic, it is therefore crucial to significantly reduce CCS costs.
11. Technological improvements should help reduce costs but investment in CCS will only occur if there are suitable incentives and regulatory mandates. Commercial CCS deployment, particularly in developing economies, is contingent upon significant cost reduction. Considering the scale of investment needed, Governments will be required to address the funding gap and to help facilitate private sector investments by strong financial incentives including an effective and stable price on CO₂ and inclusion of CCS under the Clean Development Mechanism (CDM) or any other post-Kyoto mechanism.

12. Nearly all the major economies have announced initiatives to promote CCS and associated funding for large scale CCS demonstration projects. There is also a rising interest and involvement in CCS in oil and gas producing countries. These initiatives and funding announcements show the increasing interest in CCS technology and will contribute to facilitate its development. However, substantial additional financial incentives are required if we are to achieve commercial-scale CCS deployment.

3 – CCS projects, learning by doing

13. There is a triple challenge behind CCS projects: the technical challenge of showing that CCS technology performs well at commercial scale; an economic challenge which consists of carrying out these operations with acceptable costs; and finally the challenge of public acceptability.
14. The oil and gas industry with its knowledge in CO₂-EOR/EGR has the ability to effectively demonstrate that, with the appropriate level of site assessment, monitoring and verification, the injected CO₂ could remain contained for long periods within the formation layers that have been targeted. Growing support for CCS is likely to boost the use of EOR and improve EOR techniques and rates of recovery which contribute to improve oil and gas supplies.
15. Increased knowledge sharing on CCS project experiences including measurement, monitoring and verification (MMV) is vital to reducing costs and accelerating CCS deployment. With the help of Global CCS Institute, IEF and other relevant organisations, the involvement and cooperation of existing projects is needed to enable knowledge to be shared and industry leaders in this field are encouraged to take a collaborative approach for the benefit of accelerating CCS deployment more broadly. Projects proponents are encouraged to develop in depth case studies that could be of benefit to other projects. In Salah CO₂ Project partners (Sonatrach, Statoil, and BP) are commended for their efforts in this area to date.

4 - CCS development, the road from Copenhagen

16. International cooperation, government-industry collaboration and cohesive policy direction are prerequisites to the acceleration of CCS deployment on a commercial scale. In addition to demonstrating technology performance, it will contribute to better use of funding, knowledge-sharing, local capacity-building, and shortening the CCS learning curve. Governments can and should provide the long-term policy and regulatory framework that enables commercial scale deployment while industry can provide know-how, technological innovation and a share of the capital needed to develop large scale projects. Public-private partnerships that involve cost and risk-sharing for CCS demonstration are also required.
17. Development of business cases and international mechanisms for funding deployment of CCS in developing countries are key elements that should be supported in future international meetings to provide greater predictability for industry. To enable the transfer of technology and full scale deployment in developing economies participants called for CCS to be included in CDM, or any post- Kyoto agreement and associated financing mechanisms.

18. Looking towards climate change discussions at the upcoming COP16 in Mexico in December 2010, participants called on parties to consider CCS as one of the most promising options in reducing CO2 emissions.
19. The Copenhagen Accord provided for a new “Copenhagen Green Climate Fund” to support immediate action on climate change (including mitigation and adaptation). Considering the predicated role that CCS will play in reducing CO2 emissions in a least cost scenario, CCS projects must be recognised positively and appropriately in the suite of technologies that are able to access these funds. It is recommended that governments work to ensure that CCS projects are able to access of these funds under this scheme.