INCLUSION OF CCS UNDER CDM

Comments by South African Centre for Carbon Capture and Storage

The CDM is currently the only viable mechanism to provide incentives that would make CCS projects in developing countries, such as South Africa, feasible.

1. CCS in mitigation scenarios

The International Energy Agency (IEA) stated that CCS could provide some 19% of the required global CO2 reductions by 2050, but this would mean about 18 CCS projects would be needed by 2015, and a significant number of 3 400 CCS projects would be needed by 2050.
The split was about 35% of these projects to be located in non-Organization for Economic Cooperation and Development (OECD) member countries, and the remainder to be located in OECD member states.

One of the outcomes of the recently completed UNFCCC negotiations in Copenhagen is the recognition of the importance of CCS in geological formations as a possible mitigation technology, bearing in mind concerns related to the following issues:

- risks and uncertainty of long-term physical leakage levels;
- project boundary issues (such as reservoirs in international waters, several projects using one reservoir);
- long-term responsibility for monitoring the reservoir and any remediation measures that may be necessary after the end of the crediting period; and
- other relevant matters, including environmental impacts.

Although there are still active developments on these issues, a growing body of scientific evidence indicates that all these issues may be resolved satisfactorily.

The Marrakech Accords noted that it is “the host Party’s prerogative to confirm whether a Clean Development Mechanism project activity assists it in achieving sustainable development” and so only Parties that volunteered to host CCS projects, having decided that CCS meets their sustainable development goals, would do so.

2. South African Long Term Mitigation Scenario (LTMS)

In December 2009, the South African government offered a commitment to cut the growth of its greenhouse gas emissions by 34% by 2020 and 42% by 2025 from business-as-usual scenario. This target was contingent on the developed world providing adequate financing and technological assistance. South Africa’s Deputy Director General of Environmental Affairs, Joanne Yawich, indicated that the target was developed in line with the Long Term Mitigation Scenario (LTMS) work. The proposed target allows for economic growth including a new coal-to-liquids plant and two additional coal-fired power stations, while reductions will be

achieved through a summation of the various wedges proposed by the LTMS. The LTMS indicates that CCS will most likely be a significant wedge in meeting the reduction target for South Africa. The deployment of CCS in South Africa will require substantial investments as wells as technical and human capacity building in order to realize the ambitions of the LTMS study.

3. Need for a carbon price

Commercial scale deployment of CCS is still at a very early stage due to a number of factors one of which is financing. Even within the context of an ordinary financing market for infrastructure projects, CCS projects would face considerable financing challenges. The CCS process chain does not display all of the favorable characteristics of infrastructure projects that are valued by debt and equity investors and the significant short and long term uncertainties will impact the availability and cost of funding. In view of the current challenges associated with incorporating CCS under the CDM, and the realization of the short term funding requirement, a number of alternative proposals are under discussion. However none of these alternatives have been subjected to debate or ratified, therefore CDM currently remains the only logical alternative for funding CCS project.

CCS depends on a price for carbon dioxide to underpin the justification of a project. In developed countries the carbon price will be delivered through cap-and-trade policy implementation and the necessary policy frameworks for CCS, including the development of a carbon price, are under development.
In developing countries, cap-and-trade policy will not be implemented in the near future. An alternative carbon pricing mechanism will be needed as a transition measure. Today, such a carbon price comes through the Clean Development Mechanism (CDM).

4. Financing CCS projects

According to the Global CCS Institute study[1], the successful deployment of large scale CCS projects to meet the G8 target will depend on the ability to finance these large infrastructure assets.
Some estimates suggest USD 100 billion per annum is required to deploy CCS[1].
In the absence of a mechanism such as the CDM, it seems unlikely that investment in CCS will be achieved in many developing countries within the 10 year timeframe proposed by the G8.

Financing is one of the key issues for CCS deployment in South Africa because even if a huge effort on preparatory work is done and with a strong support for CCS, nothing will happen without adequate funding. There are two distinct requirements regarding funding:

- Firstly, funding for demonstration projects and other preparatory work such as regulatory framework, national human and technical expertise.

[1] Strategic Analysis of the Global Status of Carbon Capture and Storage, Global CCS Insitute, Report 5: Synthesis Report

- Secondly, longer-term, larger-scale funding for the deployment of CCS.

Although the current requirements for the timing and scale of CCS required to mitigate South Africa's GHG emissions is subject to a number of uncertainties it is important to understand the typical implementation timeframes. A typical large scale project in the oil and gas industry takes 10 to 15 years from concept to implementation. Given the uncertainties associated with CCS it is likely that this timeframe will be extended by another 3 to 5 years. Using these numbers a CCS project that does not have financing constraints will require 13 years at best prior to implementation. Financial security will enable substantial reductions for this timeframe.

Without CCS in the CDM or another ongoing way to leverage funds from developed countries, CCS deployment in South Africa is unlikely to progress beyond the demonstration, or even test-injection level.