



**Carbon Capture &  
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**Carbon Capture and Storage Association  
Submission;  
*Carbon dioxide capture and storage in geological formations as  
clean development project activities***

Introduction

The Carbon Capture and Storage Association (CCSA) welcomes the opportunity to submit its views on the two issues identified in Decision -/CMP.7, Modalities and procedures for carbon dioxide capture and storage in geological formations as clean development mechanism project activities, paragraph 5.

The CCSA brings together a wide range of specialist companies across the spectrum of CCS technology, as well as a variety of support services to the energy sector. The Association exists to represent the interests of its members in promoting the business of Carbon Capture and Storage (CCS) and to assist policy developments towards a long term regulatory framework for CCS, as a means of abating carbon dioxide emissions.

CCS is vital to enable the world's rising energy needs, and the subsequent increase in fossil fuel use, to be compatible with the deep greenhouse gas emission reductions that are needed. CCS is an essential technology to deliver deep emission reductions to fossil fuel based power generation. Furthermore, CCS is the only CO<sub>2</sub> mitigation technology that can deliver deep emission reductions at scale in a number of CO<sub>2</sub>-intensive industries such as iron and steel, cement, refining and chemicals. There is also increasing interest in combining CCS with renewable biomass in order to create 'negative emissions' which would actually remove CO<sub>2</sub> that has already been released into the atmosphere and permanently storing it in deep geological formations.

The importance of CCS technologies to addressing climate change is highlighted by the IEA's Energy Technology Perspectives 2010 which shows the technology deployment needed to cut CO<sub>2</sub> emissions by 50% by 2050. This work indicates that CCS is expected to contribute to 19% of the total emissions reduction in 2050 which is the second largest contribution to CO<sub>2</sub> emissions reductions amongst all of the mitigation technologies. This would result in annual emissions reductions from CCS of over 8 GtCO<sub>2</sub> in 2050 and is equivalent to over 3000 CCS projects operating worldwide in both developed and developing countries. The inclusion of CCS in a portfolio of emissions reductions also results in the lowest cost of

achieving the deep emission reductions. The IEA found that attempting to reduce emissions without CCS would drive up the costs by over 70%<sup>1</sup>.

The CCSA commends Parties for adopting at CMP7 the Modalities and Procedures for CCS as CDM project activities (hereafter M&Ps). The M&Ps represent an important step forward in the global effort to deploy CCS as a means of enabling significant CO<sub>2</sub> emission reductions. The CCSA is supportive of the continuing activity that is underway to address the final outstanding issues relating to CCS under the CDM.

The CCSA also welcomes the recent decision taken at the 66<sup>th</sup> Meeting of the CDM Executive Board to adopt a work programme that will enable the CCS M&Ps to be operationalised. Given the importance of this work programme to CCS the CCSA is committed to continue to contribute to this work programme as required and ensure that the views of business, as a key stakeholder, are provided. The CCSA and its members have a wide range of technical, policy and methodological skill sets which can be drawn upon as appropriate by Parties, the CDM EB and UNFCCC secretariat to ensure the successful delivery of the work programme.

### **Transboundary projects**

Decision-/CMP.7 invites organisations to provide inputs on the following issue;

*“The eligibility of carbon dioxide capture and storage project activities which involve the transport of carbon dioxide from one country to another or which involve geological storage sites that are located in more than one country....., provisions for the type of project activities referred to in paragraph 4(a) above, including a possible dispute resolution mechanism”*

#### **Issue overview**

The CCSA supports the work of Parties to address issues related to the development of transboundary CCS projects as this removes another barrier to the deployment of CCS as an important CO<sub>2</sub> mitigation technology. Enabling a country with geological formations unsuited to CO<sub>2</sub> storage to export CO<sub>2</sub> to another country which has access to abundant suitable geological storage formations provides countries with access to the full range of CO<sub>2</sub> mitigation technologies. Similarly, allowing two countries to utilise a CO<sub>2</sub> storage site which crosses a common national border enables the selection of the most appropriate geological formations for CO<sub>2</sub> storage sites from the full range of prospective sites as well as potentially maximising the efficient utilisation of national resources. The CCSA notes however that in practice the overwhelming majority of CCS projects are expected to have project boundaries within the national borders of the host country and expects there to be relatively few transboundary CCS projects.

The 2006 IPCC Greenhouse Gas Inventory Guidelines provide guidance to Parties on how emissions from transboundary projects should be reported and these principles should be used to inform the application of the CCS CDM Modalities and Procedures to transboundary CCS projects. The two key scenarios that relate to transboundary CCS projects are;

- A country captures and then transports CO<sub>2</sub> to another country for storage. The country which is the source of the CO<sub>2</sub> reports and is responsible for the CO<sub>2</sub> emissions from the capture plant and the transportation of the CO<sub>2</sub> to the storage country. The country that will store the CO<sub>2</sub> will record and be responsible for the CO<sub>2</sub>

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<sup>1</sup> Energy Technology Perspective 2010, International Energy Agency

emissions during transportation once it enters the country and any emissions from the CO<sub>2</sub> storage site.

- Where two countries share a storage site that crosses a common border then both countries will be responsible for reporting the emissions from the CO<sub>2</sub> capture and transportation to the storage site that occurs within their borders. Any emissions from the storage site are to be reported by the countries based on a pre-agreed proportion of the total emissions.

#### Eligibility of Parties to host transboundary CCS projects

The CCSA believes that CCS CDM transboundary projects should be permitted between two non-Annex I Parties. The Kyoto Protocol requires the CDM to benefit non-Annex Parties through project activities that result in certified emission reductions, i.e. by hosting projects that generate permanent, measurable and verifiable emission reductions. For this reason the CCSA believes that CCS transboundary CDM projects should also be permitted where the CO<sub>2</sub> is captured in a non-Annex I Party and is transported either to an Annex I party for storage or to a store that crosses an Annex I Party national border. The CCSA is of the view that a CCS transboundary CDM project should not be permitted where the CO<sub>2</sub> is captured in an Annex I party and transported to a non-Annex I Party for storage as this does not appear to meet the requirements of the CDM as described in the Kyoto Protocol.

#### Application of the CCS Modalities and Procedures

The provisions established under the CCS Modalities and Procedures adopted by Parties at CMP7 are equally applicable to transboundary CCS projects and must be satisfied for projects to be eligible as CDM project activities.

However, it must be noted that not all of the provisions within the CCS M&Ps need to be met in full by each of the host Parties (Although note that the Project Participants will need to meet all of the M&Ps requirements in full). For example, if country A captures and then transports CO<sub>2</sub> across its national borders to country B it should only be required to meet those CCS M&Ps provisions that relate to capture and transportation. Country A should not be required to meet provisions that relate to activities that occur outside of its national borders, i.e. the storage of CO<sub>2</sub>.

To illustrate this point country A should not be required to meet all of the provisions in *Section F Participation Requirements, p.5, para.8*, of the CCS M&Ps as these are predominantly related to storage activities. Country A should meet the requirement to submit an expression of agreement to the UNFCCC secretariat to allow the implementation of the CCS project activity in its territory. But Country A should not be required to meet the requirements contained in paras.8 (a),(b),(d),(e) & (f) as these solely relate to CO<sub>2</sub> storage which is not an activity that country A is undertaking. Finally, Country A should be required to partially meet para.8(c) as it relates to CO<sub>2</sub> capture and transport. Country B which will be the host Party for the CO<sub>2</sub> store will also have to submit the expression of agreement as well as meeting the requirements of paras.8 (a),(b),(d),(e) & (f) and, where it relates to storage of CO<sub>2</sub>, (c).

The Designated Operational Entity (DOE) should confirm at the validation stage that all of the provisions of the CCS M&Ps have been met by the appropriate host Party. The DOE should also ensure prior to the submission of the validation report that it has received written

confirmation from the Designated National Authority of each host Party stating its willingness to host the project.

The CCS M&Ps require the confirmation letters received from the host Parties to confirm that they accept the responsibilities required by the M&Ps. Following on with the example provided above, this should follow the principle that the responsibilities contained in the M&Ps must be accepted by the host Parties in full (countries A & B) and the host Parties are only required to meet the responsibilities that apply to the part of the project activity which they will host. For example, in *Section G, Validation and Registration, p.7, para.11*, country A should not be required to accept responsibility for paras.11(a) or (c) as they relate solely to the storage of the CO<sub>2</sub>. Country A should be required to partially accept the responsibility of para.11(b) where it relates to CO<sub>2</sub> capture and transport. Country B should meet paras.11(a) and (c) and partially accept the responsibility of (b) where it relates to CO<sub>2</sub> storage. Paragraph 11(d) refers to the obligation to address a net reversal of storage. For transboundary projects the CCSA believes that the following arrangements should be permissible;

1. Country A accepts the entire obligation.
2. Country B accepts the entire obligation.
3. Both country A & B accept to jointly meet the obligation in a pre-determined proportion contained in the host Parties' letters of approval.
4. Neither country A or B accept the entire obligation and the Annex I parties holding the CERs are responsible to meet the entire obligation.

In the event that the transboundary project includes a storage site that crosses a common national border then both the host Parties must be required to implement the CCS M&Ps that relate to CO<sub>2</sub> storage. In addition one of the host Parties must be clearly identified as the lead authority with the responsibility and power to regulate the CCS project. The powers granted to the lead regulatory authority must be sufficient to ensure that it can meet the requirements of the CCS M&Ps and must be confirmed by the DOE during project validation.

### **Global Reserve of Certified Emission Reduction Units**

Decision-/CMP.7 invites organisations to provide inputs on the following issue;

*“The establishment of a global reserve of certified emission reduction units for carbon dioxide capture and storage project activities, in addition to the reserve referred to in paragraph 21(b) of the annex to this decision.”*

#### **Issue overview**

The CCS M&Ps contain no description of the rationale, objectives and operation of the Global Reserve of CERs. Furthermore, the CCSA has been unable to find any substantive discussions on this concept in the previous work that has been undertaken on this issue. As briefly described in Decision-/CMP7 the concept appears to provide for a pool of CERs to be retained in order that they can be used to account for any net reversal of storage as defined in the M&Ps. The CCSA is very concerned with the proposal for a global reserve and believes it to be unnecessary as the existing M&Ps contain very robust provisions which ensure that any net reversal of storage is fully addressed. Furthermore the implementation of the proposed Global Reserve would become an additional barrier to the deployment of CCS.

### Adequacy of the existing provisions

The M&Ps establish the requirement for 5% of the CERs issued to be held in a reserve account for the purpose of accounting for any net reversal of storage. The credits will be released to the project participants once the last certification report has been received and the CO<sub>2</sub> demonstrated to be permanently contained.

The CCS M&Ps correctly places a very strong emphasis on effective site characterisation, selection and monitoring as the key to ensuring the long-term, environmentally safe storage of CO<sub>2</sub>. The CCS M&Ps only permit storage sites to be used if there is no significant risk of seepage and established a robust set of site characterisation and risk assessment criteria that must be met if a CCS project is to be approved as a CDM project activity. The CCSA is therefore of the view that the establishment of the 5% reserve is therefore highly conservative and that it is highly unlikely that a net reversal of storage would exceed 5% of the project's emission reductions.

The M&Ps already also contain another two provisions in addition to the 5% reserve which ensures that any net reversal of storage can be addressed in the unlikely event that it occurs. Firstly, the M&Ps require the project participants to establish a financial provision which can address any net reversal of storage (Appendix B, para.19(b)). Secondly in the very unlikely event that 5% reserve is exceeded the EB has power to request the CDM Registry Administrator to cancel up to the full amount of the net reversal of storage the CERs that were issued for the project. This would ensure that any damage to the climate caused by a net reversal of storage would be fully repaired.

The introduction of a global reserve account might even result in unintended consequences which could negatively impact on the environmental integrity provided by the CCS M&Ps. The existing CCS M&Ps correctly place a strong emphasis on ensuring that project developers select and operate sites to a high standard. This is the most effective approach to reducing the risk of CO<sub>2</sub> seepage from the geological formation. The establishment of a global reserve that is not returned to the project developer essentially results in the application of a CO<sub>2</sub> emissions factor to CCS projects. As the CERs are never returned to the project developer this approach does not reward effective store management, weakening the policy signals contained in the CCS M&Ps which encourages sound and prudent operation of the CO<sub>2</sub> store. Additionally the establishment of a global reserve could, if poorly implemented, introduce a moral hazard for project developers. This would occur in the event that the global reserve accrues enough funds that it effectively shields the developer from any costs associated with a poorly developed CCS projects.

In summary, the CCSA strongly believes there to be no additional benefit from the establishment of the proposed global reserve as the existing M&Ps already ensure that any net reversal of storage can be adequately addressed. Indeed, the CCSA believes that the adoption of the CCS M&Ps would materially hinder the deployment of CCS as it would reduce the revenues available to project participants and impact on the economic viability of CCS. This would seem to represent a step back from the positive developments that occurred at CMP7.

*The view expressed in this paper cannot be taken to represent the views of all members of the CCSA. However, they do reflect a general consensus within the Association.*