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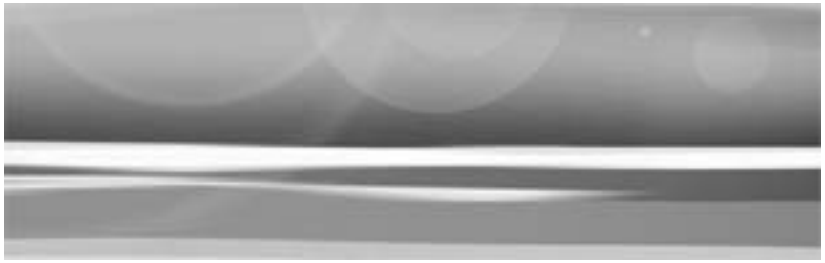
CCS project validation and verification under the CDM



Will the existing framework suffice?

Einar Telnes
Paris, September 26, 2006

Presentation outline

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- Background
- Key validation issues
- Key verification issues
- Main recommendations

Background

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- Input to COP/MOP on whether CCS projects can be considered as CDM project activities should take into account issues relating to **project boundary, leakage and permanence**
- The special circumstances of CCS projects must be dealt with in a manner which creates and maintain confidence in these projects as one of the solutions for climate change mitigation
- As far as possible, these projects should be treated as any other CDM projects
- Some special considerations needs be addressed
- Decisions are necessary on the CoP/MoP level to facilitate these projects, due to the long-term implications of the projects

Liability Management

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- Framework
  - Develop a framework which defines liability and ownership for operational and closed CCS storage.
  - Mechanisms for provision of funds for liability, monitoring and remediation need to be included in the framework.
  - Guidance for the minimum liability periods and under what conditions they will apply.
  - Develop rules for level of liability provision required.
  - Agree the common rules for extending the liability period.
  - Require project proponents to agree at the start of projects to extend the liability period if specified conditions are not met.
- Funding and Insurance
  - Determine the risk financing techniques that should be used to cover costs for increased monitoring any remediation. Remediation and monitoring liabilities could be met by risk retention (using internal funds for efficiency) or insurance (for greater certainty and protection of stakeholders).

CCS project validation

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- Must build on existing CDM infrastructure
- Validators must be accredited especially for a CCS scope
- The integrity of the storage site is confirmed as suitable by an independent and competent authority. (DOE?)
- The monitoring methodology for CO2 storage and seepage from the CO2 stored must be based on the principles laid down in the 2006 IPCC Guidelines on GHG National Inventories, Chapt. 5
- Leakage calculations: All emissions occurring as a consequence of the project activity in the project phase is deducted from emission reductions to be claimed for CERs by the project activity

Baseline and additionality

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- The baseline is simply represented by the amount of CO2 that would have been emitted without the project. (Additional CO2 caused by capture, processing, transport and storage should not be counted)

- The additionality of these CCS projects will in most cases be simple: Without the CDM, the project would not have happened.
- In cases where the CCS project cause commercial benefits, it can be assessed by the existing additonality tools

Leakage and crediting

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- Possible leakage
  - There should be a requirement built into CCS CDM to account for potential leakage, for example:
    - Immediate offsetting for leakage.
    - Longer crediting periods to confirm no leakage has occurred before credit issue.
    - Withholding a proportion of credits until storage is proven.
    - Explore the concept for annual batches - each batch would have only CER payment timetable based on proven storage.
- Long term issues
  - Determine who, when and to what extent ownership and liability changes over time, operational to closure to post-closure.
  - Determine who takes responsibility for lateral migration into areas below national or international water boundaries.

Environmental Risks and Impacts

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- **Integration**
  - An EHSIA (Environmental Health Safety Impact Assessment) should become part of the CDM process for CCS, with the monitoring and management programmes specified in the ESHIA becoming part of the long term information need from projects. Can buld on what is agreed in Marrakech.
  - Streamline the projects approval process as most host countries currently do not have the institutional capacity or the legal framework.
  - An EHSIA methodology has been developed by DNV for IEA GH R&D.
  - The technical requirements for ESHIA have been defined by ERM.

- **Methodology**
  - Develop a a CDM CCS guideline for PDD and ESHIA to improve quality of submissions and ensure consistency between projects (if not integrated).
  - Establish an international registry of approved CCS CDM EHSIA practitioners and evaluators to ensure quality of and consistency of CCS CDM EHSIAs by host countries.
  - Develop guidelines to define how impact on boundaries should be considered.
  - Develop a generic risk-profiling methodology for CCS projects and associated liability provision rules.
  - Develop common rules for site acceptance, monitoring and inventory accounting regimes.

Crediting periods

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- Should CCS projects be allowed longer crediting periods than other CDM projects?

- Many arguments in favour, and some against this suggestion….

Verification

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- Proper monitoring should be able to cover:
  - All gas stored at the CCS site
  - All gas emitted as project emissions
  - All gas emitted (or migrated) through seepage
- With clear criteria applied in the project assessment and validation stage, the verification of CCS project performance will have the same verification scope as most other CDM projects.

Framework Gaps

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- **Strategic**
  - Global and National SEA (Strategic Environmental Assessments) should be conducted to determine the potential for CCS.
  - Carry out economic modelling of the potential impact of CCS projects on CER price (pre and post 2012).
  - Establish an UNFCCC expert panel for the assistance with the evaluation, decision making and capacity building requirements associated with the CCS CDM EHSIA and long-term monitoring and site management.
  - Develop an approval process for CCS CDM projects. (part of methodology panel?)
  - Determine if CCS will be sustainable post-crediting
  - Evaluate what happens to CCS CDM beyond 2012.

- **Acceptance**
  - Develop specifications for the minimum quality of the CO_2 stream that is permissible to be used in CCS CDM Projects.
  - Decide whether EOR Projects are allowed within CCS CDM applicability criteria, and, if so, whether/ when hydrocarbons extracted can be within the project boundary.
  - Develop minimum standards for EOR CDM projects for maximised CO_2 storage.

CoP/MoP decisions required

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- CCS project should be permitted under the CDM, provided that:
- The boundary of a CCS project covers all the chain from capture, transport and the geological storage, including areas which may be affected by the injected CO2.
- Agreements are established for coverage of long-term liabilities for leakage from the storage site after the project period is ended.
- The responsibility for monitoring of emissions that may leak from the project site after completion of the project activity must be suitably defined.
- Host country capacity for assessing site storage risk is present
- Criteria for storage sites are appropriately defined

Conclusion

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- CCS projects can be applicable under the existing regulatory framework
- A few amendments/interpretations will have to be made regarding storage site assessment and long-term liabilities
- Technology-wise and through the application of existing CDM assurance mechanisms CCS projects fit well under the CDM

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