



Key Results and from Issues from London Workshop

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IEA Greenhouse Gas R&D Programme

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Rembrandt Hotel, London, UK

**PRESENTED AT METI MEETING IN PARIS 21st
APRIL**

DRAFT



Introduction

- Overview of London workshop
 - Attendees
 - CDM projects under development
- Key issues to be discussed
- Summarise discussions on key issues
 - Consensus agreed on key issues
 - Outstanding issues



Aims and Objectives

- Aim:
 - To establish co-operation to jointly produce documents needed to execute CCS projects under the Clean Development Mechanism (CDM)
- Objective:
 - To gain agreement from key parties on a common approach in the development of methodologies and elements of PDD's



Workshop Participants

- Multinational Companies
 - Statoil, BP, Shell, Repsol, Encana, JGC, Talisman Malaysia, Schlumberger, Rio Tinto
- Governmental organisations
 - UK DTI, DEFRA,
- Consulting, DOE and Financing Companies
 - DNV, ERM, Mizuho Corp., Mitsubishi Securities, ECN
- International Organisations
 - IEA GHG, IEA CCC, OPEC, WCI



CCS CDM Projects

Company	Number proposed	Methodology Developed	Projects in planning
Mitsubishi Securities	2 (EOR)	YES	5
JGC	1 (Aquifer)	YES	0
Statoil	0	Early Draft	1
Repsol	0	No	1
BP	0	No	None
Shell	0	No	Yes



Workshop Process

- Overview of CDM process and pitfalls
- Key issues considered
 - Permanance
 - Project boundaries and leakage
 - Additionality and Baselines
 - Monitoring and Best practise
 - Accidental releases and seepage/Insurance
- Proposed a “straw man” approach for each issues
- Attempted to gain consensus amongst parties around table



Strawman approach

- A proposal will be put forward in the form of a “Strawman”
- A Strawman is a proposal put up specifically to be criticised, discussed, and rearranged



Agreed Position on Permanence

- Zero/negligible seepage out of the geological store
 - Storage sites subject to stringent site selection
 - Monitoring essential to support this position
 - Quoting % seepages is not meaningful and has no basis
- All CO₂ successfully injected into store is considered “PERMANENT” for issue of CER’s
- If a seepage event occurs this will be monitored and remediated
 - No liability on CER purchaser
 - Mechanism needed for operator and host country to buy back/defer credits if seepage occurs



Issues outstanding

- Where to demonstrate the permanence issue in the documentation?
 - As part of EIA or baseline methodology?
 - Permanence broader than project accounting
 - Fundamental to national approval
 - Documentation provided in PDD



Project Boundary and 'CDM-Leakage' Conclusions

- For EOR projects we need to address additional oil production issue
 - Recovered oil is not part of CO₂ emission accounting
 - Published position by reputable organisation needed
- Need to develop methodologies for different CCS projects based on common principles that do not conflict
 - Could consolidate these later into a common methodology
 - EOR could be first
- Source(s) of CO₂ can be in or out of boundary depending on project nature: e.g retrofit v. new build, multiple CO₂ sources
- Need for further detailed discussions



Baseline and Additionality

- Nothing unique to CCS - can be treated like any other CDM process
- Barrier test approach could short-circuit Economic tests
 - No existing CCS projects in CDM countries
 - In future might be forced to use Economic test could render EOR projects unfavourable
- Different/separate baseline scenarios required for new build and retrofit ?
- Current emissions approach for biomass based on combined margin of existing national power mix
 - Emissions from new build fossil > than combined margin
 - Baseline of new build emissions proposed (new approach)
 - Will Methodology Panel accept new approach, need to argue this case
 - Could be tough to argue for new gas and tougher for coal



Baseline and Additionality Issues

- Additional gas production
 - Additional gas recovery from flaring has been agreed in (non-CCS) JGC methodology
 - Need to check what has been agreed and how it affects extra oil/gas production from CCS



Monitoring Conclusions

- CDM process does not need to focus on local risks these are responsibility of national governments through licensing process
- Monitoring programme should be a Risk based approach
- Methodology should focus on a list of techniques that could be applicable
 - Must be flexible to include new techniques and developments of techniques
- Methodology should not be prescriptive
- Work towards set of Best Practice monitoring guidelines for types of formations both on and offshore



Accidental Releases

- For CDM only need to consider seepage to the atmosphere
 - Impacts of accidental releases will be covered in EIA
 - Requirement for EIA must come from host country
 - Regulatory regime required in host country
 - DOE needs to approve EIA
 - International Guidelines required



Liability

- CER once purchased should transfer/carry no liability
- CDM timeframe limited compared to whole project – creates issues concerning liability
 - **Expect National Governments under approval process to include some requirement on liability timescales/requirements**
- **Seepage if detected, is quantifiable.**
 - **Within accounting period reduces CERs issued**
 - **Outside accounting period, could be covered by insurance**
- **Avoid linkage to Forestry (tCERS)**
- **All risk should lie with operator (remediation & CER replacement)**
- **Liability insurance could be covered by National Governments under Regulatory process (rules for reversion to State ownership)**
 - **Could establish credit reserve or similar mechanism**



Extent of agreement – focussed on EOR

- Permanence – agreement
 - Caveat - Must address issue of accuracy and conservative estimate of emissions
- Boundaries - agreement
 - Caveat - Two options open – source can be in or out as long as you account for the emissions there is no problem
- Leakage
 - Caveat – need to develop position on additional oil
- Baseline - agreement
 - Key message CCS is not unique
- Additionality- agreement
 - treat new build versus retrofit differently
 - Use barrier option to demonstrate that it has not been done



Extent of agreement – 2

- Monitoring - agreement
 - Not prescriptive but transparent
 - Care needed as transparency tends to be prescriptive
 - Development for 'Best Practice' for Storage Performance Assessment (SPA) is proposed
- Liability – seepages, etc –agreement
 - CER purchasers free of liability
 - Ultimate liability rests with government
 - Acceptance by approval of PDD
 - Variety of 'insurance instruments' are likely to be available



Discussion – Other stores

- All issues discussed apply to storage without production in depleted oil and gas fields
- Also apply to deep saline aquifers
 - Need to confirm seal integrity
 - More emphasis on site characterisation
- CO₂-ECBM – agreed not to include in CDM applications yet
 - Option not well researched enough



Next Steps

- Agreed for interested parties to cooperate together to develop CDM project methodologies
- Participation:
 - JGC*, Shell*, Statoil*, Mitsubishi Securities†, BP*, Chevron*, REPSOL*, Talisman*. Mitsui Babcock (?)
 - EnCana, Schlumberger, OPEC, DNV†, ECN, ERM†
- Observer:
 - CCSA, UK DTI, KEPRI, Rio Tinto

***POTENTIAL CDM PROJECT PARTICIPANTS**

† DOCUMENT DRAFTING SPECIALISTS