CCS Progress, Challenges – the Critical Path Ahead

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Introduction

• Progress

• Challenges
  • Political
  • Non Technical
  • Technical
  • Widening application

• Critical Path Ahead – Key stepping stones
Challenges – Political International

- How to reach a global climate agreement?
  - Kyoto Protocol expires in 2012
  - Cancun
    - Aim to achieve replacement agreement before KP ends.
      - Continuation of mechanisms - CDM
    - Nationally Appropriate Mitigation Actions (NAMAs)
    - Technology Mechanism
    - Climate Technology Centre and Network
    - Green Climate Fund
    - All to be designed and operationalised
    - Progress on CCS in CDM

- Focus now Durban
Challenges – Political National

- Economic Downturn – CCS benefits
  - US Economic stimulus package in 2009 allocated $3.5bn to CCS
  - EU Economic Recovery Plan, 2008
    - €1 billion for CCS projects
  - EU ETS/NER300
    - Fund more CCS demos
- Economic downturn – defending the above wrt large cuts in government budgets
- Incentive schemes eg ETS
Challenges – Non Technical

- Legal barriers removed
  - Successes – London Convention, OSPAR
  - London Convention transboundary
- Good regulation in place
  - IEA Model Legal Framework
- Public acceptance
Public Opposition

- Public opposition has contributed to stopping a number of CCS projects already
  - Netherlands
  - Germany
  - Japan
  - USA

- Also many project examples of best practice in stakeholder engagement
- Best practice guides
Challenges - Technical

- Capture Plant - Scale up
- Storage – Injectivity
- Storage - Capacity assessment
Capacity assessment initiatives
Challenges – widening CCS application from coal to other sectors

- Gas fired power plant
- Industrial sectors – IEA-UNIDO Roadmap for CCS Industrial Applications
- Biomass and CCS
  - Understanding potential and constraints
  - Incentives - ETS
Why Biomass and CCS - the net carbon balance

Fossil fuels

Fossil fuels with CCS

Renewable energy

Bio-energy

Bio-energy with CCS

Positive

Less positive

Neutral to slightly positive

Neutral to slightly positive

Neutral to negative

Koornneef, ECOFYS 2010
Critical Path Ahead – Key Stepping Stones

- Road maps (IEA, UNIDO, CSLF, GCCSI work) provide good guidance
- Policies for GHG reduction

- Key Stepping Stones
  - International level - incentives for developing countries
  - National level
Kyoto Protocol and CDM

Considering CCS in CDM since CMP1 Montreal (2005)

- CDM Executive Board to consider new methodologies
- Under SBSTA:-
  - Technical workshops (2006)
  - Consideration of technical and policy Issues
  - Submissions from Parties and NGOs – two synthesis reports (2007 and 2008)
  - On agenda of every SBSTA meeting
  - Decision due at CMP4 Poznan (Dec 08) – failed
  - CMP request EB to look at implications
  - **EB commission Experts Report**
  - Decision due at CMP5 Copenhagen (Dec 09) – failed
  - CMP6 Cancun ..............

- All CCS CDM reports and background [http://cdm.unfccc.int/about/ccs/index.html](http://cdm.unfccc.int/about/ccs/index.html)
CCS in Cancun

Decision CMP.16

- CCS is eligible provided that certain issues are addressed
- Issues include site selection, modelling, monitoring, risk assessment, liabilities (short and long-term)
- SBSTA to “elaborate” new “Modalities and Procedures” which address the issues

Work programme for 2011:

- Submissions (by 21 Feb) and ‘Synthesis report’
- Technical workshop (technical and legal expertise)
- UNFCCC to draft Modalities and Procedures for SBSTA 35 (Durban Dec 2011)
Need Projects

- Technical experience
  - Demonstrating integration
  - Capture Scale up and Costs
  - Storage proving and experience

- Regulatory experience
  - Testing regulations (GCCSI Toolkit)
  - Precedence on requirements

- Stakeholder confidence
Every Project is a Key Stepping Stone!
Thank you

Enjoy the conference!!