



# ***CCS Progress, Challenges – the Critical Path Ahead***

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**IEA Greenhouse Gas R&D Programme**

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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

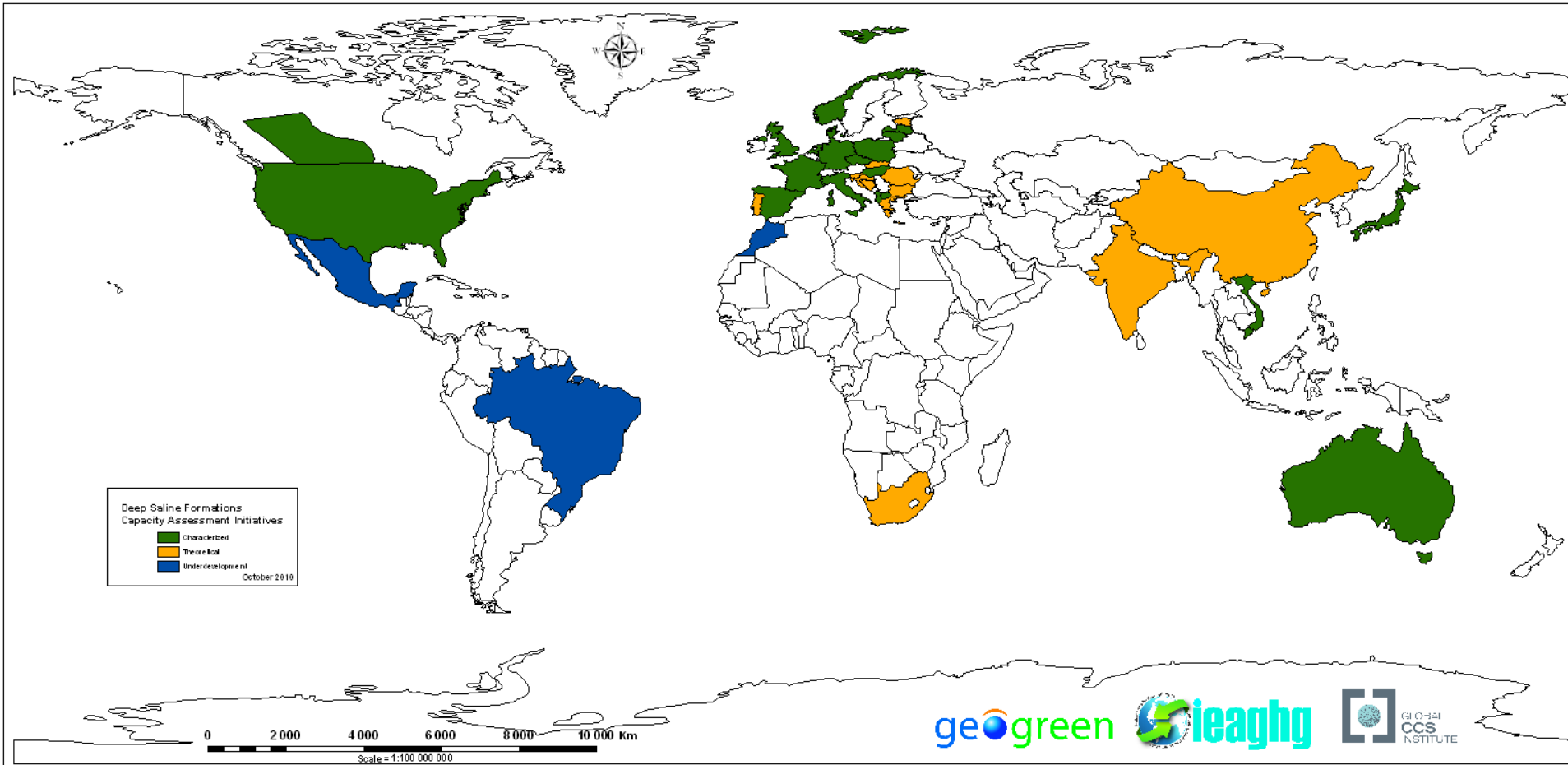


# Challenges - Technical



- 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



Positive



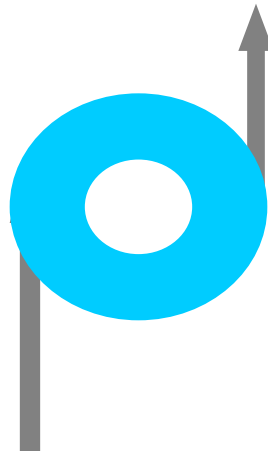
Fossil fuels

Less positive



Fossil fuels  
with CCS

Neutral to  
slightly  
positive



Renewable  
energy

Neutral to  
slightly  
positive



Bio-energy

Neutral to  
negative



Bio-energy  
with CCS

# 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>

# 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!!