

Demonstrating CCS in the EU and beyond

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**DG ENV, Unit C1: 'Climate strategy,
international negotiation and monitoring of
EU action'**

- Demonstrating CCS in the EU: legally enabling and incentivising demonstration of CCS
- The importance of global demonstration: EU assistance to emerging economies and developing countries

- Legal framework: CCS Directive agreed December 2008
- Demonstration programme:
 - 10-12 demo plants by 2015
 - Contract awarded for CCS Project Network (DNV)
 - Financing and incentivisation through EU ETS
 - Additional finance for 5 plants proposed through Economic Recovery Plan

- **Enabling approach**
 - Directive on geological storage sets environmental rules and liability requirements
 - Member States determine whether and where CCS will happen on their territory
 - Emissions captured and stored are recognised as not emitted under the Emissions Trading Scheme
 - Companies decide whether to use CCS on the basis of conditions in the carbon market
- **Capture-ready assessment required to avoid lock-in of high-emissions technology**
- **No mandatory CCS at this stage:**
 - Let the market work: The revised ETS will ensure a robust carbon price and action on demonstration will bring CCS costs down

Key issues in negotiation

1: mandatory CCS?

- EP proposed performance standards for new plant operational from 2015 of 500 g/kWh
 - Implications for whether new coal can be built without CCS
- COM position in Impact Assessment:
 - Would make meeting 20% GHG reduction target more expensive
 - Cost burden falls disproportionately on small number of Member States (DE, PL, UK, BE)
 - In tension with market-driven deployment under ETS
 - CCS technology still not demonstrated at commercial scale.
- Council: reservations from most Member States
- Outcome:
 - review once CCS demonstrated to be safe and economically feasible.

Key issues in negotiation 2: Liability and transfer to the state

- Enabling legal framework sets out liabilities covered
 - Corrective measures for any leakage (geological storage directive)
 - Surrender of allowances under the ETS to cover any leaked emissions
 - Liabilities under the Environmental Liability Directive (2004/35/EC)
- Site transfers to the state when injection has ceased and site has progressed towards safe condition:
 - Criterion: all available evidence indicates that stored CO₂ will be completely and permanently contained
- Further issues in Council and EP:
 - Minimum period before transfer of 20 years unless condition for transfer met earlier
 - Financial contribution to cover at least post-transfer monitoring for 30 years

- CO₂ captured and stored recognised as not emitted under the ETS
 - Finalisation of Monitoring and Reporting Guidelines (Proposal for a Commission Decision to Climate Change Committee)
- Use of New Entrants Reserve to provide co-financing
 - 300 million allowances reserved for demonstrating CCS and innovative renewables
 - no increase of cap, limited to demonstration, limited in time, efficiently targeted, minimal distortion of ETS, and only leverage financing (as requested by European Council)
- Proposal for €1.25 bn for 5 CCS demos as part of EU Economic Recovery Plan
 - €250m each for UK, ES/PO, DE, NL, PL

- CCS Directive implementation
 - Exchange of information with Member States
 - Guidance on key issues (some requested by Council and EP)
 - Checking transposition
- Commission review of draft permit decisions and decisions of transfer
 - Establishment of Scientific Panel by Commission Decision
- Ratification of changes to international conventions (OSPAR)

Beyond the EU's borders: Demonstrating CCS in developing countries

- IEA/G8 has called for 20 CCS demos to be launched by 2010
- Action in OECD not sufficient
- Need to facilitate early deployment of CCS technology to emerging and developing countries in order to reap the **public benefits of these technologies (GHG emissions reductions, improved air quality)**, increase **experience and economies of scale** and **drive down costs** in these countries and globally.



Why cooperate with 3rd countries on clean carbon technologies and CCS?

- Coal continue to play significant role in power generation ► CCS as an important mitigation option
- Even if we drastically reduce our emissions in Europe (i.a. via CCS), we need to tackle emissions of fossil-fuel dependent emerging economies in order to meet the 2°C objective
- Cooperation on clean technologies will not only practically help developing countries tackle climate change, but will be an essential element of a post-2012 agreement
- Development is essential ►► 1.6bn don't have access to electricity today (for MDGs < 1bn)



What have we promised to do? (1)

- **In the UNFCCC:**
 - **Commitments on Technology Transfer (A. 4.5) and Financing (A. 11.5)**
- **As the EU:**
 - **Committed to stepping up CCS cooperation with China and extending it to other partners (eg S. Africa and India) in 2007 and 2008 Climate and Energy Packages**



What have we promised to do? (2)

2005 EU-China Summit

- **Established the EU-China Partnership on Climate Change**
- **Joint Declaration on Climate Change between China and the EU:**
 - “to develop and demonstrate, in China and the EU, advanced “zero-emissions” coal technology. This technology will allow for the capture of CO₂ emissions from coal-fired power plants and its subsequent storage underground, for example in exploited oil or gas fields or in sealed geological strata, thereby avoiding CO₂ emissions into the atmosphere.”



What are we doing
already?

EU-China Cooperation on Near Zero Emissions Coal (NZEK)

- **EU-China Summit (Sept 2005) declaration on Climate Change & Energy**
- **Agreement followed by two complementary MoU with associated projects on Phase I:**
 - **China-UK MoU (Dec 2005) → UK NZEK Assessment (£3.5M) – kick-off Nov 07**
 - **China-EC MoU (Feb 2006) → COACH (€1.6M) – kick-off Nov 06**
- **Key Chinese Partners are Ministry of Science and Technology (MOST) and the Administrative Centre for China's Agenda 21 (ACCA21)**
- **Chinese partners also in other EC-funded projects GeoCapacity, MoveCBM, Cachet and STRACO2**



What are we doing already?

India – focus on CCT

- Clean coal/CCS research workshop, co-organised by EC and Ministry of Power, 27-28 Nov in Delhi
- EU-India Energy Panel has two working groups in this area, one on coal and one on clean coal technologies



What are we doing already?

- **S. Africa**

- EU-South Africa Working Group on Coal, CCT and CCS (mainly industry participants) – last meeting, Nov 08 in Brussels
- A number of government and industry representatives attended General Assembly of EU Zero Emissions Technology Platform
- EC looking at options to support CCS Centre of Excellence in S.Africa

- **OPEC**

- Second EU-OPEC Workshop on Carbon Capture and Storage, 31 Oct, BXL



What next?

- **China**
 - COACH, UK NZEC & STRACO2 inform implementation of next phases
 - In parallel, prepare for Phase II (feasibility) on issues eg IPR, costs, finance, regulation & project selection
 - EC developing Communication on financing (Spring 09)
 - Seeking to extend cooperation with MOST on NZEC demo – start phase II 2010
 - Could demo be operational ahead of original 2020 date?



Support to emerging and developing countries on CCT and CCS

Two activities:

- **i) capacity building, studies and demonstration activities on clean coal technologies and CCS in developing and emerging economies** through calls for proposals
- **ii) support to the site-specific feasibility and design phase of the NZEC project in China, and the transition to Phases II and III of NZEC, consisting of:**
 - A detailed feasibility study awarded via a call for tender so that a contractor/consortium to follow up on the Phase I research work and the adoption of the planned Commission Communication on this issue in spring 2009, and
 - A "**global visibility action**", to disseminate the China experience, seek linkages to other international cooperative activities and raise awareness of the project and the potential benefits of CCS.

- **CCS has great potential for GHG emissions reduction as part of a portfolio approach**
- **The EU is committed to demonstrating CCS**
- **We have developed a regulatory framework and policies to incentivise development**
- **European companies have the potential to lead in this new technology**
- **But we need to demonstrate globally in order to assess the potential of this technology, climb the learning curve and drive down costs**
- **The EU is supporting CCS and CCT capacity building and demonstration in a number of emerging economies to this end**



YOU CONTROL CLIMATE CHANGE.



TURN DOWN. SWITCH OFF. RECYCLE. WALK. **CHANGE**

More information on EU climate policy:
http://europa.eu.int/comm/environment/climat/home_en.htm