

# UK Work on CCS and EU ETS

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# Why CCS and ETS ?

- IPCC Special Report (2005) – CCS contributing 15-55% of CO<sub>2</sub> mitigation to 2100
- IEA Technology Perspectives (2006) – CCS 20-28% of mitigation to 2050. Mitigation costs without CCS increase by ~60%.
- Stern Report (2006) – need CCS ~10% mitigation by 2025, ~20% by 2050.
- UK recognises need for CCS – CAT Strategy, G8 and EU Presidencies (2005), Treasury announcement on demonstration (2007), and recognition in EU ETS.
- UK industry projects – possibly 3+ full scale operation in Phase 2
  - BP Peterhead – 475MW – 2010-11
  - E.ON Killingholme – 450MW – 2012
  - Progressive/Centrica – 850MW ~ 2012
  - ConocoPhillips – 450MW ~ 2012

# IPCC Guidelines for GHG Inventories

- Apr 2006
- Vol 2 Energy Chp 5 - *CO<sub>2</sub> Transport, Injection and Geological Storage*
- Methodology

Site characterisation – inc leakage pathways



Assessment of risk of leakage – simulation/modelling



Monitoring – monitoring plan



Reporting – inc CO<sub>2</sub> inj and emissions from storage site

# Development of Monitoring & Reporting Guidelines for CCS

- **Decision C(2004)130 [M&R Guidelines] invites:**
  - “MS interested in the development [of M&R guidelines for CCS] to submit research findings to the Commission”
  - “MS may submit interim guidelines for M&R.....subject to approval by EC....CCS CO<sub>2</sub> can be subtracted from emissions of installations....”
- **UK DTI response: form informal group of EU experts to develop M&R guidelines:**
  - ERM, DNV, SGS, TNO
  - BGS, GEUS, BRGM
  - BP, Statoil, Shell, and Alstom
  - UK DTI, UK Defra, Norwegian Govn, EC DG Env and DG Res
  - IEA GHG
- **Commissioned ERM and DNV for study**

# Conclusions MRG (2005)

- **Conclusions:**
  - Separate regimes for CCS operations and storage
  - Reconcile fugitive emissions up to injection back to installation
  - Storage emissions (if occur) may be outside ETS timescales - so best controlled by a suitable regulatory regime (and would be captured by MS's GHG Inventory as in IPCC IG 2006).
  - Two reports published: Analysis and Conclusions - Jan05; Interim MRG Template - Aug05 (on DTI web site)
- **Next steps:**
  - Consider CO<sub>2</sub> Enhanced Oil Recovery
  - EC DG Env considered within EU ECCP process
  - Formal submission to EC ?

# UK CCS Regulation Task Force

“To clarify existing regulation and its application, to identify any gaps and the need for new regulation, and to develop new regulation as required, in the following areas:

1. Licensing of CO<sub>2</sub> storage sites and activities offshore
  2. Decommissioning and abandonment of storage facilities
  3. Long-term liabilities for abandoned CO<sub>2</sub> storage sites
  4. Licensing and regulation of onshore facilities, including CO<sub>2</sub> capture ”
- Members: DTI, Defra, Treasury, Environment Agency, The Crown Estate, HSE
  - **Taking into account EU ETS requirements**

# 2006 EC MRG

- Decision xx/xx/2006 Guidelines for M&R GHG, parag 24
  - *Recognition of activities relating to CCS is not provided for in this Decision, but will depend on an amendment of Dir2003/87/EC or by the inclusion of those activities pursuant to Article 24 of that Dir.*
- Directive 2003/87/EC. Article 24 - Unilateral inclusion of additional activities and gases
  - *Taking into account effects on internal market, potential distortions of competition, environmental integrity of scheme and reliability of planned monitoring and reporting.*
- MRG would need to be produced for the opted-in plant, and adopted by EC. EC need to be content with risk and liability management proposed by UK.

# UK notification of opt-in

- UK notified EC of intention to opt-in CCS project (8 Mar 2007)
- Detailed opt-in application will be submitted, with interim MRG being drafted by UK (to assist EC), for specific CCS plant
- Details to be clarified:
  - Opt-in permit boundary – separate ownership of capture and storage sites (and multiple CO<sub>2</sub> sources for later projects).
  - Treatment of, and liability for, any potential seepage – being included in UK CCS Regulation Task Force.
    - Under consideration to require storage operator to buy and surrender allowances equal to seepage amount, and remediation of seepage.
  - No additional allocation for capture, transport and storage activities
  - Intention is for interim MRG to be modular (cap, trans, stor)
    - so could be used in Phase III



# Conclusions – CCS and EU ETS

- CCS CO<sub>2</sub> mitigation potential being recognised – UK gov and industry pressing ahead
- CCS needs level playing field related to CO<sub>2</sub> performance ie in EU ETS - uncertainty and disincentives need to be removed
- CCS needs a stable, and informed, regulatory and legal framework
  - Much work underway:-
  - eg IPCC SR, IPCC IG, and guidance and decisions of London Protocol, OSPAR, EC, help give confidence for environmentally sound CCS.