

### The UK Carbon Abatement Technologies Strategy

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## Carbon Abatement Technologies Strategy - 2005

'A Strategy for Developing Carbon Abatement Technologies for Fossil Fuel Use

Carbon abatement technologies comprise:

- Higher efficiency conversion
  processes
- Fuel switching to lower carbon alternatives
- CO2 capture and storage (CCS)



#### Carbon Abatement Technology Strategy Objective

'To ensure the UK takes a leading role in the development and commercialisation of Carbon Abatement Technologies that can make a significant and affordable reduction in CO2 emissions from fossil fuel use'

#### Action areas within the CAT strategy

- Research and development
- Demonstration
- Regulatory activity
- International collaboration and activity
- Increasing public awareness and stimulating debate on the role of CATs

#### Support for R & D

- Some £20m has been allocated in the current Technology Strategy programme for clean energy technologies which includes CCS technologies.
- It is envisaged that around £3-£4m will be spent on CATs annually.
- Next call in April 2007

#### Government Support for a Demonstration Programme

- In line with the Government's Energy Review Report £35m was set aside for the demonstration of Carbon Abatement Technologies, which includes both Cleaner fossil fuels and Carbon Capture and Storage.
- The first call worth £10 million for Carbon Abatement Technologies was announced on 19 September 2006 as part of the HFCCAT demo scheme(hydrogen and fuel cells and carbon abatement technology demonstration scheme).

#### **Demonstration for Carbon Capture and Storage** (CCS)

 The UK Energy Review stated that the next stage for CCS would be a commercial demonstration subject to further cost analysis



#### **CAT Demonstration programme**

- Black and Veatch appointed to project manage demonstration programme
- All proposals will have to meet the relevant criteria and show that they are actual physical projects to be built and demonstrated and not lab based R&D.
- funding from the first call of the Demo programme is likely to be awarded during April 2007.
- Developing CAT route map and this will determine timing and nature of subsequent calls

# Demonstration for Carbon Capture and Storage (CCS)

- The PBR 2006 announced the intention to appoint consulting engineers to help examine costs and funding options for a UK demonstration project for Carbon Capture and Storage
- DTI has recently recruited a firm of Consulting Engineers to carry out this task.
- Decision on demonstration taken later in 2007

#### Legal and Regulatory Issues surrounding CCS

- A cross Government regulatory task force
- Amendments to international maritime treaties (London and OSPAR)
- Working with the Commission on CCS Directive

#### **International Collaboration**

- CSLF Carbon Sequestration Leadership Forum
- UK/Norway Task Force IEA
- OSPAR
- London Convention
- UK/China MOU
- US/UK MOU
- US/UK virtual plant demo model

#### IEA G8 Summit, 6-8 July 2005

 5 initiatives to accelerate the development and commercialisation of carbon capture and storage (CCS) technology



• 3 initiatives to make electricity generation from coal and other fossil fuels cleaner and more efficient.

These were presented in the G8 Gleneagles Plan of Action.

#### **Collaboration with Norway**

- In November 2005 we established a Task Force with Norway to set out the underlying principles for CO2 storage which would form the basis for a future regulatory regime. There are plans to extend this Task Force to cover other countries on the North Sea rim.
- More recently the Chancellor of the Exchequer and the Norwegian Prime Minister have agreed that both our countries should collaborate on a study into a possible CO2 infrastructure in the North Sea and to identifying a value chain for CO2.

#### **Collaboration with USDOE**

- Collaboration under auspices
  of DTI-US DOE MoU
- Meet annually with USDOE at meetings of the Joint Coordinating Committee
- Two large collaborative R&D projects, one to develop a virtual plant demonstration model and the other on advanced materials.



#### **Operating in China**

- Developed energy collaboration with China under a series of MoUs since 1996.
- Managed more than 15 UK-China collaborative projects.
- Translated into Chinese and disseminated in China key publications arising from programme activities
- Undertaken a series of inward and outward trade missions, focused workshops and seminars with government ad other power sector organisations



#### MoU signing, November 2005

Lord Sainsbury, Parliamentary Under Secretary of State for Science And

Innovation and Professor Xu Guanhua, Chinese Minister of Science and Technology

#### **International Collaboration**

- NZEC This initiative forms a centrepiece of the EU-China Partnership on Energy and Climate Security. There are three phases to this:
  - Investigation of the feasibility of CCS in China;
  - Engineering feasibility and design studies for a demonstration plant;
  - Demonstration of CCS in China.

Support is being provided by Defra and DTI at £3.5 million

#### **Public Awareness**

- Stern report identified CCS as the most critical of the emerging energy generation technologies.
- DTI commissioned a BP-led consortia to produce a Communications strategy to improve public and political awareness of CCS. The aim is to provide a prioritised assessment of public concerns, regulatory/policy hurdles, threats and opportunities.

#### **Other Government support**

DTI provided funding for the following Studies of which reports are now available:

- Sources and Sinks study, by the British Geological Survey (BGS).
- An analysis of CCS cost-supply curves in the UK, by P0YRY Energy Consulting.
- A study on the infrastructure, availability and costs for CO2 capture and storage offshore – Southern North Sea by East of England Energy Group.









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Claire Ball and Kate Porter – Domestic CCS projects and policy



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