International Workshop on
Near Zero Emissions Coal Power Generation
with Capture & Storage in China
Beijing, 4-5 July, 2006

COACH
"Cooperation Action within CCS China – EU"

François Kalaydjian
IFP, France
Demonstration of advanced 'NZEC' Near-Zero Emissions Coal technology through CCS in EU and China

The FP6 COACH project:

• Target
  • Prepare for demonstration of near-zero emissions coal technology through CCS in China

• The main objective
  • Research and coordination overlooking the Chinese / European MoU on clean coal
COACH – technical objectives

• Prepare the ground for
  – 3 year project
  – implementation of large scale clean coal energy facilities ...
  – including options for coal based electric power generation with CO2 capture, transport and storage ...
    • 90% capture rate and 50% cost reduction
  – as well as production of H2 ...
    • 25-50 MW, from 0% to 100% H2
  – options for synthetic fuels ...
  – and provisions for Enhanced Recovery of Oil and Gas
Polygeneration - workflow

- COAL
- synth. fluids
  - H2
  - MW
  - CO2
  - Geological Storage
    - EOR, EGR

synth. fluids

EOR, EGR

Geological Storage

CO2 water fraction

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COACH – main issues

- Knowledge sharing & capacity building
- Coal-based polygeneration schemes including CCS
- Identification of reliable geological storage capabilities
- Societal anchorage including legal, regulatory, funding and economic aspects, and public issues
**Partners**

- **IFP, co-ordinator**
  - SINTEF, GEUS, BGS, KTH,
  - BP, STATOIL, SHELL,
  - SCHLUMBERGER,
  - ALSTOM, AIR LIQUIDE, ATANOR

- **ACCA21**
  - Tsinghua Univ.
  - Zhejiang Univ.
  - Inst. of Engng Thermophysics
  - Inst. of Geol. & Geoph.
  - RIPED
  - GreenGen, Huaneng Group

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Possible scheme for the governance structure:

- **EU-China Steering Committee (EC – MOST)**
- **UK-China Steering Committee**
- **EU-UK-CHINA Collaboration TEAM Coordination /Monitoring Task**

**FP6/EC Funding**
- COACH project
  - Activities related to the EU-China MoU

**FP7 (2007) ?**
- **UK Funding**
  - UK initiative
    - Activities related to the UK-China MoU

**Reporting**

**Coordination +Monitoring**
The Main Outcomes (1/2)

• **WP1/ Knowledge sharing and capacity building**
  – organisation of workshops, information exchange and dissemination, mobility scheme and education

• **WP2/ Capture technologies**
  – inventory of options, concept study of coal based plants, polygeneration, CO2 transfer conditions

• **WP3/ Geological storage and large scale use of CO2**
  – assessment of geol. storage capacity of a selected basin, GIS mapping of geology and source points, storage selection criteria
Main outcomes (2/2)

- **WP4** Recommendations and guidelines
  
  - options for Chinese European demonstration projects, recommendations for future work, strategic cooperation and knowledge transfer opportunities

- **WP5** Project management
  
  - decision taking, legal-administrative-financial management

- **WP6** Overview, monitoring & reporting of Chinese European MoU activities
  
  - Chinese European seminars, dissemination, editing of synthesis reports, communication to the public
COACH 'internal' Structure: 4+1 workpackages

WP1/Knowledge sharing & capacity building

WP2/Capture technologies

WP3/Geological storage and large scale Use of CO2

WP4/Recommendations & Guidelines for Implementation

WP5/Project Management
Strengthening the relationship with China

Other European initiatives

GEOCAPACITY

COACH WP1-WP5

COACH WP6

Other international initiatives in China

Chinese projects

MOVECBM
Potential impacts

• To mobilise Chinese and European proficiency to facilitate strategically important cooperation initiatives with China

• To contribute to the future practical implementation of European carbon capture and storage technologies in China

• To stimulate cooperation through established international cooperation frameworks

• To enable the implementation of clean coal power technologies with option for hydrogen production
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Co-ordinator
François KALAYDJIAN
IFP, France
francois.kalaydjian@ifp.fr