

ASIA-PACIFIC PARTNERSHIP ON CLEAN DEVELOPMENT & CLIMATE

CLEANER FOSSIL ENERGY TASKFORCE

Presented by: Drew Clarke on behalf of John Hartwell,
Cleaner Fossil Energy Taskforce Chair

PIC meeting
19-20 May 2008
Seattle, USA



Australian Government





Task Force Progress

- 1st Meeting, Berkeley: 18 – 21 April 2006
- 2nd Meeting, Tokyo: 20 – 21 July 2006
- 3rd Meeting, Beijing: 4 – 5 July 2007
- 4th Meeting, Melbourne: 31 March – 3 April 2008
 - Held in conjunction with a joint meeting of the Power Generation and Transmission Task Force
 - Over 150 participants from industry, research and government
 - Members were pleased with progress on projects and welcomed efforts made to collaborate and share information
 - Four new project proposals are under consideration



Joint meeting of the Cleaner Fossil Energy and Power Generation and Transmission Task Forces

- The joint meeting included discussion on:
 - Flagship and other major projects
 - Task Force working groups and networks
 - Barriers to the deployment of low emissions technologies
 - Areas for future collaboration between the two Task Forces



1. **China Australia Geological Storage (CAGS) project CFE-06-01**

- Aim: Capacity building in the selection, assessment and characterisation of potential CO₂ storage sites
- Status: Agreement has been reached between China and Australia on major aims. Final project proposal and work plan being finalised.

Participation: Australia and China

2. **Ultra-supercritical Pulverised Coal and Carbon Capture Workshop CFE-06-2**

- Aim: To develop guidelines for the design and integration of CCS with Ultrasupercritical power stations.
- Status: Workshop held in March 2008 and guidelines are being developed.

Participation: USA and APP countries



3. Ultra Clean Coal CFE-06-03

- Aim: Develop and commercialise processed coals (to remove all ash) which can be directly fired in turbines and engines as a cleaner and more efficient coal product
- Status: A detailed project plan and roadmap for commercialisation of UCC technology has been developed, with findings presented at the joint Task Force meeting.

Participation: Australia, USA and China (expected)

4. Oxy-fuel Combustion Working Group CFE-06-04

- Aim: Establish Working Group to facilitate and support the development of oxy-fuel technology.
- Status: Reports on oxy-fuel technologies in APP countries and a detailed project plan on development, demonstration and commercial deployment produced. First Working Group meeting held in February 2008.

Participation: Australia and APP countries



5. Callide-A Oxy-fuel Demonstration CFE-06-05

- Aim: Demonstrate the world's first retrofit of oxy-fuel combustion technology to a coal fired power station
- Status: Funding agreements signed. Construction is to commence in mid-2008, with the refurbished power station expected to be operational from mid-2009.

Participation: Australia and Japan

6. Assessing Post Combustion Capture Technology for Emissions from Coal Fired Power Stations CFE-06-06

- Aim: Progress the development of Post-Combustion Capture (PCC) technology by using purpose built mobile pilot plants to trial PCC technology at existing coal fired power stations.
- Status: Construction of pilot plants commenced in Australia and China and laboratory test work and research program underway. Plants will be operational in 2008.

Participation: Australia and China



7. Integrated Gasification Combined Cycle with CCS Workshop and Design Information for APP Country Coals CFE-06-07

- Aim: Expand CoalFleet for Tomorrow™ design guidelines for IGCC power stations to include information relevant to APP
- Status: Workshop held in September 2006 and the CoalFleet for Tomorrow™ design guidelines expanded to include coal types used in the APP region

Participation: United States, Japan and APP countries

8. Asia-Pacific Gas Market Growth CFE-06-08

- Aim: Develop regional plan to expand LNG investment and trade
- Status: PricewaterHouse Coopers selected to implement the project.

Participation: Australia and United States



9. Evaluating and Reducing Emissions in Producing, Processing and Transporting Natural Gas CFE-06-09

- Aim: Develop consistent and comprehensive internationally accepted methodologies to estimate greenhouse gas emissions from liquefied natural gas (LNG) facilities, processing, and associated infrastructure.
- Status: The project is due to commence in October 2008.

Participation: United States and APP countries

10. Information Exchange on LNG Public Education Campaigns CFE-06-10

- Aim: Address perception barriers to the deployment of LNG.
- Status: This project was completed in December 2007.

Participation: United States and APP countries



11. Asia Pacific Gas Hydrate Cooperation CFE-06-11

- Aim: Share information on national programs and conduct cost-shared joint projects that will allow gas hydrates to become a viable commercial energy source
- Status: MOUs being developed and workshops and conferences planned for 2008.

Participation: United States and APP countries

12. Cost & Diffusion Barriers to Low Emission Technologies CFE-06-12

- Aim: Develop methodology to evaluate the cost of electricity and barriers to deployment of emerging low emission technologies in member countries.
- Status: EPRI is undertaking the evaluation using data and case studies from projects being developed in Australia, and is due to deliver its final report in September 2008.

Participation: Australia and United States



13. Enhanced Coal bed Methane CFE-06-13

- Aim: Validate the use of CO₂ injection in coal seams to enhance methane recovery. Examine the suitability of this process for long-term storage of CO₂
- Status: Project participants are finalising working arrangements for the project which may now include trials in Australia and China. Korea has also expressed an interest in participating.

Participation: Australia, Japan and China

14. Development of Advanced Adsorption Process Technologies for Pre-Combustion Capture of CO₂ in Coal Gasification Processes (IGCC) CFE-06-14

- Aim: Brings together Australia and India to develop an efficient CO₂ capture system that will make carbon capture and storage more economical, focusing on IGCC processes.
- Status: Funding for this project has yet to be secured and the project is on hold.

Participation: Australia and India



15. Coal Gasification Performance Assessment Systems for Low Emissions IGCC Systems (CFE-07-15)

- Aim: Undertake a comparative evaluation of the gasification performance of Chinese and Australian coals and produce key data on coal gasification and slag flow behaviour for a range of coal types.
- Status: Project scope being finalised and a formal project agreement being developed between TPRI and CSIRO.

Participation: Australia and China

16. Cooperative R&D on Cleaner Fossil Energy (CFE-07-16)

- Aim: Facilitate cooperative arrangements between energy research agencies in Korea and the US to support the development of CO₂ capture technologies through joint research projects.
- Status: Agreements entered into with project proponents.

Participation: Korea and United States



New Project Proposals

- 4 new project proposals were presented at the Joint Task Force meeting in Melbourne.

Three new projects proposed by the US:

- Wyoming State –Shanxi Province CCS Partnership project
 - Initial Assessment of CCS Opportunities in the Indian State of Andhra Pradesh
 - Young Scientist & Engineering Leadership Program on Carbon Sequestration
- One new project proposed by Korea:
 - Joint Technical Seminar on Cleaner Fossil Energy project



Next Steps for the Task Force

- Finalise proposed amendments to the Action Plan
- Build on the work of the three CFE Working Groups:
 - Integrated Gasification Combined Cycle Working Group
 - Oil and Gas Working Group
 - Oxy-fuel Working Group
- Consolidate existing CFE projects
- Address issues arising from the Joint Task Force meeting
- Next meeting – Korea 2009 – to be confirmed