



**CSIRO**



CSIRO has completed a four year research program on post-combustion capture technologies under Australian conditions.

## Carbon capture technology moves a step closer

**This week CSIRO will release its latest findings to the Australian Government on carbon dioxide capture technology following a four-year A\$21 million research program aimed at reducing greenhouse gas emissions from Australian coal-fired power stations.**

29 March 2012

The report will confirm that post-combustion carbon dioxide capture (PCC) technology operates effectively under Australian conditions and is now technically available to the industry as the first stage in the carbon dioxide capture and storage (CCS) chain.

The importance of this is that while Australia continues to rely heavily on its low-cost and easy-to-mine coal reserves, technology can be introduced to the sector to reduce its contribution to carbon emissions into the atmosphere.

Coal provides some 80 per cent of Australia's electricity, some 17 per cent of export income and approximately 40 per cent of greenhouse gas emissions.

The program, funded through the Asia-Pacific Partnership (APP) on Clean Development and Climate and supported by a grant from the Department of Resource, Energy and Tourism (DRET), enabled two PCC plants to be successfully established and operated at existing Australian power stations - at Delta Electricity's Munmorah power station in NSW and at Stanwell Corp's Tarong power station in Queensland.

Demonstration plants have been set up in other countries but PCC has never been used at full-scale and integrated with a coal-fired power plant.

This was an opportunity to gain vital practical experience in Australia ahead of large-scale implementation.

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The results showed that the PCC technology was able to capture more than 85 per cent of carbon dioxide from the power station flue gases along with other gases such as sulphur dioxide, can be fitted to both new and existing power stations, has flexible application according to changing consumer demand in the electricity market and can use renewable energy such as solar thermal as a power source.

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Dr Paul Feron

CSIRO also conducted extensive laboratory studies into the most efficient gas absorbents as well as carrying out modelling of a range of processes and designs for scale-up. It also conducted environmental impact studies.

The main challenges to implementation of PCC are the costs from additional capital investment and loss of efficiency at the power station – currently the capture of 90 per cent of carbon dioxide would result in a 30 per cent loss in power station efficiency. But according to CSIRO's Dr Paul Feron "while the cost imperative is important, once the technology is established, the costs of installing and operating a PCC system will fall substantially".

CSIRO is continuing development of PCC with the aim of capturing all emissions with no energy penalty or loss of efficiency at Australian power stations.

An important part of the APP program was collaboration among research organisations, technology suppliers and end-users in Australia, Japan, US, China and Korea to accelerate early adoption of the technology in member countries.

Read more media releases in our [Media](#) section.

## Media resources

- Images available at:  
[Carbon Capture Technology moves a step closer](#)
- Background information available at:  
[Post-combustion capture](#)

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