Australian Coal Association

COAL21

ACA Policy Brief

CCS: On the Path to Deployment

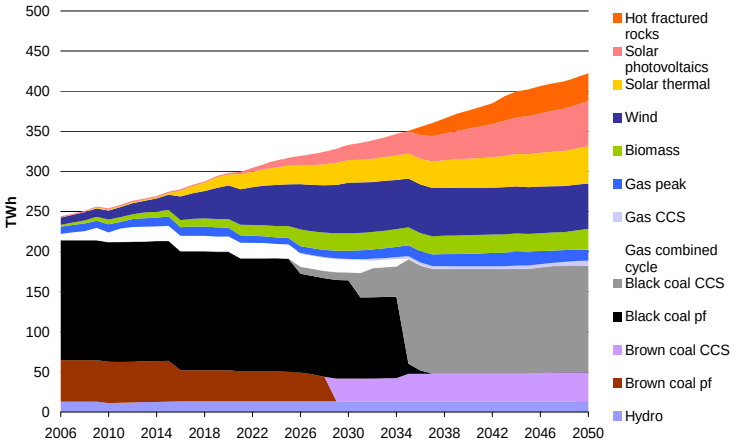
CCS: A Key Part of Australia's Energy Future

Carbon Capture and Storage (CCS) will be a key part of a portfolio of low emission and renewable energy technologies needed to meet growing energy demand while reducing Australia's emissions.

With the delay of the CPRS and lack of a clear pathway to an international agreement, investment in the deployment of these technologies becomes more critical if we are to reduce emissions.

CCS can reduce CO_2 emissions from coal-fired power by up to 90%. Importantly, ***CCS is not just a coal technology***. It can be applied to gas-fired power generation, LNG processing and other industrial activities.

Australia has a strategic interest in the development and deployment of CCS. We are the world's largest exporter of coal, a major exporter of LNG and we rely on fossil fuels for over 93% of our electricity. According to ABARE, the dominance of coal and gas in our energy mix will continue for the foreseeable future. CSIRO projects that coal with CCS will be more than 40% of Australia's generation capacity in 2050.



Source: CSIRO, Projected Australian Electricity Generation Portfolio under CPRS-5

Is CCS Too Expensive?

All low emission energy technologies will cost more than conventional coal-fired power generation. An Electric Power Research Institute (EPRI) study included in the 2010 Australian Energy Resource Assessment considered the cost of technologies in Australia in 2030 and ranked CCS amongst the lowest cost portfolio options.

Further, the International Energy Agency has found that the cost of halving global greenhouse gas emissions by 2050 will be **70% higher without CCS**.

CCS: Today's Technology

CCS is already a reality in many parts of the world. LNG projects such as Sleipner (Norway) and In Salah (Algeria) have been injecting more than 1 million tonnes of CO_2 per year into depleted oil and gas wells. The Gorgon LNG Project in Western Australia will soon be one of the largest storage projects in the world, storing up to 3.4 million tonnes of CO_2 per year.

The Global CCS Institute estimates there are currently 275 CCS projects at various stages of development globally, with at least 15 of those demonstrations in Australia.

The Pathway to Deployment

To make a major contribution to Australia's emissions reductions by 2030, CCS technology deployment must be accelerated. Lead-times on assessing geological storage reservoirs and plant construction mean we must act urgently.

CCS Flagship Projects

In 2009 the Australian Government announced $2bn in funding for CCS Flagship projects, with 4 projects shortlisted in December: ZeroGen (Qld), Wandoan (QLD), Collie South-West Hub (WA) and CarbonNet (Vic).

These projects and the $2bn funding provide an excellent foundation for Australia's contribution to the G8 target of 20 CCS projects operating by 2020. However, further funding will be required to successfully deploy these shortlisted projects (some of which may cost up to $4bn), and to support emerging CCS projects in Australia.

Recommendation 1:
The CCS Flagship Program should be expanded with additional funding rounds in 2012 and 2014

CO_2 Storage Exploration

The critical path to CCS deployment is the identification and development of geological storage reservoirs.

The Carbon Storage Taskforce has found that Australia has geological storage capacity of 70-450 years in the east and 260-1120 years in the west. The most prospective storage 'hubs' are located in the Gippsland Basin (Vic), Surat Basin (Qld) and Perth Basin (WA).

Recommendation 2:
A targeted, national pre-competitive storage exploration program is required to assess basins of strategic importance. The Carbon Storage Taskforce has recommended a $254m program and this should be implemented as a priority.

Transitional Policy Support

Australia does not currently have a framework to support deployment of CCS. In the longer-term, it is anticipated a sufficiently high carbon price will 'pull-through' investment, but this may be many years away.

A transitional support mechanism is urgently needed. This could take the form of a market-based mechanism such as a CCS or clean energy target (akin to the Renewable Energy Target), feed-in tariffs or incentives such as tax, capital or operating subsidies. The National Low Emissions Coal Council should be tasked with undertaking a detailed assessment of transitional support mechanisms for CCS and recommending a preferred measure.

Recommendation 3:
A transitional policy mechanism for CCS should be implemented by early 2011.