

# WESTERN AUSTRALIA

## leading carbon capture charge

Western Australia is playing a leading role in the battle against climate change with major carbon capture and storage demonstration projects currently planned or proposed in the State.

One of these projects is associated with the massive Gorgon natural gas project, the single largest resource development in Australia's history.

The other is tied in with the Collie Hub in the South West.

Reflecting this, the State Government recently designated the Department of Mines and Petroleum (DMP) the lead agency for the development and deployment of carbon capture and storage (CCS) in the State.

Carbon Strategy Coordinator Dominique Van Gent said it was vital for Australia as a whole to find ways to prevent carbon emissions from fossil fuel-based electricity generation and industrial activity.

"Despite our advances in developing renewable energy such as geothermal, wind and solar energy, the vast majority of Australia's electricity is still generated by coal-fired power stations," Mr Van Gent said.

"Although in Western Australia we have a more diversified fuel mix with natural gas being predominant in the South West Integrated System.

"The huge resource and industrial expansions tipped for Western Australia in particular during the next few years will create significant carbon output that must be managed if Australia is to reach its target of a 60 per cent reduction in emissions by 2050.

"Australia is also the world's largest coal exporter and the fourth largest coal producer, which makes the development of carbon capture and storage vital to protecting the employment and wealth created by this sector."

Carbon capture and storage involves capturing carbon dioxide that would otherwise be emitted to the atmosphere, compressing it, transporting it to a suitable site, and injecting it into deep geological formations to trap it for thousands or millions of years.

The State Government's efforts to implement this technology are aligned with a national strategy to tackle climate change and make significant cuts to greenhouse emissions.

The Australian Government has established two bodies to drive the deployment of low emissions coal technologies — the National Low



Callide Oxyfuel Project - preparing the turbine. Photo courtesy of CS Energy.



*Collie Oxyfuel Project - inside furnace. Photo courtesy of CS Energy.*

Emissions Coal Council, and the Carbon Storage Taskforce.

*The Barrow Island Act 2003*, which governs the development of the massive Gorgon project, is currently the only piece of legislation in Western Australia that allows for the development of CCS but this is limited to Barrow Island.

Joint venture partners Chevron, ExxonMobil and Shell made a final investment decision on the A\$43 billion Gorgon project in September 2009.

Its CCS component will be the world's largest commercial operation of its kind.

"This project in particular has the potential to put Western Australia on the map in terms of the commercial development of carbon capture and storage technology," Mr Van Gent said.

The proposed Collie Hub would be a multi-user CCS project featuring five companies — Griffin Energy, Verve Energy, BHP Billiton Worsley

Alumina, Wesfarmers Premier Coal and Perdaman Chemicals and Fertilisers.

International petroleum services company Schlumberger is progressing investigations through the Lower Lesueur Carbon Dioxide Geosequestration Study, which is testing the validity of suitable locations to store carbon dioxide in the Southern Perth Basin between Bunbury and Mandurah.

The 12-month study commenced in May 2009 and followed a preliminary study by the CO2CRC that identified the Southern Perth Basin as having potential for CCS.

Wesfarmers Premier Coal spokesperson Rob Swan said the company had taken an active interest in possible technological solutions to reducing carbon emissions from coal-fired electricity generation.

He said CCS was a significant potential development in this field.

"While we're not an electricity generator, we believe that the responsible thing to

do is to support the development of low-emission coal technology," Mr Swan said.

He said the appointment of DMP as the lead agency for the regulation of CCS in Western Australia was beneficial.

"It's an advantage to be able to deal with a local department on these critical matters, particularly as the coal industry in Western Australia is quite small on the national scale and there is the danger of being swamped by Eastern States interests," Mr Swan said.

He said there was good justification for a CCS demonstration project in the Collie area.

"Collie coal has been shown to be suitable for carbon capture via gasification technology that separates carbon dioxide and clean burning gases, and a potential geosequestration site is located in the region," he said.

"This would be a significant development on a national scale."