

## Australia Has Capacity For Large Scale Carbon Storage

According to some of the nation's leading researchers, Australia has the capacity to store huge volumes of its future greenhouse emissions in depleted gas fields, saline aquifers and in underground coal beds.

A meeting of geologists has concluded that the nation can potentially sequester carbon dioxide from the burning of fossil fuels in coal strata which already hold methane gas. The characteristics of coal seams, which produce coal seam methane, make them most likely to allow injection and long-term geological storage of carbon dioxide.

The finding will help Australia's national prospects for curbing its greenhouse emissions from power generation, says Dr Peter Cook, Chief Executive of the Cooperative Research Centre for Greenhouse Gas Technologies (CO<sub>2</sub>CRC).

However, locating suitable local storage for carbon dioxide emissions from the Sydney, Newcastle, and Wollongong industrial hub requires more work, and CO<sub>2</sub>CRC and its collaborating organisations are planning to increase research efforts in the area of carbon dioxide storage in coals over the next two years.

Currently, the most promising storage sites are in the offshore Northwest Shelf, Browse and Timor

Sea areas, and the Otway, Bass and Gippsland basins. There is also some potential in the onshore Bowen-Surat, Cooper and Galilee basins.

The Gippsland region appears to have potential to store separated carbon dioxide emissions resulting from the burning of brown coal in the Latrobe Valley. There is also scope to store significant volumes in some Queensland basins, such as the Bowen and the Galilee basins in the central region of the state.

Dr Cook says the hunt is also on to find suitable sites for large-scale carbon storage close to major industrial centres such as Sydney and Brisbane.

"We will start to look for potential sites, both onshore and offshore, and also consider the option of storing carbon dioxide in a number of 'boutique' land-based coal seams that are unsuitable for mining but are capable of holding carbon dioxide for long periods of geological time.

"Sites currently used for the extraction of coalbed methane may be very well suited to the long-term storage of carbon dioxide. However, the actual volumes they can hold remain to be assessed.

"Injection of carbon dioxide into coalbeds could

also enhance the extraction of methane gas for generating electricity", added Dr Cook.

"While much remains to be done to quantify the volumes that can be stored in various locations and to satisfy ourselves the gas will stay where it is put, you could certainly say that, thanks to our geology, Australia appears to be one of the most promising countries in the world for underground disposal of carbon dioxide.

"The latest work is starting to address the issue that our main greenhouse production is on the east coast, whereas the identified geosequestration potential was seen to be mainly on the west coast."

The findings of the study have been presented to industry and government meetings in NSW, Queensland, the ACT, and WA, as well as at international carbon sequestration meetings. CO<sub>2</sub>CRC plans to substantially lift its research effort into storage in coals in collaboration with Australian and international research organisations.

"This collaborative research is being undertaken with the expectation that Australia's already substantial carbon dioxide storage potential can be increased, particularly focusing on those areas where there is limited storage capacity identified at the present time", said Dr Cook. ■