

## The Challenge

Official forecasts of a sixty per cent increase in world primary energy demand over the next thirty years highlight the challenge of reducing man-made greenhouse gas emissions. They add to the concerns of those worried by the prospect of adverse climate change.

For an energy-intensive and energy exporting nation like Australia, the shift to a carbon-constrained world could impact economic growth and export potential.

Along with renewables, fossil fuels will inevitably be one of the sources of additional energy, so new and more efficient utilisation technologies are vital to achieving a goal of near-zero emissions to the atmosphere.

## Our Response

Monash Energy is helping meet this challenge by applying to brown coal (lignite) advanced drying and gasification technologies which enable production of low emission power and hydrocarbon products such as an ultra-clean, virtually zero-sulphur synthetic diesel.

The fundamental mission of the Monash Energy project is to design and build a world-scale coal to liquids (CTL) plant. It would provide an alternative source of diesel and other fuels in Australia enhancing energy security and reducing the forecast trade deficit in oil.

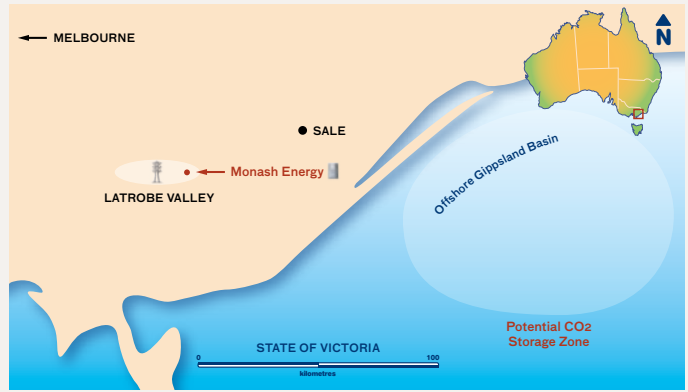
Critically, the technologies chosen enable separation of a concentrated stream of greenhouse gas for transport to injection wells for secure storage deep underground in geological formations.

## Location and Ownership

The brown coal fuel source and proposed processing facilities are located in the resource rich Latrobe Valley, 160km to the east of Melbourne, Australia. The principal area being examined for CO<sub>2</sub> injection and storage is the offshore Gippsland Basin.

This Basin contains an extensive system of deep saline aquifers which offer the potential for safe and secure storage of CO<sub>2</sub> more than two kilometres underground. Careful injection site selection can and must ensure that CCS is compatible with continuing oil and gas production. The oil and gas fields, once depleted, are potential storage volumes within the overall aquifer system.

Monash Energy is a joint development of Shell Gas and Power and Anglo American plc, pursuant to a Clean Coal Energy Alliance between the two companies.



## Carbon Capture and Storage (CCS)

The process of Carbon Capture and Storage ('CCS'), also known as geosequestration, has been identified as the critical step which enables the world to cope with increases in energy demand while achieving deep cuts in greenhouse gas emissions.

Critically for the competitiveness of Australian industry, it enables development of a new generation of near-zero emissions power stations.

**Australia and Monash Energy are at the forefront of moving CCS to reality.**

Monash Energy is working with State and Federal Government agencies to ensure the technical, environmental and commercial aspects of CCS are investigated and demonstrated, and appropriate regulatory structures established.



## Current Status

In the two years from September 2006, when they signed a Joint Development Agreement, the two owners will have invested almost A\$20 million in proving up the concept and developing the project. Currently the project is undertaking technical and commercial studies to identify the appropriate pathway to establish a CTL plant, including the requirements for first demonstrating key technologies.