Gloucester Coal Seam Gas Project

Community information fact sheet

Number 8
October 2008

Coal Seam Gas fact sheet

What is coal seam gas?

Coal seam gas (CSG) is a naturally occurring gas, mainly methane (CH4), produced from ancient organic matter and trapped in the microscropic 'cleats' of coal seams.

Coal seam gas has been known for centuries – mainly as a potential hazard in underground coal mines. Miners bleed the gas out for safety by drilling directly into the face of the coal seam before mining. Historically, the gas was vented directly into the atmosphere. However methane is a serious greenhouse gas (around 23 times worse than CO2) so capturing and using the gas is far preferable.

New drilling techniques developed over the last few years have made it practical to drill directly into coal seams from the surface to extract the gas. Lucas is a world leader in this surface to in-seam (SIS) technology.

With CSG extraction now technically practical, Australia's usable gas resources have increased dramatically.

CSG as an energy resource

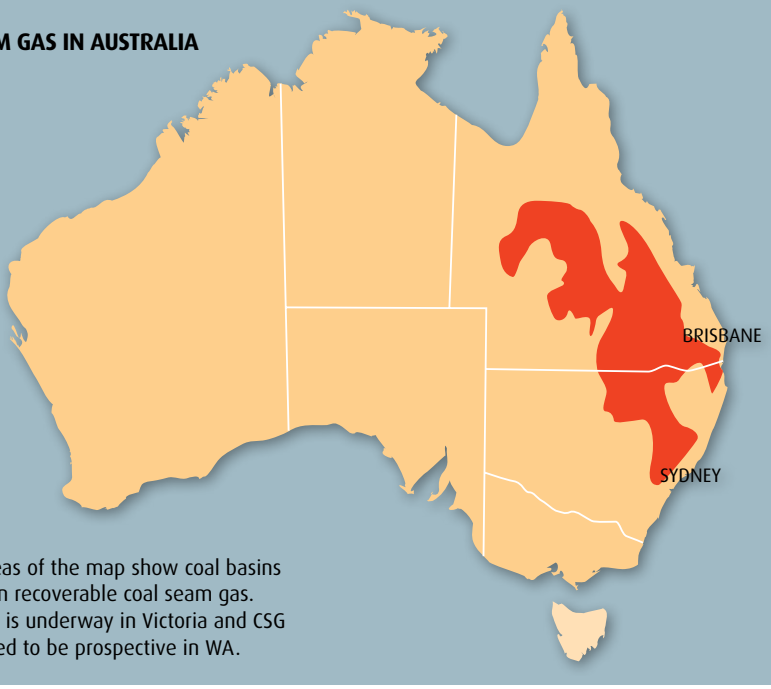
CSG is the same as the natural gas used in household stoves, heaters and hot water systems. It can also be used for industrial processes and for electricity generation. The only difference from natural gas is the way it occurs in nature.

Gas has many advantages over other energy sources. It can be directly used for a broad range of heating uses and for powering fast-response electricity generating turbines. Gas can be used for 'co-generation', a very energy-efficient process that produces electricity and uses the heat that would normally be wasted for process heating or cooling.

CSG produces less greenhouse gas than coal generation.

CSG is of particular interest on Australia's east coast for two reasons: our existing main gas supply, from South Australia's Cooper Basin, will begin to decline in just a few years. Secondly, coal seam gas is plentiful in the coal measures of Queensland and New South Wales, so it's closer to major markets than alternative gas resources like Bass Strait or the Northwest Shelf.

COAL SEAM GAS IN AUSTRALIA



The red areas of the map show coal basins with proven recoverable coal seam gas. Exploration is underway in Victoria and CSG is considered to be prospective in WA.

Extracting coal seam gas

CSG is held in the cleats by water that saturates the coal seam. By drilling into the seam and pumping out the water, the gas is released. In some coal structures, the coal is fractured ("fracced") by pumping a sand/water slurry into the seam. The pressure opens the cleats, which are held open by the sand, improving gas flow.

CSG wells are placed in a grid pattern to drain the gas across the coal seam. The gas and produced water are separated at the well and piped separately to a processing plant for final treatment and compression before it's fed into a pipeline for distribution.

This community information fact sheet has been produced by the Gloucester Coal Seam Gas Project:
22 Tate St, Gloucester NSW 2422 Tel (02) 6558 1166 Email info@gloucestergas.com.au www.gloucestergas.com.au

 Continued overleaf

CSG Glossary

Annulus – the gap between a drill pipe and the outer wall of a drill hole.

Coal mine methane (CMM) – is the same as CSG. The distinction is that CMM is gas extracted to enable safe mining of coal, as opposed to gas extracted for use as an energy source.

Coal seam methane (CSM) – a synonym for coal seam gas.

Core drilling – a drilling technique using a hollow drill string that delivers a cylinder of the underlying strata. This is used to precisely map the strata.

Flaring – burning of gas. This is done while production testing gas wells and in some other instances. Flaring, rather than simply discharging the gas to the atmosphere, reduces the greenhouse impact.

GIS – Geographic information system. A computer database of geographic information.

Wellhead – The surface components of a well, including equipment to separate water from gas and ensure the safety of the well (see photo top right).

Above: A CSG wellhead in place. Below: CSG drilling rig.