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*Underground Coal Gasification / Coal Seam Gas Investigations
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ABSTRACT

Does underground coal gasification (UCG) have a place in clean coal technology?

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Three Queensland Government authorised and monitored UCG Pilots were undertaken at shallow depths in two Queensland Mesozoic sedimentary basins over the years 2000 to 2013. The operations were assessed by a Queensland Government appointed Independent Scientific Panel (ISP).

As Pilots the operations had varying degrees of success and much was learned over the periods of their activity. Knowledge was principally gained in the areas of site selection criteria (geological), design construction, operation and shutdown (engineering and environmental monitoring).

The ISP was satisfied with the abilities of the companies to technologically manage these areas. The ISP remained to be satisfied in the areas of decommissioning and rehabilitation.

The new knowledge gained required defining a Materials Active Zone (MAZ) 5 to 15 m directly around the reactor chamber, and a Fluid Active Zone (FAZ) to describe the movement of fluids (water) outwards for 300 m.

UCG has effectively been closed down in Queensland and most probably over the whole of Australia. It is still, however, being actively pursued in China as part of the overall energy mix. The technology is viewed as being able to produce SYNGAS at a competitive price from poor quality coals. SYNGAS can be then used to produce not only power, but also urea. At depths below 880m suitably flushed, cleaned, spent chambers are available to store the CO₂ generated in the gasification process.