



Enhancing coal seam gas production

Enhancing gas production through stimulating in situ microbes and accelerating contemporary biogenic methanogenesis.

The challenge

Coal seam gas (CSG) is becoming a widely used energy source, particularly in eastern Australia where a number of basins have been found to produce significant volumes of methane gas from coal seams.

However, the drilling and maintenance of CSG wells are gradually becoming less economically viable as a result of low gas prices, and the comparably high price of maintaining and drilling CSG wells. Furthermore, the life span of a coal seam production well is only approximately 10-20 years.

CSG is cleaner than other fossil fuels, which accounts for more than 95 per cent of Queensland's gas.

The response

The Microbial Enhancement of Coal Seam Methane (MECSM™) project (now called Reservoir Rejuvenation Technology, or R2T) initiated in 2008 aims to deliver to the CSG industry a solution for the rapid replenishment of methane in depleted or under-saturated coal seams to enable renewed production.

In collaboration with the industry, CSIRO has created a team of researchers who are conducting laboratory experiments to understand the processes involved in replenishment, and who are studying the microbes to determine the viability of using them to optimise gas generation. A long term field trial is in the planning stage, set to commence in 2017.

The impact

If successful, the benefit for industry of this research will include a technology to increase the methane content of CSG reservoirs which could add considerable value to coal seam gas production and increase production of this energy source in Australia.

The overall benefits of the R2T project depend crucially on the adoption profile and actual achievement of CSG production. Most of this adoption takes place in the future, so impact analysis outcomes are associated with some uncertainty.

Looking at the midpoint of a range of impacts, our estimates suggest that the real project expenditure of \$1.4 million by CSIRO could lead to:

- ◆ Total benefits (measured as cost savings in CSG production, in real, present value terms) between \$0.7 million and \$21.4 million, depending on the assumptions made;
- ◆ A benefit cost ratio between 0.4:1 and 16:1.

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We do this by using science to solve real issues. Our research makes a difference to industry, people and the planet.

WE ASK, WE SEEK, WE SOLVE.

FOR FURTHER INFORMATION

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