

The Global Methane Initiative

Coal Mine Methane Technology Database

Coal Subcommittee Meeting
October 13, 2011



GMI Coal Subcommittee CMM Technology Database

- Developed by Australians in 2007
- Updated and reorganized entries
- Added general technology descriptions
- Added status column
- Added links to case studies and background documents

Methane Combustion

Gas Engines

Mines often vent the medium quality gas they drain from gob wells into the atmosphere instead of using it, because gob gas requires enrichment prior to pipeline injection. However, fuel for power generators does not require pipeline quality gas. Generally, IC engines can be adapted to generate electricity using coal mine gas with a methane concentration as low as 20%. However, for safety reasons, mines usually cease production of gob gas if the methane concentration drops below 25%. While all internal combustion engines powered by CMM are capable of producing electricity, several also have the capability for waste heat recovery and co-generation. For more information: http://www.epa.gov/cmop/docs/ic_engine.pdf

TECHNOLOGY	DESCRIPTION/PROJECT INFORMATION	STATUS
<p>Caterpillar www.cat.com/power-generation/generator-sets/gas-generator-sets</p>	<p>Caterpillar has introduced a range of larger, more efficient gas generator sets which can be fueled by CMM, landfill methane, or natural gas. The CMM fueled CAT™ G3520 Gas Engine produces 1966 kW with an efficiency of about 40% and NOx ratings as low as 0.5 g/bhp-hr. Minimum methane concentration for gas engines may be as low as 25%. Large installed base of CMM power generation, mainly in Australia and China, including:</p> <ul style="list-style-type: none"> • Sihe Mine, Jincheng, China (60 gensets - 120 MW) • Jincheng (18 MWe) • Jincheng (38MWe) • Malan (4 MWe) • Huainan Mine, Anhui Province, China (2 x 1.8 MW) • BHP's Appin, Tower and West Cliff mines, Australia: 94 Caterpillar engines generate 97 MW of electricity. • Anglo's Moranbah North and German Creek mines, located in the Bowen Basin coalfields in central Queensland, Australia: Moranbah North (15 x 3 MW), German Creek (16 x 2 MW) 	<p>Commercially available and demonstrated using CMM worldwide.</p>

GMI Coal Subcommittee CMM Technology Database

Please send your comments to:

Jayne Somers

somers.jayne@epa.gov

+1 202 343 9896

