COAL MINE PROJECT OPPORTUNITY
CMM Utilization at the HECG Mine No. 6
Hebi, Henan Province, China

OVERVIEW OF COAL MINE PROJECT OPPORTUNITY:

The Hebi mine area is located within a series of small, fault-bounded Paleozoic coal basins in North China. Located within the confines of Hebi City, the coal concession borders on Tangyin County on the east, is adjacent to Linzhou City on the west, and extends from Qixian County in the south to Anyang City in the north. Mine No. 6 first received its commission in 1964 and is operated by the state-owned Hebi Coal Industry (Group) Corporation, Limited (HEGC).

The primary sources of methane emissions at the Mine No. 6 are from the mined seam and gob areas. According to June 2007 data, the Hebi mine liberates 96,922 m$^3$ of methane per day from its ventilation and underground methane drainage system. Currently, the Hebi No. 6 mine employs 5 Shengli Oilfield Company (Shandong) generator sets that supply approximately 50% of the mine’s power consumption.

HEGC would like to expand power production up to 12 MW and are planning to double their overall coal production within the next 5 years. Concomitantly, the increase in coal production at Mine No. 6 will increase methane emissions in 2010 by 7 million m$^3$. Initially the most effective end-use for the methane produced by the CMM portion of the proposed project will be fulfilling the remaining 50% of energy needed for mine operations.

According to a current feasibility study, the estimated capital costs to improve Mine No. 6’s degasification system is USD$4.1 million. Developing the degasification system can increase methane capture efficiency as well as improve coal mine safety.

ESTIMATED ANNUAL EMISSION REDUCTIONS: 0.09 - 0.2 MMTCO$_2$E

SITE DETAILS
• Confines of Hebi City, bordering Tangyin, Linzhou, and Qixian Counties and Anyang City.
• West side of the Beijing – Guangzhou Railway, Jing-Zhu Expressway, and 107 National Highway.
• Part of an eight mine concession.
• National Grid power lines 1 mile from coal mine

PROJECT DETAILS
• Potential type of project: CMM recovery modernization and utilization
• Current power generation: 5 Shangdong 500KW gensets.
• Potential additional power generation for mine electricity consumption
DISCLAIMER: The information and predictions contained within this flyer are based on the data provided by the site owners and operators. The Methane to Markets Partnership cannot take responsibility for the accuracy of this data.

METHANE DETAILS
- Mine ventilation airflow rate: 267 m³/s
- Methane vacuum pump capacity: 288,000 m³
- Underground methane drainage rate (2007): 20,160 m³/day
- Methane utilized: 15,806 m³ (16% of liberated)
- Methane emissions as of 2007: 96,922 m³/day
- Total methane resource: 21 billion m³
- Methane content per ton: 13.76 m³
- Annual methane emissions: 35 million m³

PROPOSED OR PLANNED PROJECT
- Project has support of mine and gas owners, and mine operator
- Gas processing for power generation in-place.
- Update of degassing and processing equipment to accommodate proposed power generation and increased coal production.
- Modify current Shangdong engines to accept 50-60% methane concentrations
- Additional power generation units (such as the Caterpillar G3520C or similar engine).

TYPES OF ASSISTANCE SOUGHT
- Technical support for directional drilling technology
- Suppliers of gas-burning engines

SOCIOECONOMIC IMPACTS OF PROJECT
- Employment Opportunities directly from drilling and operating companies.

PROJECTED COAL PRODUCTION AND METHANE EMISSIONS

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COAL MINE INFORMATION
- Year of initial operation: 1964
- Mine status: Active
- Coal Mining Method: longwall
- Whole Concession (8 mines)
  - Mine Area: 209.5km²
  - Mineable reserves: 500 MT
- Rank of coal: Low volatile bituminous
- Number of coal seams mined: 1
- Coal seam name: 2,
- Depth of coal seam: 300-400m
- Thickness of coal seam: 3.45-17.5m
- Vitrinite Reflectance: ~1.6
- Calorific Value: 6,430-7,775 calories/g

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Genets and Waste Heat Boilers

Gensets and Waste Heat Boilers

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