OVERVIEW OF VAM PROJECT OPPORTUNITY:

Located in Pingdingshan Coal Mining Area in Mid-China's Henan Province, the proposed project will recover and utilize ventilation air methane (VAM) to generate electricity and reduce emissions of greenhouse gases. The project is expected to produce an annual reduction of emissions up to 400,000 tCO₂e. The No. 4 Coal Mine already has two underground gas extraction stations, with a total extracting capacity of 62.5 m³/min; average methane concentration in the extracted gas is over 15%. Currently, both the VAM and gas extracted from No. 4 Coal Mine is vented into the atmosphere.

For this project, the Pingdingshan Coal Mining Area is planning to utilize the unused methane to generate electricity. The project will install advanced foreign VAM oxidizer technology and electricity generation equipment next to an operating ventilation shaft. Initially, the generating equipment will be tested in a trial phase, but once the testing is completed, generating capacity could reach 6 MW. The estimated investment to construct this project is $20 million USD. This project offers opportunities to technology and service providers as well as investors.

MINE INFORMATION

- Status / Type of mine: Active / Underground
- Mining Method: Longwall

PROJECT DETAILS

- Potential type of project: methane emission reduction and power generation
- Power generation: estimated maximum capacity of 6 MW
- Industrial use: Self-consumption
MINE CHARACTERISTICS

COAL PRODUCTION
No. 4 Coal Mine

Date mine started working: First started mining in 2005
Actual coal production in 2006 (tonnes/year): 2,700,000
Proposed plans for expansions: Expand mining production to nearly 2.8M tonnes of coal from 2007 through 2010

METHANE EMISSIONS

• Total annual emissions of methane from the mine (2006): 37.5 Mm³
  – Ventilated: 31.5 Mm³
  – Drained: 6 Mm³
• Fluctuation of methane concentration in vented gas: 0.35-0.41%
• Average methane concentration in drained gas: 15%.

ESTIMATED EMISSIONS REDUCTIONS

The following estimated emissions will recovered and used by the proposed project over the life of the project:

2 Mm³ methane in 2007; 4 Mm³ methane 2008

400,000 tonnes CO₂e per year
EXISTING INFRASTRUCTURE

Example of No. 4 Coal Mine underground gas extraction station: there are two such stations with a total extracting capacity 62.5 m³/min.

PROJECT FINANCE NEEDS

- Financial assistance for feasibility study
- Equipment costs for VAM oxidizer and power generation equipment
- Estimated total capital investment costs: $20 million USD

SOCIO-ECONOMIC IMPACTS OF THE PROJECT

- The project will provide social benefits by significantly improving the health and safety for workers and residences and by providing a new source of clean electricity, displacing coal-fired power.

- The Henan Province will benefit with an improved air quality by addressing greenhouse gas emission and reducing exhaust from mining activity, which is currently vented to the atmosphere. The project will not lead to the consumption of significant natural resources or to any increase in energy consumption because the pumping station has already been installed and drainage activities are part of the baseline.

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