

COAL MINE METHANE PROJECT OPPORTUNITY

North Kathara Phase I-III & Uchitdih CMM Project

Central Coalfields Ltd

East Bokaro Coalfield, Jharkhand, India

OVERVIEW OF COAL MINE METHANE PROJECT:

The North Kathara Phase I-III & Uchitdih CMM Project is located in the central part of East Bokaro Coalfield near the township of Bokaro Steel City in Jharkhand, India. The CMM block covers an area of 5.6 km² and has an estimated coal resource of 850 MT. The gas resource is estimated to be 8.5 BCM (300 Bcf). This project is a pre-mine degasification project and no mining in the block has commenced to date. The major part of the CMM block is located within the proposed CCL mining project area. There are 22 regional coal seams (Seam Karo-I to Jarandih Top) in the area. The virgin coal seams, Sawang 'C' to Karo-VI, are targeted for degasification. The coal rank is medium volatile bituminous and has an average gas content of over 10m³/t (353 scf/ton). A commercial CBM project operated by ONGC is in the vicinity and has shown encouraging CBM prospects in its pilot phase. Data dossiers encompassing block details related to geology, regional mining history and gas resource has been prepared.

ESTIMATED ANNUAL EMISSION REDUCTIONS: 1.21 MMTCO₂E

PROJECT DETAILS

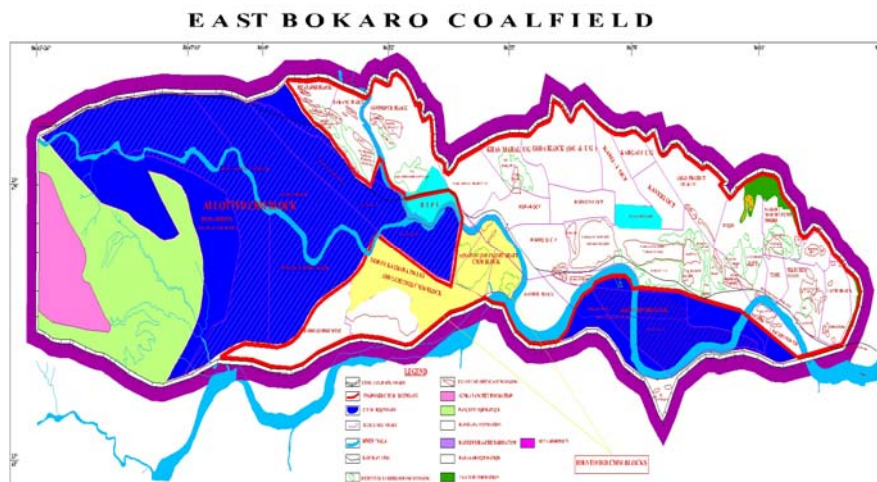
- Name of Project: North Kathara Phase I-III & Uchitdih CMM Project
- Name of Proposed Mine: North Kathara U/G Mines
- Type of Ownership: Public Sector Undertaking
- Target coal seams: Virgin seams lying below the mined out coal seams
- Type of assessments performed: A detailed data dossier is under preparation, which will form part of bid document

MINE INFORMATION

- Mine owner : Central Coalfields Ltd
- Parent company: Coal India Ltd
- Status of mine: Pre-Mine Drainage
- Type of mine: Underground
- Mining Method: Bord & Pillar (Proposed)

PROJECT FINANCES

- Assumptions: \$5-\$7/Mcf; 50 wells
- Estimated gross revenue: US\$45-50 Million
- Projected capital costs: Approximately US\$30 Million



HISTORICAL AND PROJECTED MINE DATA

HISTORICAL COAL PRODUCTION

This project is a pre-mine methane degasification project and does not have any historical coal production. However, there is active mining in the region.

PROJECTED METHANE DRAINAGE

YEAR	2013	2014	2015	2016	2017	2018	2019
<i>Methane (Mm³/yr)</i>							
Liberated from drainage systems	5.0	15	30	50	85	85	85

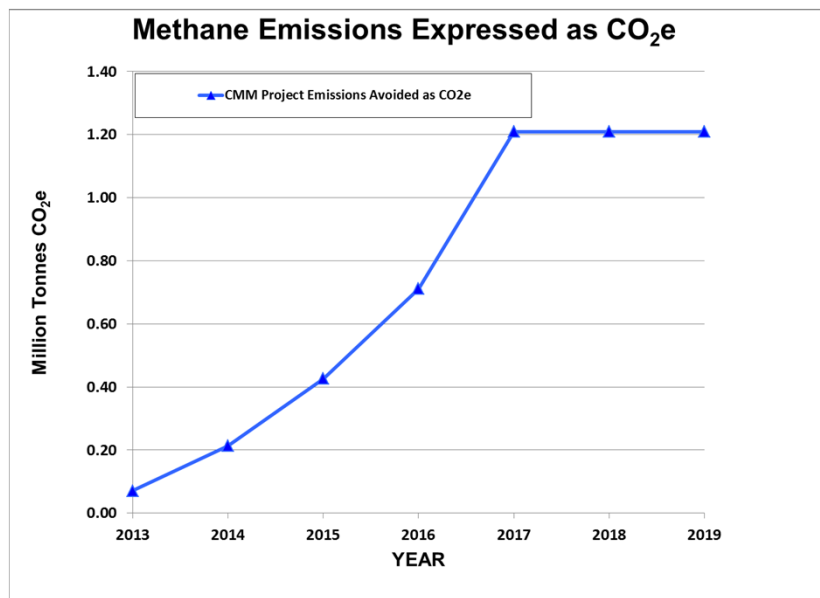
GREENHOUSE GAS EMISSION REDUCTIONS

At present there is no system of methane drainage and therefore, there is no utilization of methane in the project area. To reduce the release of methane into the environment from the proposed mine and to make future mining safe, this CMM project has been perceived.

TOTAL VOLUME OF METHANE EXPECTED TO BE RECOVERED/UTILIZED

YEAR	2013	2014	2015	2016	2017	2018	2019
Total CH ₄ recovered and utilized (m ³ /year)	5.0	15	30	50	85	85	85

COAL PRODUCTION AND METHANE EMISSION CHARTS



MARKET ANALYSIS / DEMAND ANALYSIS

The CMM produced after implementation of the North Kathara Phase I-III and Uchitdih CMM Project would have a ready market as it is located close to the developed industrial area of Bokaro Steel City and Dhanbad. The produced CMM may be utilized in the Bokaro Steel Plant or other steel plants, or in other industries.

TYPE OF ASSISTANCE SOUGHT

Technical Assistance:

- CBM resource assessment in de-stressed coal seams
- Techno-economic evaluations of the project
- Adoption of suitable drilling technology

PROPOSED TECHNOLOGIES



Well Drilling Rig Unit



Gas-based Power Generator

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