

Strategies for Promoting CMM Project Development in India

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Methane to Markets

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Strategies for Promoting CMM Project Development in India

Presentation outline

- ❖ India's Coal Sector : An overview
- ❖ Activities promoting CMM
 - Demonstration project under implementation
 - Commercial development of CMM: A Priority area
- ❖ Barriers to CMM project development
- ❖ Activities for expediting CMM /CBM Project development
- ❖ Establishment of clearing house
- ❖ Development of VCBM

India's Coal Sector : An overview

- ❖ **Coal reserves** : **257** Billion Tonnes
- ❖ **Lignite reserves** : **39** Billion Tonnes
- ❖ **Annual coal production** : **457** MT (2007-08)
- ❖ **Annual Lignite production** : **34** MT (2007-08)
- ❖ **3rd largest producer of coal**
- ❖ **% of coal mined from UG mines** : **15%**
- ❖ **Number of UG mines gassy** : **120**
(D-III: 18, D-II: 102)
- ❖ **CMM emissions** : **6th Globally**
(1 Billion Cubic Meter, 2005)

India's Coal Sector : An overview...

■ Status of Regulatory Framework

- **Coal Mines** : Regulations available
- **CBM** : Regulated through CBM Policy of Govt. of India formulated in 1997
- **CMM** : Regulatory framework for simultaneous and harmonious exploitation of CBM and coal mining under formulation by Govt. of India.

Ongoing Activities promoting CMM: Demonstration Project

- ❖ Under implementation jointly by BCCL and CMPDI in Moonidih and Sudamdih mines of BCCL
- ❖ Fund provided by Govt. of India / GEF / UNDP
- ❖ Project cost : 23.10 million USD
- ❖ Aim of the project :
 - ✓ CBM production from virgin seams ahead of mining
 - ✓ Recovery of gas from surface by vertical drilling in to Gob areas
 - ✓ Recovery of gas in mines by long-hole in-seam underground drilling
 - ✓ utilization technique of captured CBM.
- ❖ The recovered gas (42000 M³/Day) will be utilised for power generation and as fuel for running converted mine trucks.

Ongoing Activities promoting CMM: Demonstration Project ...

❖ Activities at Moonidih

- ✓ Hydro-fracturing of 3 potential zones completed in 2 vertical wells drilled from surface
- ✓ Dewatering and testing by PC Pump in one well is in progress
- ✓ Laying of gas pipelines on surface completed
- ✓ **CBM production to commence from June, 2008**

❖ Activities at Sudamdih

- ✓ Laying of gas pipelines in underground is in progress.
- ✓ Longhole in-seam drilling likely to commence soon

Successful implementation of this Project will help in replicating CMM Projects in other mining areas.

Drilling Rig Unit at Moonidih



Hydro-Frac Unit in operation at Moonidih



Commercial Development of CMM: A Priority area

- ❖ Development of CMM is high on agenda of Indian coal industry.
- ❖ Coal India limited (CIL) has invited an EOI for development of CMM within its lease hold areas.
- ❖ Initially 5 coalfields namely Raniganj, Jharia, E & W Bokaro and S Karanpura have been identified for development of CMM.
- ❖ The prognosticated CMM resource in these coalfields is 150 BCM.
- ❖ The blocks are to be allotted through global bidding
- ❖ Two CMM projects on the dip side of 2 large opencast areas are also under consideration:
 - ✓ Moher sub-basin, Singrauli Coalfield
 - ✓ Korba Coalfield

Barriers to CMM Project Development

Lack of expertise/ Regulations in following key areas identified as Barriers to CMM Project Development in India:

1. Technical

- CBM Resource assessment technique in De-stressed coal seams
- Techno-economic evaluation of identified Project area
- Utilization of recovered methane

International expert support from M2M and partner countries will be helpful.

Barriers to CMM Project Development ...

2. Legal/Regulatory

- Legal/ safety framework under which CMM prospects can be developed
- Simultaneous and harmonious exploitation of CMM and coal.

This issue is under consideration of a duly appointed Govt. committee

3. Commercial(Contract & fiscal matter)

- Ownership issues of recovered gas / carbon credits

4. Infrastructure

- Lack of infrastructure for transportation of produced CMM

Activities for Promotion of CMM/CBM Projects

Recommended activities for expediting promotion of CMM /CBM Project development :

- Develop know-how for techno-economic feasibility studies of CMM sites
- Creation of data base on CMM/CBM opportunities
- Pre-feasibility / feasibility studies of potential CMM projects
- Preparation of data dossiers on potential areas
- Sponsored intensive training in
 - ❖ Techno-economic feasibility studies
 - ❖ Hands-on training at a running CMM project for 2/3 months to geologists, mining engineers and finance personnel

Activities for Promotion of CMM/CBM Projects ...

Agencies proposed to be associated for developing strategies for CMM development

A. Govt. Organizations

- ❖ Ministry of Coal
- ❖ Ministry of Environment and Forest
- ❖ Directorate General of Mines Safety (DGMS)

B. Coal Industry Sector

- ❖ Coal India Ltd /CMPDI
- ❖ Singareni Collieries Co. Ltd. (SCCL)
- ❖ Neyveli Lignite Corporation (NLC).

C. CMM Operators : Representative from private sector interested in CMM

CMPDI may act as a nodal agency for coordinating various activities.

Activities for Promotion of CMM/CBM Projects: Regulatory Framework: A step Forward

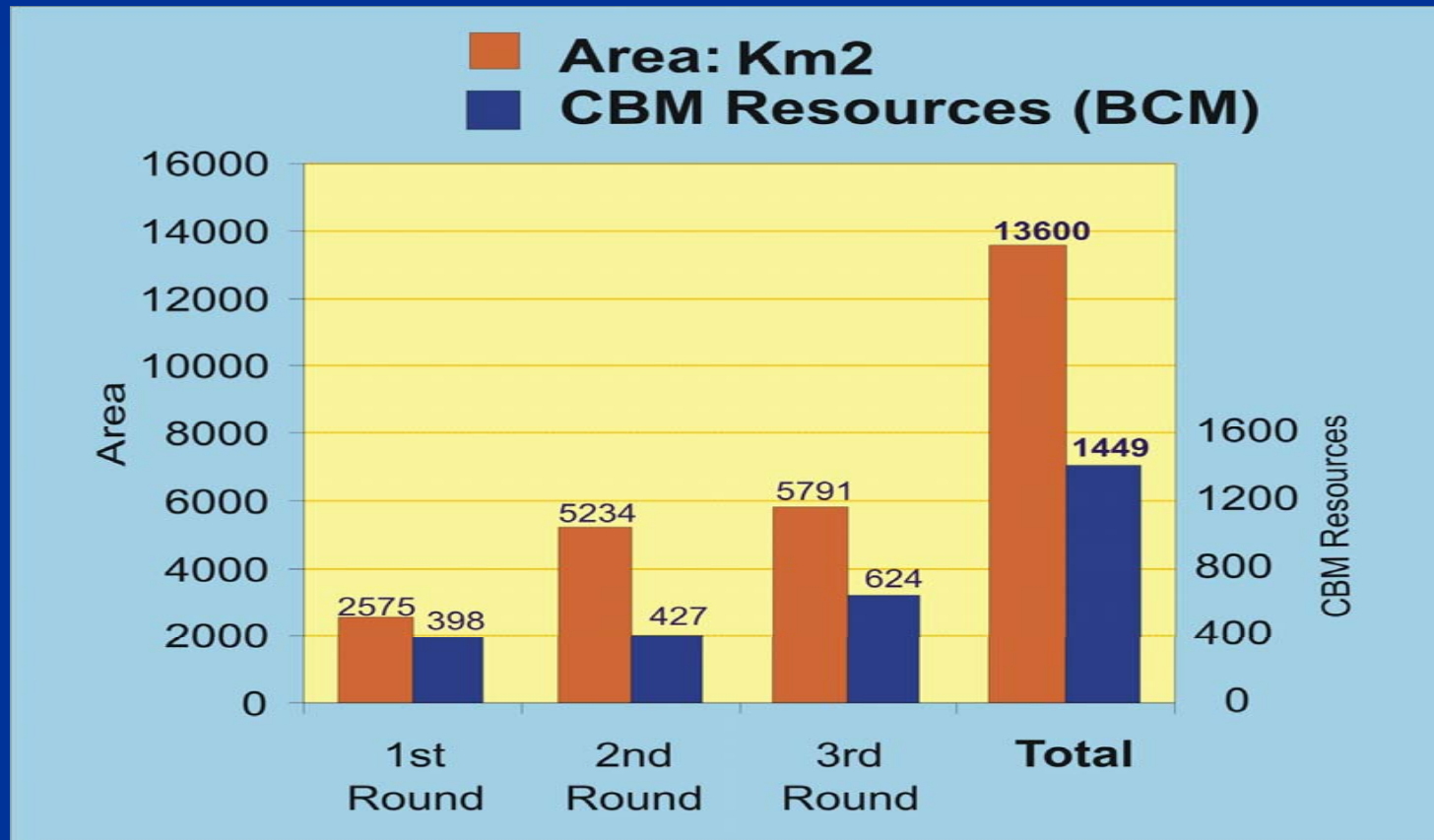
- ❖ Spurt in coal demand in last 2-3 years resulted in allotment of coal blocks within VCBM blocks
- ❖ This has caused overlapping in allotment of coal and CBM blocks
- ❖ MOC is working on a policy framework for harmonious exploitation of coal and CBM
- ❖ Once the policy is in place, coal mining and CBM activities could be carried out simultaneously without any safety hazard

CMM / CBM Clearinghouse

- ❖ MOU signed between Govt. of India and USEPA in Nov'06 to establish CBM/CMM clearinghouse in India.
- ❖ The cooperative agreement is under finalization.
- ❖ CMM / CBM Clearinghouse of India is to be opened soon at CMPDI, Ranchi.

VCBM: Ongoing Activities

- ❖ Blocks Allotted : 26 Nos.
- ❖ Area Opened Up for CBM Exploration : 13600 Sq Km
- ❖ CBM Resources in Allotted Blocks : 1.4 TCM



VCBM: Ongoing Activities...

- ❖ Production Potential in Allotted Blocks : 38 MMSCMD
- ❖ Commercial assessment is completed : 4 Blocks
- ❖ Development Plan approved : 3 Blocks
- ❖ Commercial Production commenced : 1 Block
- ❖ Present Gas production : 23.7 million m³/year.
- ❖ Activity in 4 commercially assessed blocks
 - Core holes : 120
 - Test/Pilot Wells : 80
 - Investment : 87.5 million USD
- ❖ Electricity generation capacity from allotted CBM blocks : 6700 MW
- ❖ Reduction in emission of CO₂ : 27 MT/year of CO₂ if compared with coal fired power plants of same capacity.

Flare of gas from a well Of CIL-ONGC Jharlia CBM Block



VCBM: Ongoing Activities ...

1. Delineation of VCBM blocks to be allotted during 4th Round of Bidding by Govt. of India is under progress
2. Creation of CBM related data base under Govt. of India funding :
 - So far CBM related studies carried out in 27 boreholes spread in 14 coal / lignite fields.
 - 50 boreholes to be tested for CBM studies during XI Plan (2007-12)
 - These studies will help in delineation of future VCBM blocks

Thank You