India Update

Coal Sub Committee Meeting

Beijing, China

1.11.07

Participation in Expo

- Showcasing project opportunities in 2 opencast mines in flyer format
  - Moher sub basin, Singrauli CF
  - Korba CF
- Coal India limited (CIL) is sponsoring following in the Expo:
  - Platinum booth
  - Opening reception

Development of Coal Mine Methane: CIL endeavor

- 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
- A CMM related Demonstration Project is under implementation in 2 underground mines:
  - 1 Well has been successfully hydro-fractured in Oct'07
  - 2nd well to be hydro-fractured in Nov'07
  - Production likely to start from Dec'07.

Broad Assessment of CBM Resource in Potential CMM Areas of Raniganj, Jharia, E & W Bokaro and S Karanpura Coalfields

Coalfield	Area of the Coalfield (Sq Km)	No of coal seams	Cumulative Thickness (m)	Gas content (m^3/t)	Coal reserves likely to be available for CMM (BT)	Prog. CBM resource (BCM)*
Raniganj	1550	17	30-40	5-7	8.2	40
Jharia	450	42	Up to 100	7-26	7.4	50
E Bokaro	237	22	>100	10-22	3.0	30
W Bokaro	207	13	>40	6-10	1.6	10
S Karanpura	194	42	>100	5-10	3.7	20
Total					23.9	150

* Note: 1. Without taking into account that part CBM resource are from de-stressed coal seams.
2. CBM resource in abandoned mine not accounted.

CMM Project Associated with Opencast Mines ….

- Coal production from Opencast mines of CIL is 318 Mt.
- Methane content is less due to shallow depth but emission is substantial due to high coal production.
- Pre-drainage of methane in the deeper projectised opencast area being considered in Moher Sub-basin and Korba CF.
- Integration of opencast mining with methane recovery project will be required.
- Data being generated for estimation of gas-in-place CBM resource.
- The drained out methane may be utilised for
  - ✓ Power generation
  - ✓ Captive use.
- Additional revenues in terms of carbon credits envisaged.

Proposed CMM Project in Opencast Mining Areas

Moher Sub-Basin:

- Mining Area - 312 Sq. Km
- Cumulative thk of coal- 30m.
- High Volatile Bituminous "C" Coal
- Projected gas content- 1.5 to 4 m3/tonne
- Depth of recovery: 150 to 600m
- Present coal production: 52 MTY
- Production in 2035- 81.5 MTY
- Methane likely to be captured:
  - 2013-136 million cu.m/year
  - 2035-204 million cu.m/year

Korba Coalfield :

- Mining Area - 530 Sq. Km
- 3 main coal seams, cumulative Thk- 75m.
- High Volatile Bituminous "A" Coal
- Projected Gas content- 1.6 to 2 m3/tonne
- Depth of recovery: 150 to 250m
- Present coal production- 55 MTY
- Production in 2025- 75 MTY
- Methane likely to be captured:
  - 2013-120 million cu.m/year
  - 2025-150 million cu.m/year

Establishment of Clearing House

- MOU signed between Govt. of India and USEPA in Nov'06 to establish CBM/CMM clearing house in India.
- The draft cooperative agreement is under finalization.
- Agreement to be signed soon.
- Office space at CMPDI for Clearing House is ready.

VCBM - Concept to reality

- 26 blocks allotted
- Ultimate aggregate Production capacity in the allotted blocks: 38 MMSCMD
- Commercial production initiated
- Will bridge gap between demand and supply of energy source
- 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.

Thank You