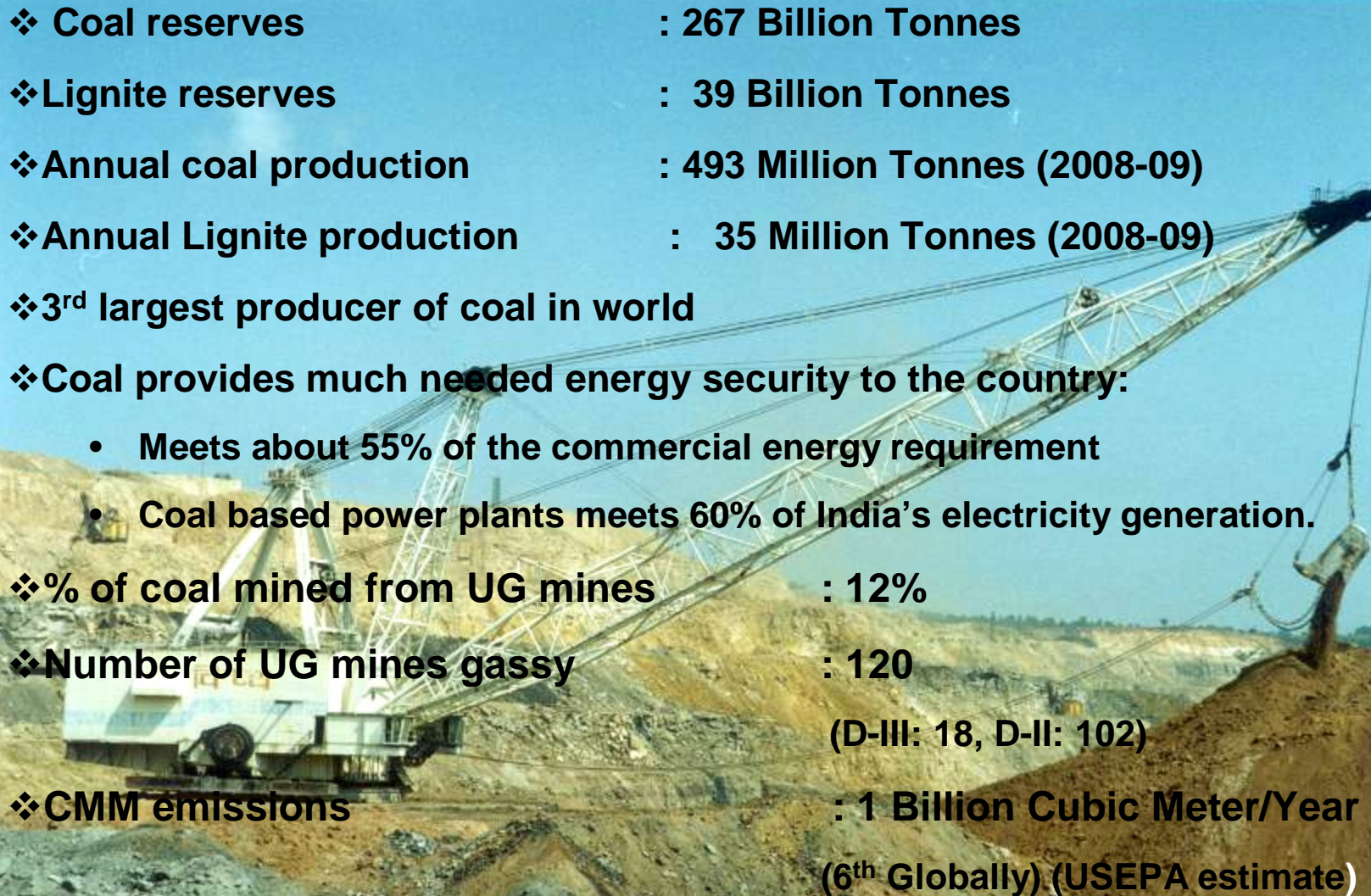


**Activities on
Development Of CBM/CMM
In India**

**Coal Sub-Committee Meeting, New Delhi
5th March 2010**

**A.K.Singh
CMD, CMPDI
&
Co-Chair, Coal Sub-Committee**

Coal: Epitomizes Energy in India

- 
- ❖ Coal reserves : 267 Billion Tonnes
 - ❖ Lignite reserves : 39 Billion Tonnes
 - ❖ Annual coal production : 493 Million Tonnes (2008-09)
 - ❖ Annual Lignite production : 35 Million Tonnes (2008-09)
 - ❖ 3rd largest producer of coal in world
 - ❖ Coal provides much needed energy security to the country:
 - Meets about 55% of the commercial energy requirement
 - Coal based power plants meets 60% of India's electricity generation.
 - ❖ % of coal mined from UG mines : 12%
 - ❖ Number of UG mines gassy : 120
(D-III: 18, D-II: 102)
 - ❖ CMM emissions : 1 Billion Cubic Meter/Year
(6th Globally) (USEPA estimate)

Establishment of India CMM/CBM clearinghouse

- As per decision of the Govt. of India, India CMM/CBM Clearinghouse has been established at CMPDI, Ranchi in Nov'08 under the aegis of MoC and US EPA.
- This is helping promotion of commercial development of CMM/CBM in the country.

Accomplishments:

- An international workshop “Development of CBM/CMM in India: An Opportunity Area” was also held in Nov'08 which was attended by national/international experts in the subject.
- A website of the clearinghouse has been launched:
www.cmmclearinghouse.cmpdi.co.in
- A quarterly magazine has been put on website
- The existing opportunities in CMM/VAM etc have been put on the web site of the clearinghouse.

Establishment of India CMM/CBM clearinghouse



Opening of India CBM/CMM Clearinghouse

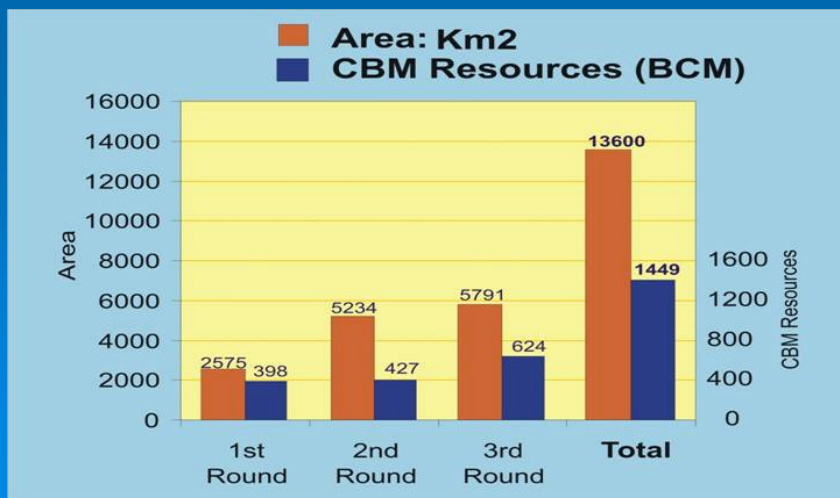


International Workshop on CBM/CMM Opportunities in India

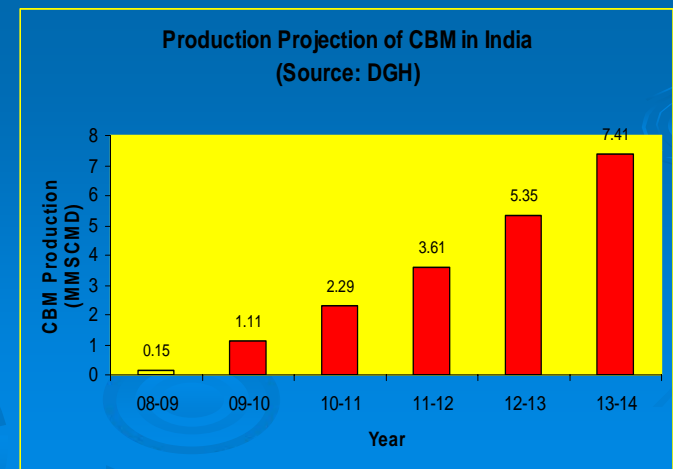
Development of Virgin Coalbed Methane

- ❖ CBM Resource: 3.4 TCM (CMPDI Estimate: 2008)
- ❖ 26 Blocks allotted for Commercial Development
- ❖ Production potential: 38 Million Cubic Meter per day, which can support power generation of 6700 MW.
- ❖ Commercial production of CBM started and was 0.15 million cubic meters per day.
- ❖ Expected to rise to 3.6 million cubic meters per day in 2011-12, showing 24 fold growth in 2 years.
- ❖ Allotment of 8 more blocks under consideration of the Govt.

Allotment Details of CBM Blocks



Production Projection of CBM



Status of Allotment/Development of CBM Blocks

1	Blocks awarded till date	Total	26
2	Status of Blocks as on date under	i. Exploration Phase - I	10
		ii. Exploration Phase - II	8
		iii. Development Phase-III [DGH approved Development Plan for 3 Blocks: Raniganj(S), Sohagpur(E) & Sohagpur (W)]	3
3	Area awarded, sq. km.		13,600
4	Total CBM Resources, BCM		1374
5	CBM wells drilled so far (Core Hole/ Test well/ Pilot well)		500
6	CBM reserve established (Gas Initial In Place), TCF/BCM for 4 blocks		8.4
7	Expected Production Potential, MMSCMD		38
8	Commercial Production commenced , w.e.f.		14.07.2007
9	Approved gas sale Price, \$/MMBTU		6.79
10	Present Gas Production from 3 blocks: RG(S), SP(E) & SP(W), MMSCMD		0.15
11	Expected CBM gas production from 3 blocks by 2013, [Raniganj (S), SP (E), SP(W)], MMSCMD		7.4

CBM/CMM Recovery Demonstration Project

UNDP/GEF/Gol funded Demonstration project at Moonidih & Sudamdih mines of BCCL

- ✓ A CBM/CMM Recovery & Utilization Demonstration Project has been successfully implemented at Moonidih.
- ✓ CBM is being recovered from 2 wells for generating electricity which is being supplied to Moonidih Project. So far over 1.2 million units of electricity generated.
- ✓ 3rd CBM well has been completed and production of gas from this well to commence soon.
- ✓ Successful implementation of this project proved efficacy of technology in Indian geo-mining conditions.

CMM Demonstration Project



Hydro Frac Unit at Moonidih



S R Pump at Moonidih



Flare of Methane at Moonidih



Gas Based Generator at Moonidih

Commercial Development of CMM

- ✓ Successful implementation of demonstration project has opened opportunities for harnessing CMM in Indian mining conditions.
- ✓ Development of CMM is high on agenda of GoI/CIL
- ✓ CMPDI is implementing a R&D project for identification of suitable areas for CMM development.
- ✓ Under this R & D project, five blocks, 3 in Jharia and 2 in East Bokaro coalfield, have been identified.
- ✓ An EoI has been invited for identification of suitable collaborator

Updates on Showcased Projects

✓ Two projects on CMM development opportunity related to projectised opencast areas were showcased at M2M Partnership Expo 2007 held at Beijing, China.

- Korba Coalfield
- Moher Sub-Basin, Singrauli Coalfield

✓ To evaluate CBM resource for examining possibility of implementation of CMM project in the projectised areas, CMPDI has taken up following activities:

- Slimhole drilling has been completed in Feb,10.
- CBM specific data generated
- Assessment report will be prepared after getting complete analytical data.

Development of VAM

- ✓Development of VAM is a priority area.
- ✓CMPDI has recently generated VAM specific data in several D-III mines of ECL, BCCL and CCL.
- ✓Expression of Interest has been invited for identification of suitable technology providers.

Challenges and Technical Support Required

- CBM Resource Assessment technique in de-stressed coal seams.
- Techno-economic evaluation of identified CMM Project area.
- Utilization technology of recovered methane.
- Capture and Utilization Technique of low concentration of methane in ventilation air.

Expertise on above from Partner countries would be required.

Business Opportunities in Development of CMM & VAM

❖ Coal Mine Methane:

- Commercial development of CMM is high on agenda of Coal India Ltd.
- CMPDI is implementing a R&D project for identification of suitable area for CMM development.
- 5 such prospective blocks identified
- An EoI has been floated for commercial development of CMM in identified blocks, which closes on 11.03.2010
- Blocks will be awarded for commercial exploitation of CMM by competitive bidding

❖ Ventilation Air Methane:

- VAM is Target Area for commercial development in Coal India Ltd.
- Data generated for few identified gassy mines
- An EoI for development of VAM project has been floated, which closes on 19.03.2010

Thank You

