

India Coal Sector Update to the 21st Session of the Global Methane Initiative (GMI) Coal Subcommittee

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सत्यमेव जयते

Ministry of Coal, Govt of India
CMPDI



Presentation outline

- India's energy scenario
- Coal: Epitomizes energy in India
- Development of CBM: India's Accomplishments
- Development of CMM: India's Perspective
- Development of CBM/CMM/VAM: CIL/CMPDI's Endeavour
- India CBM/CMM Clearinghouse and other Endeavors

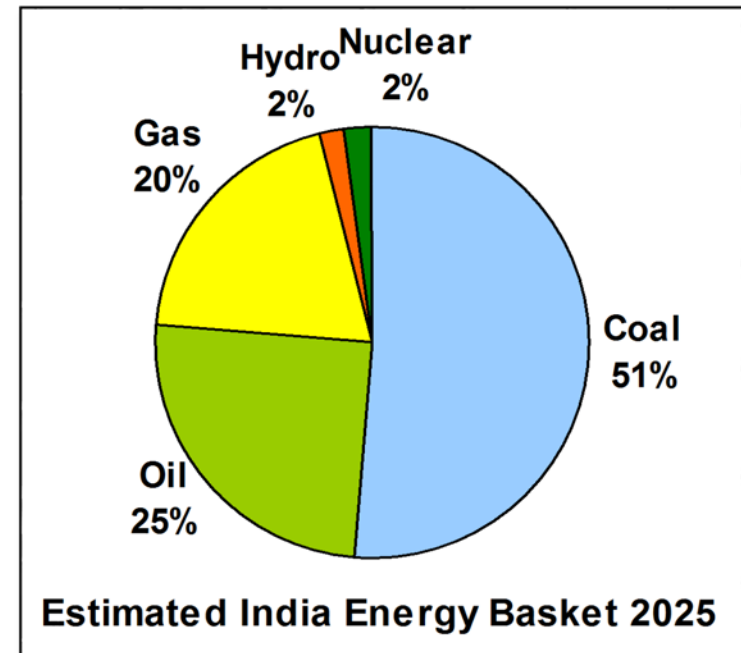
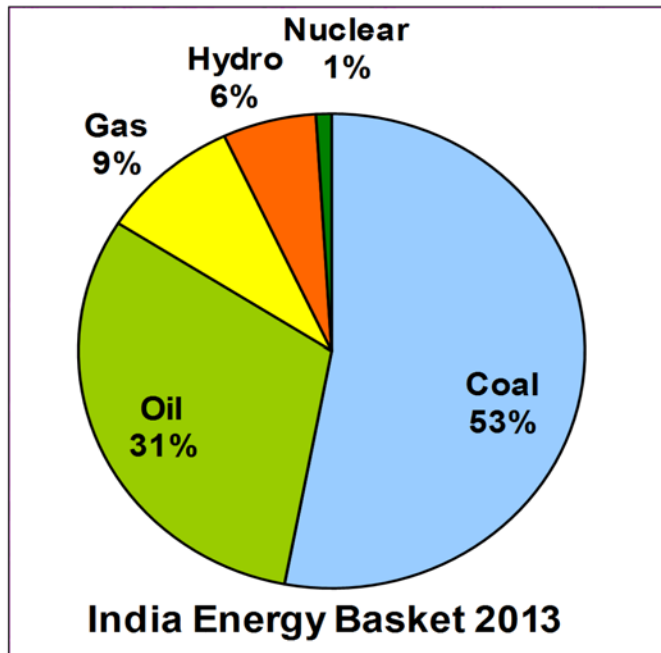
India's Energy Scenario

- The GDP growth of India is hovering around 6-7% which is likely to increase soon.
- To sustain such economic growth, there is enhanced requirement of energy.
- The gap in demand and supply of energy to sustain GDP growth is increasing and India is importing oil & gas which is putting pressure on Indian economy.
- There is stress to develop all form of energy resources both renewable and non renewable.
- Development of coal based energy resources CBM/CMM etc and Shale Gas is under focus

India's Energy Scenario

India Energy Basket: Present & Future

(Source: *India Energy Book 2013*)



Coal: Epitomizes Energy in India

- Coal plays a dominant role in sustaining economic growth and energy budget of India
 - ✓ Over 50% share in meeting India's total primary energy requirement
 - ✓ 67% share in power generation
- As per the Country's Coal inventory the total reserve of Coal is about 301 BT
- India is the 3rd largest coal producing country after China and USA with coal production of about 565 MT.
- Studies suggest that coal will remain the main source of energy supply in foreseeable future

Coal: Epitomizes Energy in India

- At present opencast mining contributes about 87% of the Indian coal production, balance is coming from UG mines having limited mechanization.
- With increasing depth of opencast mines, now the focus and stress is on development of mechanized underground mines.
- Methane emission from coal mining in India is a matter of concern which is around 388 MT CO₂e (1 BCM annually), expected to rise to 450 MT CO₂e by 2020 (USEPA estimate)
- Capture and gainful utilization of methane is a priority area at Govt and Industry level.
- Efforts were made since early 90's to harness CBM.

Development of CBM: India's Accomplishments

- Commercial development gained momentum with announcement of CBM policy in 1997
- Based on 4 rounds of global bidding: 33 Blocks allotted with 1.8 TCM resource in 17400 sq. km area
- Production potential from these blocks : 45 Million Cubic Meter per day
- Current production of CBM is about 0.8 MMSCMD (million std cubic meter per day), likely to increase many fold soon.
- More blocks are likely to be allocated through competitive global bidding.
- CBM industry has taken shape and around 400 wells/slimholes has been drilled.

Development of CBM: CMPDI's Endeavor

- Generating CBM specific data to augment CBM resource in India (CBM resource: 3.4 TCM, CMPDI estimate)
- Carved out prospective blocks and preparation of Data Dossiers for allotment through global bidding
- Implementing commercial CBM Projects on behalf of CIL in Jharia and Raniganj CBM Blocks allotted to CIL-ONGC consortium.
- These blocks have completed Development phase guided by field development plan, approved by the Govt
- **Commercial production from these blocks is likely to commence in soon although limited production is coming from the block.**

Development of CMM: India's Perspective

Development of CMM Is a priority area both at Govt and industry level as:

- There is ambitious program to increase coal production in coming years particularly from UG mines
- Will result in enhanced methane emissions from coal mining operations
- Harnessing and gainful utilization is target for mine safety, environmental benefits and getting much needed additional source of clean energy.
- Ministry of Coal has made CMPDI as Nodal Agency for development of CMM in India
- India CBM/CMM Clearinghouse established under the aegis of MoC and USEPA is also taking steps for expediting commercial development of CMM.

Development of CMM: India's Perspective

- Like in all coal producing countries, there are certain issues particularly related to ownership and operationalization.
- Such issues are under deliberation at competent Govt level and at the Indian inter ministerial level in which officials from regulatory bodies, CIL and CBM operators participated
- **The guidelines/policies of CMM is under formulation with the Government of India and likely to be announced soon paving way for commercial development of CMM in India**

Development of CMM: India's Perspective

- CMPDI identified suitable CMM blocks within CIL mining lease hold areas and prepared data dossiers on 5 such areas
- Steps are being taken for commercial development of CMM in the identified areas.
- CMPDI has also made assessment of CMM resource in the projectised areas of few operating opencast mines
- A demonstration project for harnessing and utilization of CMM has been successfully implemented at Moonidih Mine of BCCL under UNDP/GEF/Govt. of India funding proving efficacy of the process in Indian geo-mining condition
- Further, CMPDI is also assessing the CMM resource under CIL funded Project in Indian Coalfields in detail.
- Commercial development would be initiated after getting guidelines from the Govt.

Development of CMM: CMPDI's Endeavor



CBM Rig unit in operation



Hydro-fracturing unit at CBM Well

Development of VAM: CMPDI's Endeavor

- CMPDI has recently generated VAM specific data in several D-III mines of ECL, BCCL and CCL.
- Few mines have been prima-facie found to be potential for VAM project, subject to feasibility study.
- A VAM project under National Clean Energy Fund (NCEF) is under formulation with CSIRO, Australia
- The Moonidih mine(Degree-III),BCCL is selected for study
- The proposed project will aim for mitigation/utilization of VAM
- This will be the pioneer effort to test VAM technology in India

Development of VAM: Indian Scenario

- Govt. of India had allotted many Coal blocks to private sector for captive use.
- Many of these blocks are for UG development and fully mechanized high capacity UG mines are expected to be developed by private operators in coming years.
- These areas may be the target area for VAM exploitation.

India CMM/CBM Clearinghouse

- Established under the aegis of USEPA & MOC and Is functional at CMPDI, Ranchi from Nov 2008 with an aim of development of CMM/CBM in country
- Showcase opportunities of CBM/CMM development in India
- A News Letter highlighting the accomplishment in the field is regularly updated on the website
- The Clearinghouse is facilitating training programs and also sponsoring visits for attending seminars and on-site training.

The Clearinghouse has organized an International workshop on “Development of Non-conventional Energy resources in India” at CMPDI, Ranchi ,India on 12th to 13th Nov’13 which highlighted issues for expediting commercial development of CMM.

India CMM/CBM Clearinghouse....

This Workshop featured:

- Prominent attendees : Secretary Coal, Govt. of India, DG DGH (regulatory body for all hydrocarbon resources in India) and USEPA official
- Challenges & opportunities existing in Indian scenario in CBM and Shale Gas areas which were showcased
- Provided a platform for interaction between national/international experts, policy makers, project operators and academic institutions in the field of coal based unconventional energy resources
- **CMPDI is also likely to organize SAARC Training Workshop on Experience Sharing on Coalbed Methane, Underground Coal Gasification etc. expected to be held in October of this year.**

India CBM/CMM Clearinghouse...



Way Forward

- To expedite development of CMM at the earliest considering its multifaceted advantages.
- CMM development in Indian geo-mining conditions will be challenging and there will be need for technological support
- Coal Sub-committee should consider providing such support to its member countries who may require it.
- Chalking out Modality for such support would be required and needs consideration.
- Further, Coal-subcommittee may also consider taking up the matter with Steering Committee related to expeditious announcement of regulatory issues by the Govt of the partner countries. This will definitely expedite the CMM development which is the main aim of the Coal Subcommittee of GMI.



THANK YOU
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