

## CHAPTER

# 14



## INTERNATIONAL COOPERATION



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## 1. Indo-US Collaboration

### India CMM/CBM Clearing House:

- India CMM/CBM Clearinghouse is functional at CMPDI, Ranchi under the aegis of Ministry of Coal and United States Environmental Protection Agency (USEPA) since 17th November, 2008. It has been established with the financial support of USEPA and Coal India Ltd. on behalf of the Ministry of Coal in pursuant to a Govt. level understanding between Ministry of Coal (MoC) & United States Environmental Protection Agency (USEPA). MoU was signed on 16th November, 2006 between the representatives of the Govt. of USA and India at USEPA Headquarter in Washington DC in this regard. On completion of the initial three years term it was extended twice for another three years terms each. US EPA further extended grant support in April, 2018 for additional three years i.e. 2018-21.

International Webinar on “CBM Resource-Reserve Assessment”, organized by CMPDI on 29th September, 2020 in which International experts participated actively along with dignitaries from Ministry, USEPA, UNECE, CIL & its subsidiaries.

## 2. Indo-Australian Collaboration

CMPDI has signed a Memorandum of Understanding (MoU) with Commonwealth Scientific and Industrial Research Organisation (CSIRO) signed on 12th June, 2013 for a period of five years for furthering scientific cooperation.

The MoU has been renewed for further ten years, signed on 16th November, 2018 at Brisbane (Australia) and exchanged on 22nd November, 2018 at Sydney (Australia) in presence of Hon'ble President of India, to encourage programs of exchange and collaboration in areas of mutual interest and benefit to both the organizations.

### Status of On-going Research Projects:

#### A. Capacity building for extraction of CMM Resource within CIL Command areas:

- An S&T Project titled “Capacity building for extraction of CMM Resource within CIL Command areas” is under implementation under S&T funding of MoC. It is jointly implemented by CMPDI and CSIRO, Australia. Project cost is Rs.23.92 Cr. The Collaborative Understanding for execution of the Project has been signed on 22nd December, 2016 between CSIRO and CMPDI is valid up to December, 2021.

#### B. Development of Virtual Reality Mine Simulator (VRMS) for improving safety and productivity in coal mines:

- The Project was approved by Coal India Limited (CIL) in September 2017 under R&D funding of CIL which is jointly implemented by IIT-ISM, Dhanbad, CMPDI, ECL, NCL and SIMTARS, Australia. Project cost is Rs. 14.10 Cr.
- SIMTARS expressed their inability to supply & installation of VRMS due to shifting of policy considerations in Australia. All infrastructural facilities have been completed in IIT-ISM, Dhanbad for installation of VRMS & a part of payment (AUD 51975.00) has already been made to SIMTARS in February, 2019 for VRMS. IIT-ISM pursued the matter with SIMTARS, Australian Consulate General, Kolkata, Austrade, Trade Commissioner, Chennai, Queensland Trade and Investment Commissioner, and Executive Director, DNRME, Queensland Govt.
- After several VC & correspondences SIMTARS informed that UQ SMI-JKTech,

Australia is willing to associate in a project related to Virtual Reality Mine Simulator (VRMS). The matter is to be placed before the Apex committee for R&D board of CIL in its next meeting for deliberation.

**C.** Development of guidelines for prevention & mitigation of explosion hazard by risk assessment and determination of explosibility of Indian coal incorporating risk based mine emergency evacuation and re-entry protocol:

- (i) The Project was approved by Coal India Limited (CIL) in April, 2016 under R&D funding of CIL which is jointly implemented by IIT-ISM, Dhanbad, CIMFR, CIL, Kolkata and SIMTARS, Australia. Project cost is Rs. 24.13 Cr.
- (ii) SIMTARS expressed their inability to supply & install a 30m propagation tube due to shifting of policy considerations in Australia. As a result of which further project progress halted. For purchase of another 3 equipment Rs. 6.95 Cr. has already been paid to SIMTARS, but without the above propagation tube, the project cannot be completed. IIT-ISM is pursuing the matter with SIMTARS, Australian Consulate General, Kolkata, Austrade, Trade Commissioner, Chennai, Queensland Trade and Investment Commissioner, and Executive Director, DNRME, Queensland Govt. The matter is not yet resolved.

**D.** During the meeting between Hon. Minister of Coal and Mines and his Australian counterpart held on 11.09.2020, following issues were discussed-

- (i) To encourage the Australian Mining companies to participate in the ongoing global tender for commercial mining as well as for coal to chemical projects and CBM development
- (ii) Hon'ble Minister of Coal & Mines expressed interest to have collaboration with the Australian companies in setting up plants regarding coal gasification through tenders on BOO basis.

(iii) It was requested that the learning of Australia in the area of underground coal gasification could be shared so that a view on applicability of this technology in India could be explored.

(iv) Hon. Minister of Coal and Mines also conveyed to his Australian Counterpart that India was interested in acquiring coking coal assets in Australia, collaboration with Australia regarding Brown coal (Lignite) liquification, brown coal to hydrogen technology transfers and to encourage CSIRO to further scientific cooperation under the framework of their MoU with the CMPDI.

### 3. Indo-Russia Collaboration

- (i) The Coal India Limited (CIL) executed an MoU on 04.09.2019 with Far East Investment and Export Agency (FEIEA), an Agency under the Ministry of Development of the Far East Region and Arctic of the Russian Federation for identification, development and operations of coking coal assets in the Far East Region.
- (ii) The CIL also executed a Cooperation Agreement on 04.09.2019 with Far East Mining Company (FEMC), a 100% subsidiary of FEIEA for co-investing in identified coking coal assets.
- (iii) The NLC India Limited executed a Cooperation Agreement on 04.09.2019 with Far East Mining Company to explore mutually beneficial investment opportunities in the metal and mining sector in the Russian Far East Region.

### 4. Indo-Poland Collaboration:

A Memorandum of Understanding signed on 04.02.2019 between the Ministry of Energy of the Republic of Poland and Ministry of Coal, GoI on cooperation in the area of coal mining and clean coal technologies through the already established Joint Coal Working Group as well as research institutes and academia between the two countries. The MoU was signed by Hon'ble Minister of State for Coal from Indian Side and by Secretary of State, Ministry of Energy from Poland side.

## 5. India-Mozambique Collaboration

No activity during last year.

## 6. India-South Africa Collaboration

No activity during last year.

## 7. International Cooperation with SCCL

- (i) A collaborative Research project by CSIRO, Australia for Stability Analysis and Design Optimization of OB Dumps and deep OC Mines was pre-closed on 25.11.2020 as already acquired required technology from CSIRO.
- (ii) Mine Advise Pty. Limited (Russell Frith) – Australia is guiding and monitoring the implementation of new generation Longwall technology at Adriyala Shaft Project.
- (iii) Training by SIMTARS, Australia for preparation and implementation of Safety Management Plans.

## 8. International Co-operation with NLCIL

In order to meet the country's growing demand for coal, international cooperation with the advanced coal producing countries is considered for bringing in new technologies both in underground and in opencast sectors for efficient management in the coal industry, skill development and training etc. Keeping the above in view, a joint working group on coal/lignite had been set up with the USA, France, Germany, Russia, Canada, Australia, Japan and China. The priority areas, inter-alia, include acquisition of modern underground technology, introduction of high productive opencast mining technology, working underground in difficult geological conditions, fire control and mine safety.

Training of Indian personnel as well as assimilation of the technology is an important consideration. In this regard, NLC India Limited is seeking international cooperation for producing composite valuables Lignite in NLCIL Mines.

## 9. India-Indonesia Collaboration

Pursuant to the Memorandum of Understanding signed

by Ministry of Coal, Republic of India and Ministry of Energy and Mineral Resources of the Republic of Indonesia in June 2010 in Jakarta, the Fifth Meeting of the Joint Working Group on Coal between the Ministry of Coal, Republic of India and the Ministry of Energy and Mineral Resources, Republic of Indonesia was held virtually on 5th November, 2020 from New Delhi in view of the prevailing COVID-19 pandemic.

## 10. Indo-EU Collaboration:

11th India-EU Macro Economic Dialogue was scheduled in October, 2020 through VC. In this regard, following issues were shared with Department of Economic Affairs-

### (a). Clean Coal technology

Clean Coal Technology (CCT) under which development of Coalbed Methane (CBM) and its subsets (like Coal Mine Methane (CMM), Coal Gasification (Surface/Underground), Coal liquefaction, Shale Gas etc.) have been initiated in India. CCT are not only environment friendly but will be beneficial in augmenting the energy supply scenario along with economic benefits. Commercial application is required with suitable technology for generation of clean energy.

### (b). Environment & Ecology

#### (i) Renewable energy resource development

The areas of renewable energy resources may be considered to reduce carbon footprints. In this field necessary assistance from IEA is required.

#### (ii) Development of Air Quality Impact Prediction Model suitable for Indian Mines inclusive of impact assessment due to neighboring industries

There is a need for development of Indian mine specific emission factors and an air quality impact prediction model. Suitable technology may be developed to assess the impact of neighboring industry for contribution in air quality pollution so that joint efforts may be initiated to control the air pollution.





5th Joint Working Group on Coal between Republic of India and Republic of Indonesia held on 5th December, 2020

