

## CHAPTER

# 10



## RESEARCH & DEVELOPEMENT



# RESEARCH AND DEVELOPMENT

## 1. Status of Research Projects under S&T Grant of Ministry of Coal

The R&D activities in Coal sector are administered through an apex body namely, Standing Scientific Research Committee (SSRC) with Secretary (Coal) as its Chairman. The other members of this apex body include Chairman CIL, CMDs of CMPDI, SCCL and NLCIL, Director General (DG) of Directorate General of Mines Safety (DGMS), Directors of concerned CSIR Laboratories, Representatives from Department of S&T (DST), NITI Aayog and Research Institutions, etc. The main functions of SSRC are to plan, programme, budget and oversee the implementation of research projects. The SSRC is assisted by a Technical Sub-Committee headed by HoD (Mining) of IIT-BHU/KGP/ISM on annual rotation basis.

The R&D projects are broadly covered under 6 thematic areas, viz. improvement in production, productivity & safety in coal mines, coal beneficiation, coal utilization, protection of environment & ecology, clean coal technology and innovation & indigenization.

CMPDI acts as the Nodal Agency for coordination of research activities in the coal sector, which involves identification of 'Thrust Areas' for research activities, identification of agencies which can take up the research work in the identified fields, processing the proposals for Government approval, preparation of budget estimates, disbursement of fund, monitoring the progress of implementation of the projects, etc.

A total of 398 S&T projects were taken up till 28.12.2020 and 328 S&T projects completed till 28.12.2020.

## 2. Status of Research Projects under CIL R&D

For in-house R&D work of CIL, an R&D Board headed by Chairman, CIL is also functioning. CMPDI acts as the Nodal Agency for processing the proposals for CIL approval, preparation of budget estimates, disbursement of fund, monitoring the progress of implementation of the projects, etc.

In order to enhance R&D base in command areas of CIL, the CIL Board in its meeting held on 24th March 2008 had delegated substantial powers to CIL R&D Board and the Apex Committee of the R&D Board. The Apex Committee is empowered to sanction individual R&D project up to Rs.5.0 Crore value with a limit of Rs.25.0 Crore per annum considering all the projects together, whereas CIL R&D Board is empowered to sanction individual R&D project up to Rs.50.0 Crore.

So far, 95 CIL R&D projects have been taken up (till 28.12.2020), out of which 63 projects have been completed.

### Physical performance

The status of CIL R&D Projects during 2020-21 is as follows:

Sl. No.	Parameters	Quantity
1	Projects on-going as on 01.04.2020	18
2	Projects sanctioned during 2020-21 (Till 28.12.2020)	01
3	Projects completed during 2020-21 (Till 28.12.2020)	01
4	Projects on-going as on 28.12.2020	18

### 3. Physical performance

The status of Coal S&T projects during 2020-21 (till 28.12.2020) is as under:

Sl. No.	Parameters	Quantity
1	Projects on-going as on 01.04.2020	11
2	Projects completed during 2020-21 (Till 28.12.2020)	03
3	Projects approved by SSRC during 2020-21 (Till 28.12.2020)	02
4	Projects on-going as on 28.12.2020	10

### 4. Financial status

Budget provisions vis-à-vis actual fund disbursement during the period is given below:

(Fig. in ₹ Crores)

			2020-21			
RE	Fund received from MoC	Actual	BE	RE	Fund received from MoC	Actual
22.00	18.78	18.67	25.00	12.00	4.55	2.0 (Till 28.12.2020)

### 5. Following S&T projects were approved during 2020-21 (till 28.12.2020):

- a) Indigenous Development of IoT Enabled Technology for Monitoring, Analysis and Interpretation of Longwall Shield Pressures for Improving Safety and Productivity.

Implementing agencies: CMPDI, Ranchi; IIT, Kharagpur & Eastern Coalfields Limited (ECL), Sanctoria.

- b) Assessment of Rare Earth Elements (REE) and other economic resources in Coal & Non-Coal Strata and Characterization of Acid Mine Drainage and its pollution control from the North Eastern Region (NER) Coalfield.

Implementing agencies: Punjab University, Chandigarh; CMPDI, Ranchi & Duke University, USA.

## 6. Following S&T projects were completed during 2020-21 (till 28.12.2020)

- a) Investigation pertaining to geotechnical & hydrogeological aspects to stabilize the non-cohesive granular soil/sand in the opencast mines adjacent to the major perennial river.

Implementing agencies: Regional Institute-IV, CMPDI, Nagpur; Indian Institute of Technology (IIT), Bombay and WCL, Nagpur.

- b) Electronification of Ground Water Control and Conveyor System in Mines.

Implementing agencies: NLC India Limited

(NLCIL), Neyveli & National Institute of Technology, Tiruchirappalli (NITT), Tamil Nadu.

- c) Constructing structures on backfilled opencast coal mines: An attempt to suggest viable methodologies.

Implementing agencies: IIT-ISM, Dhanbad & CMPDI, Ranchi.

## 7. Financial status

Budget provisions vis-à-vis actual fund disbursement during the period are given below:

(Fig. in ₹ Crores)

2019-20		2020-21	
RE	Actual	RE	Actual
22.00	20.60	12.00	2.04 (Till 28.12.2020)

Following R&D project was approved during 2020-21 (till 28.12.2020):

- a) Bench Scale Study on reducing ash content (mineral matter) from Washery Grade Coking coal and high ash non-coking coal through oil agglomeration.

Implementing agencies: National Metallurgical Laboratory, Jamshedpur and Clean Energy Department, CMPDIL, Ranchi.

Following R&D project was completed during 2020-21 (till 28.12.2020):

- a) Multiple layer trial blasting for better recovery with less diluted coal.

Implementing agencies: IIT-ISM, Dhanbad, CMPDI, Ranchi.

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