

CHAPTER IV

COAL EXPLORATION

4.1. Regional and Promotional Exploration: Exploration for coal is carried out in two stages. In the first stage, Geological Survey of India (GSI) undertakes Regional Exploration of large areas to find out the broad availability of coal seams, geological structure, reserves etc. on a continuous basis, confirming the prognosticated occurrence of coal. Ministry of Mines provides necessary funds for this activity. In order to supplement the efforts of the GSI for Regional Exploration, services of Mineral Exploration Corporation (MECL), GSI and CMPDI are taken for carrying out Promotional (Regional) Exploration in various parts of the country. Ministry of Coal provides separate fund for this activity under the plan scheme "Regional Exploration" for coal and lignite. The Sub-committee on Energy Minerals (Group III of Central Geological Programming Board) with representatives of GSI, CMPDI, MECL, Singareni Collieries Company Limited (SCCL), Neyveli Lignite Corporation (NLC), CFRI etc., approves the programmes, coordinates and reviews the Regional Exploration work. CMPDI acts as a nodal agency for disbursement of funds for promotional exploration besides carrying out technical supervision of the promotional work of MECL in the coal sector.

4.2. Detailed Exploration: In the second stage, Detailed Exploration is carried out in potential areas of small size identified through Regional/Promotional Exploration, as per the requirements of Coal Companies. Such blocks are taken up for detailed drilling to bring the reserves into "Proved" category and thus to reduce the uncertainties. The results of Detailed Exploration are incorporated in Geological reports that lead to Mine Feasibility Studies and formulation of Project Reports on mine planning. The reports are used for exploitation of coal reserves considering factors like emerging demand, its location, and availability of infrastructure for coal evacuation and techno-economics of the mine development including coal quality.

4.3. The Detailed Exploration is funded by Coal Companies from its capital budget. CMPDI directly and in a limited manner through State Govts., carries out detailed exploration in CIL command areas. CMPDI and MECL are also conducting Detailed Exploration in Non-CIL blocks within the CIL Command Area. The Detailed Exploration in the command area of SCCL is carried out departmentally by SCCL itself.

4.4. Detailed Exploration in Non-CIL Blocks: In December 1996, 275 blocks were earmarked for supporting CIL's production needs till 2036-37 and 200 (then 172) non-CIL blocks have been identified for coal production by others. Out of this, 136 blocks have already been offered for allotment to private entrepreneurs for captive use. CMPDI proposed to conduct exploration in Non-CIL blocks to enable private entrepreneurs to readily locate prospective blocks and save 3-5 years in production schedule by paying the cost of exploration. This Ministry has approved the

proposal of CMPDIL for taking up such exploration in IX Plan and its subsequent continuation in X Plan.

4.5. In November 2003, it was decided that henceforth all exploration in the captive blocks would be done by CMPDI or under its direct supervision. No allocation of a captive block would be done unless the block has been explored enough to base a mining plan on the so available data (including assessment of extractable reserves). The Ministry has also decided to have detailed exploration along with assessment of extractable reserves carried out on priority basis in 15 identified captive mining blocks. To recover the cost of such detailed exploration of identified captive mining blocks from the scheme of "Detailed Exploratory Drilling in Non-CIL blocks", CMPDI has submitted a Revised Cost Estimate of Rs.93.84 crores. The approval of RCE is awaited.

4.6. Promotional Exploration: Sub-Group II on Coal & Lignite Exploration for formulation of X Plan has recommended the continuation of scheme for Promotional (Regional) Exploration in X Plan also. Expenditure Finance Committee(EFC), in its meeting held on 3.6.03, has approved the proposed expenditure of Rs.275.80 crore in X Plan for carrying out 6.0 lakh meter of drilling by GSI, MECL and CMPDI for locating coal and lignite and for CBM studies in association with promotional exploration and creation of coal and lignite resource information system. A target of 1,35,000 meter of promotional drilling has been fixed by Sub-committee on Coal & Lignite for 2004-05(BE) for exploration of coal & lignite blocks.

4.7. Captive Coal Mining Blocks

Under the existing provisions of Coal Mines (Nationalisation) Act, 1973, coal blocks for captive mining are allocated to public/private companies engaged in manufacture of iron and steel, generation of power and production of cement. Allocation of captive mining blocks is decided by the Committee headed by Secretary in the Ministry of Coal. As on date 143 captive mining blocks (136 under the jurisdiction of Coal India Ltd. and 7 under the jurisdiction of Singareni Collieries Company Ltd.) have been identified for allocation for captive use. 79 properties have been allocated to various public/private parties. Production has started in eight properties.

To ensure that mining in allocated coal blocks is taken up expeditiously, instructions have been issued to those companies who have been allocated coal blocks but have not yet purchased geological report, to purchase geological report from CMPDIL within six weeks failing which the coal blocks allocated to them could be considered for de-allocation. Some other measures in this direction are also under consideration. The Coal Controller has been designated to monitor the progress of allocated coal blocks. Review of progress will be taken periodically and in case of unsatisfactory progress the blocks will be de-allocated to more desiring applicants.

INVENTORY OF COAL RESOURCES OF INDIA

4.8. As a result of exploration carried out up to the depth of 1200m by the GSI and other agencies, a cumulative total of 247.85 Billion tonnes of coal resources have been estimated in the country as on 1.1.2005. The state-wise distribution of coal resources and its categorisation are as follows:

State	Coal Resources in Million Tonnes			
	Proved	Indicated	Inferred	Total
Andhra Pradesh	8263	6079	2584	16926
Arunachal Pradesh	31	40	19	90
Assam	279	27	34	340
Bihar	0	0	160	160
Chhattisgarh	9373	26191	4411	39975
Jharkhand	35417	30439	6348	72204
Madhya Pradesh	7513	8815	2904	19232
Maharashtra	4653	2309	1620	8582
Meghalaya	117	41	301	459
Nagaland	4	1	15	20
Orissa	15161	30976	14847	60984
Uttar Pradesh	766	296	0	1062
West Bengal	11383	11876	4554	27813
Total	92960	117090	37797	247847

4.9 Categorisation of Resources:

The coal resources of India are available in sedimentary rocks of older Gondwana Formations of peninsular India and younger Tertiary formations of northern/north-eastern hilly region. Based on the results of Regional/Promotional Exploration, where the boreholes are placed 1-2 Km apart, the resources are classified into Indicated or Inferred category. Subsequent Detailed Exploration in selected blocks, where boreholes are placed less than 400 meter apart, upgrades the resources into more reliable Proved category. The Formation-wise and Category-wise coal

resources of India as on 1.1.2005 are given below:

(in Million Tonnes)

Formation	Proved	Indicated	Inferred	Total
Gondwana Coals	92528	116984	37428	246940
Tertiary Coals	432	106	369	907
Total	92960	117090	37797	247847

Type-wise and Category-wise coal resources of India as on 1.1.2005 are given below:

(in Million Tonnes)

Type of Coal	Proved	Indicated	Inferred	Total
(A) Coking :-				
-Prime Coking	4614	699	-	5313
-Medium Coking	11417	11765	1889	25071
-Semi-Coking	482	1003	222	1707
Sub-Total Coking	16513	13467	2111	32091
(B) Non-Coking*:-	76447	103623	35686	215756
Total (Coking & Non-Coking)	92960	117090	37797	247847

* Including all coals of North Eastern Region.

4.10 Status of Coal Resources in India During Last Five Years: As a result of Regional, Promotional and Detailed Exploration by GSI, CMPDI and SCCL etc, the estimation of coal resources of India has reached 247.85 Bt. The estimates of coal resources in the country during last 5 years are given below:

(in Million Tonnes)

As on	Proved	Indicated	Inferred	Total
1.1.2001	84414	90242	39250	213906
1.1.2001(Revised by Sub-Group-II)	84414	98546	38023	220983
1.1.2002	87320	109377	37417	234114
1.1.2003	90085	112613	38050	240748
1.1.2004	91631	116174	37888	245693
1.1.2005	92960	117090	37797	247847

EXPLORATION ACTIVITIES OF CMPDI

4.11 CMPDI is continuing its programme of Detailed Exploration in 2004-05. The emphasis has been on proving power grade and superior grade Non-Coking coals in CIL and Non-CIL Blocks. A nominal amount of Promotional Drilling has also been carried out in North Karanpura, Tawa Valley, Wardha Valley, Makum and Talcher coalfields.

DRILLING:

4.12 For the purpose of Detailed Exploration, CMPDI has largely deployed its own drilling resources. The drilling resources of MECL and State Govt. of M.P., Chhattisgarh

& Orissa were deployed in a limited manner on contractual basis. On an average, 53 to 61 drills were operated by all agencies during the period April to December 2004.

4.13 During the period under reference, exploratory drilling has been conducted in 71 blocks spread over 17 coalfields in the states of West Bengal, Jharkhand, M.P., Chhattisgarh, Maharashtra, Assam and Orissa. This includes detailed exploration of 14 Non-CIL blocks (CMPDI – 12 and MECL –2) and promotional exploration of 5 blocks by CMPDI.

4.14 A total of 1,36,171 meter of exploratory drilling has been carried out by CMPDI and its contractual agencies during the period April to December 2004. The agency-wise performance of drilling is given below:

Agency-wise Performance of Exploratory Drilling by CMPDI & Its Contractual Agencies during April to December 2004 (In CIL, Non-CIL and Promotional Blocks)					
Agency	Annual Target BE 2004-05 (m)	Achieved April to Dec. 2004 (m)	Average No. of Drills Operated	Productivity (m/dr/mth)	% Achiev. against Annual Target
CMPDI	1,92,000	1,18,775	42-48	296	62%
MECL	Unscheduled	10,772	2-8	248	-
State Govts.					
-M.P. & Chhattisgarh	3,500	3,986	5-8	74	114%
-Orissa	3,500	2,638	0-3	172	75%
Total	1,99,000	1,36,171	53-61	265	68%

Note: Drilling by CMPDI includes 9,657m of Promotional Drilling and 33,793m of Detailed Drilling in Non-CIL/Captive Mining Blocks. MECL has drilled in Captive Mining blocks only while State Govts have drilled in CIL blocks only.

4.15 During the period under report, CMPDI drills have recorded a productivity of 296 metre, per drill, per month which is better than 281m achieved in same period of previous year. The overall productivity per drill per month for all agencies is 265m.

4.16 Coal Company command area wise and agency-wise details of exploratory drilling for coal during April to December 2004 are given in the table below:

Agency and Company Command Area-wise Exploratory Drilling Achievements During April to December 2004 (in CIL, Non-CIL and Promotional Blocks)				
Agency	RI/ Company Command Area	Annual Target BE 2004-05 (m)	Achieved April to Dec. 2004 (m)	% Achievement against Annual Target
CMPDI	RI-I/ECL	17900	11562	79%
	RI-I/BCCL		2635	
	RI-II/BCCL	6500	450	7%
	RI-III/CCL	30000	15777	53%
	RI-IV/WCL/MCL	32000	20242	63%
	RI-V/SECL	53000	33489	63%

	RI-VI/NCL	11000	9180	83%
	RI-VII/MCL	39500	25282	64%
	HQ/NEC	2100	158	8%
CMPDI TOTAL		192000	118775	62%
MECL	RI-III/CCL	Unscheduled	2949	-
	RI-VII/MCL	Unscheduled	7823	-
MECL TOTAL		Unscheduled	10772	-
DGM(M.P./ Chhattisgarh)	RI-V/SECL	3500	3986	114%
DG(Oriassa)	RI-VII/MCL	3500	2638	75%
STATE GOVTS. TOTAL		7000	6624	95%
GRAND TOTAL		199000	136171	68%

4.17 Drilling in Non-CIL Blocks: Out of the total drilling stated above, a sum of 44,565m of detailed drilling has been carried out in Non-CIL/Captive Mining blocks in the period April to December 2004. Out of it, CMPDI has drilled 33793metre in 12 blocks while MECL has drilled 10772metre in two blocks. The agency-wise details of the blocks taken up for such drilling are given below:

Agency	Company Command Area	Coalfield	Non-CIL/Captive Mining Blocks	Meterage Drilled- Apr.-Dec. 2004 (m)
CMPDI	CCL	N.Karanpura	Pakri Barwadih	2543
			Rautpara	240
			Rohne	6389
			Dumri	352
	SECL	Sohagpur	Manpura	1567
			Dhanpura	3929
		Mand Raigarh	Gare-IV/6	1080
			Gare –IV/8	1790
	MCL	Talcher	Gare Sector - III	4679
			Pelma	9735
			Patrapada	1340
			Radhikapur	149
Total Drilling by CMPDI in Non-CIL blocks:				33793
MECL	CCL	Auranga	Tubed	2949
	MCL	Ib Valley	Bijhan	7823
Total Drilling by MECL in Non-CIL blocks:				10772
Total Drilling by CMPDI & MECL in Non-CIL/Captive Mining blocks:				44565

4.18 Promotional Drilling by CMPDI: CMPDI continued the Promotional Drilling in area between Tirap Colliery & Namchik River of Makum coalfield and Madheri North West block in Wardha Valley coalfield. Apart from it, new blocks viz. Ashoka Karkata West in North Karanpura coalfield, Banbahera block in Tawa Valley coalfield and Ramachandi block in Talcher coalfield has also been taken up. During the period April to December 2004, **9657 meter** of Promotional Drilling has been carried out by CMPDI as detailed below:

Company Command Area	Coalfield	Promotional Blocks	Meterage Drilled April to Dec. 2004 (m)
NEC	Makum	Area between Tirap Colliery & Namchik River	158
CCL	North Karanpura	Ashoka Karkata West	5233
WCL	Tawa Valley	Banbahera	917
	Wardha Valley	Madheri North West	1227
MCL	Talcher	Ramachandi	2122
Total Promotional Drilling by CMPDI			9657

GEOPHYSICAL SURVEYS:

4.19 CMPDI has carried out the following work during the period April to December 2004:

- a. Geophysical Logging:** Boreholes drilled for exploratory drilling are logged by Geophysical logging instrument to get the in-situ information of different strata encountered in the borehole. CMPDI carried out a total of 12,625 metre of geophysical logging in 54 boreholes during the period April to December 2004 as per details given below:

Blocks	Total Depth Logged (m)
CIL	251
Non-CIL	11335
Promotional	1039
Total	12625

In addition, MECL has also carried out 2830 meter of Geophysical Logging in 10 boreholes drilled in a Captive Mining Block.

- b. Surface Geophysical Surveys:** CMPDI carried out surface geophysical surveys in CIL and Promotional blocks for delineation of incrops of coal seams, assessment of its geometry in shallow and deep areas and identification of intrusive/basement formations. Following work have been conducted during April to December 2004:

Blocks	Electrical Survey		Magnetic Survey (Line Km.)	HRSS Survey (Line Km.)
	Profiling (Line Km)	Vertical Electrical Sounding (Nos)		
CIL	-	11	-	20.01
Promotional	30.54	10	15.09	-

Total	30.54	21	15.09	20.01
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HYDROGEOLOGICAL STUDIES:

4.20 Following Hydrogeological Studies have been carried out by CMPDI during the period April to December 2004:

- i) Hydrogeological studies for assessment of impact of ash-haul-back from NTPC-TTPS in South Balanda Opencast Mine (Talcher Coalfield) has been completed and final report submitted. Similar studies for assessment of impact of ash-haul-back from NTPC- STPS in Gorbi mine (Singrauli coalfield) has also been completed and final report submitted.
- ii) Hydrogeological studies for EMP preparation in 6 project areas of BCCL have been completed and 5 reports submitted. In CCL area, similar studies of 3 project areas have been completed and reports submitted (Xth Plan Road Map). Studies in 8 other project areas of CCL are in progress.
- iii) In SCCL, similar studies have been completed in 3 project areas and reports submitted. Studies are in progress for one more project area. In WCL area, similar studies for 5 project areas have been completed and reports submitted. Studies are in progress for 3 other areas.
- iv) As per X Plan Road Map, hydrogeological studies for EMP preparation in 4 project areas of ECL have been completed and reports submitted. Studies are in progress in 9 other project areas.
- v) Preparation of Advance Mine Dewatering Schemes for Kasnau and Matasukh Lignite mines of Rajasthan State Mines & Minerals Ltd.(RSMML) have been completed and schemes submitted.
- vi) For production support/ project report preparation, Hydrogeological studies in 4 project areas of WCL have been completed and is under progress in 2 other areas.
- vii) Hydrogeological baseline data collection for Hasdeo Project in SECL has been completed and the Draft Report is under finalisation.

GEOSYSTEMS:

4.21 CMPDI looks after the computerisation of geological data and preparation of geological models. In CMPDI, Geological Reports(GRs) are being prepared by using in-house package CEMPGEODOC and imported modelling s/w MINEX. All the Regional Institutes of CMPDI, along with HQ, are equipped with geological modelling s/w MINEX.

- i) During the current year, it is proposed to prepare 12 Geological Reports through CEMPGEODOC & MINEX. Out of it, four GRs have already been submitted.
- ii) CMPDI has also taken up a project on 'Creation of Integrated Coal Resource Information System', under promotional exploration programme of X plan. The

project has finally been sanctioned in October 2004 and following activities are in progress:

- Technical evaluation of tenders has been completed for borehole data capture at all the Regional Institutes of CMPDI and SCCL.
- NIT for software and hardware items has been published and received tenders will be opened in January 2005.
- Collection and compilation of basic data by identified teams of RI's and SCCL is in progress.
- NIT preparation for map data capture is in progress.

DOCUMENTATION:

4.22 A total of four Geological Reports have been submitted during the period April to December 2004 for Detailed Exploration of coal. In addition, ten Appraisal Notes on priority exploration of Captive Mining Blocks has also been submitted. These notes will be followed by detailed Geological Reports, of which 8 are likely to be submitted in the current year.

RESOURCE ESTIMATION:

4.23 The 4 Geological Reports prepared so far have estimated 703 Million tonnes of coal resources. This includes 168 Mt of coal established under Promotional Exploration. Out of the 703 Mt of coal resources, 455 Mt is under Proved category, 233 Mt is under Indicated category and 15 Mt is under inferred category.

REMOTE SENSING:

4.24 During April 2004 to Dec.2004 following tasks were completed/ under progress:

- (i) Land use/cover mapping of buffer zone of 10 km.radius based on satellite data for following projects have been completed for Environmental management plan (EMP) and water balance study
 - Amlohri OCP Expn., Singrauli Coalfield, NCL
 - Hingula, Ananta Expn., Kaniah-II Expn.,Nandira UG, Talcher CF, MCL
 - Samleshwari and Belpahar OCP Expn., Ib valley CF, MCL
 - Kedla, Jharkhand, Parej, Tapin North, Ara, Sirka, Selected Dhori, Pundi, Laiyo projects of CCL
- (ii) Land use/cover mapping of buffer zone of TISCO mines of West Bokaro CF has been completed for EMP
- (iii) Large scale land use/cover mapping of Dhorwasa and Kolgaon OCPs of Wardha Valley coalfield of WCL based on high resolution satellite has been completed.

- (iv) Route alignment for extension of railway siding up to Barod and Bijari blocks in Mand-Raigarh coalfield of SECL based on remote sensing data and GIS, has been completed.
- (v) Thematic mapping for geospatial environmental management planning of Udaipur and Chittorgarh Districts. of Rajasthan for Central Pollution Control Board (CPCB) is under progress.
- (vi) Geosructural mapping of part of Makum coalfield based on satellite data is under progress under promotional exploration.
- (vii) Geosructural and Geomorphological mapping of 7 CBM blocks viz. Singrauli, Tatapani-Ramkola, Sohagpur, Mand-Raigarh, Rajmahal, Birbhum and Godavari valley Coalfields are under progress for Directorate General of Hydrocarbon.
- (viii) Large scale land use/cover mapping of Manikpur, Kusmunda, Gevra and Dipka OCPs of Korba coalfield based on high resolution satellite data is under progress.
- (ix) Large scale land use/cover mapping of lease hold area Bhubneshwari OCP of Talcher coalfield on scale 1:10,000 based on high resolution satellite data have been completed.

LABORATORIES:

4.25 CHEMICAL LABORATORY

This laboratory has carried out characterisation of coal on borehole cores from nineteen blocks explored by CMPDI covering eight coalfields. During the period from April, 2004 to December 2004, 3181.00 m of coal cores were processed and 7875 no. of samples were analysed for quality evaluation and its down stream utilisation.

In addition to the above, the following special jobs were completed during the period:

- a) Sampling of imported coals from the vessels at Paradeep, Vizag and Haldia Ports and their detail characterisation for SAIL.
- b) Field sampling of sample from ten areas from SECL, MCL and CCL and their complete characterisation of their usage in Sponge Iron Industry.

4.26 COAL PETROGRAPHY LABORATOY

During the period from April'04 to December'04, the laboratory has undertaken petrographic study (vitrinite reflectance and maceral analysis) and cleat analysis of 236 coal samples from twenty one block/areas covering nine coalfields. The area covered included working mines and exploration blocks from different coal companies. In addition petrographic studies were undertaken on clean coal samples from CCL washeries. Imported coal samples have been

analysed as per International Standards. Petrographic studies on oil shale samples of Kachachar area of Assam was carried out for the first time for M/s Premiere Oil, a British firm.

One CIL R&D funded project entitled "Characterization of cleats in coal from Raniganj and Jharia Coalfield" is in progress. Field data has been generated from Lodna and Moonidih area of Jharia Coalfields, Jhanjhra and Chinakuri area of Raniganj Coalfields. Analytical work on coal samples and interpretation of data is in progress. Data generated will be useful for different applications for CBM industry and mine stability. The progress work of the project is as per schedule.

This is the only laboratory in the country where all the four Coal Petrographers are accredited by International Committee of Coal and Organic Petrology (ICCP).

4.27 WASHERY LABORATORY:

The Washery Laboratory has carried out washability tests and proximate analysis for coal samples collected from different coalfields of SECL, MCL, CCL & WCL for their usage in Coal Washery Sectors and also for outside agencies.

During the period from April'04 to Dec.'04 a number of coal samples have been collected & tested, details of which are given below:

- i) Coal Samples from CCL Coal Washeries were collected and tested for their usage in Sponge Iron Industry.
- ii) Slurry samples from CCL Coal Washeries were collected and prepared for testing purposes for National Mineral Laboratory, Jamshedpur.
- iii) Seven coal samples from Talcher Coalfield of MCL were collected and washability tests were done for their usage for NTPC (National Thermal Power Corporation) work and all tests were completed in record time.
- iv) Coal samples from Nandan Coal Washery of WCL were collected and washability tests were done for its application in Washery.
- v) Washery rejects from Rajrappa & Kathara Coal Washery of CCL were collected and proximate analysis with washability tests were done.
- vi) Coal fines from Rajrappa were collected and tests in coal fines tailing treatment plant at Rajrappa Washery for determination of TPH, moisture percentage, GPL of feed and solid particles in effluents.

A total of 858 washability tests at different specific gravities were completed in Washery Laboratory during the above period.

COAL BED METHANE

4.28 As per Govt. of India CBM policy, consortium of CIL and ONGC has been allotted 2 blocks – one each in Raniganj and Jharia coalfields and have entered into a contract with Govt. of India for development of coal bed methane. The Govt. of Jharkhand on 28.08.03 has granted the Petroleum Exploration License (PEL) for Jharia CBM block. Consequent upon the geological exercise jointly carried out by CMPDI & ONGC, location of slim holes has been finalized and drilling of first slim hole has since commenced. The Govt. of West Bengal on 09.06.04 has granted the Petroleum Exploration License (PEL) for Raniganj CBM block and geological exercise for locating slim holes/ wells to be drilled in Raniganj CBM block has been taken up jointly by CIL-ONGC.

4.29 The Directorate General Hydrocarbons (DGH) has awarded the work of delineation of 7 prospective CBM blocks and preparation of their data packages/information dockets for 3rd round of bidding of CBM Blocks by the Govt. of India. Accordingly, geological exercise for preparation of data package/ information docket has been taken up.

4.30 CMPDI has taken up studies related to "Assessment of Coalbed Methane Gas-in-Place Resource of Indian Coalfields" through boreholes being drilled under promotional exploration (Xth Plan period) being funded by Govt. of India with a total plan expenditure of Rs 8.83 crores. The prioritization of the blocks for CBM related studies during 2004-05 have already been completed and agency has been identified for taking up desorption studies till such time in-house facilities for the study is developed at CMPDI. The desorption studies will be taken up in selected boreholes and are schedule to be taken up from January' 2005.

4.31 CMPDI has been commissioned by M/s Wardell Armstrong for taking up studies related to gas emissions characteristics of gassy mines with the objective to develop an understanding for the methane emission in Indian coal mines and for appraisal of one or two abandoned mines for assessment of Abandoned Mine Methane(AMM)/Coal Mine Methane(CMM) prospects. This project is sponsored by Deptt. of Trade & Industry (DTI), Govt. of UK and is being managed by M/s Wardell Armstrong. CMPDI has been commissioned to take up the job with due approval of Ministry of Coal. The work has since been taken up.

UNDP/Global Environment Facility (GEF)- GOI Project- Coal bed Methane Recovery and Commercial Utilisation:

4.32 The demonstration project "Coalbed Methane Recovery & Commercial Utilisation" was approved by the Government on 15.09.99, under the S&T plan of Ministry of Coal. The project, with an estimated cost of Rs 76.85 crores, is being funded jointly by the Global Environment Facility(GEF)/ United Nations Development Programme (UNDP) and Govt. of India (GOI). The project is under implementation w.e.f 15.9.99 jointly by Central Mine Planning & Design Institute Ltd.(CMPDI) as main implementing agency and Bharat Coking Coal Ltd (BCCL) as co-implementing agency, on behalf of the Ministry of Coal. Project sites are Moonidih and Sudamdih mines of BCCL in Jharia Coalfields.

4.33 Major developments in the implementation of the project during 2004-05 (up to December 2004) are as under:

i) **International CBM recovery Equipment procurement under UNIDO:**

- a) The **Package 11: Vertical Drilling Rig** (of USD 2.24 million CIF Kolkata) has reached Moonidih during 26.7.04-11.8.04. Joint inspection with the supplier's representative has been completed. Short supply of small items have been brought out in the joint inspection report and the party is making arrangements for the supply of the short listed items. The party, as per its contractual obligation is making arrangements for getting necessary approvals from Director General of Mines Safety(DGMS).
- b) The **Package 7: HDPE Pipe collection System** (of USD 0.16 million CIF Kolkata) was ordered by UNIDO on 30.4.04 and have started arriving at Project site-Moonidih.
- c) The **Package 8: Fusion Machine** for UG and Surface (of USD 0.047 million CIF Kolkata) was ordered by UNIDO on 14.5.04 and has arrived at Project site-Moonidih.
- d) The RFP was sent out by UNIDO on 3.12.04 with closing date of 12.1.05 for the following :
Package 9: Production Equipment (Underground)
Package 10: Safety System
Package 24: Gas Gathering Collection System
- e) The **Package 1: Beam Based Long Hole Drill (Underground)** (of USD 0.90 million) was finalised for purchase and UNIDO has signed the contract with the supplier.
- f) For the **Package 3: Downhole Motor (Underground)** (of USD 0.10 million CIF Kolkata) the finalisation of purchase order took some time owing to a demand of 10% increase in component cost due to metal price rise in the global market. UNIDO's Committee on Contracts has processed the contract.
- g) The **Package 4: Steering Tool with NQ- Drill string (Underground)**, which did not get any independent response in the earlier tender (response was received along with underground rig tender which could not get technically qualified), has been re-tendered by UNIDO in November.
- h) The **Package 12:**
 - a) **Drill Collars, Stabilizers & Elevators** etc. (of USD 0.139 million CIF Kolkata) were ordered by UNIDO on 18.5.04 and have started arriving at the Project site-Moonidih.
 - b) **Drill Pipes** was re-tendered by UNIDO on 26.8.04 with bid closing on 17.9.04. The package was re-tendered on account of decline by the selected bidder to supply the drill pipes at the quoted price because of

substantial steel price increases, and instead offered to supply at 36.6% increased price over the quoted price.

The re-tendered bid was evaluated and the order (of USD 0.278 million CIF Kolkata) has been placed on an Indian Supplier on 20.12.04. The delivery time on site has been negotiated at 6 months in place of 8 months offered by the supplier. This critical item, to start surface drilling, will be on site in June'05 and the Surface drilling will start by end June'05, thus delaying the Surface drilling activity by about six months.

- i) The **Package 13: Drill bits (Surface)** (of USD 0.126 million CIF Kolkata) was ordered by UNIDO on 30.4.04 and have started arriving at Project site-Moonidih.
- j) For the **Package 19: Geophysical Logger (Surface)** (of USD 0.65 million) services, the modalities of signing of the contract by UNIDO are under process.
- k) The **Package 21: Pumping Equipments (Surface)** (of USD 0.524 million CIF Kolkata) was ordered on 18.5.04 and have started arriving at Project site-Moonidih.

ii) **Lab Equipment Procurement under CMRI:**

Status of CMRI procurement of four laboratory equipment packages is:

- a) the **Package 36 : Field Desorption Apparatus** , has been commissioned at CMRI on 17.11.04.
- b) the **Package 38: Gas Chromatography System upgrade** has been installed and commissioned at CMRI, Dhanbad on 11.9.04.
- c) **Package 35: Absorption Isotherm Apparatus Upgrade and sample preparation equipment-** CMRI informed that placement of order is under finalisation for issue.
- d) **Package 37: Mobile Field desorption lab:** Part A- Chassis has been ordered and Part B-Body Building re-tendered in Nov.04 with the closing date of 30.12.04.

iii) **Training/Study Tours abroad:**

Following two trainings/study tours have been undertaken during the year:

- a) Vertical Drilling Rig study tour to Odessa, Texas, USA from 22.3.04 to 7.4.04 at the premises of supplier-M/s Crown Energy Technologies, was undertaken by six officials from BCCL and CMPDI.
- b) Four member High level Study tour to USA (from 10-15.10.04) under the leadership of Addl. Secretary (Coal)/National Project Director was undertaken.

iv) **Fund Transfer to UNIDO for procurement of International CBM recovery equipment:**

On the issue of waiver of the Bank Guarantee by the DEA, Ministry of Finance given the approval in September 2004 for an advance foreign exchange payment to UNIDO from the GoI (Cash) contribution to the project. The transfer of 1.030 million USD materialized on 7.10.04. The funds were received by UNIDO on the same day. This was essentially to bridge the gap in the International equipment budget-line, under control of UNIDO, for procurement of Packages 1,3,4,9,10,& 24.

v) **Revised Cost Estimates (June'04) with time extension of the project:**

A meeting of the Expenditure Finance Committee(EFC) Chaired by Secretary, Ministry of Coal was held on 1.11.04 to consider the proposal of Revised Cost Estimates (June'04) along with time extension upto October'2006 of the UNDP/GEF/GoI- Coalbed Methane Recovery & Commercial Utilisation project. The EFC approved the Revised Cost Estimates (RCE June'04) of the UNDP/GEF/GoI- Coalbed Methane Recovery & Commercial Utilisation project (IND/98/G34) for Rs. 92.427 crores with completion time up to October 2006.

vi) **Mid-term Evaluation of the Project:**

Mid-term evaluation was taken-up by UNDP, with the help of one International & one National consultant. A presentation was made by them at Ministry of Coal on 10.11.04. Final report of the evaluation is awaited.

vii) **CBM Utilisation equipment:**

- a) Specifications of 1 MW CBM gas-based Power Generating equipment for Moonidih site: Final specification from the Gas Plant Expert has been approved by the Operational Executive Steering Committee held on 8.12.04.
- b) Specification of CNG Compressor for Moonidih and Sudamdih.: Final specification are being prepared by the Gas Plant Expert.

viii) **Site preparation activities:**

Major site preparation activities are:

- a) Preparation of Drill site at CBM-4 & CBM-10 (Moonidih) has been completed. Vertical Drilling Rig stationed at CBM-4 site along with Mud tank, Mud pumps, Gen set, water tanks, diesel storage tanks etc. Surface lighting completed.
- b) Preparation of other 3 surface drilling sites at Moonidih taken-up at CBM-3, 11 & 12.

- c) Work for Camp office, Expert guest house at Moonidih has been completed.
- d) Renovation of Quarters at Moonidih & Sudamdih completed.
- e) Renovation of storage shed at Moonidih Regional Store is in advanced stage of completion. Site store near CBM-4 site established at CPP premises at Moonidih, BCCL.
- f) Security arrangements have been made.

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