

# CHAPTER-IV

## COAL EXPLORATION

4.1. **Regional and Promotional Exploration :** Exploration of coal reserves in the country is carried out in two stages. In the first stage, Geological Survey of India (GSI) undertakes regional exploration for locating the potential coal bearing areas on a continuous basis. In order to supplement the efforts of the GSI for regional exploration, services of Mineral Exploration Corporation (MECL), GSI and CMPDI have been engaged for carrying out Promotional (Regional) Exploration in various parts of the country. Ministry of Coal and Mines has made a separate provision for this under the plan scheme "Regional Exploration" for coal and lignite. The Sub-committee on coal and lignite (Group VIII of Central Geological Programming Board) with representatives of GSI, CMPDI, Singareni Collieries Company Limited (SCCL); Neyveli Lignite Corporation (NLC) etc., programmes, coordinates and reviews the regional exploration work. CMPDI acts as a nodal agency for disbursement of funds to the exploration agencies besides supervising the work of MECL in the area of promotional exploration for coal.

4.2. **Detailed Exploration :** In the second stage, Detailed Exploration is carried out in potential blocks identified through Regional/Promotional Exploration in consultation with Coal Companies, State Governments etc.. Such blocks are taken up for detailed drilling for proving coal deposits for the formulation of Geological Reports, Mine Feasibility Studies and Project Reports. The reports are used for exploitation of coal reserves, considering factors like emerging demand, its location, availability of infrastructure for coal evacuation and techno-economics of the mine development, including coal quality.

Detailed Exploration is funded by Coal Companies from its capital budget. Central Mine Planning and Design Institute Ltd. (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.

4.3. **Promotional Exploration by CMPDI :** EFC has approved a sum of Rs.147 crores for Promotional Drilling in Coal and Lignite during IX Plan. Inter Departmental Steering Committee (IDSC) in its meeting held on 2.9.99 decided to induct CMPDI to undertake Promotional Drilling during 1999-2000. IDSC has also permitted CMPDI to conduct the Promotional Drilling upto 10% of the total drilling for the particular financial year in the CIL command area, in future. A sum of Rs.31.63 crores has been proposed in RE 2001-02 for Promotional Drilling in CIL, SCCL and NLC Command Areas. A target of 14,500 meters of promotional drilling have been fixed by Sub-committee on Coal & Lignite for CMPDI during the year 2001-02 in CIL Command Area.

4.4. **Detailed Exploration in Non-CIL Blocks :** Till 1997-98, coal companies have been funding Detailed Exploration in all the blocks. After finalisation of the list of the blocks to be retained by CIL in December 1996, the coal companies stopped funding Detailed Exploration in non-CIL blocks from 1998-99. Expenditure Finance Committee approved the proposal of CMPDI for Ministry of Coal funding of Detailed Exploration in Non-CIL Blocks by drilling 2.67 lakh meters at an estimated cost of Rs.73.18 crores during the remaining period of IX Plan. This was done to maintain the pace of exploration and provide adequate information for the participation of private entrepreneurs in coal mining. CMPDI has accordingly proposed 1.49 lakh meters of drilling in Non-CIL Blocks by CMPDI and MECL at an estimated cost of Rs.53.80 crores during 2001-02. However, a sum of Rs.45.85 crores has been provided in the RE 2001-02.

## **INVENTORY OF COAL RESERVES OF INDIA**

4.5. As a result of exploration carried out down to a depth of 1200m by the GSI and other agencies, a cumulative total of 220.98 billion tonnes of coal reserves have been established in the country as on 1.1.2001. These are as per the revised estimates of the Sub-Group-II on Coal and Lignite Exploration for the Formulation of X Plan. The estimates as on 1.1.2002 are under finalisation at GSI.

The state-wise distribution and its categorisation are as follows:

### **(Reserves in Million Tonnes)**

<b>State</b>	<b>Proved</b>	<b>Indicated</b>	<b>Inferred</b>	<b>Total</b>
Andhra Pradesh	7529	5481	2452	15462
Arunachal Pradesh	31	11	48	90
Assam	259	27	34	320
Jharkhand	35148	28444	5583	69175
M.P./Chhattisgarh	14017	28222	7304	49543
Maharashtra	4389	1368	1605	7362
Meghalaya	118	41	300	459
Nagaland	3	1	16	20
Orissa	11308	23729	16534	51571
Uttar Pradesh	766	296	0	1062
West Bengal	10846	10926	4147	25919
<b>Total Coal</b>	<b>84414</b>	<b>98546</b>	<b>38023</b>	<b>220983</b>

#### 4.6 Categorisation of Reserves :

Formation-wise and category-wise coal reserves of India as on 1.1.2001(revised) are given below :

(Reserves in Million Tonnes)

Formation	Proved	Indicated	Inferred	Total
Gondwana Coals	84002	98469	37625	220096
Tertiary Coals	412	77	398	887
<b>Total</b>	<b>84414</b>	<b>98546</b>	<b>38023</b>	<b>220983</b>

Type-wise and category-wise reserves are as follows :

(Reserves in Million Tonnes)

Type of Coal	Proved	Indicated	Inferred	Total
<b>(A) Coking :-</b>				
-Prime Coking	4614	699		5313
-Medium Coking	11294	11296	1036	23626
-Semi-Coking	482	907	221	1610
<b>Sub-Total Coking</b>	<b>16390</b>	<b>12902</b>	<b>1257</b>	<b>30549</b>
<b>(B) Non-Coking*</b>	<b>68024</b>	<b>85644</b>	<b>36766</b>	<b>190434</b>
<b>Total(Coking &amp; Non-Coking)</b>	<b>84414</b>	<b>98546</b>	<b>38023</b>	<b>220983</b>

\* Including coals of North Eastern Region.

4.7 **Status of Reserves During Last Five Years :** The estimates of coal reserves in the country during last 5 years is given below :

(Reserves in Million Tonnes)

As on	Proved	Indicated	Inferred	Total
1.1.1998	75118	89079	42042	206239
1.1.1999	79106	88427	41219	208752
1.1.2000	82396	89501	39697	211594
1.1.2001	84414	90242	39250	213906
1.1.2001(Revised by Sub-Group-II)	84414	98546	38023	220983
1.1.2002	Under finalisation at GSI			

## **EXPLORATION ACTIVITIES**

4.8. CMPDI continued its programme of Detailed Exploration during 2001-02. The emphasis has been on proving power grade and superior grade Non-Coking coals in CIL and Non-CIL Blocks. During the year 2001-02, CMPDI is continuing Promotional Drilling in Pakri-Barwadih and Tandwa-Magadh South blocks of North Karanpura coalfield and in Area Between Hindustan Lalpet and Visapur Blocks of Wardha Valley Coalfield.

### **DRILLING :**

4.9. For the purpose of Detailed Exploration, CMPDI has largely deployed its own drilling resources. The resources of State Government of M.P., Chhattisgarh and Orissa are deployed in a limited manner. MECL has been engaged for detailed drilling in Non-CIL Blocks. The monthly average number of drills deployed by all agencies during the period April to December 2001 was 57 to 67.

4.10. The detailed exploration activities have been conducted in 86 blocks spread over 18 coalfields in the states of Assam, West Bengal, Jharkhand, M.P., Chhattisgarh, Maharashtra and Orissa. Three more blocks have been taken up for Promotional Drilling in North Karanpura and Wardha Valley coalfields.

4.11. During the period April to December 2001, a total drilling of 1,51,878 m of drilling has been carried out. Agency-wise performance of drilling during the period April to December 2001 is given below :

<b>Agency-wise Performance of Drilling During April to December 2001 (For CIL, Non-CIL and Promotional Blocks)</b>					
<b>Agency</b>	<b>Annual Target 2001-02 (m)</b>	<b>Achieved April to Dec. 2001 (m)</b>	<b>Average. No. of Drills Operated</b>	<b>Productivity (m/dr/mth)</b>	<b>% Achiev. Against Annual Target</b>
CMPDI	192000	127737	46-48	308	67%
MECL	63000*	19833	6-8	259	31%
State Govts.					
-M.P. & Chhattisgarh	5000	4259	5-8	61	85%
-Orissa	5000	49	0-3	12	1%
<b>Total</b>	<b>265000</b>	<b>151878</b>	<b>57-67</b>	<b>269</b>	<b>57%</b>

\* MECL has so far been allotted 38500m of drilling in Non-CIL Blocks.

*Drilling by CMPDI includes 6,294m of Promotional Drilling and 55,910m of Detailed Drilling in Non-CIL Blocks.*

4.12. During the period under report, CMPDI drills have recorded a productivity of 308 metres, per drill, per month. The overall productivity per drill per month for all agencies has been 269m.

4.13 Coal Company command area wise and agency-wise details of drilling for coal during April to December 2001 are given in the table below:

<b>Agency and Coal Company Command Areawise Drilling Achievement During April to December 2001 (For CIL, Non-CIL and Promotional Blocks)</b>				
<b>Agency</b>	<b>RI/ Company Command Area</b>	<b>Annual Target 2000-01 (m)</b>	<b>Achievement April to Dec. 2001 (m)</b>	<b>% Achieve- ment against Annual Target</b>
CMPDI	RI-I/ECL	26500	16470	62%
	RI-III/CCL	29000	20446	71%
	RI-IV/WCL	35500	21872	62%
	RI-V/SECL	52000	36517	70%
	RI-VI/NCL	10500	5909	56%
	RI-VII/MCL	38500	26523	69%
<b>CMPDI TOTAL</b>		<b>192000</b>	<b>127737*</b>	<b>67%</b>
MECL	RI-I/ECL	3000	431	14%
	RI-IV/WCL	24000	128	1%
	RI-V/SECL	21000	11053	53%
	RI-VI/NCL	15000	8221	55%
<b>MECL TOTAL</b>		<b>63000**</b>	<b>19833</b>	<b>31%</b>
DGM(M.P./ Chhattisgarh)	RI-V/SECL	5000	4259	85%
DGM(Orissa)	RI-VII/MCL	5000	49	1%
<b>ST.GOV. TOTAL</b>		<b>10000</b>	<b>4308</b>	<b>43%</b>
<b>GRAND TOTAL</b>		<b>265000</b>	<b>151878</b>	<b>57%</b>

*\*Includes 55,910m of Detailed Drilling in Non-CIL Blocks and 6,294m of Promotional Drilling.*

*\*\*MECL has so far been allotted 38,500m of drilling in Non-CIL Blocks.*

4.14 **Drilling Progress in Non-CIL Blocks (During April-December, 2001)** : The coalfield-wise and block-wise achievements of CMPDI and MECL for the Detailed Drilling in Non-CIL Blocks during April to December 2001 is given below :

Agency	Company Command Area	Coalfield	Block	Meterage Drilled- Apr.-Dec. 2001 (m)	Estimated value of Drilling (Rs. Lakhs)
CMPDI	CCL	N.Karanpura	Kerandari A	4463	158.48
			Kerandari C	5902	209.58
			Babupara	414	14.70
		West Bokaro	Padrangi	135	4.79
			Duni	1132	40.22
	WCL	Katol	Gondkhairi	6055	200.81
	SECL	Sohagpur	Bodri	2019	56.30
			Bodri North	2938	81.90
			Dhanpura	4430	123.51
			Dhanpura W.	5996	167.16
			Batura	4608	128.47
	MCL	Talcher	Baitarni	9974	306.78
			Konark	7844	241.26
<b>Sub-total CMPDI :</b>				<b>55910</b>	<b>1733.96</b>
MECL	ECL	Raniganj	Khagra-Joydev	98	3.86
			Biharinath	333	13.06
	WCL	Wardha Valley	Lohara West Extn.	128	3.72
	SECL	Hasdo Arand	Gidmuri	4736	112.04
			Tara	2097	49.62
			Korba	Kesla North	4220
	NCL	Singrauli	Amelia	3919	128.59
			Amelia North	4302	141.16
<b>Sub-total MECL :</b>				<b>19833</b>	<b>551.89</b>
<b>Grand Total :</b>				<b>75743</b>	<b>2285.85</b>

4.15 **Promotional Drilling by CMPDI** : CMPDI undertook Continuous Promotional Drilling in Pakri-Barwadih and Tandwa-Magadh South block of North Karanpura Coalfield and in area between Hindustan Lalpet and Visapur in Wardha Valley coalfield during 2001-02. During the period April to December 2001, **6294 meters** of Promotional Drilling have been conducted as detailed below :

Company Command Area	Coalfield	Block	Achieved April to Dec. 2001 (m)	Estimated value of drilling (Rs. Lakhs)
CCL	North Karanpura	Pakri-Barwadih	230	6.14
		Tandwa-Magadh South	632	16.90

WCL	Wardha Valley	Area Between Hindustan Lalpet & Visapur	5432	145.28
<b>Total</b>			<b>6294</b>	<b>168.32</b>

4.16 **GEOPHYSICAL SURVEYS** : Following work have been carried out during the period April to December 2001 :

(iii)**Geophysical Logging**: The following jobs have been completed:

No. of Boreholes Logged	Total Depth Logged (m)	No. of Logging Units Deployed	Clients
45	10523.8	4	ECL, CCL, WCL, MCL, MO C&M

The above figure includes geophysical logging carried out in promotional areas (Pakri-Barwadih & Tandwa Magadh South) for a total meterage of 1132.50 m. in 4 boreholes.

(iii)**Surface Geophysical Surveys**:

Type of Geophysical Survey	Quantum	Clients
(iii)Electrical Surveys (iii) Resistivity Profiling (iii) Vertical Electrical Sounding (Resistivity)	38.55 line km. 25 nos	ECL, BCCL, CCL, WCL, MOC&M
b) Seismic Surveys (iii) Seismic Refraction Survey	1.265 line km	
c) Magnetic Survey	15.63 line km..	

A total of 3 Geophysical Reports were submitted during the period.

4.17 **C) S&T Projects** :

**Ground Penetrating Radar (GPR) application for locating old abandoned working (MT 110)**

This project has been undertaken by National Institute of Rock Mechanics (NIRM) in association with CMPDI to apply GPR technique to map the extent of old working around existing mines, and determination of coal working from the surface etc. Prototype equipment has been fabricated at NIRM and field test trial will be undertaken shortly. Design of the necessary Radar Antena has been completed and the field work has

been undertaken at BCCL & ECL areas. 2<sup>nd</sup> phase of field trial will be undertaken during January-March, 2002.

## **HYDROGEOLOGICAL STUDIES :**

4.18 Following Hydrogeological Studies have been carried out during the period April to December 2001 :

- I. A Final Report on Baseline Hydrogeological Data of Korba Coalfield (SECL) has been submitted.
- II. The Hydrogeological investigations for Meera incline in J&K area (SECL) is under progress.
- III. A Final Report on Hydrogeological Investigation for S&T Project titled “Optimal Extraction of Coal Locked in Pillar Underneath Aquifers and Fragile Ecology” in Piparia Colliery, Johilla area (SECL) has been submitted.
- IV. The Baseline Hydrogeological data collection of Dhanpuri OCP of Sohagpur Area (SECL) is under progress.
- V. The Hydrogeological investigation for Semaria Colliery, Johilla Area (SECL) is under progress.
- VI. The Hydrogeological investigation for Magadh and Amrapali Blocks of North Karanpura Coalfield (CCL) are under progress.
- VII. The Baseline Hydrogeological data collection for Rajarappa Block-II, Ramgarh coalfield (CCL) is under progress.
- VIII. Ground water potential evaluation for selection of water supply of well-site for Kedla Washery and Lapanga camp in CCL are under progress.
- IX. Hydrogeological investigations for evaluation of potential sites for water supply to Super Thermal Power Plant of NTPC in Seepat (Chattisgarh) has been completed and report submitted to NTPC.

## **Chemical Laboratory :**

4.19 The following jobs were completed during the period April to December, 2001.

<b>Coal Core Process (m)</b>	<b>No. of Samples</b>	<b>Client</b>	<b>Coal field</b>	<b>No. of Blocks</b>
2477.28	6858	CCL	West Bokaro, Ramgarh	5
		TISCO	North Karanpura	2
		Govt. of Jharkhand	South Karanpura	1
			East Bokaro	2



**Geosystem :**

- I. The Geological Modeling of Parej East block of West Bokaro Coal field is completed in June, 2001, as per the requirement for preparation of Operational Plan.
- II. The Pilot Project on Argada Block, South Karanpura Coalfield, CCL to develop and standardize all the methodologies related to the “Geo-mining / Statistical Data Base of SKCCF”, a CIL R & D Project being executed by CCL has been completed and the Project completion Report has been submitted in December, 2001.

**Documentation:**

4.20 A total of 6 Geological Reports have been submitted by CMPDI and MECL during the period April to December 2001. This includes, 2 Geological Reports where recategorisation of reserves have been done.

**Reserve Estimation:**

4.21 The 6 Final Geological Reports prepared so far have established a reserve base of 0.35 billion tonnes of Non-coking coal, almost totally in proved category. The reserves of two reports were recategorisation of earlier reports.

**Remote Sensing:**

4.22 The following projects related with creation of environmental database and spatial environmental management planning for coal and non-coal sectors is being implemented :

- I. Land use/cover mapping of buffer zone of Dikchu Copper Mines, Gangtok, Sikkim and Bhotang Copper Mines, Rangpo, Sikkim, based on IRS-1D LISS-III satellite data for environmental management planning has been completed, and report submitted to Indian Bureau of Mines, Nagpur.
- II. Thematic mapping for study of environmental problems of Aravali Hills region covering Alwar Dist. In Rajasthan and Gurgaon Dist. In Haryana based on satellite data and preparation of action plan for restoration of environmental quality is under progress & scheduled to be completed by March 2002.
- III. Thematic mapping for integrated spatial environmental management planning of Korba region based on remote sensing and GIS is under progress & scheduled to be completed by March 2002

- A. Thematic mapping for integrated spatial environmental management planning of Satna limestone belt based on remote sensing and GIS, is under progress.
- B Land use/cover mapping of Singrauli coalfield based on satellite data of the year 2001 for Regional Environmental Management Planning (REMP) of Singrauli coalfield, is under progress and scheduled to be completed by March 2002.

#### 4.23 Petrography Laboratory (Till 31<sup>st</sup> December 2001)

(A). The following jobs were completed upto 31-12-2001:

No. of Determinations for petrography studies	Client	Coalfield
40	ECL	Raniganj
382	CCL	East Bokaro, West Bokaro, South Karanpura, North Karanpura, Ramgarh, Giridih, Rajrappa
16	SECL	Korba, Mand-Raigarh
34	CIL R&D	Jharia,

#### (B) CIL R&D Project: “Resource Survey, Characterisation and Blending Studies of Low Volatile Coking Coal for their use in Steel Industry”

Seven equipments were to be procured for the project. Six equipments namely, X-Ray Diffractometer, Plastometer, Lab Model Flotation machine, Spiral Concentrator and Scanning Electron Microscope have been installed and commissioned. The procurement action for Dilatometer has been withdrawn since no supplier is in a position to supply the same. One ROM sample each from Kalyani area, East Bokaro CF and Dhansar Colliery of Jharia CF along with clean coal samples from Mahuda Washery has been delivered to CFRI, Dhanbad for carrying out washability, blending, carbolite coke oven test, CRI and CSR tests. Work is in progress by CFRI in their lab in Dhanbad. The final report of the project is to be completed by September 2002.

### **COAL BED METHANE**

4.24 In view of notification No. DOC.CD-431/2001 dated 25<sup>th</sup> August 2001 issued by Cabinet Secretariat, the subject CBM has been transferred to Ministry of Petroleum and Natural Gas. However, following CBM projects are being dealt by Department of Coal. Two Coal Bed Methane (CBM) blocks- one each in Raniganj and Jharia Coalfield have been allocated by the Government to the newly formed consortium of ONGC and CIL on nomination basis for exploration and production of CBM. Memorandum of Understanding (MoU) for unincorporated joint venture has been signed between CIL & ONGC for collaborative development of coalbed methane prospects, which has been duly approved by the CIL Board. For this purpose, joint application for grant of Petroleum Exploration License (PEL) in Jharia coalfield (84.5 sq. km) and Raniganj coalfield (356 sq.km.) have been submitted. CMPDI has been involved in this exercise and a joint exploration strategy has been evolved at an estimated total cost of Rs. 184.30 crores to establish potentiality at first instance in these blocks. The work will commence on grant of PEL and subsequent mobilization of exploration inputs.

#### 4.25 UNDP/Global Environment Facility (GEF)-GOI Project : Coalbed Methane & Commercial Utilisation

The Demonstration Project titled “Coalbed Methane Recovery & Commercial Utilisation” has been approved by the Govt. of India vide no. 34012/15/96-CRC dated 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 duration of project is 5 years. The project is under implementation w.e.f 15<sup>th</sup> Sept’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 Ministry of Coal. Project sites are Moonidih and Sudamdih mines of BCCL in Jharia coalfield.

In pursuance to the approved project document, Chief Project Manager(CBM), Project Administration & Finance Manager, Project Adviser(CBM) and Sr. National Technical Consultant have been appointed and are functioning. Major development in the implementation of the project are as under:-

- I. The Ministry of Coal/Govt. of India has concluded an agreement on 23.02.2000 with United Nations Industrial Development Organisation (UNIDO), Vienna to provide certain professional and administrative services for this project which is mainly for assistance in the procurement of imported equipment.
- II. CMPDI has prepared the Integrated Information System Scheme for the project and established a dedicated 128 Kbps internet link at CMPDI (H.Q) in the 1<sup>st</sup> stage. The 2<sup>nd</sup> Stage to BCCL (H.Q) is under implementation.
- III. Out of the total 20 number/slots of trainees from CMPDI, BCCL, CMRI and DGMS approved by the Operational Executive Steering Committee (OESC) of the project for training abroad, two officials of DGMS were sent on a CBM study tour to USA in July’01 under the sponsorship of US Trade Development Agency.
- IV. Bihar State Pollution Control Board has issued “No Objection Certificate” in September, 2000 to the Sudamdih and Moonidih mine managements for one year. Action for obtaining Environmental Clearance from the MoE&F New Delhi has been initiated in January’2001, and clarification desired by MoE&F are under preparation.
- V. Integrated Geological Report for Sudamdih Mine prepared by RI-II, CMPDI for facilitation in selection of borehole sites etc. at Sudamdih project site.
- VI. A Tripartite Meeting for the project was held on 11<sup>th</sup> Dec’2000 at New Delhi under the Chairmanship of the National Project Director/Addl. Secretary, Ministry of Coal and Mines to review the progress of the project implementation.
- VII. UNIDO has so far rendered the following services:

- a) The Chief Technical Advisor (CTA) and three out of other six International Experts appointed.
- b) Organised two Study tours for high level project delegation in year 2000, to USA, and to Germany & Vienna/Austria at CBM Recovery and utilisation sites.
- c) CTA and three International Experts finalised the requirement of equipment and their specifications at Dhanbad in early Dec'2000, which were grouped in four packages for which procurement action was initiated by UNIDO. The bidding process by UNIDO initiated on 29<sup>th</sup> March, 2000, failed on account of either no response or non-compliance.
- d) As per the decision of Operational Executives Steering Committee (OESC) of the project the earlier four packages were regrouped into forty packages in consultation with ONGC, who agreed to joint sharing of hydraulic fracturing equipment.
- e) Meeting held with the UNIDO team and the CTA during 1<sup>st</sup>-3<sup>rd</sup> October, 2001 at Kolkata to arrive at the likely cost of all the equipment packages, and to decide on the equipment to be purchased together with their specification. Based on these discussions, the OESC of the project approved the following procurement action on 3<sup>rd</sup> October'01:
  - (i) Procurement of 26 equipment packages by UNIDO.
  - (iii) Procurement action by project for five equipment packages from indigenous sources, including one for contractual services for wireline drilling/coring.
  - (iii) Procurement action by CMRI, Dhanbad for four laboratory equipment packages.
- f) UNIDO initiated bidding action for 26 packages by 25<sup>th</sup> October, 2001 including time extension for one package (Long hole drill-Underground). Offers received for 20 packages at UNIDO.
- g) Bid evaluation meeting was held at UNIDO/Vienna during 28-30 November, 2001 and the summarised position of evaluation of these twenty packages is as under:
  - (i) 12 packages evaluated for technical and financial qualification.
  - (ii) 5 packages to be evaluated along with the Longhole Drill package as they are inter linked.

- (iii) Fresh procurement action to be taken for only two out of the three packages, as also for four out of the five packages for which bids were not received.

VIII. As per the latest decision of the OESC taken on 27<sup>th</sup> Dec'01, CMPDI has offered to examine the possibility of procuring wire-line drilling equipment, which could be part financed by the CBM Project, and CMPDI would drill wire-line slim boreholes for coring and undertake geophysical logging from their own resources.