

COAL MINING IN INDIA



PRESENTATION AT IMME 2008



COAL INDIA LIMITED

:: KOLKATA :: 5th NOVEMBER 2008 ::

India's Energy Landscape

- ❖ Abundance of coal resources compared to oil and gas
 - Indian energy supply largely dependent on coal
- ❖ Coal contributes to about 55% of the commercial energy consumption as compared to 27 % world average
- ❖ India is the 3rd largest coal producing country after China and USA.
- ❖ More than 65% of electricity generation capacities are coal based.
- ❖ Surging oil and international coal prices compels coal Industry to play key role for energy security of the country

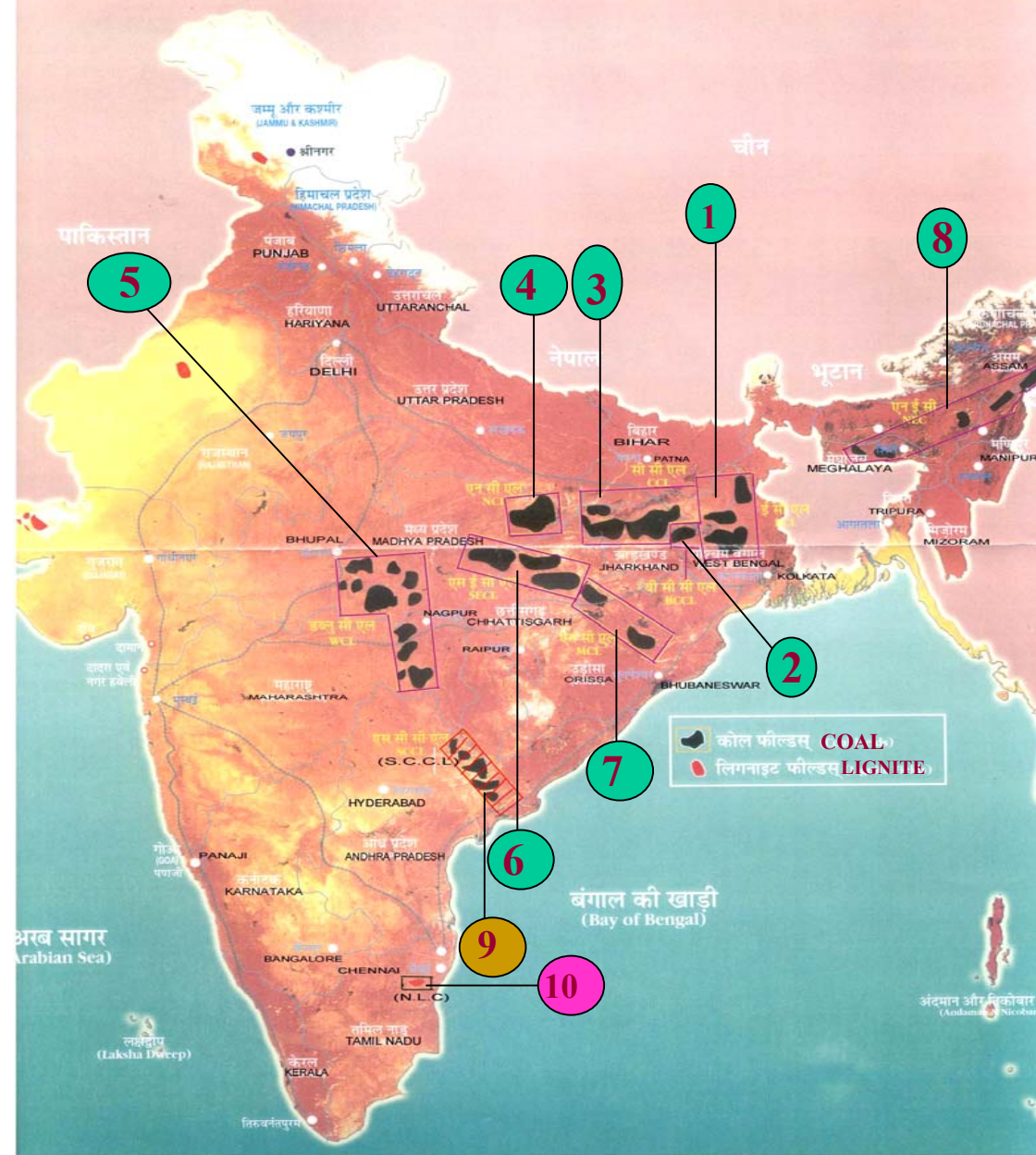
COAL INDIA LTD (CIL) – PROFILE

- ❑ Contributes around 85% of coal production in India.
- ❑ Meets 46% of commercial energy needs of the country
- ❑ Single largest coal producing company in the World
- ❑ Employs over 420 thousand persons and is the largest corporate employer in the country.
- ❑ One of the largest Companies in the country, turnover being 9.69 billion US \$ in 2007-08
- ❑ Paid 1.09 billion US \$ to Govt. exchequer by way of Tax in 2007-08
- ❑ Paid highest ever Dividend of 426 million US \$ to the Govt. of India in 2007-08
- ❑ In India, CIL offers coal at much lesser price than the International prices.

COAL INDIA'S OPERATION

- ❑ Spreads over Eight States in India (Jharkhand, West Bengal, Orissa, Chattisgarh, M.P, U.P, Maharashtra & Assam)
- ❑ Operates 473 Mines (UG Mines:283, OC Mines:155, Mixed Mines:35) through 7 coal producing Subsidiary companies (ECL, BCCL, CCL, SECL, WCL, NCL, MCL) and one consultancy company (CMPDIL)
- ❑ Operates 17 Washeries
(Coking Coal - 11, Non Coking coal - 6)
- ❑ Has Over 200 Other Establishments Like Workshops, Hospitals, Captive Power Plants Etc.

COAL AND LIGNITE RESOURCES IN INDIA



A. CIL : COAL PRODUCING SUBSIDIARIES

- EASTERN COALFIELDS LTD.(ECL) (1)
- BHARAT COKING COAL LTD.(BCCL) (2)
- CENTRAL COALFIELDS LTD.(CCL) (3)
- NORTHERN COALFIELDS LTD.(NCL) (4)
- WESTERN COALFIELDS LTD.(WCL) (5)
- SOUTH EASTERN COALFIELDS LTD.(SECL) (6)
- MAHANADI COALFIELDS LTD.(MCL) (7)
- NORTH EASTERN COALFIELDS.(NEC) (8)
- (A UNIT UNDER CIL(HQ))

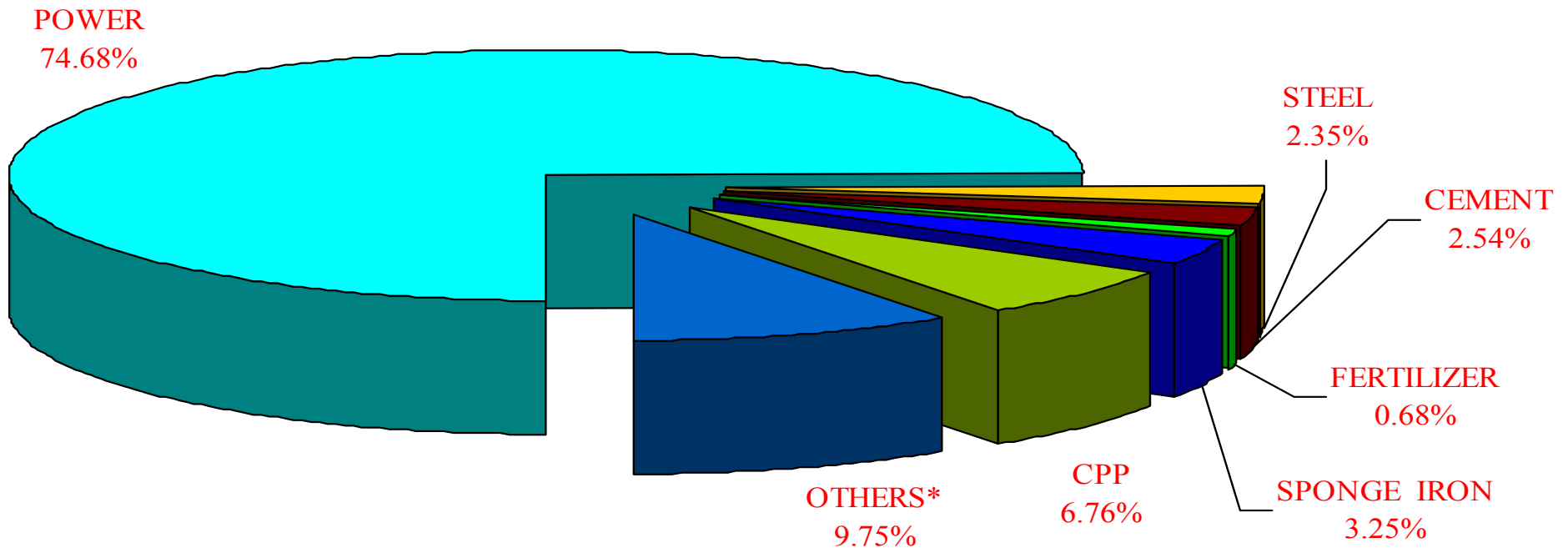
PLANNING & DESIGN INSTITUTE

CENTRAL MINE PLANNING & DESIGN INSTITUTE (CMPDIL)

- B. SINGARENI COLLIERIES CO. LTD. (9)
- (SCCL)

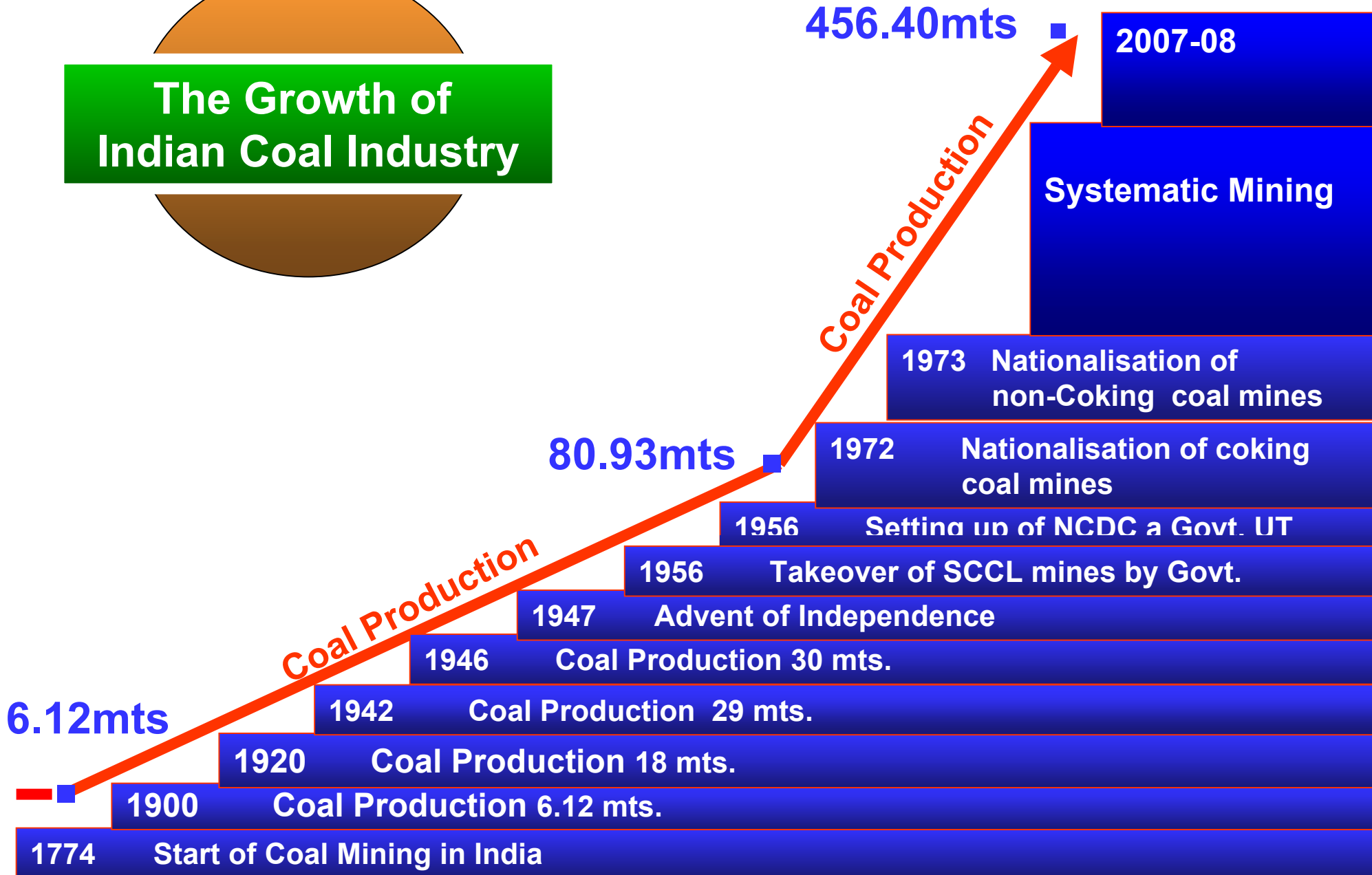
- C. NEYVELI LIGNITE CORPORATION (10)
- (NLC)

CONSUMER PROFILE (2007-08)

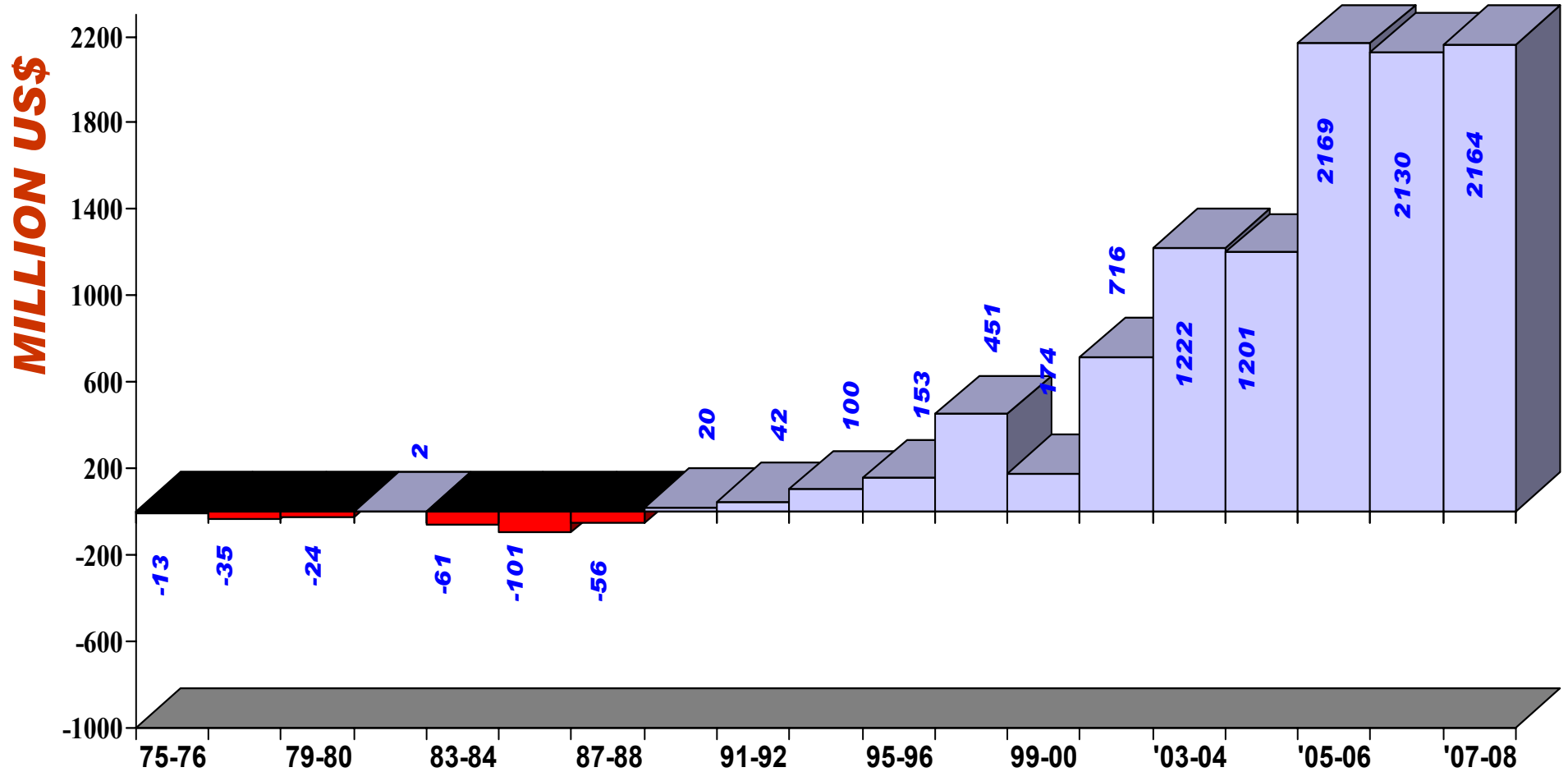


OTHERS(Non core): SSF (Special Smokeless Fuel) units, Briquette manufacturing units, Chemical, Glass & Potteries, Leather units, coke oven etc.

The Growth of Indian Coal Industry



YEAR WISE INCREASE IN PROFITABILITY (PROFIT BEFORE TAX)



Coal Production in India 2007-08

Govt Companies

422.12mt

34.38mt

Private

Singareni Collieries Ltd

40.60mt

Coal India Limited

379.49mt

IISCO

1.1mt

1.02mt

TISCO

7.21mt

Others

27.17mt

NEC

ECL

24.06mt

BCCL

25.22mt

CCL

44.17mt

WCL

43.51mt

SECL

93.79mt

NCL

59.62mt

MCL

88.01mt

CMPDI

Expl, PIng

DEMAND SUPPLY PROJECTION

Mill T

Year →		2011-12	2016-17
PRODUCTION	COKING	27.65	35.00
	NON-COKING	652.35	1020.00
	TOTAL	680.00	1055.00
DEMAND	COKING	68.50	105.00
	NON-COKING	662.60	1020.00
	TOTAL	731.10	1125.00
Shortfall	COKING	40.85	70
	NON-COKING	10.25	-
	TOTAL	51.10	70

Investment Opportunities / New Avenues in Coal India Limited

UNDERGROUND MINE

Development and Operation of High capacity Underground Mines

- 17 Expression of Interests (EoI) have been received for Construction, Development and Operation of 2 to 5 million tonne annual Capacity 7 Underground Mines
- The Eols are under scrutiny. Limited tender will be floated amongst short listed parties after pre-NIT meeting
- The bidding will be opened for Contractual Operation by successful bidder in each project
- Scope Includes Exploration, Mine Planning, Mine Construction, Mine Development, Mine Operation on Long-term basis

Extraction of Residual Coal from Closed / Abandoned Mines

A large number of Underground Mines are Closed/ Abandoned for reasons of –

- Depletion of Reserves having residual Coal as Protective Pillars
- Mine Fire in the Working Seam/ Neighboring Seam(s)
- Presence of Waterlogged Old Working in and around the Mine
- Poor Economic Returns due to obsolete technology

- **Coal India Intends to Re-open such Mines for Extraction of Residual Coal**
- **For the First Phase of Re-opening/ Operation 18 Mines having Cumulative Reserves of 1647 million tonne are being Considered**
- **These Mines are Open for Joint Venture Participation by Internationally Reputed Mining Companies**
- **Detailed Notice for Inviting Expression of Interest formulated and floated on 6.8.08. Revised last date of submission is 12.11.08**
- **Details are available in www.coalindia.nic.in**

UNDER GROUND MINING EQUIPMENT

Equipment	Existing	Proposed Future Requirement			
		08-09	09-10	10-11	11-12
Side Discharge Loader	774	126	138	47	43
Load Haul Dump	264	49	42	25	23
Continuous Miner	5	4	6	12	16
Power Support Longwall	6	1	1	1	6

OPENCAST MINE

Opportunities in opencast mining

- ❑ From the present level of 335 Mt, the production in OC mines is expected to reach a level of 465 Mt in 2011-12 and 606 Mt in 2016-17
- ❑ Introduction of higher capacity/size equipment to support the growth parameters like:
 - ✓ Rope shovel with bucket capacity up to 42 cum
 - ✓ 10-15 cum hydraulic shovel
 - ✓ Rear dumper up to 240 t
 - ✓ Dozers up to 850 hp
 - ✓ Long term Maintenance And Repair Contract (MARC) with OEM.

- ❑ In-pit crushing & conveying technology as an alternative for large volume handling
- ❑ Use of Mobile crushing unit
- ❑ Drilling and Exploration
- ❑ Airborne laser Terrain mapping (ALTM) technology for regular monitoring of excavation and land restoration status in respect of Opencast Mines
- ❑ Use of GPS based TDS system in mining operation.

Future Requirement - DRAGLINE

Size	Existing	Proposed Future Requirement				
		08-09	09-10	10-11	11-12	12-13
42 M ³	-					
20-30 M ³	24					
10-15 M ³	2	2	1	1	0	0
5-10 M ³	15					

Future Requirement - ROPE SHOVEL

Size	Existing	Proposed Future Requirement				
		08-09	09-10	10-11	11-12	12-13
42 M ³		1	2	0	0	1
20 M ³	9	0	0	2	1	2
12.5 M ³	6					
10 M ³	111	11	12	5	6	3

Future Requirement - HYDRAULIC EXCAVATOR

Size	Existing	Proposed Future Requirement				
		08-09	09-10	10-11	11-12	12-13
More than 10 M ³	4	3	3	4	4	0
5-10 M ³	29	23	27	16	10	9
2.2-5 M ³	224	44	20	16	17	12
2.2 M ³ & below	99	29	18	14	5	12

Future Requirement - REAR DUMPER

Size	Existing	Proposed Future Requirement				
		08-09	09-10	10-11	11-12	12-13
240 T		8	14	4	4	7
170 T	35	26	10	15	5	1
120/150 T	260	35	14	12	51	15
85/100 T	678	240	110	96	106	55
50/60 T	675	153	267	206	141	153

Future Requirement - DOZER (High Capacity)

Size	Existing	Proposed Future Requirement				
		08-09	09-10	10-11	11-12	12-13
<u>Crawler</u>						
More than 700 HP	9	11	1	10	6	2
410 HP	406	122	49	29	50	37
320 HP	520	66	77	40	77	32
<u>Wheel</u>						
400 HP	42	2	8	9	9	5
300 HP	21	1	1	0	0	3

Future Requirement - DRILL

Size	Existing	Proposed Future Requirement				
		08-09	09-10	10-11	11-12	12-13
311 MM & above	15	1	2	0	0	1
250 MM	245	47	20	20	11	14
160 MM	410	84	89	67	43	32

TENTATIVE REQUIREMENT OF OTR TYRES UPTO 2011-12

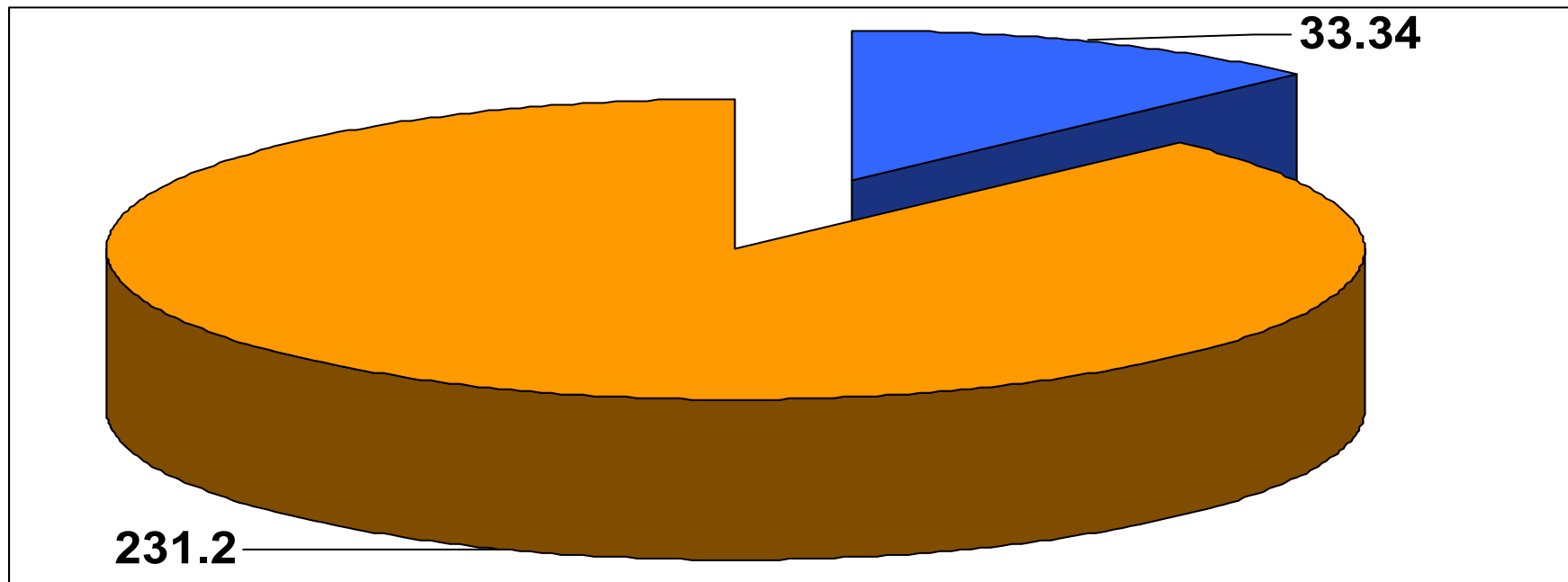
TYRE SIZE EXISTING	08-09	09-10	10-11	11-12	TOTAL UPTO 11-12
40.00 X 57 (240T)	-	24	62	74	160
36.00 X 51 (170T)	64	161	192	230	647
30.00 X 51 (120T)	473	766	914	1093	3246
24.00 X 49 (85T)	1586	2686	2915	3168	10355

**COAL RESOURCES -
OPPORTUNITIES IN EXPLORATION &
DRILLING**

INDIAN COAL RESERVES

As on 1.4.2008

(Bill Tonnes)



Coking **Non-Coking**

TOTAL RESOURCE – 264.54 Bt

GEOLOGICAL RESOURCES OF INDIAN COAL CATEGORYWISE AND DEPTHWISE

(AS ON 01.04.2008)

(In Billion Tonnes)

Depth (M)	Proved	Indicated	Inferred	Total	%
0-300	79.34	66.84	14.34	160.52	60.7
300-600	7.11	45.22	18.10	70.43	26.6
0-600 (For Jharia)	137.1	0.50	-	14.21	5.4
600-1200	1.67	11.66	6.05	19.37	7.3
Total	101.83	124.22	38.49	264.54	100
%	38.49	46.96	14.55	100	-

Targets of Drilling for CMPDIL (2007-08 to 11-12)

- ❑ 2.34 million metre exploratory drilling has to be achieved by departmental resources and outsourcing.
- ❑ In 2007-08, 0.209 million metre of drilling has been achieved.
- ❑ Departmental capacity to be increased from 0.20 million metre to 0.4 million metre by 2011-12. Outsourcing will continue during this period to achieve XI plan targets.
- ❑ Action initiated to enhance drilling capacity to 1.00 million metre/annum through departmental resources and outsourcing.

Projected Phasing of Exploration Program of CMPDIL in XI Plan (in thousand m)

Block- types	2007-08 Actual	2008-09 Program	2009-10 Projected	2010-11 Projected	2011-12 Projected	XI Plan Total
CIL Command	161	149	207	194	199	910
Outside CIL Command	045	174	265	423	443	1350
Regional/Promo tional	003	004	017	021	023	68
St.Govt.	-	013	003	-	-	16
Total	209	340	492	638	665	2344*
Through outsourcing	-	-	508	362	335	1205
Total	209	340	1000	1000	1000	3549

*Action initiated to enhance drilling capacity to 1.0 million metre/annum through departmental^{B1} resources and outsourcing.

Outsourcing to Augment Exploration Capacity

- ❑ 9 blocks for 0.359 million metre – Work Order issued
- ❑ 4 blocks for 0.028 million metre through National tenders – LOI issued.
- ❑ 8 blocks involving 0.65 million metre – Global tender floated. (Last date extended ,details and documents available at web site : www.cmpdi.co.in , www.cmpdi.gov.in)
- ❑ Expression of Interest invited and received from National/International parties for undertaking detailed exploration of Indian coal blocks involving 1.0 million metre/annum of drilling. EOI is under evaluation.

COAL BENEFICIATION

Setting up of Coal Beneficiation Plants

WASHED COAL SUPPLY POLICY

- Coal India has taken a policy decision to supply washed non-coking coal to all consumers by 2011-12 except pit head consumers.
- Coal India is going to set up Coal Washeries within next four years for a total capacity of 100.6 MTY (Primarily for non-coking coal)
- These Washeries will be built up, commissioned, operated and maintained by Private Operators selected by Global Bidding process.
- Coal India will provide Fund and infrastructure like land, power, water, Railway siding.

WASHERIES TO BE SET UP IN DIFFERENT SUBSIDIARY COMPANIES IN 1ST PHASE

SL.NO.	NAME OF COMPANY	CAPACITY (MTY)	No. OF WASHERY
1.	ECL	7.50	2
2.	BCCL	18.60	6
3.	CCL	19.50	4
4.	SECL	10.00	2
5.	MCL	40.00	4
6.	WCL	5.00	1
Total		100.60	19

COAL VIDESH

‘ COAL VIDESH’ – GOING GLOBAL

- **Widening of Demand-Supply Gap and Growing Imports**

<i>Imports -></i>	<i>2005-06 : 38 Mt</i>	<i>2006-07 : 45 Mt</i>
	<i>2011-12 : 51 Mt</i>	<i>2024-25 : 180 Mt</i>

- **Constraint of Indian coal reserves :**

Limited coking and low ash non-coking reserves

- **Leveraging Core Competence Abroad :**

Core competence in coal business value chain can be gainfully leveraged in the international market.

- **Transnational Business Competence :**

*Develop “transnational” business competence to venture into strategic opportunities abroad for yielding **higher ROI** and as well add value by inheriting **global best practices***

Supplementing production from mines abroad

- **CIL is pursuing the initiatives of acquiring coal resources abroad through two alternative routes :**
- **Participation in JV of PSUs for formation of an SPV to secure coal resources abroad**
 - ✓ **SPV was accorded approval of the Cabinet on 8th Nov 2007**
 - ✓ **SPV proposed to be formally registered as 'Coal Ventures International'**
 - **CIL a major stakeholder with contribution of Rs 1000 Crs in equity of Rs 3500 Crs**
- **Acquisition of coal mines/blocks by CIL**
 - **Pursued through Coal Videsh Division functioning at CIL(HQ)**
 - **CIL Board approved several proposals to operationalize the venture; Govt. approval is awaited**

PROCUREMENT BY COAL INDIA LIMITED

HEMM PROCUREMENT

- **Heavy Earth Moving Machinery (HEMM)**
 - **Draglines(15-55 Cu mtrs)**
 - **Electric shovels (5-42 cu mtrs)**
 - **Hydraulic Shovels(2-10 Cu mtrs)**
 - **Dump Trucks (50-240 Tons)**
 - **Blast Hole drills(160mm – 380mm)**
 - **Crawler Dozers (320- 850 HP)**
 - **Wheel Dozers (320-410 HP)**
 - **Front end loaders (2-10 cu mtrs)**
 - **Tyre handlers**
 - **Motor Graders(145-280 HP)**

UG MACHINERY PROCUREMENT

- **Underground Mining Machinery**
 - **At Face (Continuous Miner, Side Discharge Loaders, Load Haul Dumpers, Belt conveyors, Coal drills, Long Wall equipment)**
 - **For transport (Haulages, Shuttle cars, Conveyors, Winding engines, Cages and skips)**
 - **For ventilation (Ventilation Fans, Auxiliary fans)**
 - **Pumps and compressors**
 - **For Crushing (Coal crushers, Vibratory screens)**
 - **Electrical equipments (Transformers, ACB, OCB, Switch gears)**
 - **Safety items (Cap lamps, Breathing apparatus, Self rescuers)**

CIL's Annual Volume of Purchase

- **Maintenance Repair Operation (MRO), spare parts and consumables : Rs 3000 crores (US \$ 650 millions) (1 \$= Rs 45)**
- **Plant, machinery, capital equipments Rs 4000 crores (US \$ 880 millions)**
- **Services (Transportation, Contract mining, consultancy, IT) :Rs 3000 crores (US \$ 650 millions)**
- **Total Rs 10,000 crore every year (> US \$ 2 billions)**

Eligible Products

- **Provenness criteria** : Your products offered must have been supplied in the past to any corporate customer and **performed satisfactorily for at least 1 year**. Documentary evidences required to be submitted with your bid.

Maintenance and Repair Contract (MARC)

- **Concluded at the time of supply of equipment for certain high capacity HEMM.**
- **Bids are evaluated at total price – Price of equipment, price of spare parts and consumables, cost of supervision and overhead during the entire MARC period.**
- **MARC period is fixed at a 70% of economic life of equipment.**
- **Guaranteed Availability of equipment.**

Integrity Pact

- **For tenders above certain threshold value, Bidders will have to sign an Integrity Pact (IP) with CIL.**
- **The Integrity Pact (IP) is a tool developed in the 1990's by Transparency International to help governments, businesses and civil society to fight corruption in the field of public contracting.**
- **IP establishes mutual contractual rights and obligations of both buyer and supplier.**
- **Integrity Pact : CIL's Responsibility**
 - **CIL commits that:-no official will demand or accept any illicit gratification to give any of the parties an advantage at any stage of the project.**
 - **All necessary and appropriate technical, legal and administrative information related to the contract will be made public.**

Integrity Pact : Bidder's Responsibility

- **They will not offer any illicit gratification to obtain unfair advantage.**
- **They will not collude with other parties to impair transparency and fairness.**
- **They will not accept any advantage in exchange for unprofessional behavior.**
- **They will disclose all payments made to agents and intermediaries of all descriptions.**
- **Penalties for breach.**
- **IEMs**

Procurement Responsibility

By Coal India Limited(HQ)

- **High capacity HEMM, OTR tyres New technology, Joint Ventures, Turn-key projects for Mine development etc.**

By Subsidiaries

- **Lower Sized equipments, All Consumables, services, Spare parts: Subsidiary companies**

THANK YOU