

6.Coal Mining & Quarrying



Coalmine at Panaji

6. COAL

Concepts and Definitions

Coking Coal - Coking coals are those varieties of coal which on heating in the absence of air (process known as **Carbonisation**) undergo transformation into plastic state, swell and then re-solidify to give a Cake. On quenching the cake results in a strong and porous mass called coke.

Primary/Medium/Semi/Weak Coking Coal: Coking coal is divided into 3 sub-categories namely,

Primary Coking Coal (Low ash , low Volatile, High Coking property)

Medium Coking Coal (low ash, medium volatile, low caking index) and

Blendable/ Semi/Weak Coking Coal (low ash, high volatile, very low caking index).

Non Coking Coal These are coals with relatively lower ash and higher fixed carbon and of poor coking properties i.e. does not soften and form cake like coking coal during carbonization in the coke oven.

Coal Grades (from website of M/o Coal)

The gradation of non-coking coal is based on Useful Heat Value (UHV), the gradation of coking coal is based on ash content and for semi coking / weakly coking coal it is based on ash plus moisture content , as in vogue as per notification.

Grades of Coking Coal

Grade	Ash Content
Steel Grade –I	Not exceeding 15%

<i>Steel Grade -II</i>	<i>Exceeding 15% but not exceeding 18%</i>
<i>Washery Grade -I</i>	<i>Exceeding 18% but not exceeding 21%</i>
<i>Washery Grade -II</i>	<i>Exceeding 21% but not exceeding 24%</i>
<i>Washery Grade -III</i>	<i>Exceeding 24% but not exceeding 28%</i>
<i>Washery Grade -IV</i>	<i>Exceeding 28% but not exceeding 35%</i>

Grades of Non-coking Coal

<i>Grade</i>	<i>Useful Heat Value (UHV) (Kcal/Kg) UHV= 8900-138(A+M)</i>	<i>Corresponding Ash% + Moisture % at (60% RH & 40° C)</i>	<i>Gross Calorific Value GCV (Kcal/ Kg) (at 5% moisture level)</i>
<i>A</i>	<i>Exceeding 6200</i>	<i>Not exceeding 19.5</i>	<i>Exceeding 6454</i>
<i>B</i>	<i>Exceeding 5600 but not exceeding 6200</i>	<i>19.6 to 23.8</i>	<i>Exceeding 6049 but not exceeding 6454</i>
<i>C</i>	<i>Exceeding 4940 but not exceeding 5600</i>	<i>23.9 to 28.6</i>	<i>Exceeding 5597 but not exceeding. 6049</i>
<i>D</i>	<i>Exceeding 4200 but not exceeding 4940</i>	<i>28.7 to 34.0</i>	<i>Exceeding 5089 but not Exceeding 5597</i>
<i>E</i>	<i>Exceeding 3360 but not exceeding 4200</i>	<i>34.1 to 40.0</i>	<i>Exceeding 4324 but not exceeding 5089</i>
<i>F</i>	<i>Exceeding 2400 but not</i>	<i>40.1 to 47.0</i>	<i>Exceeding 3865 but not</i>

	<i>exceeding 3360</i>		<i>exceeding. 4324</i>
<i>G</i>	<i>Exceeding 1300 but not exceeding 2400</i>	<i>47.1 to 55.0</i>	<i>Exceeding 3113 but not exceeding 3865</i>

Grades of Semi-coking and Weakly Coking Coal

<i>Grade</i>	<i>Ash + Moisture Content</i>
<i>Semi coking grade –I</i>	<i>Not exceeding 19%</i>
<i>Semi coking grade –II</i>	<i>Exceeding 19% but not exceeding 24%</i>

Lignite – Often referred to as Brown coal is a soft brown coal with a low degree of coalification (process of formation of coal from vegetal matter). It's gross calorific value is 5,700 Kilo calorie/kilogram or less on an ash-free but moist basis.

Coke- The solid product obtained from carbonization of coal or lignite at high temperature.

Proved Reserves A 'Proven Mineral Reserve' is the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

Indicated Reserves An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

Inferred Reserves An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill

holes. Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies.

Output per man-shift (OMS):- It is an indicator of labour productivity. It is defined as the average output per employee engaged for a normal work-shift. It is computed as the total output divided by total number of shifts worked by all the employees.

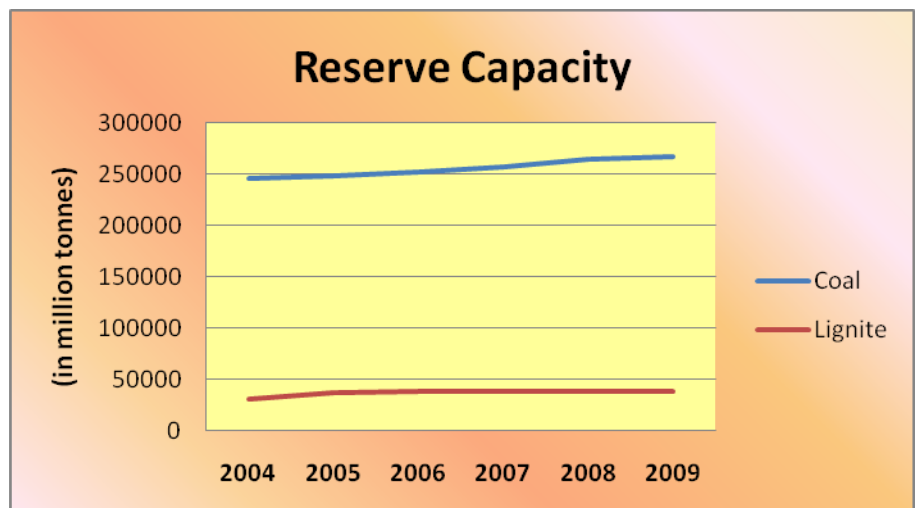
6. COAL MINING AND QUARRYING

6.1 The chief data source for this sector is Coal Controller's Organisation, in the M/o Coal. Unless otherwise stated analytical highlights given below are based on Table No. 6.0 on Trends in Important Indicators of Coal Mining and Quarrying Infrastructure.

Capacity

Reserve Capacity

6.2 The reserve capacity for coal production increased from 246 billion tonnes in 2004 to 267 billion tonnes in 2009 showing a CAGR of 1.69% per annum. The reserve capacity for lignite production increased from 31 billion tonnes in 2004 to 39 billion tonnes in 2009 showing a CAGR of 4.71% per annum.



Developed coal mines

6.3 Total number of coal mines increased from 547 in 2006 to 561 in 2009. Total number of lignite mines increased from 9 in 2006 to 13 in 2009 (Table 6A.4). Share of public sector mines decreased from 97.3% in 2006 to 95.7% in 2009 for coal. But for lignite a reverse trend is seen. Share of public sector mines for lignite increased from 88.9% in 2006 to 92.3% in 2009 (Table 6A.6).

Washery Capacity

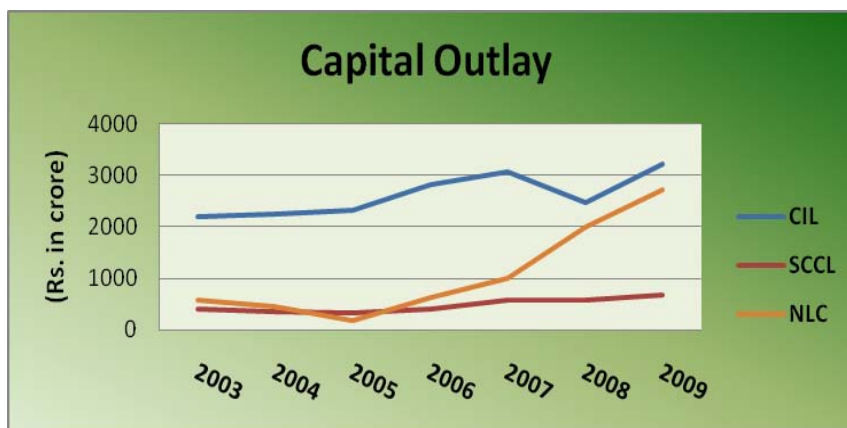
6.4 As on 31st March 2009, there is total washery capacity of 33.28 Million tones per annum(MTA) for coking coal and 97.32 MTA for non coking coal. While public sector companies have a major share(83%) in washery capacity for coking coal, private sector companies have a major share(79%) in washery capacity for non-coking coal (Table 6B.3 and 6B.4).

Quality

6.5 Number of opencast mines is on the increase, while number of underground mines is decreasing. Number of opencast mines increased from 166 in 2006 to 197 in 2009, but number of underground mines decreased from 342 in 2006 to 332 in 2009 for coal (Table 6A.4).

Fiscal Cost

6.6 Capital outlay for CIL and SCCL shows negligible growth during 2003 to 2009. Only for NLC it shows a CAGR of 29% during the same period.



Capacity Utilisation

6.7 Total coal production is showing a CAGR of 6.41% during 2004 to 2009, while reserve capacity shows a much lower CAGR of 1.69%; indicating that after some time there may be depletion in reserve capacity. Presently production rate is 0.2% of the reserve capacity. It implies that at the present growth rates of production (extraction) and reserve capacity present reserves should last for less than 500 years.

Affordability

6.8 Price of steam coal for electricity generation increased from ₹823 per tonne in 2003 to ₹1055 per tonne in 2009 showing a CAGR of 4.22%.

Table 6.0 : Trends in Important Indicators of Coal Mining and Quarrying Infrastructure

Sl. No.	Description	2003	2004	2005	2006	2007	2008	2009	CAGR %
		(Reference Date / Period - As on 31st March for Stock Variables - Financial Year ending on 31st March for Flow Variables)							
A		ACCESS / CAPACITY							
I Reserves* (in million tonnes)									
1	Gradewise Reserves of Coal								
	Prime Coking	-	5313	5313	5313	5313	5313	5313	0
	Medium Coking	-	25053	25071	25077	25334	26324	26392	1.05
	Blendable / Semi Coking	-	1707	1707	1707	1707	1707	1707	0
	Non Coking	-	213619	215756	220263	225028	231191	233798	1.82
	Total	-	245692	247847	252360	257382	264535	267211	1.69
2	Lignite	-	30708	37154	38274	38338	38512	38656	4.71
C		FISCAL COST							
II Capital Outlay (Rs. In crore)									
3	CIL								
	BE	2190	2240	2310	2814.35	3063.7	2472.14	3214.7	6.61
	Actual	1192.8	1156.82	1188.31	1611.23	2059.69	2033.51	2289.06	11.48
4	SCCL								
	BE	405	340	325	395	577.09	570.58	665.3	8.62
	Actual	139.49	163.42	274.87	424.18	448.63	573.97	499.33	23.68
5	NLC								
	BE	584.94	455.4	180.7	640	999	2006.97	2717	29.17
	Actual	434.8	158.1	143.7	379.7	1123.7	1766.7	1559.15	23.72
D		UTILISATION							
III Coal Production (MT)									
6	Public	-	341.8	360.8	381.3	400.4	422.2	450.1	5.66
7	Private	-	19.4	21.8	25.7	30.4	34.9	42.6	17.04
8	Total	-	361.2	382.4	407.0	430.8	457.1	492.8	6.41
E		AFFORDABILITY							
IV Prices of Selected Grades of Coal as on 1st July (Rs./ Tonne)									
9	Steam Coal for Industry	1420.1	1610.4	1610.4	1617.2	1617.2	1805.4	1805.4	4.08
10	Steam Coal for Electricity Generation	823.2	934.4	934.4	941.2	941.2	1055.1	1055.1	4.22
11	Coking Coal for Industry	1980.4	2843.6	2843.6	2849.6	2849.6	3178.8	3178.8	8.21

* Gradewise Coal and Lignite Reserves for the year 2004, 2005 and 2006 are as on 1st January.

Source : 1. Coal Directory of India , published by Coal Controller's Organisation, M/o Coal

2. Annual Report published by M/o Coal

Table 6A.1 : Trends in Gradewise Reserves of Coal and Lignite

(In Million Tonnes)

Type of Coal	As on	Reserve			
		Proved	Indicated	Inferred	Total
Prime Coking	01-01-2006	4614	699	0	5313
	01-04-2007	4614	699	0	5313
	01-04-2008	4614	699	0	5313
	01-04-2009	4614	699	0	5313
Medium Coking	01-01-2006	11445	11751	1881	25077
	01-04-2007	11853	11601	1880	25334
	01-04-2008	12308	12136	1880	26324
	01-04-2009	12448	12064	1880	26392
Blendable/ Semi Coking	01-01-2006	482	1003	222	1707
	01-04-2007	482	1003	222	1707
	01-04-2008	482	1003	222	1707
	01-04-2009	482	1003	222	1707
Non Coking	01-01-2006	78858	106210	35195	220263
	01-04-2007	81624	107362	36042	225028
	01-04-2008	84425	110378	36388	231191
	01-04-2009	88175	109804	35819	233798
Coal Total #	01-01-2006	95399	119663	37298	252360
	01-04-2007	98573	120665	38144	257382
	01-04-2008	101829	124216	38490	264535
	01-04-2009	105720	123570	37921	267211
Lignite *	01-01-2006	4476	20259	13539	38274
	01-04-2007	4177	26288	7874	38338
	01-04-2008	4824	25667	8020	38512
	01-04-2009	5363	25219	8164	38656
Coal and Lignite Total	01-01-2006	99875	139922	50837	290634
	01-04-2007	102750	146953	46018	295720
	01-04-2008	106653	149883	46510	303047
	01-04-2009	111083	148789	46085	305867

* Figures compiled by Neyveli Lignite Corporation Ltd.

Including Sikkim

Source : 1. Annual Report published by M/o Coal

2. Material Supplied by Coal Controller's Organisation

Table 6A.2 : Trends in Statewise Reserves of Coal

(In Million Tonnes)

State	As on	Coal Reserves			
		Proved	Indicated	Inferred	Total
Andhra Pradesh	01-01-2006	8403	6158	2585	17146
	01-04-2007	8791	6266	2658	17715
	01-04-2008	9007	6711	2979	18697
	01-04-2009	9194	6748	2985	18927
Arunachal Pradesh	01-01-2006	31	40	19	90
	01-04-2007	31	40	19	90
	01-04-2008	31	40	19	90
	01-04-2009	31	40	19	90
Assam	01-01-2006	0	3	0	3
	01-04-2007	0	3	0	3
	01-04-2008	0	3	0	3
	01-04-2009	0	3	0	3
Jharkhand	01-01-2006	36148	31411	6338	73897
	01-04-2007	36960	31094	6338	74392
	01-04-2008	37493	31629	6338	75460
	01-04-2009	39479	30894	6338	76711
Bihar	01-01-2006	0	0	160	160
	01-04-2007	0	0	160	160
	01-04-2008	0	0	160	160
	01-04-2009	0	0	160	160
Madhya Pradesh	01-01-2006	7566	9258	2934	19758
	01-04-2007	7842	9723	2782	20347
	01-04-2008	7896	9882	2782	20560
	01-04-2009	8041	10295	2645	20981
Chhattisgarh	01-01-2006	9570	27433	4439	41442
	01-04-2007	9973	27035	4443	41451
	01-04-2008	10419	29272	4443	44134
	01-04-2009	10911	29192	4381	44483
Maharashtra	01-01-2006	4652	2432	1992	9076
	01-04-2007	4856	2822	1992	9670
	01-04-2008	5004	2822	1992	9818
	01-04-2009	5255	2907	1992	10155
Meghalaya	01-01-2006	118	41	301	460
	01-04-2007	118	41	301	460
	01-04-2008	89	70	301	460
	01-04-2009	89	17	471	577
Nagaland	01-01-2006	4	1	15	20
	01-04-2007	3	1	15	19
	01-04-2008	3	1	15	19
	01-04-2009	9	0	13	22

Table 6A.2 (contd.) : Trends in Statewise Reserves of Coal
(In Million Tonnes)

State	As on	Coal Reserves			
		Proved	Indicated	Inferred	Total
Orissa	01-01-2006	16911	30793	14297	62001
	01-04-2007	17465	31455	14314	63234
	01-04-2008	19222	31728	14314	65264
	01-04-2009	19944	31484	13799	65227
Sikkim	01-01-2006	-	-	-	-
	01-04-2007	-	-	-	-
	01-04-2008	0	58	43	101
	01-04-2009	0	58	43	101
Uttar Pradesh	01-01-2006	766	296	0	1062
	01-04-2007	766	296	0	1062
	01-04-2008	766	296	0	1062
	01-04-2009	766	296	0	1062
West Bengal	01-01-2006	11383	11879	4553	27815
	01-04-2007	11454	11810	5071	28335
	01-04-2008	11584	11680	5071	28335
	01-04-2009	11653	11603	5071	28327
India	01-01-2006	95867	119769	37667	253303
	01-04-2007	98573	120665	38144	257382
	01-04-2008	101829	124216	38490	264535
	01-04-2009	105720	123570	37921	267211

Note : Data may not add up to respective total due to rounding off.

Source : Material supplied by Coal Controller's Organisation

Table 6A.3 : Trends in Statewise Reserves of Lignite

State	As on	(In Million Tonnes)			
		Lignite Reserves			
		Proved	Indicated	Inferred	Total
Gujarat	01-01-2006	1084.44	259.40	1318.91	2662.75
	01-04-2007	785.27	259.40	1618.08	2662.75
	01-04-2008	785.27	259.40	1618.08	2662.75
	01-04-2009	785.27	259.40	1618.08	2662.75
Jammu & Kashmir	01-01-2006	0	20.25	7.30	27.55
	01-04-2007	0	20.25	7.30	27.55
	01-04-2008	0	20.25	7.30	27.55
	01-04-2009	0	20.25	7.30	27
Kerala	01-01-2006	0	0	9.65	9.65
	01-04-2007	0	0	9.65	9.65
	01-04-2008	0	0	9.65	9.65
	01-04-2009	0	0	9.65	9.65
Puducherry	01-01-2006	-	-	-	-
	01-04-2007	0	405.61	11	416.61
	01-04-2008	0	405.61	11	416.61
	01-04-2009	0	405.61	11	416.61
Rajasthan	01-01-2006	560.91	2620.60	1053.84	4235.35
	01-04-2007	560.91	2620.60	1129.92	4311.43
	01-04-2008	639.69	2568.30	1276.84	4484.83
	01-04-2009	842.13	2327.78	1384.14	4554.05
Tamil Nadu	01-01-2006	2831	17359.15	11148.98	31339.13
	01-04-2007	2831	23387.42	5108	31327.02
	01-04-2008	3399.39	22819.03	5108.60	31327.02
	01-04-2009	3735.23	22521.93	5144.65	31401.81
West Bengal	01-01-2006	-	-	-	-
	01-04-2007	0	0.29	0.86	1.15
	01-04-2008	0	0.29	0.86	1.15
	01-04-2009	0	0.29	0.86	1.15
India	01-01-2006	4476.35	20259.4	13538.68	38274.43
	01-04-2007	4177.18	26287.67	7873.55	38338.4
	01-04-2008	4824.35	25666.98	8020.47	38511.8
	01-04-2009	5362.63	25129.36	8163.82	38655.81

Source : Material supplied by Coal Controller's Organisation

Table 6A.4 : Companywise Number of Opencast and Underground Mines as on 31.3.2006 and 31.3.2009

(in number)

Sl. No.	Company	As on 31.3.2006				As on 31.3.2009				% Change				
		OC	UG	Mixed	Total	OC	UG	Mixed	Total	OC	UG	Mixed	Total	
COAL														
1	ECL	20	88	5	113	21	82	7	110	5	-6.8	40.0	-2.7	
2	BCCL	14	50	21	85	18	47	17	82	28.6	-6.0	-19.0	-3.5	
3	CCL	33	22	4	59	36	24	2	62	9.1	9.1	-50.0	5.1	
4	NCL	8	0	0	8	10	0	0	10	25.0	-	-	25.0	
5	WCL	35	42	6	83	39	43	4	86	11.4	2.4	-33.3	3.6	
6	SECL	19	70	1	90	21	69	1	91	10.5	-1.4	0	1.1	
7	MCL	13	9	0	22	15	9	0	24	15.4	0	-	9.1	
8	NEC	2	3	0	5	3	5	0	8	50	66.7	-	60.0	
9	CIL	144	284	37	465	163	279	31	473	13.2	-1.8	-16.2	1.7	
10	SCCL	11	46	0	57	13	37	0	50	18.2	-	-	-12.3	
											19.6			
11	JSMDCL	1	0	0	1	1	0	0	1	0	-	-	0	
12	DVC	1	0	0	1	1	0	0	1	0	-	-	0	
13	IISCO	0	1	2	3	1	2	1	4	-	100	-50.0	33.3	
14	JKML	0	4	0	4	0	7	0	7	-	75.0	-	75.0	
15	BECML	1	0	0	1	1	0	0	1	0	-	-	0	
16	ICML	1	0	0	1	1	0	0	1	0	-	-	0	
17	JSPL	1	0	0	1	1	0	0	1	0	-	-	0	
18	HIL	1	0	0	1	1	0	0	1	0	-	-	0	
19	TSL	-	-	-	-	3	5	0	8	-	-	-	-	
20	MIL	0	1	0	1	0	1	0	1	-	0	-	0	
21	BLA	0	1	0	1	1	0	0	1	-	-	-	0	
											100			
22	CML	1	0	0	1	1	0	0	1	0	-	-	0	
23	PANEM	1	0	0	1	1	0	0	1	0	-	-	0	
24	PIL	-	-	-	-	1	0	0	1	-	-	-	-	
25	JNL	-	-	-	-	1	0	0	1	-	-	-	-	
26	JPL	-	-	-	-	1	0	0	1	-	-	-	-	
27	SIL	-	-	-	-	0	1	0	1	-	-	-	-	
28	APMDTCL	-	-	-	-	1	0	0	1	-	-	-	-	
29	UML	-	-	-	-	1	0	0	1	-	-	-	-	
30	KEMTA	-	-	-	-	1	0	0	1	-	-	-	-	
31	ESCL	-	-	-	-	1	0	0	1	-	-	-	-	
32	SEML	-	-	-	-	1	0	0	1	-	-	-	-	
33	TISCO	3	5	0	8					-100	-	-	-100	
											100			
Total		166	342	39	547	197	332	32	561	18.7	-2.9	-17.9	2.6	
LIGNITE														
1	NLC	3	0	0	3	3	0	0	3	0	-	-	0	
2	GMDCL	3	0	0	3	5	0	0	5	66.7	-	-	66.7	
3	GIPCL	1	0	0	1	1	0	0	1	0	-	-	0	
4	GHCL		0	0		1	0	0	1	-	-	-		
5	RSMML	2	0	0	2	3	0	0	3	50	-	-	50	
Total		9	0	0	9	13	0	0	13	44.4	-	-	44.4	

OC : Opencast UG : Underground

Source : Coal Directory of India, published by Coal Controller's Organisation, M/o Coal

Table 6A.5 : Statewise Number of Opencast and Underground Mines as on 31.3.2006 and 31.3.2009

Sl. No.	State	As on 31.3.2006				As on 31.3.2009				% Change			
		OC	UG	Mixed	Total	OC	UG	Mixed	Total	OC	UG	Mixed	Total
COAL													
1	Andhra Pradesh	11	46	0	57	13	37	0	50	18.2	-19.6	-	-12.3
2	Arunachal Pradesh	2	3	0	5	1	0	0	1	-50.0	-	-	-80.0
3	Assam	12	42	1	55	3	5	0	8	-75.0	-88.1	-100.0	-85.5
4	Chhattisgarh	0	4	0	4	18	42	1	61	-	950.0	-	1425.0
5	Jammu & Kashmir	60	86	27	173	0	7	0	7	-	-91.9	-100.0	-96.0
6	Jharkhand	18	51	5	74	68	84	21	173	277.8	64.7	320.0	133.8
7	Madhya Pradesh	29	21	1	51	21	50	4	75	-27.6	138.1	300.0	47.1
8	Maharashtra	0	0	0	0	33	22	0	55	-	-	-	-
9	Orissa	14	9	0	23	16	9	0	25	14.3	0.0	-	8.7
10	Uttar Pradesh	4	0	0	4	5	0	0	5	25.0	-	-	25.0
11	West Bengal	16	80	5	101	19	76	6	101	18.8	-5.0	20.0	0.0
	Total	166	342	39	547	197	332	32	561	18.7	-2.9	-17.9	2.6
LIGNITE													
1	Gujarat	4	0	0	4	7	0	0	7	75	-	-	75
2	Rajasthan	2	0	0	2	3	0	0	3	50	-	-	50
3	Tamil Nadu	3	0	0	3	3	0	0	3	0	-	-	0
	Total	9	0	0	9	13	0	0	13	44.4	-	-	44.4

OC : Opencast

UG : Underground

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Source : Coal Directory of India, published by Coal Controller's Organisation, M/o Coal

Table 6A.6 : Sectorwise Number of Mines as on 31.3.2006 and 31.03.2009

(in numbers)

Sector	As on 31.3.2006				As on 31.3.2009				% Change			
	OC	UG	Mixed	Total	OC	UG	Mixed	Total	OC	UG	Mixed	Total
COAL												
Public	158	335	39	532	180	325	32	537	13.9	-3.0	-17.9	0.9
Private	8	7	0	15	17	7	0	24	112.5	0.0	-	60.0
Total	166	342	39	547	197	332	32	561	18.7	-2.9	-17.9	2.6
% Share of Public Mines to Total Mines	95.2	98.0	100	97.3	91.4	97.9	100	95.7	-4.0	-0.1	0.0	-1.6
% Share of Private Mines to Total Mines	4.8	2.0	0	2.7	8.6	2.1	0	4.3	79.1	3.0	-	56.0
LIGNITE												
Public	8	0	0	8	12	0	0	12	50	-	-	50
Private	1	0	0	1	1	0	0	1	0	-	-	0
Total	9	0	0	9	13	0	0	13	44.4	-	-	44.4
% Share of Public Mines to Total Mines	88.9	-	-	88.9	92.3	-	-	92.3	3.8	-	-	3.8
% Share of Private Mines to Total Mines	11.1	-	-	11.1	7.7	-	-	7.7	-30.8	-	-	-30.8

OC : Opencast

UG : Underground

Source : Coal Directory of India, published by Coal Controller's Organisation, M/o Coal

Table 6A.7 : Sectorwise and Typewise Number of Mines as on 31/03/2009

(in numbers)

Sector / Type	OC	UG	Mixed	Total
COAL				
Public Captive	2	2	1	5
Public Non -Captive	178	323	31	532
Private Captive	17	7	0	24
Private Non-Captive	0	0	0	0
Total	197	332	32	561
LIGNITE				
Public Captive	4	0	0	4
Public Non -Captive	8	0	0	8
Private Captive	1	0	0	1
Total	13	0	0	13

OC : Opencast

UG : Underground

Source : Coal Directory of India, published by Coal Controller's Organisation, M/o Coal

**Table 6A.8 : Coking Coal Washery Capacity
as on 31st March**

Year	Owner Company	Raw Coal Capacity (MTA)
2008	BCCL	15
	CCL	9.35
	WCL	1.2
	Total CIL	25.6
	SAIL	2.04
	Total Public	27.62
	TSL (Private)	5.66
	Total Private	5.66
	Grand Total	33.28
2007	BCCL	15
	CCL	9.35
	WCL	1.2
	Total CIL	25.6
	SAIL	2.04
	Total Public	27.62
	TSL (Private)	5.66
	Total Private	5.66
	Grand Total	33.28
2006	BCCL	15
	CCL	9.35
	WCL	1.2
	Total CIL	25.6
	SAIL	2.04
	Total Public	27.62
	TSL	5.66
	Total Private	5.66
	Grand Total	33.28

Note : Yield Rate of an Item= 100 * (Quantity of the item produced / Raw Coal Feed)

Source : Coal Directory of India, published by Coal Controller's Organisation, M/o Coal

**Table 6A.9 : Non Coking Coal Washery
Capacity as on 31st March**

Year	Company	Raw Coal Capacity (MTA)
2008	BCCL	3.96
	CCL	11.72
	NCL	4.5
	Total CIL	20.2
	Total Public	20.2
	JSPL	6
	BLA Industries Pvt. Ltd.	0.33
	Aryan Coal beneficiation Pvt. Ltd	26
	Aryan energy Pvt. Ltd.	2.6
	Bhatia International Ltd.	6
	Indo Unique Flames Ltd.	5.4
	Global Coal and Mining Pvt. Ltd.	5
	Gupta Coal and Washeries Ltd.	13.92
	Kartikay Coal Washeries Pvt. Ltd	13
	Spectrum coal & Power Ltd.	5.2
	Total Private	77.12
	Grand Total	97.32
2007	BCCL	3.96
	CCL	11.72
	NCL	4.5
	Total CIL	20.2
	Total Public	20.2
	JSPL	6
	BLA Industries Pvt. Ltd.	0.33
	Total Private	6.33
	Grand Total	26.53
	2006	BCCL
CCL		11.72
NCL		4.5
Total CIL		20.2
Total Public		20.2
JSPL		6
BLA Industries Pvt. Ltd.		0.33
Total Private		6.33
Grand Total		26.53

Note : Yield Rate of an Item= 100 * (Quantity of the item produced / Raw Coal Feed)

Source : Coal Directory of India, published by Coal Controller's Organisation, M/o Coal

Table 6C.1 : Capital Outlay for the XI Plan Period and for 2007-08 to 2009-10

Company	(Rs.in crore)					
	XI Plan proposed by M/o Coal	2007-08 (BE)	2007-08 (Actual)	2008-09 (BE)	2008-09 (Actual)	2009-10 (BE)
CIL	17390.07	2472.14	2033.51	3214.70	2289.06	2900.00
SCCL	3340.30	570.58	573.97	665.30	499.33	580.57
NLC	15044.00	2006.97	1766.71	2717.00	1559.15	1893.84
Sub-Total (Coal PSUs)	35774.37	5049.69	4374.19	6597.00	4347.54	5374.41
Departmental Schemes						
Science & Technology	100.00	22.54	12.86	10.00	10.00	20.00
Regional Exploration	383.50	63.59	34.99	30.00	30.00	30.39
Detailed Drilling	893.89	104.50	40.00	60.00	15.00	60.00
Env. Mgmt & Subsidence Ctrl.	4642.88	31.12	17.99	10.00	9.90	15.00
Conservation & Safety in Coal Mines	692.95	0.01	150.38	135.00	132.00	135.00
Development of Transport Infrastructure in coal field areas	972.65	0.01	23.58	21.80	0	22.00
Coal Controller's Office	1.13	0.23	0.19	0.20	0.21	0.31
IT	15.00	3.00	0.03	3.00	0	3.00
North-Eastern Region	0	25	0	30.00	0	14.30
Sub-Total Departmental Schemes	7702.00	250.00	280.02	300.00	197.11	300.00
Grand Total (MoC)	43476.37	5299.69	4654.21	6897.00	4544.65	5674.41

Source : Annual Report, published by M/o Coal

**Table 6D.1 : Coking Coal Washery Performance
(2006-07 to 2008-09)**

(in thousand tonnes)

Year	Owner Company	Raw Coal Feed	Washed Coal Production	Capacity Utilization (%)	Yield (%) Washed Coal
2008-09	BCCL	3314	1605	22.09	48.4
	CCL	3512	1709	37.56	48.7
	WCL	698	366	58.17	52.4
	Total CIL	7524	3680	29.39	48.9
	SAIL	748	577	36.67	77.1
	Total Public	8272	4257	29.95	51.5
	TSL (Private)	6983	2925	123.37	41.9
	Total Private	6983	2925	123.37	41.9
	Grand Total	15255	7182	45.84	47.1
2007-08	BCCL	3177.2	1662	21.18	52.3
	CCL	4138	1838	44.26	44.4
	WCL	690	331	57.50	48
	Total CIL	8005.2	3831	31.27	47.9
	SAIL	844.4	514.2	41.39	60.9
	Total Public	8849.6	4345.2	32.04	49.1
	TSL (Private)	7195.3	2825.7	127.13	39.3
	Total Private	7195.3	2825.7	127.13	39.3
	Grand Total	16044.9	7170.9	48.21	44.7
2006-07	BCCL	3129.1	1660.4	20.86	53.1
	CCL	4200	1825	44.92	43.5
	WCL	673	327	56.08	48.6
	Total CIL	8002.1	3812.4	31.26	47.6
	SAIL	383.1	22.1	18.78	59
	Total Public	8385.2	4038.5	30.36	48.2
	TSL	7062.5	2986.6	124.78	42.3
	Total Private	7062.5	2986.6	124.78	42.3
	Grand Total	15447.7	7025.1	46.42	45.5

Note : Yield Rate of an Item = $100 * (\text{Quantity of the item produced} / \text{Raw Coal}$

Capacity Utilization = $(\text{Raw Coal feed}/\text{Washery Capacity})*100$

Source : Coal Directory of India, published by Coal Controller's Organisation, M/o

Table 6D.2: Performance of Non Coking Coal Washery Owned by Collieries (2006-07 to 2008-09)

Year	Company	Raw Coal Feed	Production	(in thousand tonnes)	
				Capacity Utilization (%)	Yield (%)
2008-09	BCCL	1143	987	28.86	86.4
	CCL	8108	6558	69.18	80.9
	NCL	3465	2961	77.00	85.5
	Total CIL	12716	10506	62.95	82.6
	Total Public	12716	10506	62.95	82.6
	JSPL	4914	1606	81.90	32.7
	BLA Industries Pvt. Ltd.	235	230	71.21	97.9
	Aryan Coal beneficiation Pvt. Ltd	20280.7	15112.7	78.00	74.5
	Aryan energy Pvt. Ltd.	932.6	723.8	35.87	77.6
	Bhatia International Ltd.	1414.9	1162.8	23.58	82.2
	Indo Unique Flames Ltd.	443.7	365.9	8.22	82.5
	Global Coal and Mining Pvt. Ltd.	1746.2	1315	34.92	75.3
	Gupta Coal and Washeries Ltd.	5662	4594.7	40.68	81.1
	Kartikay Coal Washeries Pvt. Ltd	302	257	2.32	85.1
	Spectrum coal & Power Ltd.	5767	5078	110.90	88.1
	Total Private	41698.1	30445.9	54.07	73
Grand Total	54414.1	40951.9	55.91	75.3	
2007-08	BCCL	891	788	22.50	88.4
	CCL	8000	6595	68.26	82.4
	NCL	3252	3071	72.27	94.4
	Total CIL	12143	10454	60.11	86.1
	Total Public	12143	10454	60.11	86.1
	JSPL	5909	1916	98.48	32.4
	BLA Industries Pvt. Ltd.	325	316	98.48	97.2
	Total Private	6234	2232	98.48	35.8
	Grand Total	18377	12686	69.27	69
	2006-07	BCCL	1220	1056.9	30.81
CCL		8213	6676	70.08	81.3
NCL		2940	2581	65.33	87.8
Total CIL		12373	10313.9	61.25	83.4
Total Public		12373	10313.9	61.25	83.4
JSPL		5904	2163	98.40	36.6
BLA Industries Pvt. Ltd.		219	211.4	66.36	96.1
Total Private		6123.8	2374.4	96.74	38.8
Grand Total		18496.8	12688.3	69.72	68.6

Note : Yield Rate of an Item = 100 * (Quantity of the item produced / Raw Coal Feed)

Capacity utilisation = (raw Coal feed/Washery Capacity) *100

Source : Coal Directory of India, published by Coal Controller's Organisation, M/o Coal

