J) ENVIRONMENT RELATED COST:

Rs.3.00/t of coal has been provided to absorb environmental related cost in the project.

K) MINE CLOSURE COST:

Rs. 6.00/t has been provided in the project against mine closure cost.

K) COST OF PRODUCTION

Total cost of production works out to be Rs. 945.23/t and Rs. 1013.67/t at 100% and at 85% respectively.

22.13 GRADE OF COAL & WEIGHTED AVERAGE SELLING PRICE

The grade of coal is Grade 'E' considering 5 cm contamination at each contact point at each year of mine life. The selling price for Grade 'E' coal has been considered as Rs 975.50/t.

- TRANSPORTATION / LOADING / SIZING CHARGES

Rs. 35/t. has been considered for sizing charges for coal upto (-) 200 mm size.

- DESPATCH OF COAL & POINT OF SALE.

Coal from the face would be dispatched to CHP which will be loaded in Tippers for onward transport to customers.

22.14 PROFITABILITY (PROFIT/LOSS)

The profit with average sale value of coal as Rs. 975.50 works out to be Rs. 30.27/t and loss works out to be Rs. 38.17/t at 100% and 85% respectively.

22.15 MANPOWER & OMS

The total requirement of manpower works out to 333 giving OMS of 14.22 t. This includes provision for leave/ sickness. Details of manpower requirement and manpower analysis are given in Appendix-B and B.1.

22.16 EMS

The overall EMS works out to Rs. 1310.39 based on WCL budget of 2008-09 of Ballarpur area (including impact of NCWA-VIII). The salary & wages works out to Rs. 97.25/t.

22.17FINANCIAL IRR

The IRR of the project at 100% and 85% capacity works out to be 5.01% and (-) 1.18% respectively

22.18DETAILS OF FSA ENTERED ON COST-PLUS BASIS

The FSA has not been finalized. It will be finalized after approval of PR from competent board with the desired customer.

22.19BREAK-EVEN PRODUCTION:

It is estimated that the project will achieve break-even point at 1.16 t of production in a year which is 92.76 % of rated capacity.

22.20 DESIRED SELLING PRICE:

The desired selling price to yield 12% IRR at 100% and 85% of target production works out to Rs.1064.29/t and Rs.1153.77/t respectively. Appendix-O shows the estimates of cost of production at various production levels

22.21 COMPL

Capital e: the phasing of ir Index of precedi

22.22SENSIT

22.21 COMPLETION IRR:

Capital expenditure has been estimated/increased for forward escalation on the phasing of initial estimated capital. The escalation rate is based on W.P.I. / Civil Index of preceding 36 months.

22.22SENSITIVITY ANALYSIS:

BASE CASE	IRR AT 100%
CAPITAL COST PLUS 10%	3.89
CAPITAL COST PLUS 15%	3.37
CAPITAL COST PLUS 20%	2.88
OPERATING COST PLUS 10%	- 3.49
OPERATING COST PLUS 15%	- 9.21
OPERATING COST PLUS 20%	- 16.48
SALES REVENUE PLUS 5%	9.01
SALES REVENUE PLUS 10%	12.63
SALES REVENUE PLUS 15%	15.98

*****

PROJECT REPORT

FOR

SAKHARI-IRAWATI (PAUNI-III) OC MINE

LIST OF APPENDICES

PROJECT REPORT

FOR

SAKHARI-IRAWATI (PAUNI-III) OC MINE

LIST OF APPENDICES (Contd..)

SL. No.	Appendix No.	Title of the Appendix
31	A.9	Statement showing estimated Revenue expenses capitalized during development period
32	A.9.1	Estimated revenue expenditure capitalized during development period - coal and common
33	A.9.2	Estimated revenue expenditure capitalized during development period - OBR-DRE
34	B	Statement showing Job-wise / Category-wise requirement of manpower
35	B.1	Statement showing estimated salaries and benefits
36	C	Estimated cost of production per tonne of coal at 100% capacity utilization (including cost of EMP)
37	C.1	Cost and profitability at different levels of production
38	C.2	Annual expenditure for EMP and impact of cost / tonne on coal
39	C.3	Sensitivity analysis for profit/loss at different levels of capacity utilization
40	C.4	Sensitivity analysis of FIRR and FNPV on different parameters
41	D.1	IRR of the project at 100% level of production
42	D.2	IRR of the project at 85% level of production
43	E.1	Statement of revenue cash outflow at 100% level of production
44	E.2	Statement of revenue cash outflow at 85% level of production
45	F	Estimated capital investment on the basis of completion cost
46	G	Estimated capital investment for environmental protection measures

*****

Sl No	
1A	Private land to
1B	Solatium @ 3(
1C	Stamp Duty, F Value of land
1D	Interest @ 12'
1E	Acquisition of
2	One time Mor employment a
3	Acquisition of
A)	Forest land tc Compensator forest)
B)	Net present v Supreme cou
C)	Add-on cost
4	Socio-econor

The break (as per the

1. Revenue	
a) Tenancy	
b) Tentative	
2. Forest La	

Coal (Mty)	1.25
Peak OB (Mm^3/y)	8.45
Average SR (m^3/t)	6.54
Life (Yrs)	21.00

STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT WITH PHASING AND DEPRECIATION
(MARCH,2009)

(Amount in Rs. '000s)

A/c Head	PARTICULARS	TOTAL CAPITAL PROVISIO	PHASING OF TOTAL CAPITAL								LIFE	Depreciation
			I	II	III	IV	V	VI	VII	VIII		
A.1	LAND	634258	318800	315458	0	0	0	0	0	0	21	30203
A.2.1	SERVICE BUILDINGS	128597	0	0	25719	45009	45009	12860	0	0	21	6124
A.2.2	RESIDENTIAL BUILDINGS	184409	0	0	36882	36882	36882	36882	36881	0	21	8781
A.2	*TOTAL BUILDINGS*	313006	*0*	*0*	*62601*	*81891*	*81891*	*49742*	*36881*	*0*	*21*	14905
A.3	PLANT & MACHINERY	2185692	*0*	*0*	*1092366*	*699997*	*377121*	*16208*	*0*	*0*	*3-18*	*270673*
A.4	FURNITURE & FITTINGS	2500	0	0	500	1000	1000	0	0	0	28	89
A.5	RAILWAY SIDING	0	0	0	0	0						0
A.6	VEHICLES	8899	0	0	6457	2029	413	0	0		9-13	946
A.7	PROSPECTING & BORING	2000	0	0	1000	500	500	0	0		20	100
A.8	DEVELOPMENT EXP. (COAL)	265545	23500	117679	16745	31692	75929	0	0	0	20	13277
A.8.1	CAPITAL OUTLAY IN MINES	27340	0	756	10006	9092	4198	1645	1643	0	20	1367
A.8.2	ROADS & CULVERTS	45496	0	0	9099	15924	15924	4549	0	0	20	2275
A.8.3	WATER SUPPLY & SEWERAGE	17972	0	0	10000	7972	0	0	0	0	20	899
A.8.4	GR & PR PREPARATION COST	6100	0	0	1950	1950	2200	0	0	0	20	305
A.8.4.A	ENV. POLLUTION CONTROL	3500	0	0	0	0	300	1300	900	1000	20	175
A.8.5	SCIENTIFIC RESEARCH											
A.8	*TOTAL DEVELOPMENT EXP.*	365953	*23500*	*118435*	*47800*	*66630*	*98551*	*7494*	*2543*	*1000*	*20*	18298
A.9	REVENUE EXPENDITURE CAPITALISE	92301	21496	70805	0	0	0		0		20	4615
	LESS:DEPRCN.DURING DEV.PERIOD	49737	11655	38082	0							
	NET REV. EXP. CAPITALISED	42564	9841	32723	0	0	0		0			4615
	TOTAL CAPITAL	**3554872**	**352141**	**466616**	**1210724**	**852047**	**559476**	**73444**	**39424**	**1000**		**339828**

(Departmental Option)

APPENDIX - A.1

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI -III) OCP

ESTIMATED CAPITAL INVESTMENT ON LAND ACQUISITION , COMPENSATION AND REHABILITATION (MARCH,2009)

(Amt. in Rs. '000s)

Sl. No	Particulars	Rate	Total Amount	I	II
1A	Private land to be acquired (692.03ha)	250/ha	198008	100000	98008
1B	Solatium @ 30% of Value of Land		59402	30000	29402
1C	Stamp Duty, Registration charges & Lawyer's fees @1.25 % of total Value of land		2476	1300	1176
1D	Interest @ 12% for 2 year of cost of the land		47522	24000	23522
1E	Acquisition of Govt. land (including Roads & Nallas) (aprrox. 100 ha)	250/ha	25000	12500	12500
2	One time Monetary Compensation package for land holders in lieu of employment as per new R&R package of CIL		257081	130000	127081
3	Acquisition of forest land (29.81 ha)				
A)	Forest land to be diverted for non - forestry purpose (considering Compensatory Afforestation in twice the forest land in degraded forest)	250/ha	14905	7500	7405
B)	Net present value of forest land (as per guidelines of Hon'ble Supreme court)	900/ha	26829	12000	14829
C)	Add-on cost @ 2 % of compensatory afforestation cost	1.2/ha	36	0	36
4	Socio-economic survey & miscellaneous	LS	3000	1500	1500
	TOTAL		634258	318800	315458

The break-up of type of land required for mining is as follows (as per the land records provided by Ballarpur Area)

Particulars	Land (ha)
1. Revenue Land to be acquired	
a) Tenancy land to be acquired incl. Colony land	692.03
b) Tentative Government land	100.00
SUB TOTAL (1).....	792.03
2. Forest Land	29.81
TOTAL	**821.84**

STATEMENT SHOWING ESTIMATED CAPITAL INVESTMENT WITH PHASING AND DEPRECIATION

APPENDIX-A

Coal (Mty)	1.25
Peak OB (Mm^3/y)	8.45
Average SR (m^3/t)	6.54
Life (Yrs)	21.00

APPENDIX - A2

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

Departmental Option

SUMMARY OF ESTIMATED PHASED CAPITAL INVESTMENT ON CIVIL WORKS
[AT COST INDEX 360 IN 2009 (1st HALF)]

(Amt. in Rs.000s)

Sl.No.	Particulars	Total Cost at CI 360	Phased capital Investment						
			Ist Yr.	2nd Yr.	3rd Yr.	4th Yr.	5th Yr.	6th Yr	7th above
1	2	3	4	5	6	7	8		
1	Service Buildings	128597			25719	45009	45009	12860	
2	Residential Buildings	184409			36882	36882	36882	36882	36
	Sub-Total	**313006**	**0**	**0**	**62601**	**81891**	**81891**	**49742**	36
3	Roads & Culverts :								
A	Approach Road	15125		756	7563	6050	756		
B	Colony Roads	8223			1645	1645	1645	1645	1
C	Haul Roads	58184			2909	8728	8728	8728	29
D	Service Road.	3992			798	1397	1797		
E	Diversion of Roads	64182			12836	22464	28882		
	Sub-Total	**149706**	**0**	**756**	**25751**	**40284**	**41808**	**10373**	31
4	Colony Water Supply	12368			2474	4329	4329	1236	
	Colony Sewerage	8902			1780	3116	3116	890	
	Industrial Water Supply	12305			2461	4307	4307	1230	
	Industrial Sewerage	11921			2384	4172	4172	1193	
	Sub-Total	**45496**	**0**	**0**	**9099**	**15924**	**15924**	**4549**	
	Grand Total	**508208**	**0**	**756**	**97451**	**138099**	**139623**	**64664**	9

S.No.	
1	
1	Project Office
2	Manager's Offi
3	EXCAVATION
(i)	Daily maintena m height, oper
(ii)	Main Worksho shop/ rediator shop 6.0 m he
(iii)	Washin ramp
(iv)	Office ore
(v)	Substation bui
(vi)	Concrete pave
(vii)	Groundwater with separate
(viii)	Pump House
(ix)	Dumper parki
(x)	Compound w
(xi)	Waste oil tank
(xii)	Fuel Station
(xiii)	Washing Plat
(xiv)	Lavatories &
(xv)	Scooter/Cycle
(xvi)	Security Post
(xvii)	Space for futu
4	Facilities guts
(i)	Brake testing
(ii)	Dozer repair
(iii)	Dozer washir
(iv)	Underground
(v)	Pump House
5	E & M Works
	a) Main work
	b) L repai
	c) L wash
	d) Undergrou
	e) Pump hou
	f) Structural
	g) Washing
	h) Workshop
	i) Workshop
	j) Switch roo
	k) Bituminou
	l) Boundary
	m) Security
	n) Cycle / Sc
	o) Lavatorie

Job No.4021291

APPENDIX - A.2

artmental Option

Rs.000s)

ent		
	6th Yr	7th & above
009	12860	
882	36882	3688
891	49742	3688
756		
1645	1645	16
8728	8728	290
1797		
8882		
1808	10373	307
4329	1236	
3116	890	
4307	1230	
417	1193	
15924	4549	
139623	64664	67

APPENDIX - A.2.1

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

Statement Showing the Estimated Capital Requirement on Service Buildings with Permanent Specifications [AT COST INDEX 360 IN 2009 (1st HALF)]

(Amount in Rs.'000s)

S.No.	Particulars	Requirement		Unit Cost at CI 100 at Nagpur as on 01.01.92	Total cost at CI 360
		Nos.	Plinth Area in sq.m		
1	2	3	4	5	6
1	Project Office	1	461	2.68	4448
2	Manager's Office	1	282	2.68	2721
3	EXCAVATION WORKSHOP				
(i)	Daily maintenance, schedule maintenance, medium & minor repair shed , 11 m height, open on sides,14 bays,suitable for 20 Te EOT crane	14	96	6	29030
(ii)	Main Workshop building consisting of engine shop/ hydraulic equipment repair shop/ rediator repair shop/ electrical repair shop/ machine shop/Tyre repair shop 6.0 m heightsuitable for 10 Te electric hoist.	1	480	3.3	5702
(iii)	Washing ramp for dumpers of 60T capacity	2	96	LS	1600
(iv)	Office & Stores, 3m height	1	64	2.68	617
(v)	Substation building, 4.5m height	1	36	3.3	428
(vi)	Concrete pavement	1	8900	0.27	8651
(vii)	Groundwater reservoir for dumper washing and fire fighting (90 KL + 10 KL) with separate compartment	1	85	3.9	1193
(viii)	Pump House	1	36	3	389
(ix)	Dumper parking place, WBM	1	2500	0.19	1710
(x)	Compound wall with gate (in RM)	1	680	0.67	1640
(xi)	Waste oil tank(in kl)	1	10	3.9	140
(xii)	Fuel Station	1	9	2.28	74
(xiii)	Washing Platform, open	1	64	0.27	62
(xiv)	Lavatories & Urinals (4 seater)	1	30	4.11	444
(xv)	Scooter/Cycle Shed	1	150	1.2	648
(xvi)	Security Post	1	10.5	2.28	86
(xvii)	Space for future expension, open (in sq.mtr)		192		
4	Facilities outside Workshop				
(i)	Brake testing track	1	1000	0.19	684
(ii)	Dozer repair shop at quarry (6 m height)	1	128	2.64	1217
(iii)	Dozer washing station	1	60	0.27	58
(iv)	Underground water tank (in kl)		20	3.9	281
(v)	Pump House	1	4	3	43
5	E & M Workshop				
	a) Main workshop building,clear height,4.5m	1	288	2.48	2571
	b) LMV repair shed, height - 4.5m	1	54	2.48	482
	c) LMV washing ramp size 8m*5m	1	40	LS	500
	d) Underground water tank	1	20	3.9	281
	e) Pump house (2m x 2m size) in kl	1	4	3	43
	f) Structural yard (open) - Moorum surface	1	144	0.13	67
	g) Washing Platform	1	24	0.27	23
	h) Workshop Office (clear ht 3m)	1	24	2.68	232
	i) Workshop Stores (clear ht 3m)	1	24	2.68	232
	j) Switch room	1	16	3.3	190
	k) Bituminous pavement	1	675	0.2	486
	l) Boundary wall with gate,260m	1	272	0.67	656
	m) Security Post	1	10.5	2.28	86
	n) Cycle / Scooter stand	1	100	1.2	432
	o) Lavatories & Urinals (4 seater)	1	30	4.11	444

APPENDIX - A.2.1 (contd.)

(iii)

S.No.	Particulars	Requirement Nos.	Requirement Plinth Area in sq.m.	Unit Cost at CI 100 at Nagpur as on	Total cost at CI 360
6	UNIT STORES	1	480	3.3	5702
(i)	Store shed, 6 m height	1	2320	0.27	2255
(ii)	Hard stand	1	220	0.67	531
(iii)	Boundary wall with gate (in RM)				
7	Sub-Station	1	210	3.3	2495
	a) Buildng for Project	1	220	0.11	87
	b) Barbed wire fencing with gate (length in metres)				
8	Dispensary	1	200	2.8	2016
9	(a) Magazine (3*3 Te)	3	56	3.3	1996
	b) Barbed wire fencing with gate (length in metres)	1	450	0.11	178
10	Senior/ Officers club	1	350	2.28	2873
11	Workers Institute	1	341	2.28	2799
12	First Aid Centre	1	17	2.8	171
13	Primary School	1	277	2.28	2274
14	Lavatories / Urinals (10 seaters)	1	52	4.11	769
15	Officers Rest House (2 Roomed)	1	276	2.28	2265
16	Staff Rest House (4 Beded)	1	189	2.28	1551
17	Canteen(50 seater)	1	162	2.28	1330
18	Shopping Centre	1	193	2.28	1584
19	Rest Shelter	1	39	2.28	320
20	Security Room	1	10.5	2.28	86
21	Store & Office	1	150	3.3	1782
	i) Building (6.0 m ht.)	1	300	0.67	724
	ii) Boundary wall				
21	Community Hall	1	450	2.28	3694
22	Garages	3	23	1.41	350
23	Civil Maintenance Office & Stores	1	75	2.68	724
24	Staff Club	1	181	2.28	1486
24	Bus Stand	2	18	1.41	183
26	Scooter/Cycle Shed	1	150	1.2	648
27	Boundary wall with gate (in RM)	1	300	0.67	724
28	Soil Investigation, land development & drainage etc			L.S	800
29	Extra provision for foundation in Poor/BC Soil @ 10%				11055
30	TOTAL				122403
31	ADD: Miscellaneous 3%				3672
32	TOTAL				126075
33	Add: Tax on Works Contract @ 2 %				2522
34	GRAND TOTAL				128597

Statement Showing t

S	Catego
1	Cat. I to VI & Grade
2	3384 - 4464 to 369
3	3998 - 6528 to 600 Spl
4	8600 - 14600 to 17
5	18500 - 23900 & A
6	Hostel Type Acco
7	TOTAL
8	Provision for grou horticulture
9	Rainwater harves
10	TOTAL :
11	Contingencies (3
12	TOTAL
13	Add 2% Tax on
14	GRAND TOTAL

Overall housing

* This inc es

**About 20% of

APPENDIX - A.2

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

Statement Showing the Estimated Capital Requirement for Residential Buildings with permanent specification s

Life 20 years,Capacity1.25 Mty

[AT COST INDEX 360 IN 2009 (1st HALF)]

(Rate & Amount in Rs.' 000s)

	Category/Scale	Type of Qrts	No. of Persons	% Satisfaction	Number of Qrts Reqd	Unit Cost at CI 100 at Nagpur as on 01.01.92	Total cost at C
						(Rs.'000)	360
	2	3	4	5	6	11	1
1	Cat. I to VI & Grade B, C, D & E	MQ	548	49	276	98.2	97572
2	3384 - 4464 to 3698 - 5878	A	15				
3	3998 - 6528 to 6000 - 8400, Grade A & Spl	B	159	60	76	155.67	12591
4	8600 - 14600 to 17500 - 22300	C*	32	100	26	243.89	22828
5	18500 - 23900 & Above	D	1	100	1	499.78	1799
6	Hostel Type Accommodation**				26	41.76	3909
7	TOTAL		755		405		68699
8	Provision for ground levelling & horticulture	12.55	Hectare			129	5828
9	Rainwater harvesting					LS	1000
10	TOTAL :		755				75527
11	Contingencies (3%)						5266
12	TOTAL		755				80793
13	Add 2% Tax on works contract :						3616
14	GRAND TOTAL :		755		405		84409

Overall housing satisfaction - 53.60%

* This includes half garage - 9SQ.M.

**About 20% of type quarters have been considered for hostel type accommodation.

APPENDIX - A.2.3

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

STATEMENT SHOWING BUILDING COST INDEX IN Maharastra REGION IN 2009 (1st half)

(WITH REFERENCE TO 100 BASE AT NAGPUR AS ON 1.1.92)

Sl.No.	Description	Units	Rates at Nagpur as on 01.01.92	Average Rates at Areas (Rs.)	Ratio bet.col 5 & 4	Weightage	Cost
1	2	3	4	5	6	7	8
A	**Material**						
1	Bricks	1000	610.00	2300.00	3.770	16	60
2	Sand (67% coarse 33% fine)	Cum	90.00	280.00	3.111	5	15
3	Cement	qtl	140.00	440.00	3.143	21	66
4	Stone aggregate	Cum	230.00	860.00	3.739	6.5	24
5	Timber (local timber)	Cum	12500.00	44000.00	3.520	18	63
6	Mild/Structural/Tor Steel	qtl	1300.00	3700.00	2.846	10	28
B	**Labour:**						
i	(a) Masson (50%First	Each	52.00	201.97	3.884	8.5	33
2	(a) Carpenter (50%First	Each	52.00	198.12	3.810	4	15
3	(c) Coolie/Beldar	Each	40.00	194.27	4.857	11	34
	Total					100	353
	Cost Index					Say	300
Cost Index w.r.t. 100 base in New Delhi as on 01.10.1976							

)IX - A.2.3

2009 (1st half)

:)

eightage	Cost
7	8
16	60
5	15
21	66
6.5	24
18	63
10	29
8.5	30
4	1
11	5
100	35
Say	360

APPENDIX - A.2.4

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

STATEMENT SHOWING UNIT-COST OF RESIDENTIAL BUILDINGS

(Amount in Rs.'000s)

1	MINERS' QUARTERS :	
	Double Storeyed with Permanent Specifications	
	In Poor/BC soil (Require under reamed piles 6 m long)	
	Plinth area .. .. .. 40.43 Sq.m	
	Circulation Area .. .. .. 5.00 Sq.m	
	Sitting-Out-Balcony .. .. .. 2.80 Sq.m	
	Total Area .. .. .. 48.23 Sq.m	
	Unit cost for miners' quarter at Nagpur	
	under new housing scheme at cost index 100 ..	81
	Extra for Anti-Termite Treatment ..	1.3
	Extra for foundations in Poor/BC soil ..	12.6
	Provision for additional facilities ..	3.3
	Total ..	98.2
2	TYPE 'B' QUARTERS :	
	Double Storeyed with Permanent Specifications	
	in Poor/BC soil (Require under reamed piles 6 m long)	
	Plinth area .. .. .. 56.00 Sq.m	
	Circulation Area .. .. .. 5.00 Sq.m	
	Sitting-Out-Balcony .. .. .. 2.80 Sq.m	
	Total Area .. .. .. 63.80 Sq.m	
	Basic building rate / Sq.m at Nagpur at C.I.100 ..	1.56
	Internal water supply and sanitary installation	
	@12.5% of the building rate ..	0.2
	Internal electrification @ 10% of building rate ..	0.16
	External service connection 5% of building rate ..	0.08
	Extra for foundations in Poor/BC soil ..	0.41
	Extra for Anti-Termite Treatment ..	0.03
	Total Rate / Sq.m ..	2.44
	Unit Rate at CI 100 ..	155.67
3(A)	TYPE 'C' QUARTERS :	
	Double Storeyed with Permanent Specifications	
	in Poor/BC soil (Require under reamed piles 6 m long)	
	Plinth area .. .. .. 84.00 Sq.m	
	Circulation Area .. .. .. 5.00 Sq.m	
	Sitting-Out-Balcony .. .. .. 3.90 Sq.m	
	Total Area .. .. .. 92.90 Sq.m	
	Basic building rate / Sq.m at Nagpur atC.I. 100	1.56
	Internal water supply and sanitary installation	
	@12.5% of the building rate ..	0.2
	Internal electrification @ 12.5% of building rate.	0.2
	External service connection 5% of building rate	0.08
	Extra for foundations in Poor/BC soil ..	0.41
	Extra for Anti-Termite Treatment ..	0.03
	Total Rate / Sq.m ..	2.48
	Unit Rate at CI 100 ..	230.39

..(ii)..

APPENDIX - A.2.4 (contd.)

3(B)	GARAGE (HALF) (Single Storeyed)	
	Plinth area .. .. .. 9.00 Sq.m	
	Basic building rate / Sq.m at Nagpur ..	1.41
	Extra for foundations in Poor/BC soil ..	0.09
	Total Rate / Sq.m ..	1.5
	Unit Rate at CI 100	13.5
	Total of 4(A) and 4(B) ..	243.89
4(A)	TYPE 'D' QUARTERS	
	Single Storeyed with Permanent Specifications in Poor/BC soil (Require under reamed piles 6 m long)	
	Plinth area .. .. .. 139.00 Sq.m	
	Basic building rate / Sq.m at Nagpur atC.I. 100	1.95
	Internal water supply and sanitary installation @12.5% of the building rate ..	0.24
	Internal electrification @ 12.5% of building rate..	0.24
	External service connection 5% of building rate ..	0.1
	Extra for foundations in Poor/BC soil ..	0.41
	Extra for Anti-Termite Treatment ..	0.05
	Total Rate / Sq.m ..	2.99
	Unit cost at Nagpur at CI 100	415.61
4(B)	SERVANT'S QUARTER (Single Storeyed)	
	Plinth area .. .. .. 19.00 Sq.m	
	Basic building rate / Sq.m at Nagpur atC.I. 100	1.65
	Internal water supply and sanitary installation @ 15% of the building rate ..	0.25
	Internal electrification @ 10% of building rate..	0.17
	External service connection 5% of building rate ..	0.08
	Extra for foundations in Poor/BC soil ..	0.41
	Extra for Anti-Termite Treatment ..	0.05
	Total Rate / Sq.m ..	2.61
	Unit cost at Nagpur at CI 100	49.59
4(C)	GARAGE	
	Plinth area .. .. .. 19.00 Sq.m	
	Basic building rate / Sq.m at Nagpur at C.I. 100	1.41
	Extra for foundations in Poor/BC soil ..	0.41
	Total Rate / Sq.m	1.82
	Unit cost at Nagpur at CI 100	34.58
	TOTAL [4(A) , 4(B) AND 4(C)]	499.78
5	HOSTEL TYPE ACCOMMODATION	
	Single Storeyed with Permanent Specifications in Poor/BC soil (Require under reamed piles 6 m long)	
	Plinth area .. .. .. 20.00 Sq.m	
	Basic building rate / Sq.m at Nagpur ..	1.65
	Internal water supply and sanitary installation @15% of the building rate ..	0.25
	Internal electrification @ 10% of building rate ..	0.17
	External service connection 5% of building rate ..	0.08
	Extra for foundations in Poor/BC soil ..	0.41
	Extra for Anti-Termite Treatment ..	0.05
	Total Rate / Sq.m	2.61
	Unit Rate at CI 100 ..	41.76

APPENDIX-A.3

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

ESTIMATED CAPITAL INVESTMENT ON PLANT & MACHINERY WITH PHASING

(March, 2009)

COAL(Mty)	1.25
PEAK OB(Mm^3)	8.45
AV.S.R.(m^3/t)	6.54
LIFE(Years)	23

(Amounts in Rs.'000)

Sl. No.	PARTICULARS	Total Nos.	Total Capital	INITIAL CAPITAL												Life	Depreciation
				I-YEAR		II-YEAR		III-YEAR		IV-YEAR		V-YEAR		VI-YEAR			
				No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount		
(A)	FOR OVERBURDEN:																
1	6.1 m^3 DIESEL HYD. SHOVEL	6	269838					4	179892	2	89946	0				8	33730
2	60 T RD DUMPERS	49	980882					17	340306	19	380342	13	260234			7	140126
3	160 mm DIA DIESEL RBH DRILL	6	66858					4	44572	2	22286	0				9	7429
4	410 HP DOZERS	6	129540					4	86360	2	43180	0				9	14393
	SUB-TOTAL:(A).		**1447118**						**651130**		**535754**		**260234**		**0**		**195678**
(B)	FOR COAL:																
1.	4.1 m DIESEL HYD.B/H	1	44973					1	44973		0	0	0		0	7	6425
2.	60T RD DUMPERS	5	100090					2	40036	1	20018	2	40036	0	0	7	14299
3.	160 mm DIE.RBH DRILL	1	11143					1	11143		0	0	0		0	9	1238
4.	320 HP DOZERS	1	14852					1	14852		0	0	0		0	9	1650
	SUB-TOTAL:(B).		**171058**						**111004**		**20018**		**40036**		**0**		**23612**

(C)	COMMON														0	0	9	3756
1	70/80 t CRANE	1	33808					1	33808						0	0	9	281
2	12/15 t MOBILE SERVICE CRANE	1	2533					1	2533						0	0	9	1796
3	28 kl WATER SPRINKLER	2	16168					1	8084	1	8084				0	0	9	2288
4	280 HP MOTOR GRADER	1	20592					1	20592						0	0	9	178
5	MOBILE MAINT. VAN	1	1600					1	1600						0	0	9	179
6	DIESEL BOWSER 7 kl	1	1615					1	1615						0	0	7	1304
7	5.74m³ FRONT END LOADER	1	11734					1	11734						0	0	9	1107
8	TYRE HANDLER	1	9967					1	9967									2498
9	2.8 m3 DIESEL HYD. B/H	1	22486					1	22486						0	0	9	306
10	FIRE-FIGHTING TRUCK	1	2757					1	2757								7	19301
11	FLOAT ENG. ASSM. 60 T DUMPER		135108					19	47538	20	50040	15	37530					**32996**
	SUB-TOTAL.(C).		**258368**						**162714**		**58124**		**37530**			**0**		
(D)	FOR LAND RECLAMATION:																	
1	320 HP WHEEL DOZER	1	13063									1	13063				10	1306
2	WATER TANKER 8 kl	1	1389									1	1389				9	154
	SUB-TOTAL.(D).		14452										14452		0			1461
	SUB-TOTAL.(A-D).		**1890996**						**924848**		**613896**		**352252**		**0**			**253746**
(E)	OTHER P& M																	
1	C.H.P.		**101840**						**81009**		**20831**							**6213**
a(i)	P& M (MECHANICAL)	LS	34673						17418		17255						18	1926
a(ii)	P& M (MECHANICAL)	LS	7144						7144									397
b	IDLERS & BELTING	LS	3512						1670		1842						3	1171
c	CIVIL & STRUCTURALS	LS	53043						53043								30	2526
d	ELECTRONIC ROAD WEIGH BRIDGE	LS	3468						1734		1734.0							193
2.	PUMPING	LS	20261						1939		1443		1443		15436		18	1126
3.	WORKSHOP	LS	27138						11241		15897				0		18	1508
4.	ELEC. P&M	LS	34227						20952		11280		1995		0		18	1902
5	TELECOMMUNICATION	LS	2150						360		717		1073					119
5.	HOSPITAL EQUIPMENTS	LS	2500						0		1300		1200		0		18	139
6.	SURVEY EQUIPMENTS	LS	2500						0		1300		1200		0		18	139
		LS	10-3080						52017		33333		17958		772		18	5782

4.	LUC P&M	LS	34227					20952		11280		1995		0	18	1902
5	TELECOMMUNICATION	LS	2150					360				1073				119
5.	HOSPITAL EQUIPMENTS	LS	2500					0		1300		1200		0	18	139
6.	SURVEY EQUIPMENTS	LS	2500					0		1300		1200		0	18	139
7.	MISc.	LS	104080					52017		33333		17958		772	18	5782
								167518		86101		24869		16208		16927

APPENDIX A.3.1

COAL(Mty)	1.25
PEAK OB(Mm^3)	8.45
AV.S.R.(m^3/t)	6.54
LIFE(Years)	23

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

ESTIMATED CAPITAL INVESTMENT ON PLANT & MACHINERY - HEMM

(March, 2009)

(Amounts in Rs.'000)

Sl. No.	PARTICULARS	Total Nos.	Total Capital	INITIAL CAPITAL												Life	Depreciation
				I-YEAR		II-YEAR		III-YEAR		IV-YEAR		V-YEAR		VI-YEAR			
				No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount		
(A)	FOR OVERBURDEN:																
1	6.1 m³ DIESEL HYD. SHOVEL	6	269838					4	179892	2	89946	0				8	33730
2	100 T RD DUMPERS	49	980882					17	340306	19	380342	13	260234			7	140126
3	160 mm DIA.DIESEL.RBH DRILL	6	66858					4	44572	2	22286	0				9	7429
4	410 HP DOZERS	6	129540					4	86360	2	43180	0				9	14393
	SUB-TOTAL.(A).		**1447118**						**651130**		**535754**		**260234**		**0**		**195678**
(B)	FOR COAL:																
1.	4.3 m³ DIESEL HYD.B/H	1	44973					1	44973		0	0	0		0	7	6425
2	60T RD DUMPERS	5	100090					2	40036	1	20018	2	40036	0	0	7	14299
3.	160 mm DIE.RBH DRILL.	1	11143					1	11143		0	0	0		0	9	1238
4.	320 HP DOZERS	1	14852					1	14852		0	0	0		0	9	1650
	SUB-TOTAL.(B).		**171058**						**111004**		**20018**		**40036**		**0**		**23612**

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

ESTIMATED CAPITAL INVESTMENT ON PLANT & MACHINERY - HEMM

(March, 2009)

APPENDIX A.3.1

COAL(Mty)	1.25
PEAK OB(Mm^3)	8.45
AV.S.R.(m^3/t)	6.54
LIFE(Years)	23

(C)	COMMON:																		
1	70/80 t CRANE	1	33808					1	33808					0	0	9	3756		
2	12/15 t MOBILE SERVICE CRANE	1	2533					1	2533					0	0	9	281		
3	7KL WATER SPRINKLER	2	16168					1	8084	1	8084			0	0	9	1796		
4	280 HP MOTOR GRADER	1	20592					1	20592					0	0	9	2288		
5	MOBILE MAINT. VAN	1	1600					1	1600					0	0	9	178		
6	DIESEL BOWSER 3 kl	1	1615					1	1615					0	0	9	179		
7	5.74m^3 FRONT END LOADER	1	11734					1	11734					0	0	7	1304		
8	TYRE HANDLER	1	9967					1	9967					0	0	9	1107		
9	2.8 m^3 DIESEL HYD. BAT.	1	22486					1	22486								2498		
10	FIRE-FIGHTING TRUCK	1	2757					1	2757					0	0	9	306		
11	FLOAT ENG. ASSM. 60 T. DUMPER		135108													7	19301		
	SUB-TOTAL.(C).		**258368**					19	47538	20	50040	15	37530		**0**		**32996**		
									162714		**58124**		**37530**						
(D)	FOR LAND RECLAMATION:																		
1	320 HP WHEEL DOZER	1	13063									1	13063			10	1306		
2	WATER TANKER 8 kl	1	1389									1	1389			9	154		
	SUB-TOTAL.(D).		**14452**										**14452**		**0**		**1461**		
	GRAND TOTAL.(A-D).		**1890996**						**924848**		**613896**		**352252**		**0**		**253746**		

STATEMENT SHOWING ESTIMATED PR FOR SAKHARI-IRAWATI (PAUNI-III) O CAPITAL REQUIREMENT FOR ELECTRICAL PLANT & MACHINERY

Appendix- A.3.2

		14452												
	GRAND TOTAL.(A-D).	1890996								14452	0		1461	
							924848		613896	352252	0		253746	

Appendix- A.3.2

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

STATEMENT SHOWING ESTIMATED CAPITAL REQUIREMENT FOR ELECTRICAL PLANT & MACHINERY

OPTION : DEPARTMENTAL

(Base Price :MARCH, '09)

(Amount in Rs. '000)

SL.NO.	PARTICULARS	TOTAL CAPITAL REQUIREMENT			PHASING OF CAPITAL				
		QTY.	UNIT RATE	AMT.	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
1.0	MAIN SUBSTATION								
1.1	Air break isolator, gang operated, off load, outdoor type, pole mounted, 11 kV, 400A with D.O. Fuses.	1 No.	16	16			16		
1.2	Do without D.O. fuse	5 Nos.	8	40			40		
1.3	Lightning arrester, station class, 9 kV, 5 kA for 11 kV system	5 sets	15	75			75		
1.4	Indoor type V.C.B., 11 KV, 400 Amp, 250 MVA complete having protections and metering with CTR 200/5 - 1no.;CTR 100/5 - 2nos., 20/5 - 1nos. and PT 11 kV / 110V	4 Nos.	315	1260			1260		
1.5	Transformer, outdoor type, DY-11, 11/3.4 KV, 2000 kVA with off load tap changer and complete with all accessories as per IS:2026	2 Nos.	1520	3040			3040		
1.6	Lighting transformer, plinth mounted, outdoor type rated 100 kVA, (Al)11 kV / 230 V (Line to Line)	1 No.	103	103			103		
1.7	Switch board, 3.3 kV, 11 panel sectionalised indoor type, 400 Amp, 75 MVA symmetrical breaking capcity with 11 circuit breaker panel of various capacities as under :- 2 Nos. incoming feeder control C.B. with CTR 350/5 2 Nos. quarry feeder control C.B. with CTR 200/5 2 No. spare feeder control C.B. 2 Nos. capacitor bank control C.B. with CTR 50/5 1 No. feeder panel for CHP with CTR 100/5 1 No. feeder panel for Workshop with CTR 100/5 1 No. sectionaliser with CTR 350/5	1 sets	2298	2298			2298		

SL.NO.	PARTICULARS	TOTAL CAPITAL REQUIREMENT QTY.	UNIT RATE	AMT.	PHASING OF CAPITAL I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
					Appendix- A.3.2 (contd.)				
1.8	Lighting distribution board, 10 panel suitable for 415V, 3 phase and neutral system comprising 1 No. incoming control 3 pole MCCB, 200 Amp. and 9 Nos. outgoing control 32 A mp. 2- pole MCB having back up HRC fuses rated 30 Amp.	1 No.	52	52			52		
1.9	Capacitor bank, 3.3 kV grade,75 kVAR with control panel (manual)	6 Nos.	75	450			450		
1.10	Air break isolator, gang operated, off load, out door type pole mounted, 3.3 kV, 400A, with D.O. fuse	4 Nos.	10	40			40		
1.11	Lightning arrestor, station class, for 3.3 kV system, set of 3	4 Nos.	7	28			28		
1.12	Neutral grounding resistor for restricted earth fault system for 11 KV / 3.3 KV transformers each of 38 ohm	2 sets	150	300			300		
1.13	Transformer 3.3 kV/440 V, 500 kVA for workshop	1 No.	519	519			519		
1.14	Outdoor type V.C.B. 3.3 kV, 400 Amp, 75 MVA having protections and metering facilities with CTR 100/5 for primary control of the Transformer for workshop	1 No	326	326			326		
1.15	Miscellaneous including earth pits, earth strips, steel , cables and structurals, etc.	LS	1500	1500			1500		
	SUB-TOTAL - 1 :			10047	0	0	10047	0	0
2.0	QUARRY POWER DISTRIBUTION								
2.1	Lightning arrester, station class for 3.3 kV system, set of 3	2 sets	7	14				14	
2.2	3.3 kV oil immersed load break switch, 75 MVA, 400 Amp, 3 phase, 50 Hz, in outdoor kiosk with HRC fuse	2 Nos.	62	124				124	
2.3	Air break isolator 3.3 kV gang operated, off load, outdoor type pole mounted, 400 A with D.O fuse	2 Nos.	10	20				20	

SL.NO.	PARTICULARS	TOTAL CAPITAL REQUIREMENT QTY.	UNIT RATE	AMT.	PHASING OF CAPITAL I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
					Appendix- A.3.2 (contd.)				
2.4	Switch board, 3.3 kV, 9 panel sectiona 1, 400 Amp, 75 MVA symmetrical breaking capcity with 9 circuit breaker panel of various capacities for pumping as under :	1 set	1880	1880			1880		

2.2	3.3 kV oil immersed load break switch, 75 MVA, 400 Amp. 3 phase, 50 Hz, in outdoor kiosk with HRC fuse	2	Nos.	62	124			124	
2.3	Air break isolator 3.3 kV gang operated, off load, outdoor type pole mounted, 400 A with D.O.fuse	2	Nos.	10	20			20	

SL.NO.	PARTICULARS	TOTAL CAPITAL REQUIREMENT				PHASING OF CAPITAL				
		QTY.		UNIT RATE	AMT.	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
						Appendix- A.3.2 (contd.)				
2.4	Switch board, 3.3 kV, 9 panel sectionalised , 400 Amp, 75 MVA symmetrical breaking capcity with 9 circuit breaker panel of various capacities for pumping as under :- 2 Nos. incoming feeder control C.B. with CTR 300/5 3 Nos. main pump feeder control C.B. with CTR 100/5 2 No. spare feeder control C.B. 1 No. feeder control C.B. for LT power distr. trf. with CTR 150/5 1 No. sectionaliser with CTR 300/5	1	set	1880	1880				1880	
2.5	Transformer 630 kVA, 3.3 kV/440 V for power supply to LT pump	1	No.	570	570				570	
2.6	440 V switchboard, 10 panel, suitable for outdoor use for pumps with circuit breakers as follows : 1 No. incoming feeder control 630 A MCCB with CTR 630/5 3 Nos. pumping feeder control MCCB.each of 200 A 4 Nos. pumping feeder control 32 A SFU with 16 A HRC fuse. 1 No. spare feeder control MCCB. of 200 A 1 Nos. spare feeder control 32 A SFU with 16 A HRC fuse	1	set	175	175				175	
2.7	Capacitor bank, 3.3 kV grade,75 kVAR with control panel (manual)	3	Nos.	75	225				225	
	SUB-TOTAL - 2 :				**3008**	**0**	**0**	**0**	**3008**	**0**
3.0	**CABLE AND OVERHEAD LINES**									
3.1	PVCDWA mining type cable with copper conudctor, 3.3 kV grade of following sizes :									
	a) 3 x 35 mm^2	1	km	577	577				300	277
	b) 3 x 50 mm^2	1	km	776	776				500	276
	c) 3 x 120 mm^2	0.5	km	1853	927				650	277
	e) 3 x 150 mm^2	0.2	km	2327	465				200	265
3.2	Lighting cable of various sizes of 650 V/1100 grade a) 2 x 4 mm^2 b) 2 x 6 mm^2	LS		450	450				250	200
3.3	3.3 KV overhead line for quarry feeder with ACSR (4x100 sqmm) conductor on poles and other accessories.	2.5	km	700	1750				1750	
	SUB-TOTAL - 3 :				**4945**	**0**	**0**	**0**	**3650**	**1295**

Appendix- A.3.2 (contd.)

SL.NO.	PARTICULARS	TOTAL CAPITAL REQUIREMENT QTY.		UNIT RATE	AMT.	PHASING OF CAPITAL I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
4.0	**ILLUMINATION OF QUARRY**									
4.1	Lighting transformer, outdoor, pole mounted AN cooled, rated 16 kVA, 3.3 kV/230 V (L-L) alongwith its primary control, 3.3 kV isolator and D.O. fuse & D.P.structure	5	sets	236	1180			708	472	
4.2	Lighting distribution board suitable for 230 V supply system comprising 1 No. 63 A 2 pole MCB as incoming control & 2 Nos. 30A 2 pole MCB as outgoing control	5	sets	5	25			15	10	
4.3	Service road illumination including OHL, steel poles (10.5m high) HPSV Lamps and fittigs suitable for 150 W lamps with control gears and other accessories.	1	km	600	600			300	300	
4.4	Approach road illumination including O.H.L. steel poles (10.5m), HPSV lamps and fittings suitable for 150 W lamps with control and other accessories.	0.5	km	600	300			300		
4.5	Illumination of quarry area, general dump area etc.with cluster of 6 Nos. 400 W HPSV Lamps mounted on steel towers gears approximately 15m high, fixed type.	4	Nos.	150	600			300	300	
4.6	Illumination of production faces with 400 W, HPSV Lamps, in symmetrical luminaire mounted on telescopic tower (self supporting 5.5m high).	4	Nos.	100	400			200	200	
4.7	Illumination of Haul road with 250 W HPSV lamps, fitted in street light fittings mounted on 12m high poles.	2	km	600	1200			600	600	
	SUB-TOTAL - 4 :				**4305**	**0**	**0**	**2423**	**1882**	**0**

4.7	Illumination of Main road with 250 W HP SV lamps, [illegible] light fittings mounted on 12m high poles.								
	SUB-TOTAL - 4 :			4305	0		2423	1882	0

SL.NO.	PARTICULARS	TOTAL CAPITAL REQUIREMENT			PHASING OF CAPITAL				
		QTY.	UNIT RATE	AMT.	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
5.0	**TOWNSHIP ELECTRIFICATION**				Appendix- A.3.2 (contd.)				
5.1	Incoming 11 KV OHL with poles, other accessories	2.5 km	800	2000			2000		
5.2	Circuit breaker, (VCB) outdoor type, 11 kV, 400A, 250 MVA having protection and metering facilities with CTR 50/5	4 No	380	1520			1520		
5.3	11 KV, AB isolator 400A Off load type with D.O. fuse 10 Amps	4 Nos.	16	64			64		
5.4	Lightning arrester, station class, 9 kV, 5 kA for 11 kV system	4 Nos	15	60			60		
5.5	Transformer, outdoor type, pole mounted, 160 kVA, 3.3 KV/415V with all accessories.	4 Nos.	160	640			640		
5.6	415 V L.T. pole mounted distribution box with on incoming 250 Amp. T.P. MCCB and 3 Nos. T.P. outgoing circuit MCCB 100 Amp.	4 sets	52	208			208		
5.7	415V L.T. overhead distribution line with 5 Nos. ACSR conductor 65 Sqmm with ACSR conductor and other accessories.	2 km	600	1200			600	600	

SL.NO.	PARTICULARS	TOTAL CAPITAL REQUIREMENT			PHASING OF CAPITAL				
		QTY.	UNIT RATE	AMT.	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
					Appendix- A.3.2 (contd.)				
5.8	HPSV Street light fitting, 70 W complete with control gear and lamp	70 Nos.	4	280			140	140	
5.9	11 KV Double pole structure for installation of 160 KVA transformer A.B. isolator D.O. fuse lightning arrestor etc.	4 Nos.	50	200			100	100	
5.10	PVCSWA aluminum conductor cable, 1.1 KV grade, 4 core x 35 Sqmm and 2 core x 25 Sqmm	LS	500	500			250	250	
5.11	Miscellaneous electrical for township including service connection line to the residence	LS	600	600			300	300	
	SUB-TOTAL - 5 :			7272	0	0	5882	1390	0
6.0	**Testing and maintenance equipment**	LS	350	350			200	150	
	Meggar - 5000 V - 1 no Meggar - 1000V - 2 nos Multimeter - 2 nos Tong Tester - 2 nos Transformer oil testing machine - 1 no. Cable fault locator - 1 no. Portable motor checker with associated accessories - 1 set Telescopic big wheel ladder - 1 no., etc.								
7.0	**Energy Conservation measures**	LS	300	300			200	100	
8.0	**Miscellaneous Electrical P&M**	LS	900	900			400	300	200
9.0	**Erection and Commissioning**	LS	3100	3100			1800	800	500
	GRAND TOTAL			34227	0	0	20952	11280	1995

9.0	Erection and Commissioning	LS	3100	3100			1800	800	500
	GRAND TOTAL			34227	0		20952	11280	1995

Appendix - A.3.3

POJECT REPORT FOR SAKHARI-IRAWATI (PAUNI-III) OCP
ESTIMATED CAPITAL INVESTMENT ON P&M - WORKSHOP

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
1.	Excavation workshop equipment (Appendix A.3.3.1)	LS	-	24332	0	9838	14494
2.	E&M workshop equipment (Appendix A.3.3.2)	LS	-	2806	0	1403	1403
	TOTAL			27138	0	11241	15897

POJECT REPORT FOR SAKHARI-IRAWATI (PAUNI-III) OCP
ESTIMATED CAPITAL INVESTMENT ON P&M - EXCAVATION WORKSHOP

Appendix - A.3.3.1

Amount in Rs.'000

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
A.	**MACHINE SHOP:**						
1	Medium duty centre lathe, 260 mm CH, 2000mm DBC, with drive units and accessories	1	1211	1211		-	1211
2	Light duty centre lathe, 200mm CH and 1000mm DBC, 3.75 kW, motor power	1	250	250		-	250
3	Radial drilling machine, drilling capacity in steel 32mm, drilling radius 800mm, motor power, 2.25kW	1	1018	1018		1018	
4	Power hacksaw to cut rounds upto 100mm, 1.5kW motor power	1	97	97		97	
5	Shaping machine, 630mm stroke length, alongwith motor, starter, accessories etc.	1	230	230			230
6	Portable hand drill, 25mm diameter capacity	1	36	36		36	
7	Pedastal grinder, double ended, 300 mm wheel dia.	1	40	40		40	
8	Tools, accessories, surface plates, measuring instruments, work tables, dies, gauges etc.	LS	-	100		50	50
	Sub-total:			2982	0	1241	1741

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Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
B.	**ELECTRICAL REPAIR SHOP:**						

Appendix - A.3.3.1 (Contd..)

	instruments, work tables, dies, gauges etc.						
	Sub-total:			**2982**	**0**	**1241**	**1741**

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8

Appendix - A.3.3.1 (Contd..)

B.	**ELECTRICAL REPAIR SHOP:**						
1	Coil drying chamber alongwith temperature control	2	30	60		30	30
2	Coil winding machine, wire size 0.5 - 2.5 mm diameter with accessories	2	39	78		39	39
3	Battery charging set,capacity 12-72V	2	61	122		61	61
4	Distilled water plant, 15lph capacity	2	55	110		55	55
5	Portable hand drill, drilling capacity 25 mm in steel	2	36	72		36	36
6	Flexible shaft grinder, 100 mm wheel dia.	1	27	27		27	
7	Testing instruments, meters, long testers, tools, hydrometer, measuring instruments, tackles, megger, tools, implements, soldering iron etc.	LS		100		50	50
	Sub total :			**569**	**0**	**298**	**271**
C.	**Engine/Hydraulic equipment repairshop:**						
1	Valve seat puller and remover, 0.5kW	1	26	26			26
2	Hydraulic press, 100t capacity	1	320	320			320
3	Hydraulic jack with pullar attachment, 50 t. cap. remote controlled	1	738	738			738
4	Master tool kits	2	150	300		150	150
5	Tools, testing equipment, implements, tackles etc. Steam jenny set, water jet cap. 760lph, steam 330lph, pressure 115 bar	LS		100		50	50
6	Steam jenny set, water jet cap. 760lph, steam 330lph, pressure 115 bar	1	0	0			0
	Sub-total :			**1484**	**0**	**200**	**1284**

Appendix - A.3.3.1 (Contd..)

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
D.	**Radiator repair shop :**						
1.	Oxy-accetylene gas cutting and brazing sets	2	10	20		10	10
2.	Hand pump for radiator cleaning, work benches, partition racks, water tank, tools and tackles, soldering iron, hoist 3/5t capacity etc.	LS		50		25	25
	Sub-total :			**70**	**0**	**35**	**35**
E.	**Heavy repair and structural shop :**						
1	Transformer welding set, 400A	2	59	118		59	59
2	Oxy acetylene gas cutting and brazing set	2	10	20		10	10
3	Portable hand grinder, 100 mm wheel dia.	1	17	17			17
4	Portable hand drill, drilling cap, 25 mm	1	36	36			36
5	Vices, torque wrenches, screw drivers, wrenches, vices, handsaw, tools and tackles etc.	LS		50		25	25
	Sub-total:			**241**	**0**	**94**	**147**
F.	**Dumper Daily Maintenance :**						
1.	Air compressor, 4.2 m3/min capacity @ 7.0kg/cm2 pressure with tyre inflator and accessories	2	677	1354		677	677
2.	Pressurised lubricating equipment with air compressor for greasing/oildespensing	1	787	787		787	
3.	Articulated mobile tank with telescopic funnel for waste oil	2	58	116		58	58
4	OH tank 2000 lit. capacity with stand for filling	LS		60		30	30
5	Diagnotic/testing instruments, wrenches, screw-drivers, other tools and implements	LS		100		50	50
	Sub-total:			**2417**	**0**	**1602**	**815**

	oil						
4	OH tank 2000 lit. capacity with stand for filling	LS	-	60		30	30
5	Diagnotic/testing instruments, wrenches, screw-drivers, other tools and implements	LS	-	100		50	50
	Sub-total:			**2417**	**0**	**1602**	**815**

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8

Appendix - A.3.3.1 (Contd..)

G.	**Dumper schedule repair shops :**						
1	DC rectifier welding set with semi-automatic wire feed mechanism, 400Amps, 25kVA	1	339	339			339
2	Transformer welding set,400A	2	59	118		59	59
3	Inverter type welding set,200A	1	191	191			191
4	Oxy acetylene gas cutting and brazing set	2	10	20		10	10
5	Nitrogen charging kit	2	81	162		81	81
6	Master tool kits	5	150	750		450	300
7	Hydraulic bead breaker and tyre remover	1	330	330			330
8	Flexible shaft grinder, 100 mm wheel	1	27	27		27	
9	Portable hand drill, 25 mm dia	1	36	36		36	
10	Torque wrenches, screw drivers, wrenches, saw, gauges, tools, implements, feeler gauges,Pneumatic inpact wrench etc.	LS	-	100		50	50
11	Bearing heater for fitting of bearings	1	278	278			278
	Sub-total:			**2351**	**0**	**713**	**1638**

Appendix - A.3.3.1 (Contd..)

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
H.	**Dozer repair shop :**						
1	Pressurised lubricating equipment	1	305	305			305
2	Portable hand drill, 25mm drilling capacity	1	55	55		55	
3	Pedestal grinder double ended, wheel dia. 300mm	1	40	40		40	
4	Transformer welding set, 400A	1	59	59		59	
5	Oxy acetylene gas cutting and brazing set	1	10	10			10
6	Master tool kits	1	150	150		150	
7	Tools, implements, mech, jacks, tackles, torque wrenches, gauges etc.	LS		50		25	25
	Sub-total :			669	0	329	340
I.	**Washing System :**						
1.	High pressure multi-jet, washing machine capacity 1760lph alongwith supply pump and its accessories	2	355	710		355	355
2	Steam jenny set, water jet capacity 760 lph, steam jetcapacity 330 lph	2	158	316		158	158
	Sub-total:			1026	0	513	513

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Sl.No	Partic. .rs	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr

	Sub-total:			1026			

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8

Appendix - A.3.3.1 (Contd..)

J	**Heavy repair shop:**						
1	Transformer welding set, 400Amps, 20kVA	1	59	59		59	
2	Hydraulic jack with puller attachments and safety devices, 50t capacity	1	738	738			738
3	Flexible shaft grinder, 100mm wheel diameter	1	27	27		27	
4	Portable hand drill with drill bits, collets 25mm drilling capacity , 0.55kW motor power	1	36	36		36	
5	Oxy-acetelene gas cutting & brazing set	1	10	10			10
6	Master tool kit	1	150	150			150
7	Shockets, torque wrenches, stands, work bench	LS		50		25	25
	Sub-total:			**1070**	**0**	**147**	**923**
K	**Material Handling Equipment:**						
1	EOT crane, 15t capacity, floor operated suitable for span 12m	2	1966	3932		1966	1966
2	Electric hoist 10t capacity	1	514	514			514
3	Hydraulic floor crane, 2t capacity	1	51	51			51
4	Tools and tackles etc.	LS		50		25	25
	Sub-total:			**4547**	**0**	**1991**	**2556**

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
						Appendix - A.3.3.1 (Contd..)	
L	**Field Service Equipment:**						
1	Mobile service unit	Refer Appendix No. A.3					
2	Diesel operated pump for washing shovels/drills	1	69	69		69	
	Sub total:			**69**	**0**	**69**	0
M	**Stores and Common Equipments:**						
1	Diesel operated mobile welding set, 400A	1	509	509			509
2	Material handling equipments for stores	LS	-	100		50	50
3	Racks, bins, hand trolleys, skid pallets etc.	LS	-	200		100	100
4	Fire extinguishers	LS	-	200		100	100
	Sub total:			**1009**	**0**	**250**	759
	Total (A to M)			**18504**	**0**	**7482**	11022
N	**Workshop power supply, illumination 15% (A to M)**	LS	-	2775	0	1122	1653
O	**Contingency expenditure 5% (A to M)**	LS	-	925	0	374	551
P	**Installation, commissioning etc. 10% (A to M) & N**	LS	-	2128	0	860	1268
	Total For Excavation Workshop			**24332**	**0**	**9838**	14494

Total For Excavation

Appendix - A.3.3.2

POJECT REPORT FOR SAKHARI-IRAWATI (PAUNI-III) OCP
ESTIMATED CAPITAL INVESTMENT ON P&M - E & M WORKSHOP

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
A.	**Machine shop:**						
1	Light duty centre lathe, 200 mm CH and 1600 mm DBC	1	364	364		364	
2	Tools and tackles etc.	LS	-	50		25	25
3	Power hacksaw to cut rounds upto 100 mm dia.	1	97	97		97	
4	Pillar drilling m/c, 25 mm dia. in steel	1	77	77		77	
	Sub-total			588	0	563	25
B.	**Electrical equipment repair shop :**						
1	Transformer oil filteration machine	1	300	300			300
2	Transformer oil testing kit	1	32	32			32
3	H.V. testing Kit	1	192	192		192	
4	Hydraulically operated cable crimping m/c	1	41	41		41	
5	Motor drying unit	1	107	107		107	
6	Cable vulcaniser for 3x150 sq.m cables	1	39	39		39	
7	Relay testing equipment	1	64	64			64
8	Cable fault detector	1	81	81			81
9	Measuring instruments, tong tester, meters, soldering rod, wrenches, screw drivers, hygroneter, tools, tackles etc.	LS	-	50		25	25
	Sub total			906	0	404	502

Appendix - A.3.3.2 (Contd..)

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
C.	**Mechanical repair shop :**						
1.	Hydraulic hand press, 20 t. cap.	1	67	67			67
2	Portable hand drill, drilling cap. 13 mm	1	10	10			10
3	Pedestal grinder, double ended, wheel dia. 300mm	1	40	40			40
4	Tools and tackles etc	LS		50		25	25
5	Portable hand grinder, wheel dia. 100mm	1	17	17			17
	Sub-total			**184**	**0**	**25**	**159**
D.	**Structural shop :**						
1.	Transformer welding set, 400 A capacity	1	59	59			59
2.	Oxy acetylene gas cutting and brazing set	1	10	10			10
	Sub-total			**69**	**0**	**0**	**69**
E.	**LMV Repair shop:**						
1	Air compressor, 0.5 cu.M/min at 7kq/sq.cm alongwith tyre inflator, pressure gauge, receiver and electricals etc	1	75	75			75
2	High pressure water jet washing machine for light vehicle, jet capacity 760lph, 2.3kW power	1	162	162			162
3	Grease guns, tools jacks etc,	LS		50		25	25
	Sub-total			**287**	**0**	**25**	**262**

	Vehicles, etc.	LS	-	50			
3	Grease guns, tools jacks etc,			287	0	25	262
	Sub-total						

Sl.No	Particulars	Qty.	Unit Cost	Amount	PHASING		
					1 st. & 2nd. Yr	3rd. Yr.	4TH. Yr
1	2	3	4	5	6	7	8
					Appendix - A.3.3.2 (Contd..)		
F	**Material Handling Equipment/Common Eqpt.**						
1	Cutting tools, Chucks, Attachements, Face plates, Rests, Collets, Fixtures, Drill bits, Vices, Keys, Micrometer, Caliper, Spanners, Allen key sets, Hacksaws, Hammers, Swage blocks, Files, Screw driver, Pliers, Other tools and implements, Racks, Hand Trol	LS	-	100		50	50
	Sub-total			**100**	**0**	**50**	**50**
				2134	**0**	**1067**	**1067**
	TOTAL A to F			320	0	160	160
G	**Workshop power supply, illumination @15% (A to F)**	LS	-	106	0	53	53
H	**Contengencies @ 5% (A to F)**	LS	-	246	0	123	123
I	**Installation and commissioning @ 10% (A to F) & G**	LS	-	**2806**	**0**	**1403**	**1403**
	Grand total :						

Appendix - A.3.4

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP
ESTIMATED CAPITAL INVESTMENT ON P&M - PUMPS, PIPES AND PIPE FITTINGS

Amount in Rs.'000

S.No.	Particulars	Total Quantity	Unit Cost	Total Cost	Phasing of Balance Capital								Depriciation of estimated Capital
					3rd Year		4th Year		5th Year		6th Year		
					Qty.	Amt.	Qty.	Amt.	Qty.	Amt.	Qty.	Amt.	
1	2	3	4	5	6	7	8	9	10	11	12	13	16
1.	Pump motor set consisting of :												
(i)	Pump, centrifugal, multistage, radial split casing Br.impeller, steep characteristic 200 lps,120m head 10% increased in rated head should decrease the rated discharge by 25%, 10% decrease in rated head should increase the rated discharge by 15%	4 (3+1 Standbye)	2240	8960							4	8960	497.78
(ii)	Motor TEFC, NFLP, 400kW, 3.3kV, 3 ph, 50 Hz, supply												
(iii)	Starter star delta NFLP mining type remote control												
(iv)	Base plate, sluice valve, foot valve, non return valve, flanges pressure gauges, flowmeter etc.												
2.	Pump motor set consisting of :												
(i)	Pump, centrifugal, multistage, radial split casing Br.impeller, steep characteristic 80 lps,80m head 10% increased in rated head should decrease the rated discharge by 25%, 10% decrease in rated head should increase the rated discharge by 15%	3	475	1425	1	475	1	475	1	475			79.17
(ii)	Motor TEFC, NFLP, 110kW, 550/440V, 3 ph, 50 Hz, supply												
(iii)	Starter star delta NFLP mining type remote control												
(iv)	Base plate, sluice valve, foot valve, non return valve, flanges pressure gauges, flowmeter etc.												

Appendix - A.3.4 (contd..)

..(ii)..

1	2	3	4	5	6	7	8	9	10	11	12	13	16
3	Pump motor set consisting of :												26.28

	10% decrease in [illegible] discharge by 15%.												
(ii)	Motor TEFC, NFLP, 110kW, 550/440V, 3 ph, 50 Hz supply												
(iii)	Starter star delta NFLP mining type remote contr												
(iv)	Base plate, sluice valve, foot valve, non return valve, flanges pressure gauges, flowmeter etc.												

Appendix - A.3.4 (contd..)

1	2	..(ii).. 3	4	5	6	7	8	9	10	11	12	13	16
3.	Pump motor set consisting of :												
(i)	Pump, centrifugal, multistage, horizontal split casing, steep characteristic, C.I. Impeller, 80 lps., 60 m head, 10% increase in rated head should give 25% decrease in rated discharge, 10% decrease in rated head should given 15% increase in rated discharge	1	473	473	1	473							26.28
(ii)	Diesel engine, 80 kW, battery start, fuel tank and other allied accessories complete												
(iii)	Base plate, sluice valve, foot valve, non-return valve, flanges, pressure gauge, flow meter etc.												
4.	Portable face pump motor set consisting of :												
(i)	Pump, centrifugal, multistage, horizontal split casing, steep characteristic, C.I. Impeller, 11 lps., 30 m head, 10% increase in rated head should give 25% decrease in rated discharge, 10% decrease in rated head should given 15% increase in rated discharge	5 4+1 (Standbye)	76	380	1	76	1	76	1	76	2	152	21.11
(ii)	Motor TEFC,NFLP, 9.3 KW, 550/415 V, 3 Phase, 50 Hz												
(iii)	Starter Star- Delta, NFLP mining type remote control												
(iv)	Base plate, sluice valve, foot valve, non-return valve, flanges, trolley with 100m long trailling cable etc.												
5.	Pipes :												
(i)	ERW pipe 406.4 mm (m)	1000	3.84	3840	-	-	-	-	-	-	1000	2016	317.88
(ii)	ERW pipe 324 mm (m)	1000	2.108	2108	200	422	200	422	200	422	400	842	117.11
(iii)	ERW pipe 219 mm (m)	1000	1.391	1391	200	278	200	278	200	278	400	557	77.28
(iv)	G.I. Pipe 80 mm (m)	800	0.419	335	200	84	200	84	200	84	200	83	18.61
6.	Pipe fittings & misc.	LS	LS	384	LS	39	LS	39	LS	39	LS	267	21.33
7.	Installation and foundation :	LS	LS	965	LS	92	LS	69	LS	69	LS	735	53.61
	TOTAL :			**20261**		**1939**		**1443**		**1443**		**15436**	**1125.61**

APPENDIX - A.3.5

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI - III) OC MINE
(March 2009)

ESTIMATED CAPITAL INVESTMENT, LIFE & DEPRECIATION ON COAL HANDLING PLANT

(FIGURES IN RS.'000)

Sl.No.	Particulars	Total Capital requirement	Phasing of Capital Provision				Life in years	Depreciation
			Yr - I	Yr - II	Yr - III	Yr -IV		
1	2	3	4	5	6	7	8	9
1.	Plant & Machinery							
	a) P & M (Mechanical)	34673	-	-	17418	17255	18	1926.3
	b) P & M (Electrical)	7144	-	-	7144	-	18	396.9
	c) Electronic Road Weighbridge	3468	-	-	1734	1734	18	192.7
	Sub Total	45285	-	-	26296	18989		2515.9
2.	Idlers & belting	3512	-	-	1670	1842	3	1170.7
3.	Civil & Structural works.	53043	-	-	53043	-	21	2525.9
	Total	**101840**	**-**	**-**	**81009**	**20831**		**6212.5**

APPENDIX - A.3.5

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI - III) OC MINE
(March 2009)

ESTIMATED CAPITAL INVESTMENT ON COAL HANDLING PLANT

(FIGURES IN RS.'000)

Sl.No.	Particulars	Total Capital requirement	Phasing of Capital Provision			
			Yr - I	Yr - II	Yr - III	Yr - IV
1	2	3	4	5	6	7
1.	Conveyors					
	1) Drive head and structurals	4229	-	-	2091	2138
	2) Idlers	1759	-	-	848	911
2.	Belting	1434	-	-	670	764
3.	Equipment	30172	-	-	15186	14986
4.	Electricals	7144	-	-	7144	-
5.	Miscellaneous Expenses	1129	-	-	564	565
6.	Erection	2930	-	-	1463	1467
7.	Civil & Structural Works	53043	-	-	53043	-
	Total	**101840**	-	-	**81009**	**20831**

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APPENDIX - A.3.5.1

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI - III) OC MINE
(March 2009)

ESTIMATED CAPITAL INVESTMENT ON COAL HANDLING PLANT - CONVEYORS

(FIGURES IN RS.'000)

Sl.No.	Particulars	Total Capital requirement			Phasing of Capital Provision			
		Quantity	Unit Cost	Amount	Yr - I	Yr - II	Yr - III	Yr - IV
1	2	3	4	5	6	7	8	9
	Conveyors							
1.	ROM Conveyor C1,1200mm wide, 55kw drive, 2.3 m/sec speed, 400tph capacity, 118m long.	1 Set	2939	2939	-	-	2939	-
2.	ROM Conveyor C2,1200mm wide, 55kw drive, 2.3 m/sec speed, 400tph capacity, 135m long.	1 Set	3049	3049	-	-	-	3049
	Total			**5988**	-	-	**2939**	**3049**

APPENDIX - A.3.5.2

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI - III) OC MINE
(March 2009)

APPENDIX - A.3.5.2

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI - III) OC MINE
(March 2009)

ESTIMATED CAPITAL INVESTMENT ON COAL HANDLING PLANT- BELTING.

(FIGURES IN RS.'000)

Sl.No.	Particulars	Total Capital requirement			Phasing of Capital Provision			
		Quantity	Unit Cost	Amount	Yr - I	Yr - II	Yr - III	Yr - IV
1	2	3	4	5	6	7	8	9
	Belting i) 1200 mm wide, N/N belting	535 m	2.68	1434	-	-	670	764
	Total			**1434**	**-**	**-**	**670**	**764**

APPENDIX - A.3.5.3

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI - III) OC MINE
(March 2009)

ESTIMATED CAPITAL INVESTMENT ON COAL HANDLING PLANT - EQUIPMENT

(FIGURES IN RS.'000)

Sl.No.	Particulars	Total Capital requirement			Phasing of Capital Provision			
		Quantity	Unit Cost	Amount	Yr - I	Yr - II	Yr - III	Yr - IV
1	2	3	4	5	6	7	8	9
1.	Feeder Breaker,400 tph. cap., suitable to receive 60t. Dumpers	2 Nos.	9428	18856	-	-	9428	9428
2.	Feeder, Weighbridge Electronic 100t. cap.	2 Nos.	1734	3468	-	-	1734	1734
3.	Feeder, Reciprocating,200 tph. cap.	4 Nos.	1862	7448	-	-	3724	3724
4.	Dust Suppression and fire extinguisher System	LS		400	-	-	300	100
	Total			**30172**	**-**	**-**	**15186**	**14986**

JOB No. :4021291

ESTI

Sl.No.	
1	
1.	3.3kV, overhead
2.	3.3kV, 95 sqmm.
3.	from project subs
	3.3 kV outdoor
	100A and lightnin
4.	3.3 kV outdoor
	control of transfo
5.	Power transform
6.	Motor control ce
	system comprisi
	- 1 No. ACB, 44
	for incoming
	- 1 No. ACB, 44
	for supplying
	- 1 No. ACB, 4
	for sup
	- 1 No.
	- 2 Nos. ACBs
	for power su
	- 1 No.
	- 1 No. 63 A F
	of power to
	- 4 Nos. 63 A
	starter 32A
	- 1 No.
	- 1 No. 16 A F
	control pow
	- 1 No. 32 A
	dust suppre
	- 1 No. 32 A
	- 1 No. ACB,
	for capacit
7.	Lighting trans
8.	Lighting distr
	230V, (L-L) c
	- 1 No. incor
	- 10 Nos. 16
9.	440V, 3

CMPDI

APPENDIX - A.3.5.4

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI - III) OC MINE
(March 2009)
ESTIMATED CAPITAL INVESTMENT ON COAL HANDLING PLANT - ELECTRICAL

(FIGURES IN RS.'000)

Sl.No.	Particulars	Total Capital requirement			Phasing of Capital Provision			
		Quantity	Unit Cost	Amount	Yr - I	Yr - II	Yr - III	Yr - IV
1	2	3	4	5	6	7	8	9
1.	3.3kV, overhead line for incoming power supply to CHP	500 m	0.7	350	-	-	350	-
2.	3.3kV, 95 sqmm. PVCSWA aluminium conductor cable from project substation to OHL and OHL to CHP	200 m	0.55	110	-	-	110	-
3.	3.3 kV outdoor type AB isolator 400A with D.O. fuse 100A and lightning arrestor	2 Sets	17	34	-	-	34	-
4.	3.3 kV outdoor type, 400A, 50 MVA, VCB for primary control of transformer with CT & PT.	1 No.	326	326	-	-	326	-
5.	Power transformer 3.3 kV/440V, 1000 kVA	1 No.	1108	1108	-	-	1108	-
6.	Motor control centre (MCC), 17 panel, 440V, 3 ph & N system comprising with - 1 No. ACB, 440 V, 1800 Amp having CT ratio 800/5 for incoming power supply control. - 1 No. ACB, 440 V, 400 Amp having CT ratio 100/5 for supplying power to C1. - 1 No. ACB, 440 V, 400 Amp having CT ratio 100/5A for supplying power to C2 conveyor. - 1 No. - do - as spare. - 2 Nos. ACBs, 440V, 800 A having CT ratio 400/5A for power supply to 2 Nos.feeder breakers. - 1 No. - do - as spare. - 1 No. 63 A FSU having HRC fuse 32 A for control of power to power socket outlets. - 4 Nos. 63 A FSU having HRC fuse 32 A and DOL starter 32A for reciprocating feeder control. - 1 No. - do - as spare. - 1 No. 16 A FSU having HRC fuse 10 A for control power supply. - 1 No. 32 A FSU having HRC fuse 16 A for dust suppression pump. - 1 No. 32 A FSU having HRC fuse 16 A as spare. - 1 No. ACB, 440V, 400 A having CT ratio 300/5 for capacitor bank control.	1 Set	850	850	-	-	850	-
7.	Lighting transformer 25 kVA, 3.3 kV/230V (L-L)(Cu)	1 Set	61	61	-	-	61	-
8.	Lighting distribution board, 11 panel, 200A suitable for 230V, (L-L) consisting of following : - 1 No. incoming control MCCB, 100 Amp. - 10 Nos. 16 Amp. DP MCB for lighting feeder controls.	1 Set	51	51	-	-	51	-
9.	440V, 3 ph., 375 kVAR capacitor bank, delta connected.	1 Set	60	60	-	-	60	-

APPENDIX - A.3.5.4 co

(FIGURES IN RS.

Sl.No.	Particulars	Total Capital requirement			Phasing of Capital Proc			
		Quantity	Unit Cost	Amount	Yr - I	Yr - II	Yr - III	Yr
1	2	3	4	5	6	7	8	
10.	Industrial type, low bay, dust proof, well glass type luminaries with 125 W HPSV lamps, integral control	60 Nos.	4	240	-	-	240	
11.	Heavy duty flood light luminariws with 250W, HPSV, SON tubular lamps along with control gear etc.	30 Nos.	8.8	264	-	-	264	
12.	Lighting tower 12m height (approximately) for outdoor lighting purpose.	4 Nos.	50	200	-	-	200	
13.	Industrial type dust & jet proof tube light fixture with tube, choke, starter etc. suitable for 2 x 36/40 W tube.	40 Nos.	4.9	196	-	-	196	
14.	Power cable, PVCSWA, 1.1 kV grade, aluminium conductor of following sizes :							
	3 x 400 sq.mm.	250 m	1.500	375	-	-	375	
	3 x 240 sq.mm.	250 m	0.966	242	-	-	242	
	3 x 70 sq.mm.	300 m	0.32	96	-	-	96	
	3 x 50 sq.mm.	250 m	0.243	61	-	-	61	
	3 x 16 sq.mm.	500 m	0.122	61	-	-	61	
15.	Lighting cable, PVC, armoured, 650 V grade with aluminium conductor of sizes:							
	2 x 10 sq.mm.	1200 m	0.093	112	-	-	112	
16.	Testing and maintenance equipment such as:	LS		50	-	-	50	
	i) Megger, 1000 V grade - 1 No.							
	ii) Tong tester / clip on tester - 1 No.							
	iii) Multimeter, earth resistance tester each - 1 No.							
	iv) Misc. electrical tools such as hand gloves, rubber mats, avometer etc. - 1 lot							
17.	3 way cable junction box with cover, each way suitable for PVCSWA, 35/50 sq.mm. size cable termination facility for power sockets	LS	LS	30	-	-	30	
18.	Industrial type 415 V, 30 A, 4 pin, 3 phase switch sockets with associated 3 pole, 30 A MCB as switch for repair and maintenance.	30 Nos.	1	30	-	-	30	
19.	3 way PVC cable conductor 650 V grade suitable for 2 x 10 sq.mm. PVC aluminium cable to be used in lighting circuits for various lamps. The top cover will be removable type with screws.	LS	LS	30	-	-	30	
20.	Earthing with earthpits as per IS 3043 (latest amendmer	1 Lot	LS	500	-	-	500	
21.	Provision for control systems including control cables etc.	LS	LS	1000	-	-	1000	
22.	Miscellaneous	LS		163	-	-	163	
23.	Erection and commissioning	LS		544	-	-	544	
	TOTAL			7144	-	-	7144	

ES

RCC retaining wall
dumpers upto 60t.
coal, 2 nos. feede
foundations includ
complete with 2 n
length and 6.0m
monorail in F.B. sup
Supporting structu
gantries
A) Ground
i) Without roof
a)>1000mm b
ii) With roof
a)>100[illegible]m
B) Gantry
i)>1000mm belt
a)upto 10m h
b)>10m ht. (C
Drive house
a) upto 10m ht. (DH
Truck loading hou
hoppers including
TH2)
Hard stand below
Ground sump (35
dust suppression
CHP office
Substation building
Electronic road we
Barbed wire fencin
Earth work in exca
depth below GL fo

Add 10% for found
Add 3% for contin
Add for soil investi
Add for general la
Add for de eng
Add 2% for [illegible]

08 No.:-4021291

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI - III) OC MINE
(March 2009)

ESTIMATED CAPITAL INVESTMENT ON COAL HANDLING PLANT-CIVIL & STRUCTURALS
(at a Cost Index of 360 in 1st. half of 2009 w.r.t. 100 base in Jan.92 at Nagpur)

(FIGURES IN RS.'000)

Sl. No.	Particulars	Total Capital requirement			Phasing of Capital Provision			
		Quantity	Unit Cost	Amount	Yr - I	Yr - II	Yr - III	Yr - IV
1	2	3	4	5	6	7	8	9
1	RCC retaining wall for coal unloading by rear discharge dumpers upto 60t. cap. with 2 nos. fixed plates for feeding coal, 2 nos. feeder breaker supporting structures and foundations including ramp, approach road etc., all complete with 2 nos. wing wall and main wall of 24m length and 6.0m ht. from G.L. with arrangement for monorail in F.B. support etc., all complete	1 No.		10815	-	-	10815	-
2	Supporting structures for belt conveyor over ground & gantries							
	A) Ground							
	i) Without roof							
	a)>1000mm belt width (Conv C1=15m,C2=15m)	30 m		130	-	-	130	-
	ii) With roof							
	a)>1000mm (Conv C1=30m,C2=30m)	60 m		1426	-	-	1426	-
	B) Gantry							
	i)>1000mm belt width							
	a)upto 10m ht. (Conv. C1=42m, C2=42m)	84 m		4990	-	-	4990	-
	b)>10m ht. (Conv C1=21m, C2=38m)	59 m		3856	-	-	3856	-
3	Drive house							
	a) upto 10m ht. (DH1 & DH2)	2 Nos.		2160	-	-	2160	-
4	Truck loading house with 2 x 100t. capacity ROM twin hoppers including staircase structure etc complete (TH1 & TH2)	2 Nos.		17110	-	-	17110	-
5	Hard stand below hoppers	528 sqm.		1020	-	-	1020	-
6	Ground sump (35 cum cap) & pump house (10 sqm) for dust suppression	1 No.		620	-	-	620	-
7	CHP office	25 sqm.		250	-	-	250	-
8	Substation building	40 sqm.		480	-	-	480	-
9	Electronic road weighbridge foundation & control room	2 Nos.		800	-	-	800	-
10	Barbed wire fencing in Yard for transformer	15 m		10	-	-	10	-
11	Earth work in excavation for laying 50mm dia pipe at 1m depth below GL for dust suppression	50 m		10	-	-	10	-
	Total 1 to 11			43677	-	-	43677	-
	Add 10% for foundations in poor soil			4368	-	-	4368	-
	Add 3% for contingencies			1441	-	-	1441	-
	Add for soil investigation	LS		300	-	-	300	-
	Add for general land development	LS		450	-	-	450	-
	Add for design engineering @3.75%			1802	-	-	1802	-
	Add 2% for sales tax			1005	-	-	1005	-
	Total			53043	-	-	53043	-

APPENDIX A.3.6

COAL(Mty)	1.25
PEAK OB(Mm^3)	8.45
AV.S.R.(m^3/t)	6.54
LIFE(Years)	23

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

ESTIMATED CAPITAL INVESTMENT ON PLANT & MACHINERY-OTHERS

(March, 2009)

(Amounts in Rs.'000)

Sl. No.	PARTICULARS	Total Nos.	Total Capital	INITIAL CAPITAL												Life	Depreciation
				I-YEAR		II-YEAR		III-YEAR		IV-YEAR		V-YEAR		VI-YEAR			
				No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount		
(A)	OTHER P& M:																6213
I.	**C.H.P.**		**101840**						**81009**		**20831**						
a(i)	P& M (MECHANICAL)	LS	34673						17418		17255					18	1926
a(ii)	P& M (MECHANICAL)	LS	7144						7144								397
b	BOILERS & BELTING	LS	3512						1670		1842					3	1171
c	CIVIL & STRUCTURALS	LS	53043						53043							30	2526
d	ELECTRONIC ROAD WEIGH BRIDGE	LS	3468						1734		1734.0						193
2.	PUMPING	LS	20261						1939		1443		1443		15436	18	1126
3.	WORKSHOP	LS	27138						11241		15897				0	18	1508
4.	ELEC. P&M	LS	34227						20952		11280		1995		0	18	1902
5.	TELECOMMUNICATION	LS	2150						360		717		1073				119
5.	HOSPITAL EQUIPMENTS	LS	2500						0		1300		1200		0	18	139
6.	SURVEY EQUIPMENTS	LS	2500						0		1300		1200		0	18	139
7.	MISc.	LS	104080						52017		33333		17958		772	18	5782
	TOTAL:(A)-		**294696**						**167518**		**86101**		**24869**		**16208**		**16927**

5.	HOSPITAL EQUIPMENTS	LS	2500						0		1300		1200		0	18	139
6.	SURVEY EQUIPMENTS	LS	2500						0		1300		1200		0	18	139
7.	MISc.	LS	104080						52017		33333		17958		772	18	5782
	TOTAL.(A).		294696						167518		86101		24869		16208		16927

Appendix- A.3.7

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP
ESTIMATED PHASED CAPITAL EXPENDITURE ON P&M - COMMUNICATION

OPTION : DEPARTMENTAL

(Base Price : MARCH'09)
(Amount in Rs. '000)

S.No.	Particulars	Qty	Unit Price	Total Cost	Yearwise Phasing							
					1st Year		2nd Year		3rd Year		4th Year	
					Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost
1	2	3	4	5	6	7	8	9	10	11	12	13
	COMMUNICATION :											
1	Surface mine communication											
	a) EPABX 150 lines	LS		600			LS	400	LS	200		
	b) BSNL lines	10	4	40	5	20	3	12	2	8		
	c) BSNL Cellone Mobile connection with sets	10	5	75	8	40	5	25	2	10		
2	BSNL 2 Mpbs leased line	1	250	250					LS	250		
3	Router	1	300	300					LS	300		
4	Ethernet Managed Switch	1	35	35						35		
5	Internet & LAN, Hardware and Software	LS		600	LS	200	LS	200	LS	200		
6	Cables & Overhead lines etc.	LS		200	LS	100	LS	50	LS	50		
7	Testing & Measuring Equipment	LS		50			LS	30	LS	20		
	Sub - Total :			**2150**		**360**		**717**		**1073**		

APPENDIX - A.4

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI -III) OC

ESTIMATED CAPITAL INVESTMENT ON FURNITURE & FITTINGS

(MARCH,2009)

(Amt in Rs.`000)

Sl. No.	Particulars	Total Capital	Phasing of capital provision		
			III	IV	V
1.	General Furniture & Fittings	2500	500	1000	1000
	Total	2500	500	1000	1000

APPENDIX-A.6

PROJECT REPORT FOR SAKHARI-IRAWATI (PAUNI -III) OC

ESTIMATED CAPITAL INVESTMENT ON VEHICLES

(MARCH,2009)

(Amount in Rs. '000)

Sl.No.	Particulars	Nos.	Unit cost	Total capital provision	PHASING						Life (Years)	Depriciation
					III		IV		V			
					Nos.	Amt.	Nos.	Amt.	Nos.	Amt.		
1.	Diesel Truck	1	1200	1200	1	1200					9	133
2.	Diesel Jeep	5	413	2065	2	826	2	826	1	413	9	229
3	School Bus	1	1550	1550	1	1550					9	172
4	Ambulance	1	458	458	1	458					13	35
5	Cash Van	1	700	700	1	700					9	78
6	Explosive Van 3/5 t	1	1200	1200	1	1200					9	133
7	Job Pick up Van	1	458	458	1	458					9	51
8	Motor cycle	1	65	65	1	65					13	5
9	Tipping Truck	1	1203	1203			1	1203				
	TOTAL	13		8899		6457		2029		413		837

(Departmental Option)

APPENDIX-A.7

PR FOR SAKHARI-IRAWATI (PAUNI-III) OCP

ESTIMATED CAPITAL INVESTMENT ON PROSPECTING & BORING
(MARCH,2009)

(Amount in Rs `000)

Sl. No	Particulars	Total Capital	Phasing of capital provision		
			III	IV	V
1.	Proving of Geological structure (For about 400m of additional Exploration)	2000	1000	500	500
	TOTAL	2000	1000	500	500

(Departmental Option)

APPENDIX -A.8 & A.8.1