MINUTES OF THE 19th EAC (THERMAL & COAL MINING PROJECTS) MEETING HELD ON 13th -14th August, 2014 IN NEW DELHI

The 19th EAC (Thermal & Coal mining projects) Meeting was held on 13th -14th August, 2014 in New Delhi to consider the proposals in coal mining sector. The list of participants of EAC and the proponents are given at Annexure-1 and 2 respectively.

B. Confirmation of Minutes: The Committee confirmed the minutes of the 17th EAC meeting held on 23rd -25th July, 2014.

C. The following proposals were considered:

19.1 Bijari OCP (1.50 MTPA normative and 2.25 MTPA peak in an ML area 269.025 ha) of M/s South Eastern Coalfields Ltd., Dist., Raigarh, Chhattisgarh –EC based on TOR granted on 18.11.2008.

19.1.1 The proposal is seeking environment clearance for Bijari OCP (1.50 MTPA normative and 2.25 MTPA peak in an ML area 269.025 ha) of M/s South Eastern Coalfields Ltd., Dist., Raigarh, Chhattisgarh.

19.1.2 The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/433/2008-IA.II (M) dated 18.11.2008. TOR validity extended by one year on 16.12.2013.

ii. The latitude and longitude of the project are 20^0 15' 28" to 20^0 15' 49" North and 83^0 20' 59" to 83^0 22' 37" East respectively.

iii. Joint Venture: There is no Joint Venture.

iv. Coal Linkage: New project, at present there is no railway siding nearby. This project is to be linked to various consumers through road sale consumers or Robertson railway siding situated at a distance of 50 km. After rail corridor comes to existence the coal dispatch of the project shall be linked to the nearest rail corridor.

v. The land usage of the project will be as follows:

Pre-mining:

i. Pre-mining	
Total land involved	:273.375ha.
Breakup is as follows:-	
Tenancy	: 227.433Ha.
Forest	: Nil
Government	: 41.592Ha.
Total Land	: 269.025Ha
*Forest land falls in safety zone,	: 4.350Ha
(not to be acquired)	
Total land involved	:273.375Ha.
ii. Post- Mining :	
a) Total quarry area	: 198.483Ha
1. Void / Water body	: 36.363Ha
2.Reclaimed Internal Dump/ Backfilled Area	: 162.120Ha
b) Reclaimed External OB dump	: 17.550Ha

c) Colony, service road, Infrastructure etc	:	17.940Ha
f) Rehabilitation site	:	10.320Ha
g) Safety zone	:	29.082Ha
Total land involved	**:**	**273.375Ha.**

iii. Core area

S No	Particulars	Area in Ha
1	Forest Land	Nil
2.	Government Land Grazing Land	25.430 16,162
3.	Tenancy Land	227.433
	Total Land required	269.025
*Forest land falls in safety zone : 4.350Ha (not to be acquired)		

vi. The total geological reserve is 20.53 MT. The mineable reserve 17.55 MT, extractable reserve is 17.55 MT. The per cent of extraction would be 100 %.

vii. The coal grade is D & E .The stripping ratio is 2.72 cum / Te of coal. The average Gradient is 02-05. There will be 3 seams with maximum thickness ranging of 6.33 m.

viii. The total estimated water requirement is 420 m3/day. The level of ground water ranges from Pre-monsoon water levels vary from 3.20 m to 9.45 m; Post-monsoon water levels vary from 1.15 m to 4.50 m

ix. The Method of mining would be by Opencast mining with shovel- dumper & Surface miner.

x. There is one external OB dump with Quantity of 2.60 million cum in an area of 17.55 Ha with height of 45 meter above the surface level and 2 internal dump with Quantity of 45.20 million cum in an area of 162.12 ha. height of 45 m. above ground level.

xi. The final mine void would be in 36.363 Ha with depth of 61.40 m. and the Total quarry area is 198.486 Ha. Backfilled quarry area of 162.120 Ha shall be reclaimed with plantation. A void of 36.363ha with depth of about 61.40mtrs, which is proposed to be converted into water body.

xii. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.

xiii. The **life of mine** is 14 Years.

xiv. **Transportation**: Coal transportation in pit by Tippers, Surface to Siding by Tippers and siding to loading by pay loaders into rail wagons; siding at the pit top shall be ready by mid 2017.

xv. There is **R & R** involved. There are 170 PAFs.

xvi. **Cost**: Total cost of the project is Rs. 164.49 Crore (Based on Revised cost estimate approved on 26.05.2014). CSR Cost: As per CIL Policy for 50 MTPA. R&R Cost Rs. 39.1907 Crore. Environmental Management Cost Rs. 10.3724 Crores.

xvii. **Water body**: The Jobnar nalla on Eastern side of the mine. Kurket River flowing S-W side of mine boundary at a distance of 2.5Kms

xviii. **Approvals**: Ground water clearance not applicable as it falls under safe category. Board's approval obtained on 29.07.2008. The Revised Cost Estimate was approved by SECL Board on 26.05.2014. Mine Closure Plan approval on 26.05.2014.

xix. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xx. **Forestry issues**: There is no forest area involved for mining.

xxi. Total **afforestation** plan shall be implemented covering an area of199.670 ha at the end of mining. Green Belt over an area of 20.000Ha. Density of tree plantation 2500 per Ha .

xxii. There are no **court cases/violation** pending with the project proponent.

xxiii. **Public Hearing** was held on 04.05.2013 at Bijari Village, Raigarh. The issues raised in the PH includes policy of Project for poor & Handicapped persons; scheme of education, health, road, water, electricity; scheme to prevent industrial and road accidents due to transportation activity; comment about the demand of opening a school upto 12th standard; policy about the persons who depend on the forest product and affected due to project; scheme of resettlement of rehabilitate etc.

19.1.3 **The Committee, after detailed deliberations, sought following information for further consideration of the project:**

i. Entire drainage should be channeled into tertiary channel.
ii. The OB should be re handled by reducing the internal height.
iii. PP should examine the reduction in depth and area and submit the report to the EAC for consideration. Efforts should be made to reduce the void to zero.
iv. The air quality data to be verified by Dr. Attri, Member, EAC.
v. Adequate Green belt is provided around the mines including safety zones.
vi. Piezometers be installed up to the aquifer level so as to monitoring the ground water level.
vii. Siding at pit top/head shall be functional by mid-2017 until that time road transportation of coal shall be by mechanically covered trucks.
viii. The Proponent shall carry out the carrying capacity of the road vis-à-vis the coal transportation by road. Since the road belongs to the State Government the MoU /permission of the State Government for coal transportation be obtained.
ix. PP shall examine the feasibility of mechanized loading/centralized loading.
x. The Action Plan along with budgetary provisions for the issues raised in the Public Hearing be submitted in tabular form.
xi. Check dams/water tanks (Talab) be provided for rain water harvesting.
xii. Check point 20 of basic data.
xiii. Details of Wildlife (Tiger Elephant etc.), elephant corridor etc. along with the wildlife Management Plan be submitted.
xiv. Details of R&R be submitted.
xv. PP to give details of grazing land to be used for mining and whether equal amount of land has been provided to the State Government for grazing purpose.
xvi. The Committee decided that a Sub-Committee of the EAC shall visit the site.

19.2 **Kusmunda Opencast Expansion Project (Normative 15 MTPA to 50 MTPA & Peak 18.75 MTPA to 62.50 MTPA in an ML area 3510.348 Ha) of M/s South Eastern Coalfields Ltd., located at dist. Korba, Chhattisgarh. –TOR**

19.2.1 The proposal is seeking TOR for Kusmunda Opencast Expansion Project (Normative 15 MTPA to 50 MTPA & Peak 18.75 MTPA to 62.50 MTPA in an ML area 3510.348 Ha) of M/s South Eastern Coalfields Ltd., located at dist. Korba, Chhattisgarh.

19.2.2 The proponent made the presentation and informed that:

i. The proponent obtained earlier EC vide letter no. J-11015/374/2013-IA.II (M) on dated 19th February, 2014 for the expansion of Kusmunda OCP (15.0 MTPA Normative & 18.75 MTPA Peak and the total Project area 2301.167 ha (2536.656 ha - 235.489ha of forest land = 2301.167 ha);
ii. The latitude and longitude of the project are 22^0 15' 18" to 22^0 21' 30" North and 82^0 38' 39" to 82^0 42' 08" East respectively.
iii. Joint Venture: There is no Joint Venture.
iv. Coal Linkage: Various thermal power plants including Chhattisgarh State Electricity Board (CSEB).

v. The land usage of the project will be as follows:

Pre-Mining:

S.N	Particulars	Forest Land	Ten. Land	Govt/ Other Land	Total
(a)	PHASE I	205. 96*	1045.597	404.267	1655.825
(b)	PHASE II (Including land given in Phase I)	376.922**	2532.365	601.061	3510.348

Additional Forest Land Clearance is under process. 148.935 ha forest land have been identified between 15MTPA and 50 MTPA boundaries. Application for diversion will be applied after acquisition of land.

Post- Mining:

Sl.No.	Activities	Total Area(Ha)
1	Void/ Water body	355.000
2	Reclaimed internal OB dump	1245.000
3	Safety zone	166.000
4	Rehabilitation	130.000
5	Colony	40.250
6	External dump	325.000
7	Infrastructures	300.000
8	Service road	10.000
9	Others	939.098
	Total	3510.348

Core area:

Phase I :

Land Use during Mining

This land will undergo changes during mining and the land use pattern will be as follows:

Particulars	Area in Ha
Area to be excavated	788.874 Ha
Storage for top soil	03.00 Ha
Over Burden / Dumps	325.00 Ha
Mineral Storage	00.00 Ha
Infrastructure(Workshop, Administrative Buildings)	284.634 Ha
Roads	07.517 Ha
Green Belt	10.00 Ha
Effluent Treatment Plant	01.00 Ha
Rehabilitation site(out side mine)	69.00 Ha
Colony (outside mine)	39.00 Ha
Safety Zone	82.80 Ha
Other Specify for Future mining	45.00 Ha
Total	1655.825Ha

Land Use during Mining for Phase II

Particulars	Area in Ha
Area to be excavated	1600.000
Storage for Top soil	3.000

Overburden/Dumps	325.000
Mineral storage	0.000
Infrastructure (W/Shop, Admin. Building)	300.000
Roads	10.000
Green Belt	10.000
Rehabilitation Site(outside mine)	130.000
Colony(outside mine)	40.250
Safety Zone	153.000
Other specific (future mining)	939.098
TOTAL	3510.348

v. The total geological reserve is 1105.00 MT. The mineable reserve 956.98 MT (as on 01.04.2014), extractable reserve is 956.98MT (as on 01.04.2014). The per cent of extraction would be 100 %.

vi. The coal grade is F .The stripping ratio is 1.42 cum / Te of coal. The average Gradient is 4-10 Degree. There will be 3 seams with maximum thickness ranging 60.83 m.

vii. The total estimated **water requirement** is 16447m3/day. The level of ground water ranges from 6.00 m to7.85m Pre-monsoon; 3.11m to 4.45m Post-monsoon.

viii. The Method of mining would be by Opencast mining with shovel- dumper & Surface miner.

ix. There is 13 external OB dump with Quantity of 80.80 million cum in an area of 325Ha with height of 90 meter above the surface level and 1 internal dump with Quantity of 1321.70 million cum in an area of 1245.00 ha.

x. The final mine void would be in 355 Ha with depth of 235 m. and the Total quarry area is 1600.00 Ha. Backfilled quarry area of 1245.00 Ha shall be reclaimed with plantation. A void of 355 Ha with depth of 235.00 m which is proposed to be converted into a water body

xi. The **life of mine** is 24 Years (as on 01.04.2010).

xii. **Transportation**: Coal transportation in pit to chp byinpit conveyrs and despatch to consumers by belt conveyrs &railwith SILO/Railway into wagons.

xiii. There is **R & R** involved. There are 8200 PAFs.

xiv. **Cost**: Total capital cost of the project is Rs. 7612.33 Crore (Based on Project Report 03/08/2013). CSR Cost Rs. 187.50 Lakhs/ year for 18.75 MTPA. As per CIL Policy for 50 MTPA. R&R Cost Rs. 508.28 Crores. Environmental Management Cost Rs. 57533.32 Lakhs.

xv. **Water body:** The Hasdeo River, Ahiran Nadi, Kholar Nullah and many small channels joining Hasdeo river.

xvi. **Approvals**: Ground water clearance obtained on 25.11.2005. Board's approval obtained on 03.08.2013. Mine Closure Plan approval on 03.08.2013.

xvii. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xviii. **Forestry issues**: Total forest area involved 376.922Ha for mining (Phase-I 205.961 Ha ; Phase-II 170.961 Ha). For phase –I application for diversion / regularization has been submitted to MOEF New Delhi.. For phase –II Registration for diversion of 40.544 Ha.forest land has been done on dated 14.11.2010 at C.C.F.L.M. Office Raipur. During inspection of DFO Katghora Out of 40.544 ha only 22.026 Ha land was found as forest land, Remaining 18.518 Ha revenue forest land of Risdi village was notified as grazing land in MISSAL BANDOBAST. Accordingly application for reduction of land to 22.026Ha has been submitted to CCF Bilaspur 148.935 ha forest land have been identified between 15MTPA and 50 MTPA boundaries.

xix. Total **afforestation** plan shall be implemented covering an area of 1570.00 ha at the end of mining. Green Belt over an area of 106.41Ha. Density of tree plantation 2500 trees/ ha of plants.

xx. There are no court **cases/violation** pending with the project proponent.

19.2.3. The Committee received comments from one of the NGOs with regard to the following:

i. Kusmunda has been the Main Polluter of Korba.
ii. There have been three Times Expansions to this project and the proposed expansion of Kusmunda mining is three folds from the original project. Schools & 90 Hospitals would be Impacted Relocation of 10 villages.
iii. Korba would be again Critically Polluted Area.
iv. There are Court Case on Violations. Such expansion projects should be treated as new project.

19.2.3 The Committee recommended that a sub-group of the Committee shall make a site visit before further considerations as it involves large area and bigger capacity and reply to the comments to the NGO.

19.3 Cluster No.11 (11 mixed mines of a combined production capacity of 9.1 MTPA normative 9.9 MTPA peak capacity in a combined ML area of 4218 ha) of M/s Eastern Coalfields Ltd., located in Raniganj Coalfields, West Bengal –TOR Modification.

19.3.1 The proposal is for modification/typographical error in the TOR for Cluster No.11 (11 mixed mines of a combined production capacity of 9.1 MTPA normative 9.9 MTPA peak capacity in a combined ML area of 4218 ha) of **M/s Eastern Coalfields Ltd.**, located in Raniganj Coalfields, West Bengal**.**

19.3.2 The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/245/2011-IA.II (M) dated 13.01.2012. TOR validity extended by one year on 11.03.2014. After obtaining TOR, certain typographical errors in individual mine capacities and in the total cluster capacity were noticed which needed correction.

A. As per Original TOR granted (with typographical errors)

S. No	Name of Mine	UG/OC	ML Area (Ha)	Normative/ Peak Capacity (MTY)		Life (Years)
1	**Krishnanagar**	**UG**	772	**0.24**	**3.00**	>25
2	**Haripur Group of Mines**	**UG + OC**	853	**1.99**	**2.27**	>25
A	Haripur	UG		0.60	0.78	>25
B	Chora Block Incline	UG		0.99	0.99	>25
C	Chora 7,9 & 10 Pit	UG				
D	Bonbahal OC Patch (25 Ha)*	**OC**		0.40	0.50	3
E	Shankarpur / CL Jambad OC Patch/ mine (52 Ha)	**OC**		Exhausted and being backfilled		
3	**New Kenda Group of Mines**	**UG + OC**	742	**3.71**	**3.89**	>25
A	New Kenda	UG		0.11	0.14	>25
B	W Kenda OC Patch / Mine (49 Ha)*	OC		0.60	0.75	2
C	New Kenda OC Mine (240 Ha)*	OC		3.00	3.90	8
4	**Bahula Group of Mines**		676	**0.42**	**0.55**	>25
A	Lower Kenda	UG		0.13	0.17	>25
B	Bahula	UG		0.24	0.31	>25
C	CL Jambad	UG		0.05	0.07	>25

5	**Siduli**	**UG**	335	**0.30**	**0.30**	>25
6	**Khandra**	**UG**	388	**0.39**	**0.39**	>25
7	**Shankarpur Project**		452	2.00	2.30	
A	Shankarpur	UG		1.65	1.33	>25
B	Shankarpur OC Patch/ mine (42 Ha)*	OC		2.00	2.30	4
			4218	**9.10**	**9.90**	
* New proposed patches/mines (Area of the patch given in brackets)						

B. After correcting typographical error:

S. No	Name of Mine	UG/OC	ML Area (Ha)	Normative/ Peak Capacity (MTY)		Life (Years)
1	**Krishnanagar**	**UG**	772	**0.24**	***0.30***	>25
2	**Haripur Group of Mines**	**UG + OC**	853	**1.99**	**2.27**	>25
A	Haripur	UG		0.60	0.78	>25
B	Chora Block Incline	UG		0.99	0.99	>25
C	Chora 7,9 & 10 Pit	UG				
D	Bonbahal OC Patch (25 Ha)*	**OC**		0.40	0.50	3
E	Shankarpur / CL Jambad OC Patch/ mine (52 Ha)	**OC**		Exhausted and being backfilled		
3	**New Kenda Group of Mines**	**UG + OC**	742	**3.71**	***4.79***	>25
A	New Kenda	UG		0.11	0.14	>25
B	W Kenda OC Patch / Mine (49 Ha)*	OC		0.60	0.75	2
C	New Kenda OC Mine (240 Ha)*	OC		3.00	3.90	8
4	**Bahula Group of Mines**		676	**0.42**	**0.55**	>25
A	Lower Kenda	UG		0.13	0.17	>25
B	Bahula	UG		0.24	0.31	>25
C	CL Jambad	UG		0.05	0.07	>25
5	**Siduli**	**UG**	335	**0.30**	**0.30**	>25
6	**Khandra**	**UG**	388	**0.39**	**0.39**	>25
7	**Shankarpur Project**		452	2.00	2.30	
A	Shankarpur	UG		*1.16*	1.33	>25
B	Shankarpur OC Patch/ mine (42 Ha)*	OC		2.00	2.30	4
			4218	***9.05***	***10.90***	
* New proposed patches/mines (Area of the patch given in brackets)						

C. Area of the Cluster

Total area of Cluster No. 11 is 4218.00 Ha. Breakup of the various land-uses is tabulated as under:

S.N	Land Use	Area in Ha
1	Cultivable/ Fallow	1412.57
2	Village/Basti	203.80
3	Tanks/Water Bodies	250.18
4	Danga/Waste Land	599.83
5	Road & Railway	99.77
6	Plantation/Vegetation	170.40
7	Vacant Govt Land	89.33
8	Built-up	133.17

9	Quarry	40
10	OB Dump	55
11	ECL Land	1021.58
12	Colliery Infrastructures/Others	142.37
	Total	4218.00

19.3.3 The Committee, after detailed deliberations, has agreed to the corrections as proposed by the Proponent in the TOR

19.4 Cluster No.3 (3 Mixed mines of a combined production capacity of 3.33 MTPA normative 3.97 MTPA peak capacity in a combined ML area of 1628 ha) of M/s Eastern Coalfield Limited located in Raniganj Coalfields, dist. Burdwan, West Bengal. - EC based on TOR granted on 23.07.2012.

19.4.1 The proposal is for environment clearance for Cluster No.3 (3 Mixed mines of a combined production capacity of 3.33 MTPA normative 3.97 MTPA peak capacity in a combined ML area of 1628 ha) of **M/s Eastern Coalfield Limited** located in Raniganj Coalfields, dist. Burdwan, West Bengal.

19.4.2 The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/13/2010-IA.II (M) dated **23.07.2012**.
ii. The latitude and longitude of the project are 23^0 44' 30'' N & 23^0 48' 00" N and 86^0 52' 15" E & 86^0 56' 30" E respectively.
iii. Joint Venture: There is no Joint venture.
iv. **Coal Linkage:** Wardha Power Company Limited ((WPCL), Maharashtra.; Kahalgaon Super Thermal Power Station (KhSTPP), Kahalgaon, Bhagalpur, Bihar.; Aravali Power Company Private Limited, Haryana;. National Capital Power Station (NCPS) or NTPC Dadri, Gautam Budh Nagar, Uttar Pradesh; Kanti Thermal Power Station in Kanti, Muzaffarpur, Bihar.
v. The land usage of the project will be as follows:

S.No	Type Land Use	Present Mining Land Use (ha)	Land Use during Mining (ha)	Post- mining Land Use (ha)
1	Running quarry	72.58	222.10	
	Backfilled		48.83 (Plantation)	212.93 ha (Plantation)
	Not Backfilled	55.83	7.00	65.00 (lagoon)
2	External OB dump	35.52	15.52	15.52 (Plantation)
3	Service building	44.00	44.00	44.00
4	Rail & Road	49.50	49.50	49.50
5	Habitation (total)	66.61	66.61	66.61
	Unstable habitations	7.17	7.17 (Plantation)	7.17 (Plantation)
6	Forest Land	0.00	0.00	0.00
7	Other areas	130.00	100.00	100.00
8	Agriculture land	542.00	542.00	542.00
9	Plantation / Natural Vegetation	6.28	6.28	6.28
		113.72	113.72	113.72
10	River/nallah/pond	74.69	74.69	74.69
11	Barren land	430.10	330.58	330.58
	Total	1628.00	1628.00	1628.00

vi. Details about OC mining with Cluster 3:

Sl No		Name of OC Mine	Area (Ha)	Mineable Reserves (MT)	Volume of OB to be generated (Million M3)	Life in years	Backfilling start year
1	Dabor UG	Dabor-I & II OC Patch/mine	347 (quarry area - 153.1)	11.78	35.0	10	3rd
2	Bonjemehari UG	Bonjemehari OC Patch	44	1.32	4.05	4	2nd
3	Sangramgarh UG	Sangramgarh Extension Revised OC Patch	25	2.70	10.38	4	2nd
		Total	416	15.8	49.53		

vii. The total estimated water requirement is 2540 m^3/day (1275 for Mining ; 1265 (for domestic-township). The level of ground water ranges from 3.00 m to 9.00 m Pre – monsoon & 3.95 m to 5.25 m Post – monsoon BGL.

viii. There is one external OB dump with Quantity of 3.5 M Cum in an area of 15.52 ha with height of 30 meter above the surface level and 3 internal dump with Quantity of 46.03 million cubic meters..

ix. No final mine voids in Bonejemhari & Sangramgarh. Final mine void will be created at Dabur OC with an area of 65 Ha and depth of 20 m (max) and the total quarry area is 257.61Ha (including abandoned quarries measuring 35.51 Ha from pre – nationalization period). Backfilled quarry area of 192.61 Ha shall be reclaimed with plantation. A void of 65.00 ha with depth of 20 m which is proposed to be converted into a water body.

x. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.

xi. **Transportation**: Coal transportation in pit: Underground mine- coal tubs at the faces are being hauled by series of rope haulages to surface. Opencast mine- coal is loaded by shovels at face and transported to the surface coal depot by colliery dumpers , Surface to Siding Road transportation by 15 te dumpers and siding to loading by pay loaders are used for loading of coal onto wagons

xii. There is no **R & R** involved. There are no PAFs.

xiii. **Cost**: Total capital cost of the project is Rs. 5993.54 Lakhs. CSR Cost: Provisions for CSR under Community Development have been made @ Rs. 5.00 per tonne of coal produced. This works out to about Rs. 1.7 Cr per annum at 3.33 MTY of coal production` (present production from the cluster is only 0.483 MTY). The amount to be spent annually will be significant as the life of most of the mines is more than 25 years. Environmental Management Cost (capital cost Rs. 644 Lakh, annual recurring cost Rs. 883.712 Lakh).

xiv. **Water body**: Barakar River flows in west of cluster boundary at a distance of 4 km. Adjoy river flows in east of the cluster. General RL of the cluster varies between 135 to 174 m (Muktaichandi Hill). The area is generally covered by soil and alluvium. Damodar River with its tributaries controls the main drainage of the property. There is no adverse effect of mining on these water bodies.

xv. **Approvals**: for ground water clearance application has been made to CGWA. Board's approval obtained in December, 2013. Mine Closure Plan approval in December, 2013.

xvi. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xvii. **Forestry issues**: No forest area involved for mining.

xviii. **Afforestation** plan covers total 235.62 ha area. Beside this 120.00 ha area is already under

plantation. At the end of mining total 255.62 ha area of the cluster will be under plantation. Density of tree plantation 1600 trees/ ha of plants.

xix. There are no **court cases/violation** pending with the project proponent.

xx. **Public Hearing** was held on 28.03.2014 in Nandanik community hall, Rupnayaranpur, Salanpur panchayat samiti, District Burdwan, West Bengal. The issues raised in the PH includes crisis of water, poor road condition due to coal transportation from Dabur colliery & no medical facility; prevention of dust pollution by proper & adequate water sprinkling, intensive plantation; improvement of the socio-economic condition of the villagers etc.

19.4.2 The Committee, after detailed deliberations, has recommended for granting Environment Clearance with the following specific conditions in addition to other conditions:

i. External OB dumps shall be fully re handled in internal dumps. There shall be no external dump after the mining.
ii. Adequate numbers of piezometers are to be installed at the aquifer level and the ground water table shall be monitored.
iii. The PP shall comply with the stipulations in the Raniganj Master Plan.
iv. The PP shall make efforts for revival of the existing railway line or a new railway line for coal transportation within a period of three years, during which the coal can be transported by mechanically covered trucks.. The PP shall also explore the possibility of constructing a railway siding at the active railway line
v. The mine closure plan shall be synchronized with EC conditions.
vi. Water bodies /Nalla shall not be disturbed.

19.5 Ichhapur Underground Coalmine Project (2 MTPA in an ML area of 1186.83 ha) of M/s West Bengal Mineral Development & Trading Corp.Ltd., Tehsil Asansol., dist. Bardhman, West Bengal –EC based on TOR granted on 30.11.2011 further amended on 10.02.2012, 03.09.2013–Further Consideration

19.5.1 The proposal is for environment clearance for Ichhapur Underground Coalmine Project (2 MTPA in an ML area of 1186.83 ha) of **M/s West Bengal Mineral Development & Trading Corp. Ltd.,** Tehsil Asansol, dist. Bardhman, West Bengal.

19.5.2 The proposal was last considered in 12th EAC meeting held on 27th -28th February, 2014. The Committee sought additional information w.r.t. approval of CGWB for using underground water; approved Mine plan and mine closure plan be submitted; documentary proof from the WB SPCB with regard to the mine in Durgapur not being in the Critically Polluted area; wagon loading and mechanized loading of coal at railway siding; transportation of coal through pipe conveyor from mine to the railway siding; to continuously monitor the subsidence and mitigation measures taken; the recommendations of CIMFR be for mitigation; to extract all coal seams as proposed by CIMFR that except below Amlouka village. It is recommended to go for partial extraction over 7A, 7B & 7C panels in X(T2) seam and 7I and 7J panels in IX(T) seam to maintain the allowable strain limit below the village; the surface cracks formed during extraction should immediately be filled in with mitti to prevent breathing of air and inflow of water to the underground workings; suitable drainage should be made to avoid any water logging in the centre of subsidence trough; dumping of coal and building materials should be avoided on forest land otherwise it may affect forest cover; during extraction of panels, the ground subsidence should be monitored over forest land and villages to know the actual impact by an external agency; mine water discharged should be comparable to the surface water standards; due care shall be taken for heat and humidity during drivages and extraction in underground activities. Continuous monitoring of humidity and temperature shall be carried out along with the subsidence study; all land losers shall be given employment; the CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation; during the stage upto

coal production, the capital CSR Budget shall be 0.4% of Capital Cost of the Project.

19.5.3 The proponent made the presentation and informed that:

i. Approval of CGWB for using underground water.: Approval of CGWB for using underground water obtained on 08.07.2014.
ii. Approved Mine plan and mine closure plan be submitted : Mining Plan and Mine Closure Plan has been approved by Ministry of Coal vide letter 13016/83/2006-CA-I dated 28.4.2014.
iii. Documentary proof from the WB SPCB with regard to the mine in Durgapur not being in the Critically Polluted area. : Documentary proof from the WB SPCB with regard to the mine in Durgapur not being in the Critically Polluted area has been submitted with a copy of letter no. 361-2N-75/2012(E) dated 02.05.2014.
iv. Wagon loading and mechanized loading of coal at railway siding. : It has been proposed to carry out Coal loading in Wagons through silo at Railway siding.
v. The transportation of coal through pipe conveyor from mine to the railway siding. : Coal from the Coal handling Plant, installed within the mine complex area, shall be directly transported through pipe conveyor to the railway siding
vi. To continuously monitor the subsidence and mitigation measures taken;
vii. The recommendations of CIMFR be for mitigation; xii. During extraction of panels, the ground subsidence should be monitored over forest land and villages to know the actual impact by an external agency: As per the recommendation of Central Institute of Mining and Fuel Research, Dhanbad in "Subsidence Prediction and Mitigative Measures of Ichhapur Coal Block" report, during extraction of panels, the ground subsidence shall be monitored over at least one panel each in forest land and village to know the actual impact by an external agency. Apart from this, the guidelines laid down in Coal Mines Regulation 1957 and the recommendations of Director General of Mines Safety, Dhanbad, all such study will be carried out as required, during extraction of coal under these areas. All the recommendation as laid down by Central Institute of Mining and Fuel Research, Dhanbad in "Subsidence Prediction and Mitigative Measures of Ichhapur Coal Block" report shall be implemented.
viii. The surface cracks formed during extraction should immediately be filled in with mitti to prevent breathing of air and inflow of water to the underground workings.:
ix. Suitable drainage should be made to avoid any water logging in the centre of subsidence trough: The subsidence trough shall be filled with the waste rocks from the waste rock dump and over that soil will be topped from nearby area. Suitable drainage arrangement will be made to avoid any water logging in subsidence area.
x. Dumping of coal and building materials should be avoided on forest land otherwise it may affect forest cover: No dumping of Coal or waste material has been proposed on the forest land, as per the approved Mining Plan.
xi. Mine water discharged should be comparable to the surface water standards: A part of the mine pumped out water shall be used in different activities in the mines and balance amount will be treated, if required, to meet the relevant standards as per the norms and shall be used for irrigation or other purposes for the commodity.
xii. Due care shall be taken for heat and humidity during drivages and extraction in underground activities. Continuous monitoring of humidity and temperature shall be carried out along with the subsidence study. : As per mining plan, to take care of heat and humidity, air conditioning will be done when lower seams will be mined, so as to ensure temperature in the work place remains within limits. The detailed ventilation studies including air conditioning will be commissioned as soon as mine construction will start. Also, as per Coal Mines Regulation 1957, Continuous monitoring of humidity and temperature will be carried out and same will be recorded, duly signed by competent person in a bond paged book.
xiii. All land losers shall be given employment: Mining and allied activities will provide job opportunities for eligible persons (the total requirement envisaged is 750 employees). There

will be about 88 land losers who can opt for employment in the unskilled and semi-skilled categories.

xiv. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation : As per the CSR plan prepared and presented, the CSR recurring cost proposed is in excess of Rs 5.0 per tonne of coal raised. Rs. 1.334 cr per annum for CSR activities (recurring cost) up to the life of the project has been proposed for the 2 MTPA project as against Rs. 1.0 Crores required. Hence, it is agreed CSR cost will get adjusted as per annual inflation rate.

xv. During the stage upto coal production, the capital CSR Budget shall be 0.4% of Capital Cost of the Project. Rs.8.324 cr has been allocated for capital CSR Budget. The Estimated Project cost of Ichhapur underground coal mine is Rs 1500 Cr. So, the percentage of capital CSR Budget allocated as per CSR plan is 0.555 % of the estimated Project Cost, i.e 0.15 % more than suggested.

19.5.4 The Committee, after detailed deliberations, recommended for granting EC with the following specific conditions:

i. All the recommendation by the Central Institute of Mining and Fuel Research, Dhanbad in "Subsidence Prediction and Mitigative Measures of Ichhapur Coal Block" report shall be implemented.
ii. Coal loading in Wagons shall be through silo at Railway siding.
iii. The transportation of coal shall be through pipe conveyor from mine to the railway siding.
iv. Continuous monitoring of subsidence and mitigation measures shall be taken.
v. The recommendations of CIMFR for mitigation; be adopted
vi. During extraction of panels, the ground subsidence should be monitored over forest land and villages.
vii. The surface cracks formed during extraction should immediately be filled to prevent breathing of air and inflow of water to the underground workings.
viii. Dumping of coal and building materials should be avoided on forest land.
ix. Mine water discharged should be comparable to the surface water standards
x. Due care shall be taken for heat and humidity during drivages and extraction in underground activities. Continuous monitoring of gasses as it is a degree III gassy mine, humidity and temperature shall be carried out along with the subsidence study.
xi. Methane and other air quality parameters alongwith the subsidence be monitored regularly.

19.6 Coal Washery (4.0 MTPA in an ML area 13.706 ha) of M/s Vedanta Washery And Logistic Solutions Pvt. Ltd., Dist. Raigarh, Chhattisgarh –TOR.

19.6.1 The proposal is for seeking TOR for Coal Washery (4.0 MTPA in an ML area 13.706 ha) of **M/s Vedanta Washery And Logistic Solutions Pvt. Ltd.,** Dist. Raigarh, Chhattisgarh**.**

19.6.2 The proponent made the presentation and informed that:

i. The Proponent applied for the TOR for **4.0 MTPA wet type coal washery & 1.2 MTPA Iron ore beneficiation**. However Committee suggested that the iron ore beneficiation is the industry sector if Impact Assessment Division who handles the subject. Therefore they will consider the coal washery project only and not the iron ore beneficiation to which proponent agreed to.
ii. The latitude and longitude of the project are 21°59'31.71"N & 83° 9'34.37"E respectively.
iii. Joint Venture: There is no joint venture.
iv. Coal Linkage: Not submitted.
v. Land use details:

S.No.	LANDUSE	AREA (Sq. km)
1	BUILT- UP LAND A. Settlements B. Industrial area	 10.676 4.396
2	WATER BODIES A. Tank / River / Reservoir etc.	 20.724
3	FOREST A. Scrub forest	 59.032
4	CROP LAND A. Single crop B. Double crop	 170.188 16.956
5	WASTELANDS A. Land with scrub B. Land without scrub C. Mining area	 23.236 5.966 2.826
	TOTAL	**314**

vi. Raw coal will be sourced from SECL, Bilaspur (through linkage / E-auction/open market).

vii. **List of Client for whom coal will be washed:**

S.No.	Unit	Quantity (in MTPA)
1	M/s. Century Pulp & Paper Pvt. Ltd., Nainital, (Uttarakhand)	0.5
2	M/s. Bharat Aluminum Company Ltd., Korba (C.G)	1.0
3	M/s. KSK Mahanadi Power Company Limited, Akaltara (C.G)	0.5
4	M/s. Lanco Amarkantak Power Limited, Korba (C.G)	0.5
5	M/s. Vedanta Aluminium Ltd. – Jharsuguda (Orissa)	1.0
6	M/s. Jaiswal Neco Industries Ltd. Raipur (C.G)	0.5
	Total	**4.0**

viii. Characteristics of Raw Coal, Clean Coal & Reject Coal:

S.No.	Particulars	Raw Coal	Clean Coal	Reject Coal
1	GCV (Kcal / Kg)	3000-3200	3800 – 4000	2000 - 2200
2	Ash (%)	46-48	36 – 38	68 –70
3	Volatile Matter (%)	26	29	14
4	Fixed Carbon (%)	26-28	33-35	16-18
5	Yield (%)	---	65 - 70	30 - 35
6	Sulphur (%)	0.5	0.5	0.5

ix. **Transportation**: Railway siding is envisaged for the proposed project, to be served from Roberston Railway Station. Raw coal from the aforementioned sources, will be transported by Rail upto the site. Washed coal from the site will be sent to customer by Rail / Road depending on the MoU between customer and SECL. Washery rejects will be sent to the power plants by Rail / Road. Beneficiated iron ore will be transported to customers by Rail /

Road.

x. Details of **railway siding**: Land acquisition for railway siding is completed. Detailed Project Report (DPR) is approved by SECR. Rail Transport Clearance (RTC) has been approved by Ministry of Railways, New Delhi. Engineering Scale Plan (ESP) has been approved SECR. SIP approval is under process.
xi. There is no **R & R** involved. There are no PAFs.
xii. **Cost**: Total capital cost of the project is Rs. 45 Crores. CSR Cost will be carried out as per norms. No R&R Cost. Environmental Management Cost (capital cost Rs 2 crores, annual recurring cost Rs 40 Lakhs).
xiii. **Water body** : Dantar Nallah (0.5 Kms.), Mand River (2.4 Kms.), Kurket River (8.0 Kms.) are flowing within 10 Km. radius of the Project site
xiv. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
xv. **Forestry issues**: No forest land is involved in the proposed Project site
xvi. There are no **court cases/violation** pending with the project proponent.

19.6.3 **The Committee, after detailed deliberations, sought the following information for further consideration:**

i. The coal and iron or beneficiation shall be dealt separately.
ii. The details of linkage of raw coal and the end-users be submitted alongwith MoUs .
iii. The details of disposal/use of rejects alongwith its linkage to the end users be submitted.
iv. The Proponent should give two identified alternative sites for selection of appropriate site for washery.
v. The air quality presented is of 2002 which is very old. The PP should generate the recent air quality data.

19.7 Restructuring of Mine-1 Lignite Mine (reduction from 10.5 MTPA to 8 MTPA and expansion in ML area from 2762 ha to 3219 ha) M/s Neyveli Lignite Corp. Ltd. Dist. Cuddalore, Tamil Nadu – Modification of TOR.

19.7.1 The proposal is for correction/modification of TOR for Restructuring of Mine-1 Lignite Mine (reduction from 10.5 MTPA to 8 MTPA and expansion in ML area from 2762 ha to 3219 ha) **M/s Neyveli Lignite Corp. Ltd.** Dist. Cuddalore, Tamil Nadu. TOR was granted to the project vide letter no. J-11015/02/2012 dated 20.05.2014.

19.7.2 The proponent made the presentation and informed that:

i. In page no. 1 & 2 of the TOR in the table showing core area land details the following corrections are requested in the name of villages:

As given in TOR

Sl. No.	Name of the village (and status of Land Acquisition)	Classification-wise Extent of lands in Hectares (Revenue classification within brackets)						Total
			Agricultural		Culturable Waste	Not available for cultivation		
		Forest	Irrigated (Patta/Wet)	Un-irrigated (Patta Dry)	(Govt.Tharisu)	Common facility (Govt.Poram-boke)	Ear-marked For Housing (Govt. Natham)	
1	Thenkuthu (To be acquired)	0.00	37.765	187.59	1.75	37.055	4.66	268.82
2	Vadakuthu (To be acquired)	0.00	0.00	0.00	0.00	31.575	0	31.575

3	Therkumelur (Possession with NLC)	0.00	40.03	41.07	6.095	49.805	11.885	148.885
4	Veludayanpattu (Possession with NLC)	0.00	0.00	0.00	0.00	7.30		7.30
Total		**0.00**	**77.795**	**228.66**	**7.845**	**125.735**	**16.545**	**456.58**

The revised Table may be read as following:

Sl.No.	**Name of the village (and status of Land Acquisition)**	**Classification-wise Extent of lands in Hectares**						
		(Revenue classification within brackets)						**Total**
			Agricultural		**Culturable Waste**	**Not available for cultivation**		
		Forest	**Irrigated (Patta/Wet)**	**Un-irrigated (Patta Dry)**	**(Govt.Tharisu)**	**Common facility (Govt.Poram-boke)**	**Ear-marked For Housing (Govt. Natham)**	
1	Ammeri (To be acquired)	0.00	37.765	187.59	1.75	37.055	4.66	268.82
2	Ammeri (Possession with NLC)	0.00	0.00	0.00	0.00	31.575	0	31.575
3	Vadakku-vellore (to be acquired)	0.00	40.03	41.07	6.095	49.805	11.885	148.885
4	Vadakku-vellore (Possession with NLC)	0.00	0.00	0.00	0.00	7.30		7.30
Total		**0.00**	**77.795**	**228.66**	**7.845**	**125.735**	**16.545**	**456.58**

19.7.3 In the first page of the TOR "Expansion in ML area from 2762 Ha to 3219 Ha" may be read as "Expansion in ML area from 3178.4 Ha to 3635.4 Ha" .

19.7.4 The Committee, after detailed deliberations, has agreed to the corrections as proposed by the Proponent and as stated in paras 19.7.2 & 19.7.3 above.

19.8 Niljai Expansion (Deep) OC Coal Mine Project (expansion in ML area from 1346.63 ha to 1761.22 ha at the existing prod. capacity of 3.5 MTPA) of M/s Western Coalfields Ltd., Dist. Yavatmal, Maharashtra - EC based on TOR granted dated 23.05.2012.

19.8.1 The proposal is for seeking Environment Clearance for Niljai Expansion (Deep) OC Coal Mine Project (expansion in ML area from 1346.63 ha to 1761.22 ha at the existing prod. capacity of 3.5 MTPA) of **M/s Western Coalfields Ltd.,** Dist. Yavatmal, Maharashtra **.**

19.8.2 The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/261/2011-IA.II(M) dated 23.05.2012. The expansion in terms of land area only i.e. Increase in Land Area from 1364.63 ha to 1761.22 ha.

ii. The latitude and longitude of the project are N 19^0 58'08" to N 20^0 00'34" and E 79^o03'13" to E 79^o05'07" respectively.

iii. Joint Venture: There is no joint venture.

iv. Coal Linkage: Linked to Thermal Power Plants of MAHAGENCO.

v. The land usage of the project will be as follows:

Pre-Mining:

S.N.	LAND USE	Within ML Area (ha)	Outside ML Area (ha)	Total
1	Agricultural land	1728.97	--	1728.97
2	Forest land	--	--	--
3	Waste land	32.25	--	32.25
4	Grazing land	--	--	--
5	Surface water bodies	--	--	--
6	Settlements	--	--	--
7	Others (specify)	--	--	--
TOTAL				**1761.22**

Post- Mining:

S.N.	Land use during mining	Land use (ha)				
		Plantation	Water Body	Public use	Undisturbed	Total
1	External OB Dump	587.80	--	--	--	587.80
2	Top soil dump	98.4	--	--	--	98.40
3	Excavation	--	293.12	--	295.52	588.64
4	Roads	0.62	--	0.98	--	1.6
5	Built up area	--	--	147.4	--	147.4
6	Green Belt	--	--	--	--	--
7	Undisturbed Area	257.38	--	--	--	257.38
8	Embankment around quarry	--	--	--	80	80
	Total	**944.20**	**293.12**	**148.38**	**375.52**	**1761.22**

Core area :

Sl.No.	Particulars	Total Area (ha)
1.	Existing Quarry Area	335.04
2.	Additional Quarry Area	253.60
3.	External OB dump	587.80
4.	Black cotton soil dump	98.40
5.	Infrastructure	20.00
6	Area needed for rationalization and blasting zone	257.38
7	Colony land (Sundernagar township)	60.00
8	Embankment Area	80.00
9	Site for Bellora village rehabilitation	43.00
10	Site for Niljai village rehabilitation	26.00
	Total Land	**1761.22**

vi. The total geological reserve is 49.780 MT. The mineable reserve 45.30 MT, extractable reserve is 45.30 MT. The per cent of extraction would be 91 %. The coal grade is E(UHV 3935 kcal/kg) .The stripping ratio is 8.47 m3/t. The average Gradient is 1 in 5 to 1 in 6. There will be 2 seams with thickness ranging upto 6.50 m to 11.0 m.

vii. The total estimated water requirement is 428.00 m3/day (Consumption at site), 756.504 m3/d (Consumption in colony). The level of ground water ranges from 8.50 m to 14 m bgl.

viii. The Method of mining would be opencast with shovel-dumper combination.

ix. There are two external OB dumps with 383.51 Mm3 in an area of 587.80 Ha with height of 90 meter above the surface level.

x. The final mine void would be in 293.12 Ha with depth of 200 m. and the Total quarry area is

588.64 Ha. Backfilled quarry area of 295.52 Ha shall be reclaimed with plantation. A void of 293.12 ha with depth of 200 m which is proposed to be converted into a water body

xi. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.

xii. The **life of mine** is 20 Years.

xiii. **Transportation**: Coal transportation in pit by dumper, Surface to Siding by dumper and siding to loading by pay loader.

xiv. There is **R & R** involved. There are 600 PAFs.

xv. Cost: Total capital cost of the project is Rs. 414.1063 Crores. CSR Cost Rs. 5 per tonne. R&R Cost Rs. 3050 Lakhs. Environmental Management Cost (capital cost Rs 60 Lakhs).

xvi. **Water body** : Wardha river is adjacent to mine (under 500m)

xvii. **Approvals**: Ground water clearance is not applicable as not applicable, as it is not falling in critical area as per CGWA. Board's approval obtained on 15.02.2011. Mining plan has been approved on 15.02.2011. Mine Closure Plan approval on 25.08.2012.

xviii. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xix. **Forestry issues**: There is no forest area involved for mining.

xx. Total **afforestation** plan shall be implemented covering an area of 944.2 ha at the end of mining. Green Belt over an area of -?? -ha. Density of tree plantation 2500 trees/ ha of plants.

xxi. There are no **court cases/violation** pending with the project proponent.

xxii. Application for Certification of existing EC has been submitted to Regional Office, MOEF, Bhopal vide our letter WCL/WA/GM/NILJAI/EC/13317 dated 26.12.2013. The inspection by MOEF, Bhopal is expected between 19th to 23rd August, 2014

xxiii. **Public Hearing** was held on 29.11.2013. at project site, Bellora, Tahsil Wani, District Yavatmal, Maharashtra. The issues raised in the PH includes Rehabilitation; employment; Development works in Bellora; Submission of EIA report in Marathi; Arsenic Contamination; Impact of coal dust; Overburden Dumping etc.

19.8.3 The Committee, after detailed deliberations, sought following information for further consideration of the project:

i. Certified compliance report to the earlier EC conditions be submitted.

ii. Details of integration of mines in the area be submitted.

iii. The Committee has noted that the mine has not only expanding in area but also expanding in depth as well thereby which will disturb/divert the water bodies. The Proponent therefore, has to seek appropriate clearance for diversion of Nalla/River/Water bodies.

iv. Details of OBs and voids including the quantum back filled, distance between the OB dumps be submitted.

v. No extra land shall be used for OB dumps.

vi. The frequency of air quality monitoring shall be as per the CPCB prescribed practices and procedures.

vii. PP should re-work on the handling of depth and voids so as to bring back the mined out area for agricultural purposes.

viii. The OBs of three adjacent mines shall be handled together so as to prevent loss of prime agricultural lands.

19.9. Begunia Underground Coalmine Project (0.33 MTPA in an ML area of 236 ha) of M/s SAIL, located at Dist. Bardwan, West Bengal - EC based on TOR granted on 19.05.2011. Further consideration.

19.9.1 The proposal is for environment clearance for Begunia Underground Coalmine Project (0.33 MTPA in an ML area of 236 ha) of **M/s SAIL**, located at Dist. Burdwan, West Bengal. The proposal was last considered in 9th EAC meeting held on 20th -21st January, 2014.

19.9.2 The Committee sought additional information w.r.t. the Proponent may explore the feasibility of transportation of coal by Rail or Ropeway; details of distribution of aquifer; details of sand stowing as well as the source of sand/ sand mining to be submitted along with details of sand mining lease; a study on Hydro-geology may be carried out and report submitted; a study on subsidence be carried out and report submitted to the Ministry; detailed information on heat, humidity, degree of gaseousness etc. be submitted and measures taken to improve safety and working condition; a confirmatory letter for allocating Rs. 50 lakhs per annum towards CSR activities as committed during deliberations; the approved mine plan and the mine closure plan be submitted; the issues raised and commitments made during the PH may be submitted in tabulated form as advised.

19.9.3 The proponent made the presentation and informed that:

i. **The coal is** proposed to be transported from mine site to steel plants by rail. A railway siding and coal loading wharf are under process of development inside the SAIL Growth Works at Kulti, near the mouth of the incline. The job has been entrusted to M/s RITES Ltd. and likely to be completed by March 2015.

ii. **The Hydro –geological study for the project area has been carried out by M/s CIMFR, Dhanbad.** Based on the sub-surface geological information and exploratory boreholes data of existing mining area the disposition of aquifers has been worked out as follows:.

Formation	**Thickness Range (m)**		**Hydro-geological Unit**
	Minimum	**Maximum**	
Soil/sub soil/alluvium	2.75	35.5	Unconfined aquifer
Thick bed of shale with layers of intercalation of sandstone, shale and thin layers of local coal seams (above Begunia)	0.10	1.14	Aquiclude
Medium to coarse grained sandstone with intercalation of shale & sandstone	66.55	74.60	Semi-confined aquifer
Begunia coal seam (B-VII)	2.60	3.20	Aquiclude
Medium to coarse grained sandstone with intercalation of shale & sandstone	62.80	72.75	Semi-confined aquifer
Begunia Special Coal Seam (B-VI Bottom)	0.30	2.05	Aquiclude
Coarse to medium grained sandstone with intercalation of shale & sandstone	133.75	175.30	Semi-confined aquifer
Ramnagar coal seam (B-VI Top)	3.10	5.35	Aquiclude
Medium grained sandstone with intercalation of shale & sandstone	23.82	40.50	Semi-confined aquifer
Laikdih Seam (Bottom & B-VI Bottom)	20.95	23.45	Aquiclude
Medium grained sandstone with intercalation of shale & sandstone	44.53		Semi-confined aquifer

Gopinathpur Group Seam (Intersected only in one BH and occurs in several splits)	18.56	Aquiclude
Medium grained sandstone with intercalation of shale & sandstone	58.87	Semi-confined aquifer

iii. Bord and Pillar method with hydraulic sand stowing is proposed to extract coal from Mahatadih-Raidih Block. Maximum of three depillaring panels will be in operation at any point of time. Requirement of sand and water for hydraulic sand stowing is estimated to be around 880 m^3/day and 2640 m^3/day respectively for a production level of 1100 tpd from stowing panels. One stowing plant with two mixing troughs is proposed to be constructed at the surface. Sand from the nearby collecting points will be transported to the sand bunkers by tipping trucks. Sand-water slurry, from the mixing chambers of the stowing plant, will be transported to the places of stowing by pipelines through stowing boreholes and mine galleries. Stowing water will be collected in the sumps of the seam, from where it will be pumped out of the mine for reuse.

iv. The subsidence study has been carried out by M/s CMPDIL Ranchi and the report are as follows:
   a. Due to extraction of panels of Begunia seam, the anticipated maximum possible subsidence likely to occur is 0.01m over the panels R1, R2 & R3. The estimated maximum possible slope and strain likely to occur are 0.047mm / m and 0.024mm/m over the panel R1. Over rest of the panels subsidence is not likely to occur over surface due to greater depths.
   b. The anticipated maximum subsidence of 0.01m and strain of 0.024mm/m is not likely to affect any of the surface features provided stowing is done to full compaction.
   c. It is recommended that while carrying out extraction in some initial panels, close subsidence monitoring is required to be done. On the basis of observed data, necessary correction in subsidence estimation may done if required.

v. A detailed information on heat, humidity, degree of gaseousness has been carried out by M/s CMPDIL Ranchi and the report is as follows:
   a. The seam is virgin. During exploration stage no gas emission assessment has been noticed in Begunia seam. The Begunia seam in neighboring Victoria UG mine of BCCL, has been categorized as degree-III gassiness. Hence there is probability that this Begunia seam will be categorized as degree III gassiness. However, it is proposed to determine the desorbable gas content and degree of gassiness of Begunia seam once the seam is accessible. Hence, based on the status of neighboring mine, the Begunia seam has been considered as degree III gassy seam (highest) for the purpose of ventilation planning. All the safety measures need to taken as per degree III gassy mine.
   b. All safety measures need to be taken as per CMR 1957 & related Technical Circulars
   c. The ventilation system design has been made to remove heat produced from various sources & to create safe & comfortable working environment. Cooling power of air can be generated by providing adequate air quantity with adequate velocity & by installing air-conditioning plant or spot coolers at district. In the nearby locality, in CIL underground mines which are at around more or less same depth & having SDL/LHD machines for loading coal, the temperature is not crossing the statutory limit. Cooling power is generated by circulating air only & nowhere air-conditioning plant or spot coolers are being used. Hence, provision of air conditioning plant is not considered for Begunia Project.

vi. The management accepted to spend at least Rs. 50 Lakhs per year towards CSR activities.

vii. The Mining Plan and Mine Closure Plan for Begunia U/G Project has been approved by the Ministry of Coal vide letter No. 13016/23/2011-CA-I/CA-II, Dated 25.03.2014.
viii. The proponent has submitted the action plan alonwith the budgetary provisions for the commitment during the public hearing.

19.9.3 The Committee, after detailed deliberations, has recommended for granting Environment Clearance with the following specific conditions in addition to other conditions:

i. The approved mine plan shall be followed in synchronization with the EC conditions.
ii. There shall be no diversion/disturbance to the aquifer and any nalla/rivers in the vicinity of the mines.
iii. Adequate numbers of piezometers shall be installed around the mines and the ground water tables shall be monitored regularly.
iv. Close monitoring of subsidence and gasses emission shall be done. Safety and monitoring actions as recommended by CMPDIL shall be implemented.
v. Proponent should provide adequate air conditioning so as to prevent heat and humidity to the underground mining.
vi. Local people be recruited /trained and be given preference for appropriate jobs
vii. All electrical equipment should be flame proof.

19.10 Patherdih NLW Coal Washery (2.5 MTPA in an ML area 17.5 ha) of M/s Bharat Coking Coal Ltd., located at dist. Dhanbad, Jharkhand–TOR

19.10.1 The proposal is for seeking TOR for Patherdih NLW Coal Washery (2.5 MTPA in an ML area 17.5 ha) of **M/s Bharat Coking Coal Ltd.,** located at dist. Dhanbad, Jharkhand.

19.10.2 The proponent made the presentation and informed that:

i. It is a 3 – Product coal washery having capacity 2.5 MTPA in an ML area of 17.5 ha land vested with BCCL.
ii. The latitude and longitude of the project are 230 40' 30" & 230 40 '50" N and $86^0$26' 10" & 86^0 26'30" E respectively.
iii. Joint Venture: There is no joint venture.
iv. Coal Linkage: Gondudih OCP (1MT), Dhansar/Industry/Kusunda/Khas Kusunda Mines (1.5MTPA).
v. **Land use details** : Approximately 17.5 Ha of land upon which existing Washery is situated & proposed to be dismantled, will be required for the proposed Washery installation
vi. The total estimated **water requirement** is approx. 0.25 MGD KLD as make up water & air pollution control sprinkling.
vii. **Transportation**: Raw coal intake and product dispatch will be though conveyor at railway siding existing besides the proposed washery.
viii. There is no **R & R** involved. There are no PAFs.
ix. **Cost**: Total capital cost of the project is Rs. 132.00 Crores. CSR Cost :As per CIL's policy, the company will spend 2% of the retained earnings of the previous year subject to a minimum of Rs. 2/- per tonne of coal production R&R Cost not applicable. Environmental Management Cost will be as per norms.
x. **Water body**: River Damodar is flowing at a distance of 3.5 Km from the project site.
xi. **Approvals**: BCCL board approved coal washery on 30.08.2008.
xii. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
xiii. **Forestry issues**: No forest area involved.
xiv. There are no **court cases/violation** pending with the project proponent.

19.10.3 **The Committee, after detailed deliberations, has recommended for granting ToR with the following specific ToRs in addition to standard ToRs:**

i. The present washery shall replace the old wahsery which is not now in operation.
ii. There shall be no road transportation of coal. Coal transportation shall be rail only.
iii. The mine water shall be used for washery and other purposes after appropriate treatment.
iv. Catchment area/check dam be constructed for rain water harvesting and the water. therefrom be utilized after adequate treatment. The details of linkage along with MoUs. for washed coal rejects and middling be provided.
v. The washery shall be a closed system with zero discharge.

19.11 Mugoli Nirguda Extension Deep OC Mine Project (Normative 3.00 MTPA & Peak 3.90 MTPA in an ML area 818.05 Ha to 1145.16 Ha) M/s Western Coalfields Limited, located at dist. Chandrapur, Maharashtra. –TOR

19.11.1 The proposal is for TOR for Mugoli Nirguda Extension Deep OC Mine Project (Normative 3.00 MTPA & Peak 3.90 MTPA in an ML area 818.05 Ha to 1145.16 Ha) M/s Western Coalfields Limited, located at dist. Chandrapur, Maharashtra.

19.11.2 The proponent made the presentation and informed that:

i. The EC for Mugoli OC mine for 2.5 MTPA capacity was obtained vide letter no. J-11015/277/2008 – IA. II (M) dated 04/05/2009 and EC for Mugoli OC Expn 4.0 MTPA vide letter no. J-11015/299/2010 – IA. II (M) dated 21/06/2011.
ii. The proposal is for enhancement in land area from 818.05 ha to 1145.16 ha.
iii. The latitude and longitude of the project are N 19^0 50' 54.36" to N 19^0 54' 57.17" and E 79^o05'24.04" to E 79^o07'34.02" respectively.
iii. Joint Venture: There is no joint venture
iv. Coal Linkage : Linked to Thermal Power Plants of MAHAGENCO
v. EC proposal vis-à-vis existing scenario:

S.N	PARTICULARS	EXISTING PROJECT	EXPN. PROPOSAL	REMARKS
1	NAME	Mugoli OC Expn	Mugoli Nirguda Extn Deep OC	Change in capacity & Land Area
2	CAPACITY (MTPA)	4.00 MT	3.90 Mt	Change In Capacity
3	PRESENT PRODN. (MT)	3.6 MT (2013 – 14)	-	-
4	ENVIRONMENTAL CLEARANCE	RECEIVED FOR 4.00 Mt VIDE LETTER NO. J – 11015/299/2010 – 1 A.II (M) at 21.06.2011	Applied for Change in Area from 818.05 ha to 1145.16 ha	Change in Land Area
5	LAND AREA (ML AREA IN ha)	818.05 ha	1145.16 ha	Change In The Area
6	LAND ACQUISITION	TOTAL LAND AREA REQUIRED : 818.05	TOTAL LAND RECQUIRED -	Change In The Area

	BREAK UP (ha)	AGRI. LAND –758.54 GOVT. LAND – 59.51 ONLY 788.37 ha LAND IS ACQUIRED	1145.16 Ha AGRI. LAND – 1070.09 GOVT. LAND – 75.07 LAND ACQUIRED - 788.37 BALANCE LAND TO BE ACQUIRED - 356.79 ha * 22.60 ha IS OUTSIDE M L AREA	
7	FOREST LAND	NIL	NIL	No Change
8	ECOLOGICALLY SENSITIVE AREA SUCH AS NATIONAL PARK / SANCTUARY / BIOSPHERE RESERVES	NO ECOLOGICALLY SENSITIVE AREA SUCH AS NATIONAL PARK / SANCTUARY / BIOSPHERE RESERVES WITHIN 15 KMS. RADIUS OF THE PROJECT.	NO ECOLOGICALLY SENSITIVE AREA SUCH AS NATIONAL PARK / SANCTUARY / BIOSPHERE RESERVES WITHIN 15 KMS. RADIUS OF THE PROJECT.	No Change
9	POPULATION IN CORE ZONE	NIL	YES (WILL BE ASCERTAINED DURING BASELINE DATA GENERATION)	Change
10	DISPLACEMENT OF FAMILY	NIL	YES (286 PAFs)	Change
11	LAND LOSERS / OUSTEES	NIL	YES (IDENTIFICATION IS UNDER PROCESS)	Change
12	METHOD OF WORKING	OPENCAST WITH SHOVEL - DUMPER COMBINATION	OPENCAST WITH DRAGLINE & SHOVEL - DUMPER COMBINATION	Change
13	ULTIMATE WORKING DEPTH (m)	105	150	Change
14	OVERBURDEN REMOVAL (IN MILLION CUBIC METRE)	64.543	256.81 (including rehandling)	Change
15	WATER REQUIREMENT	921.80 m3/ day	921.80m3/ day	No Change
16	MINERAL TRANSPORTATION	12500 TPD, 606 TRUCKS/ day (20 Te. CAPACITY)	12500 TPD, 606 TRUCKS/ day (20 Te. CAPACITY)	No Change

vi. The land usage of the project will be as follows:

The total land requirement for this project is 1145.16 ha and 788.37 ha has already been acquired and balance land 356.79 ha is to be acquired

Pre-Mining:

S.N.	LAND USE	Within ML Area (ha)	Outside ML Area (Ha)	Total
1	Agricultural land	1047.49	22.60	1070.09
2	Forest land	--	--	
3	Waste land/Govt. land	75.07	--	75.07
4	Grazing land	--	--	
5	Surface water bodies	--	--	
6	Settlements	--	--	
7	Others (specify)	--	--	
	Total	1122.56	22.60	1145.16

Post- Mining:

S.N.	Land use during mining	Land use (ha)				
		Plantation	Water Body	Public use	Undisturbed	Total
1	External OB Dump	245.00	--	--	--	245.00
2	Top soil dump	--	--	--	--	--
3	Excavation	150.00	262.27	--	101.20	513.47
4	Roads	10.0		20.0		30.00
5	Built up area	4.0		44.6		48.60
6	Green Belt	--	--	--	--	--
7	Undisturbed Area	200.00			38.09	238.09
8	Embankment	32.00		38.0		70.00
	Total	641.00	262.27	102.6	139.29	1145.16

S.N.	Particulars	Total Land (ha)
1	Quarry Area	262.27
2	Internal backfilling upto surface and above (Ha)	251.20
3	External OB dump (including existing dumps)	245.00
4	Embankment around quarry (including existing embankment)	70.00
5	Proposed Washery and FBC Plant	0.00
6	Land for proposed relocated magazine	1.00
7	Land for proposed relocated Mugoli Village	15.00
8	Infrastructure incl. colony (approx.)	25.00
9	Residential colony	7.60
10	Roads	30.00
9	Blasting/ Safety zone	135.40
6	Rationalization of boundary	102.69
	Total Land	1145.16

vii. The total geological reserve is 59.506 MT. The mineable reserve 38.60 MT, extractable reserve is 38.60 MT. The per cent of extraction would be 65 %.

viii. The coal grade is GCV 4674 kCal/kg (Grade G-9). The stripping ratio is 1:6.65. The average

Gradient is 1 in 10 to 1 in 16.5. There will be one seam with thickness upto 14.75 m.

ix. The total estimated **water requirement** is 688 m3/day. The level of ground water ranges 3.35 to13.70 m. bgl pre monsoon ; 1.02m to 10.70 m bgl in post monsoon

x. The Method of mining would be by opencast with dragline mining & shovel-dumper combination.

xi. There is 2 external OB dump with Quantity of 24.84 Mm3 in an area of 245.00 ha with height of 90 meter and one internal dump with Quantity of 231.97 Mm3 in an area of 251.20 ha.

xii. The final mine void would be in 262.27 Ha with depth of 150 m. and the Total quarry area is 513.47 Ha. Backfilled quarry area of 150.00 Ha shall be reclaimed with plantation. A void of 262.27 ha with depth of 150 m which is proposed to be converted into a water body

xiii. The **life of mine** is 14 Years.

xiv. **Transportation**: Coal transportation in pit by dumper, Surface to Siding by dumper and siding to loading by pay loader.

xv. There is **R & R** involved. There are 286 PAFs.

xvi. **Cost:** Total capital cost of the project is Rs. 372.5193 Crores (Excluding WDV OF Rs 31.0898 crores). CSR Cost Rs. 5 per tonne. R&R Cost Rs. 47.63 Crore. Environmental Management Cost Rs. 6.00/t

xvii. **Water body** : Wardha river is flowing near the mine lease boundary of the project on one side and Pengana river on the other side.

xviii. **Approvals**: Ground water clearance is not applicable, as it is not falling in critical area as per CGWA. Board's approval obtained on 06.02.2014. Mining plan approved on vide letter No. WCL/BD/SECTT/BM-252/2014/1364, dated 15.02.2014. Mine Closure Plan approval in built in project.

xix. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xx. **Forestry issues**: No forest area involved for mining.

xxi. Total **afforestation** plan shall be implemented covering an area of 641.00 ha at the end of mining. Density of tree plantation 2500 trees/ ha of plants.

xxii. There are no **court cases/violation** pending with the project proponent.

19.11.3 The Committee, after detailed deliberations, has recommended for granting ToR with the following specific ToRs in addition to standard ToRs:

i. Detailed study of hydrological structure of the area vis-à-vis hydrology of the adjacent river be submitted.

ii. There shall be no diversion/disturbance to any river/nalla.

iii. The area being a black cotton soil having multiple crop need to be taken into account and appropriate management of mine area need to be submitted.

iv. A detailed analysis of the projected environmental impact of progressive mining be presented.

v. Detailed management plan for handling of OB and void be presented so as to bring back the land for Agricultural purpose.

vi. Certified compliance report from RO, MoEF to the conditions of earlier EC alongwith the Action Plan by the Proponent be submitted.

19.12 Basundhara Coal Washery (10 MTPA in an ML area 27.66 ha) of M/s Mahanadi Coalfields Ltd., located in Dist. Sundergarh, Orissa – TOR – Further Consideration.

19.12.1 The proposal is for environment clearance for Basundhara Coal Washery (10 MTPA in an ML area 27.66 ha) of M/s Mahanadi Coalfields Ltd., located in Dist. Sundergarh, Orissa.

19.12.2 The proposal was last considered in 14th EAC meeting held on 27th -28th March, 2014. The Committee sought additional information with regard to acquainting themselves with the site conditions, transport details and quality of reject and its usage as per MoEF guidelines, responsibility of the B.O.M.O., details of the 1.2 Ha of forest land forms part of the project, status of surface drainage and its protection etc.

19.12.3 The proponent made the presentation and informed that:

i. The washery site is having undulating topography with highest elevation at 278 m and the lowest at 254 m above mean sea level.
ii. The project site in the mine leasehold of Kulda OCP of Basundhara Area.
iii. The project site is characterized by barren land and small patches of vegetation consisting of bushes and shrubs.
iv. Raw coal from Kulda OCP to washery through two. of conveyor belts each of approx. 1200 TPH capacity.
v. Washed Coal from Basundhara washery to the silo near railway siding by 2x2000 TPH twin covered conveyor belts of approx. 1.85 KM length
vi. Rejects from washery to reject site by covered conveyor belt of about 2.2 KM length
vii. Transportation of rejects from washery site to ''Temporary Rejects Storage'' site will be through covered belt conveyor
viii. Calorific value of rejects will be about 1450 Kcal./Kg. GCV, therefore MCL Board has decided to dispose the rejects to consumers through MoU route or by e-tendering
ix. Disposal of rejects will be through MoU Route or by E-Tendering.
x. Transportation of rejects from Temporary Reject Storage to railway siding is to be made by road.
xi. For rail dispatches, exclusive rail siding for transportation of washery rejects need to be identified by the buyer.
xii. Rejects should not be lying stacked at temporary rejects storage for more than 30 days in case of disposal/ sale through MoU route.
xiii. The responsibilities of M.D.O. called as BOM Operator is spelt out in detail at RFP Document.
xiv. Ownership of raw coal, washed coal and rejects including slurry (if any) shall remain with MCL.
xv. The responsibility of obtaining statutory & regulatory clearances including Environmental Clearances lies with the MCL but BOMO shall provide all necessary assistance / support.
xvi. While operating BOMO must comply with all statutory & regulatory requirements.
xvii. BOMO shall dispose the rejects to the "Temporary Rejects Storage'' for onward disposal either through MoU or through e-auction.
xviii. Safety & Security of the washery and its properties including raw coal & its products.
xix. Operation & Maintenance of the Plant for 10 years.
xx. **Forest land:** The application in the prescribed format for diversion of 1.2 ha of forest land for Basundhara Washery(10 MTY) has been submitted in the office of Addl. Principal Chief Conservator of Forest (Nodal Officer), Odisha vide letter No. MCL/GM/BGA/Wash/2014-15/ES-86/75 dtd. 23.05.2014 and 26.05.2014.

19.12.4 The EAC has received comments form one of the NGOs on the following issues:

i. The proposed project falls in Schedule V area, for developmental projects and land acquisition purposes, under section 4(i) of Panchayat Extension to Schedule Areas Act 1996, there is mandatory requirement of consultation with Gram Sabha prior to land acquisition and starting of the project. In this case, no such consultation has been made and the Form 1 does not say anything about the consultation process, if any held.

ii. The Basundhara river is very close to (less than 500 m) the proposed project, and coal washery project being a highly water polluting unit, there is every possibility that the discharged waste water from the washery will pollute the river and affect the population downstream. There is no mention about the impact on downstream riparian rights.
iii. Railway siding is one of most air polluting locations and requires more precaution. No detailed information about the railway siding and its impact on local community and environment are given.

19.12.5 The Committee, after detailed deliberations, has **recommended for granting ToR** with the following specific ToRs in addition to standard ToRs:

i. A feasibility of automated coal loading system be explored out and submitted.
ii. The safety, security and matters related to environment of the mine and its operation shall be the responsibility of M/s MCL.
iii. Details of utilization of rejects be submitted.
iv. Proponent may submit whether the wasshery is on the coal bearing area or otherwise.
v. The washery shall be provided with green belt around it.
vi. Proponent may confirm whether the land for washery has been acquired under PESA: whether gram sabha has taken any possession on this whether any special package for tribal area has been provided.
vii. There shall be no drawl of water from Basundra River.
viii. Detailed information to the issues mentioned at para 19.12. 4 be provided during consideration of EC.
ix. CSR Plan for Capital CSR Budget @ 0.4% of the Capital Cost and securing CSR funds as per CIL Policy be provided.

19.13 Expansion (under 7(ii) of EIA Notification 2006) of Manuguru Opencast – II Coal Mining Project (from 5 MTPA to 6.25 MTPA in an ML area of 1526.20 ha) M/s The Singareni Collieries Company Ltd., Dist. Khammam, Andhra Pradesh –EC Correction.

19.13.1 The proposal is for correction in EC letter of Expansion (under 7(ii) of EIA Notification 2006) of Manuguru Opencast – II Coal Mining Project (from 5 MTPA to 6.25 MTPA in an ML area of 1526.20 ha) M/s The Singareni Collieries Company Ltd., Dist. Khammam, Andhra Pradesh.

19.13.2 The Environment Clearance was granted to the project vide letter no. J-11015/78/2013-IA-II(M) dated 21.02.2014. Project proponent requested for slight discrepancies and typographical corrections. The Committee noted and recommended for factual corrections at the following places.

EC Ref.	Observation	Request
2(iv)	The total geological reserve is 344.88 MT. The mineable reserve are 264.20 MT, extractable reserve are 244.78 MT. The extraction would be 71 %.	The total geological reserve is 344.88 MT. The mineable reserve are 264.20 MT, extractable **balance** reserve are 244.78 MT. The extraction would be 71 %.
2.v	The coal grade is G-9. The average Gradient is 1 in 5.5 to 1 in 7.0. There will be total twelve seams with thickness ranging from **0.78** to **21.23** m.	The coal grade is G-9. The average Gradient is 1 in 5.5 to 1 in 7.0. There will be total twelve seams with thickness ranging from **0.79** to **15.00** m.
2(vi)	The total estimated water requirement is 3500 m3/day. The level of ground water ranges from [winter (2012): 0.89 m to 6.75	The total estimated water requirement is 3500 m3/day. The level of ground water ranges from [winter (2012): 0.89 m to 6.75 m; Pre

	m; Pre monsoon (2012): 1.00 m to 8.45 m; Monsoon (2012):0.55 m to 4.75 m; Post Monsoon (2012): 0.45 m to 4.65 m]. Void of **8.9.90** ha at a depth of 45 m proposed to be converted into water body.	monsoon (2012): 1.00 m to 8.45 m; Monsoon (2012):0.55 m to 4.75 m; Post Monsoon (2012): 0.45 m to 4.65 m]. Void of **809.90** ha at a depth of 45 m proposed to be converted into water body.
2(viii)	"There is one external OB dump covering an area of 1070 Ha having a height up to 120 m with the quantity of 695.296 m3(B) and there is one internal dump covering an area of 973.51 ha of 120 m height "	There are two external OB dumps covering an area of 1070.10 Ha having a height up to 120 m above ground level with the quantity of 695.296 M.m3 and there is one internal dump covering an area of 973.51 ha of 120 m height above ground level. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.
2(ix)	"The life having a height of 120 m with a quantity of 1235.05 m3"	At the end of the life, the internal dump having a height of 120 m above ground level with a quantity of 1235.05 Mm3
2(xxi)	Total afforestation plan shall be implemented covering an area of 1967.78 ha at the end of mining. Green Belt over an area of 173.95 ha. Density of tree plantation 2500 trees/ ha of plants.	Total afforestation plan shall be implemented covering an area of 1961.78 ha at the end of mining. Green Belt over an area of 274.88 ha. Density of tree plantation 2500 trees/ ha of plants.
A(xxxvi)	A Progressive afforestation plan shall be implemented covering an area of 1967.78 ha at the end of mining, which includes reclaimed External OB dump area (1070.06 ha), Internal OB dump area (616.84 ha), and Green belt (173.95 ha) in township located outside the lease by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. Massive plantation shall be carried out in open spaces in and around the mine and a 3-tier avenue plantation along the main approach roads to the mine.	A Progressive afforestation plan shall be implemented covering an area of 1961.78 ha at the end of mining, which includes reclaimed External OB dump area (1070.06 ha), Internal OB dump area (616.80 ha), and Green belt (274.88 ha) in township located outside the lease by planting native species in consultation with the local DFO/Agriculture Department.
A(xxxvii)	An estimated total 1923.796 Mm3 of OB will be generated during the entire life of the mine. Out of which 695.296 Mm3 of OB will be dumped in four external OB Dumps in an earmarked area covering 1076.56 ha of land. 1228.50 Mm3 of OB will be dumped in one internal OB Dumps in an earmarked area covering 973.51 ha of land. The maximum height of external OB dump for hard OB will not exceed 90 m and that for soft OB shall not exceed 60 m. The	An estimated total 1929.75 Mm3 of OB will be generated during the entire life of the mine. Out of which 682.63 Mm3 of OB will be dumped in four external OB Dumps in an earmarked area covering 1070.06 ha of land. 1228.50 Mm3 of OB will be dumped in one internal OB Dumps in an earmarked area covering 973.51 ha of land. The maximum height of external OB dump for hard OB will not exceed 120 m and that for soft OB shall not exceed 10 m. The maximum slope of the

	maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MOEF and its Regional Office on yearly basis.	dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self-sustaining and compliance status shall be submitted to MOEF and its Regional Office on yearly basis.

19.13.3 The Committee recommended the corrections as stated in para 19.13.2 above.

19.14 Jalagam Vengal rao Opencast Project-II (4 MTPA Normative and 5 MTPA peak in a project area of 1409.81 ha) of M/s Singareni Collieries Company Ltd., located in village Kommepalli, Mandal Sathupalli, dist. Khammam, Andhra Pradesh. – EC Modification.

19.14.1 The proposal is for modification in EC condition of expansion (under 7(ii) of EIA Notification 2006) of Jalagam Vengal rao Opencast Project-II (4 MTPA Normative and 5 MTPA peak in a project area of 1409.81 ha) of M/s Singareni Collieries Company Ltd., located in village Kommepalli, Mandal Sathupalli, dist. Khammam, Andhra Pradesh.

19.14.2 The Environment Clearance was granted to the project vide letter no. J-11015/268/2007-IA.II (M) dated 28.03.2010. As per the EC Condition No. (viii) "No coal transport shall be under taken by road". Project proponent requested for modification in EC condition.

19.14.3 The proponent made the presentation and informed that:

i. Initial survey for laying railway line from Sathupalli to Kothagudem has been completed. The Project cost is Rs. 360.00 crores and CCDAC sanctioned 70% of the project cost i.e., Rs. 252.00 crores and SCCL also paid percentage charges of Rs. 6.38 crores. The SC Railway, Secunderabad awarded contract to M/s. Kawre & Jawda Project Pvt. Ltd. Nagpur. Final field survey by the contractor was completed on 15.04.2013. Final alignment plan submitted on 24.10.2013 South central railway submitted DPR on 13.03.2014 The construction of railway line will take another 5 years.
ii. SCCL requested MoEF to modify the condition of rail transport for permission to transport coal from the proposed project by road to the linked customers till the railway line is completed. SCCL will implement all mitigative measures to control air pollution during the phase of coal transportation by road. As such, EAC is requested to kindly recommend to modify the conditions with a permission to transport coal by road till the railway line is completed in view of the shortage of coal to power plants in the region.

19.14. 4 The Committee, after detailed deliberations, has agreed for the modifications in the EC conditions that the railway line should come into operation within a period of **three** years and until that time the coal may be transported by road with mechanically covered trucks. The Proponent shall take up the matter with concerned authorities to expedite railway line construction and shall maintain the road at its own cost for transportation of coal.

19.15 Mohanpur OCP Expansion of (1 MTPA to 2 MTPA in ML area of 164.91 ha) M/s Eastern Coalfields Ltd., Dist. Burdwan, West Bengal - EC under 7(ii) of EIA Notification 2006.

19.15.1 The proposal is for environment clearance for Mohanpur OCP (under 7(ii) of EIA Notification 2006) (from 1 MTPA to 2 MTPA in ML area of 164.91 ha) M/s Eastern

Coalfields Ltd., Dist. Burdwan, West Bengal.

19.15.2 The proponent made the presentation and informed that

i. The project was accorded TOR vide letter no. J-11015/1128/2007-IA.II(M) dated 10.12.2009.

ii. The latitude and longitude of the project are 23° 46' 40" to 23° 47' 29" North and 86° 56' 20" to 86° 57' 37" East respectively.

iii. Joint Venture: No Joint Venture.

iv. Coal Linkage : Kolaghat thermal power station

v. The land usage of the project will be as follows:

Sl. No.	Land use Type	Area (Ha)		
		Existing	To be acquired	Total
1	Excavated area including haul-road	60.34	-	60.34
2	External OB Dump	20.00	-	20.0
3	Colliery Infrastructure/Built-up	2.00	-	2.0
4	Coal depot	1.00	-	1.0
5	Road	0.50	-	0.5
6	Village	-	7.70	7.70
7	Cultivable	4.30	17.10	21.40
8	Barren/Vacant land	26.77	25.20	51.97
Total		**114.91**	**50.00**	**164.91**

vi. Details of Seams:

Sl No	Name of Coal Seam	Effective Thickness Range	Net Net Geological Reserve	Quality
1	Salanpur-D (Bot)	1.0 -2.0	0.31	D-G
2	Salanpur-C (Top)	1.0-2.0	0.18	D-G
3	Salanpur-C (Bot)	1.0-3.0	0.40	D-G
4	Salanpur-B (Top)	1.5-3.0	0.42	E-G
5	Salanpur-B (Bot)	2.0-6.0	1.62	F-G
6	Salanpur-B (Comb)	4.0-9.0		F-G
7	Salanpur-A	15.0-21.0	7.38	E-G
8	Salanpur-Special (Top)	1.5-3.5	0.29	D-G
9	Salanpur-Special (Bot)	1.0-4.0	1.27	B-E
10	Salanpur-Special (Comb)	7.5-8.5		E-F

In general the dip of the seams varies from 10 Degree 15 Degree towards south. Strike direction is along East- West.

vii. The total estimated water requirement is 680 m^3/day. The level of ground water ranges Pre – monsoon (2013) variation: 1.35 m to 10.20 m BGL Post – monsoon(2013) variation : 0.50 m to 1.40 m BGL.

viii. The Method of mining would be by open cast.

ix. To facilitate the space for in-pit dumping the OCP has been planned in two quarries i.e. Quarry-1 and Quarry-2. Total area to be quarried within the project area considering both Quarries 1 & 2 is 92 Ha.

x. As the project report has been approved for partial outsourcing, removal of top OB is only done departmentally while remaining OB removal, coal production and dispatch are outsourced. The

enhancement in capacity will require more OB removal while the present departmental capacity is 0.65 M. Cum / year. Thus, more outsourced machinery and manpower will be deployed to augment capacity for mining of both OB and Coal.

xi. Presently the overburden material is transported partly to the external dump and partly to the internal dump. External dumps have an area of 20 Ha and a volume of 3.08 Million Cum OB can be accommodated, whereas internal dump has an area of 16 Ha and accommodates a volume of 4.0 Million Cum of OB.

xii. The total volume of OB material that will be removed from the proposed OCP is now estimated to be 28.30 M Cum including 15.20 M Cum from Quarry-1 and 13.10 M Cum from Quarry- 2. OB is proposed to be dumped in the existing internal OB dump. No additional external OB dump has been proposed. Overburden of Quarry-2 will be accommodated in the void of Quarry-1 and further by heightening the OB dump by around 35m above surface.

xiii. Quarry -2 cannot be backfilled during its operation for maintaining the haul road in the floor of Salanpur Special Bottom seam. It is proposed that after the quarry operation is over around 8.70 M Cum of OB from the external dump and the heightened part of internal dump will be rehandled to back fill partly the void of Quarry -2. .

xiv. There is one external OB dump with Quantity of 7.0 Mbcm in an area of -- ha with height of 35 m above the surface level and one internal dump with Quantity of 23.98 Mbcm in an area of 43.0 Ha (including 1.0 Ha of Top Soil dump).

xv. The final mine void would be in 49.0 Ha with depth of 20 m. and the Total quarry area is 91.0 Ha. Backfilled quarry area of 43.0 Ha shall be reclaimed with plantation. A void of 49.0 ha with depth of 20 m which is proposed to be converted into a water body.

xvi. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.

xvii. The **life of mine** is 4 Years.

xviii. **Transportation:** Coal transportation in pit by Coal is loaded by shovels at face and transported to the surface coal depot by colliery dumpers, Surface to Siding by Road transportation by 15 te dumpers and siding to loading by Payloaders are used for loading of coal onto wagons.

xix. There is **R & R** involved. There are 34 households PAFs.

xx. **Cost:** Total capital cost of the project is Rs. 92.67 Crores. CSR Cost Rs. 1.00 crores. R&R Cost 8.54 Crores Environmental Management Cost 163.35 lakhs per annum

xxi. **Water body**: No river/nalla flow near the leasehold area.

xxii. **Approvals**: Application has been made to CGWA for water clearance. Board's approval obtained on Dec'13 (Mine Closure Plan). Mine Closure plan of the mine has been approved in December, 2013.

xxiii. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

xxiv. **Forestry issues**: There is no forest area involved for mining.

xxv. Total **afforestation** plan shall be implemented covering an area of 85.41 ha at the end of mining. Density of tree plantation 1600 samplings per ha.

xxvi. There is no **court cases/violation** pending with the project proponent. However , the show cause notice was issued by the RO, MOEF BBSR.

xxvii. The mine has violated the EC conditions by producing more than approved capacity **of 1.0 MTY in 2011 – 12 & 2012 – 13.**

19.15.3 It is a violation case. Letter to State Government to take credible action for violation has been sent.

19.15.4 EAC has deliberated the EC compliance report from RO, MOEF, vide letter no. 106-102/EPE dated 07.05.201, and noted that some of the EC conditions have not been complied. The Committee has suggested to comply with the following EC conditions and submit the Action Taken Report.

1. Project should adopt appropriate measures for conservation of nutrients in the top soil by planting grasses/ leguminous plants.
2. Project should take immediate steps to see that a bund is constructed and no water from the road enters in to siltation pond. The remaining mine water is led into a nallah directly. Project should also construct a two-stage setting tank and only the overflow from this tank should enter the nalla.
3. The retaining wall has been damaged. Project should take immediate action for repairing the damaged portion of retaining wall.
4. Plantation works should be undertaken in the completed and inactive portion of the north-west External OB dump.
5. ETP has not yet been constructed and no Oil & Grease trap has been provided at the workshop. Project should take up immediate steps to construct settling tanks and Oil & Grease trap.
6. Monitoring of land use of the project has not been carried out in 2012 and should be done during 2015. Project has not yet provided the details to the RO, MoEF of the land use changes as per the 2012 study.
7. Mine has exceeded the production and produced 1.3 million tons of coal during 2011-12 against the sanctioned capacity of 1.0 MTPY, which is a violation of the condition.
8. The RPM (PM_{10}) exceeded the limits of 100 ug/m^3 prescribed under the National Ambient Air Quality Standards of CPCB, 2009. The project also should monitor the $PM_{2.5}$ as per NAAQ Standards Notification of CPCB, 2009. Project should take up suitable measures to control the dust emissions so as to comply with the standards.
9. Ambient air quality is monitored for parameters such as RPM, SPM, SO2, and NO_x only. Project should also monitor heavy metals viz. Hg, Pb, Cr, As and comply with the condition.

19.15.5 The Committee has expressed its concern that the Proponent has not informed the Committee that it has exceeded the production in 2011-12 and 2012-13 which is a violation case .and that the RO, MoEF is in the process of issuing show cause notice as stated in its compliance report. The Committee has suggested that the Proponent should be asked to be on record why suppression of information was made in this regard. The Committee after detailed deliberation has sought the following information for further consideration

i. Action Plan duly concurred by RO, MoEF with regard to Compliance report to the earlier EC conditions.
ii. The project proponent should respond to non-compliance of EC conditions mentioned by the Regional Officer of MoEF including show-cause notice issued by the RO, MoEF.
iii. The project proponent should take the consent to operate from the State Pollution Control Boad and the same be submitted to MoEF.
iv. The proponent should comply to the OMs issued by the MoEF with regard to the violation of EC conditions.

19.16 The MoEF has requested the EAC to review and prepare a generic TOR for washery. The Committee after deliberations has finalized and recommended a generic TOR for washery which is at Annexure-I.

The meeting ended with a vote of Thanks to the Chair.

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Annexure-1

Generic ToR for coal washery

i. Siting of washery is critical with respect to its adverse environmental impacts. Preference should be , therefore, given to the site located at pit head; in case such a site is not available, the site should be as close to the pit head as possible that would enable to transport coal from mine to the preferably washery through closed conveyer belt to avoid air pollution. In case such sites are not available, the project proponent should suggest alternative sites for which a ToR is a "must".

ii. The Washery should have a closed system and zero discharge. The storm drainage should be treated in settling ponds before discharging into rivers/streams/waterbodies.

iii. A thick Green belt of about 50 m width should be developed surrounding the Washery.

iv. A brief description of the plant alongwith a layout, the specific technology used and the source of coal should be provided.

v. The EIA-EMP Report should cover the impacts and management plan for the project of the capacity for which EC is sought and the impacts of specific activities, including the technology used and coal used, on the environment of the area (within 10km radius), and the environmental quality of air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. Cumulative impacts for air and water should be a part of EIA in case coal mine, TPP and other washeries and are located within 10km radius. The EIA should also include mitigative measures needed to minimize adverse environmental impacts.

vi. A Study Area Map of the core zone and 10km area of the buffer Zone showing major industries/mines and other polluting sources, and these maps shall also indicate the migratory corridors of fauna, if any and the areas where endangered fauna and plants of medicinal and economic importance are found in the area. If there are any ecologically sensitive areas found within the 15km buffer zone, the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc. should be shown and the comments of the Chief Wildlife Warden of the State Government should be furnished in those cases.

vii. Collection of one-season (non-monsoon) primary base-line data on environmental quality of air (PM10, PM2.5, SOx and NOx), noise, water (surface and groundwater), soil should be provided.

viii. The wet washery should generally utilize mine water only, and in case mine water is not available, the option of storage of rain water and its use should be examined. Use of ground water and river water should be avoided.

ix. Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-à-vis washery should be given separately. If the source of water is from ground water and or river, sanction of the competent authority in the State Govt. should be provided.

x. Impacts of mineral transportation - the entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place. Transport of washed coal should be by train as far as possible. Road transport should generally be

avoided. In case, if TPP is within 10km radius, it should be through conveyer belt. The washed coal and rejects should be transported to the destination preferably by railways only. If transport by railways is not feasible because of the topography of the area, the option for transport by road be examined in detail and its impacts alongwith the mitigatory measures should be clearly brought out in EIA.

xi. Details of various facilities to be provided for the personnel involved in mineral transportation in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Details of workshop and treatment of workshop effluents should be provided.

xii. Impacts of CHP, if any on air and water quality should also be clearly spell out alongwith Action Plan in EIA.

xiii. The budget for Capital CSR at Recurring CSR should be provided.

xiv. Public Hearing details of the coal washery and include details of notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided. Action Plan showing each issue raised in the Public Hearing, the responses provided by the project proponent and the details of budget earmarked should be provided.

xv. Status of any litigations/ court cases filed/pending on the project, if any, should be mentioned in EIA.

xvi. Submission of sample test analysis of:

a. Characteristics of coal to be washed- this includes grade of coal and other characteristics of ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.
b. Characteristics and quantum of washed coal.
c. Characteristics and quantum of coal waste rejects.

xvii. Details of management/disposal/use of coal waste rejects should be provided. The rejects should be used in TPP located close to the washery as far as possible. If TPP is within a reasonable distance (10 km), transportation should be by conveyor belt. If it is far away, the transportation should be by railway as far as possible.

xviii. Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC has been sought should be submitted.

xix. Corporate Environment Responsibility:

a. The Company must have a well laid down Environment Policy approved by the Board of Directors.
b. The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
c. The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
d. To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

xx. A detailed action Plan for Corporate Social Responsibility for the project affected people and people living in and around the project area should be provided.

xxi. Permission of drawl of water be pre-requisite for consideration of EC.

xxii. Wastewater /effluent should confirm to the effluent standards as prescribed under Environment (Protection) Act, 1986

xxiii. Details of washed coal, middling and rejects be submitted alongwith the MoU with users.

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Annexure 2

LIST OF PARTICIPANTS IN 19th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 13th -14th August, 2014 IN NEW DELHI.

Sl. No.	List of Members	
1.	Prof. C.R. Babu	Member
2.	Shri Jawahar Lal Mehta	Member
3.	Shri N. K. Verma	Member
4.	Shri G. S. Dang	Member
5.	Shri A. K. Bansal	Member
6.	Dr. Shankar Bala	Member
7.	Dr. S.D. Attri	Member
8.	Dr. Manoranjan Hota	Director & Member Secretary
9.	Shri. P. R. Sakhare	Deputy Director

Annexure 3

LIST OF PROPONENTS PARTICIPATED IN THE 19th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 13th -14th August, 2014 ON COAL SECTOR PROJECTS.

19.1 **Bijari OCP of M/s South Eastern Coalfields Ltd.,**

1. Shri R. P. Thakur
2. Shri Manoj Kumar
3. Shri M. N. Annukumar
4. Shri Anop Ghosh
5. Shri Pathagata Chokrabor
6. Shri T. D. Guin
7. Shri K. Shrinivas
8. Shri Arvind Kumar
9. Shri U. T. Kanzarkar
10. Shri S. R. Tripathi
11. Shri A. K. Gupta
12. Shri Amit Saxena

19.2 **Kusmunda Opencast Expansion Project of M/s South Eastern Coalfields Ltd.,**

1. Shri R. P. Thakur
2. Shri Manoj Kumar
3. Shri M. N. Annukumar
4. Shri Anop Ghosh
5. Shri Pathagata Chokrabor
6. Shri T. D. Guin
7. Shri K. Shrinivas
8. Shri Arvind Kumar
9. Shri U. T. Kanzarkar
10. Shri S. R. Tripathi
11. Shri A. K. Gupta
12. Shri Amit Saxena

19.3 **Cluster No.11 of M/s Eastern Coalfields Ltd.**

1. Shri J. N. Biswal
2. Shri S. Chakravarty
3. Shri G. Prasad
4. Shri S. Kundu
5. Shri A. Shekhar
6. Shri S. K. Bhawaria

19.4 **Cluster No.3 of M/s Eastern Coalfield Limited.**

1. Shri J. N. Biswal
2. Shri S. Chakravarty
3. Shri G. Prasad
4. Shri S. Kundu

5. Shri A. Shekhar
6. Shri S. K. Bhawaria

19.5 **Ichhapur Underground Coalmine Project of M/s West Bengal Mineral Development & Trading Corp.Ltd.**

1. Shri A. Shome
2. Shri R.K. Saha
3. Shri P. Pandey
4. Dr. Marisa Sharma

19.6 **Coal Washery of M/s Vedanta Washery And Logistic Solutions Pvt. Ltd.**

1. Shri Suryakant Agrawal
2. Shri Nagarjuna

19.7 **Restructuring of Mine-1 Lignite Mine of M/s Neyveli Lignite Corp. Ltd.**

1. Shri R. Deivam
2. Shri R. Solainathan
3. Shri Rashmi Gupta
4. Shri Marisha Sharma

19.8 **Niljai Expansion (Deep) OC M/s Western Coalfields Ltd.**

1. Md. Noor Uddin
2. Shri R. M. Wanare
3. Shri S. K. Sinha
4. Shri K. Chakraborty

19.9 **Begunia Underground Coalmine Project of M/s SAIL.**

1. Shri R. Darbari
2. Shri A. K. Dal
3. Shri M.J. Ahmod
4. Dr. T. B. Singh
5. Dr. Abhay Kumar
6. Shri Vivek Singh

19.10 **Patherdih NLW Coal Washery of M/s Bharat Coking Coal Ltd.**

1. Shri. D. C. Jha
2. Shri V. K. Sinha
3. Shri Kumar Ranjeev
4. Shri Amit Roy
5. Shri Goutam Dutta

19.11 **Mugoli Nirguda Extension Deep OC Mine Project of M/s Western Coalfields Limited.**

1. Shri R. M. Wanare
2. Md. Noor Uddin
3. Shri S. K. Sinha

19.12 **Basundhara Coal Washery of M/s Mahanadi Coalfields Ltd..**

1. Shri J. P. Singh
2. Dr. A.K. Samantaray
3. Shri P.K. Mishra
4. Shri Jitendra Singh
5. Shri A.K. Singh
6. Shri A. Kumar
7. Shri Nawal Kishor
8. Shri Yogendra Mishra
9. Shri V.K. Pandey

19.13 **Expansion (under 7(ii) of EIA Notification 2006) of Manuguru Opencast – II Coal Mining Project of M/s The Singareni Collieries Company Ltd.**

1. Shri M. Vasanth Kumar
2. Shri Shanth Kumar

19.14 **JalagamVengalrao Opencast Project-II of M/s The Singareni Collieries Company Ltd.**

1. Shri M. Vasanth Kumar
2. Shri Shanth Kumar

19.15 **Mohanpur OCP Expansion of M/s Eastern Coalfield Limited.**

1. Shri J. N. Biswal
2. Shri S. Chakravarty
3. Shri G. Prasad
4. Shri S. Kundu
5. Shri A. Shekhar

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ANNEXURE-4

GENERIC TOR FOR COAL WASHERY

Based on the presentation made and discussions held, the Committee prescribed the following TOR:

(i) A brief description of the plant, the technology used, the source of coal, the mode of transport of incoming unwashed coal and the outgoing washed coal. Specific pollution control and mitigative measures for the entire process.

(ii) The EIA-EMP report should cover the impacts and management plan for the project of the capacity for EC is sought and the impacts of specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. If the washery is captive to a coal mine/TPP/Plant the cumulative impacts on the environment and usage of water should be brought out along with the EMP.

(iii) A Study area map of the core zone and 10km area of the buffer showing major industries/mines and other polluting sources, which shall also indicate the migratory corridors of fauna, if any and the areas where endangered fauna and plants of medicinal and economic importance are found in the area. If there are any ecologically sensitive areas found within the 15km buffer zone, the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc should be shown and the comments of the Chief Wildlife Warden of the State Government should be furnished.

(iv) Collection of one-season (non-monsoon) primary base-line data on environmental quality ?air (PM_{10}, $PM_{2.5}$, SOx and NOx), noise, water (surface and groundwater), soil.

(iv) Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-à-vis washery should be given separately. Source of water for use in mine, sanction of the competent authority in the State Govt..and examine if the unit can be zero discharge including recycling and reuse of the wastewater for other uses such as green belt, etc.

(vi) Impact of choice of the selected use of technology and impact on air quality and waste generation (emissions and effluents).

(vii) Impacts of mineral transportation - the entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place.

(viii) Details of various facilities to be provided for the personnel involved in mineral transportation in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Examine whether existing roads are adequate to take care of the additional load of mineral [and rejects] transportation, their impacts. Details of workshop, if any, and treatment of workshop effluents.

(ix) Impacts of CHP, if any on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.

(x) Details of green belt development.

(xi) Including cost of EMP (capital and recurring) in the project cost.

(xiv) Public Hearing details of the coal washery to include details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xv) Status of any litigations/ court cases filed/pending on the project.

(xvi) Submission of sample test analysis of:

i. Characteristics of coal to be washed- this includes grade of coal and other characteristics ?ash, S and and heavy metals including levels of Hg, As, Pb, Cr etc.
ii. Characteristics and quantum of washed coal.
iii. Characteristics and quantum of coal waste rejects.

(xvii) Management/disposal/Use of coal waste rejects

(xviii) Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC has been sought.

(xxxvi) Submission of sample test analysis of:
Characteristics of coal to be washed- this includes grade of coal and other characteristics, ash, S

(xxxviii) Corporate Environment Responsibility:

a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

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ANNEXURE -5

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT

(i) An EIA-EMP Report would be prepared for **??.. MTPA** rated capacity in an ML/project area of ??ha based on the generic structure specified in Appendix III of the EIA Notification 2006.

(ii) An EIA-EMP Report would be prepared for ??. MTPA rated capacity cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modelling for **???. MTPA** of coal production based on approval of project/Mining Plan for ???MTPA. Baseline data collection can be for any season except monsoon.

(iii) A map specifying locations of the State, District and Project location.

(iv) A Study area map of the core zone and 10km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km area of the buffer zone should be given.

(v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.

(vi) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.

(vii) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.

(viii) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc.

(ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.

(x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.

(xi) Break up of lease/project area as per different land uses and their stage of acquisition.

LANDUSE DETAILS FOR OPENCAST PROJECT

S.N.	LANDUSE	Within ML Area (ha)	Outside ML Area (ha)	TOTAL
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			

4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

(xii) Break-up of lease/project area as per mining operations.

(xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.

(xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM_{10}, $PM_{2.5}$, SO_x, $NO_x$and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil along with one-season met data coinciding with the same season for AAQ collection period.

(xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be provided based on desirable limits.

(xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I fauna, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a comprehensive Conservation Plan should be prepared and submitted with EIA-EMP Report and comments from the CWLW of the State Govt. also obtained and furnished.

(xvii) Details of mineral reserves, geological status of the study are and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures.

(xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.

(xix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

(xx) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.

(xxi) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.

(xxii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long?termmodelling studies on. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there us a declining trend of groundwater availability and/or if the area falls within dark/grey zone.

(xxiii) Impact of blasting, noise and vibrations.

(xxiv) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.

(xxv) Impacts of mineral transportation ?within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.

(xxvi) Details of waste generation ?OB, topsoil ? as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OBdump heights and terracing should based on slope stability studies with a max of 28^{o} angle as the ultimate slope. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.

(xxvii) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF) and selection of species (local) for the afforestation/plantation programme based on original survey/landuse.

Table 1: Stage-wise Landuse and Reclamation Area (ha)

S.N.	**Land use Category**	**Present (1^{st} Year)**	**5^{th} Year**	**10^{th} Year**	**20^{th} year**	**24^{th} Year (end of Mine life)***
1.	Backfilled Area(Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL	110*	110*	110*	110*	110*

* As a representative example

Table 2: Stage-wise Cumulative Plantation

S.N.	**YEAR***	**Green Belt**		**External Dump**		**Backfilled Area**		**Others (Undisturbed Area/etc)**		**TOTAL**	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	1^{st} year										
2.	3^{rd} year										
3.	5^{th} year										
4.	10^{th} year										
5.	15^{th} year										
6.	20^{th} year										
7.	25^{th} year										

8.	30th year										
9.	34th year (end of mine life)										
10.	34-37th Year (Post-mining)									85	

* As a representative example

(xxviii) Conceptual Final Mine Closure Plan, post mining land use and restoration of land/habitat to pre- mining. A Plan for the ecological restoration of the area post mining and for land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of rehandling (wherever applicable) and backfilling and progressive mine closure and reclamation.

Table 3: Post-Mining Landuse Pattern of ML/Project Area (ha)

S.N.	**Land use during Mining**	**Land Use (ha)**				
1.	External OB Dump	Plantation	Water Body	Public Use	Undisturbed	TOTAL
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
4.	Built up area					
5.	Green Belt					
6.	Undisturbed Area					
	TOTAL	85				**110**

(xxix) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and ETP in mine. Recycling of water to the max. possible extent.

(xxx) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine.

(xxxi) Risk Assessment and Disaster Preparedness and Management Plan.

(xxxii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.

(xxxiii) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.

(xxxiv) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.

(xxxv) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.

(xxxvi) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxxvii) In built mechanism of self-monitoring of compliance of environmental regulations.

(xxxx) Status of any litigations/ court cases filed/pending on the project.

(xxxxi) Submission of sample test analysis of:

Characteristics of coal - this includes grade of coal and other characteristics ?ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.

(xxxxii) Copy of clearances/approvals ? such as Forestry clearances, Mining Plan Approval, NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

(A) FORESTRY CLEARANCE

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland	Balance area for which FC is yet to be obtained	Status of appl. for diversion of forestland
		If more than one, provide details of each FC			

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ANNEXURE -6

GENERIC TOR FOR AN UNDERGROUND COALMINE PROJECT

(i) An EIA-EMP Report should be prepared for a peak capacity of **????.. MTPA** over an area of ????.. ha addressing the impacts of the underground coalmine project including the aspects of mineral transportation and issues of impacts on hydrogeology, plan for conservation of flora/fauna and afforestation/plantation programme based on the generic structure specified in Appendix III of the EIA Notification 2006.. Baseline data collection can be for any season except monsoon.

(ii) The EIA-EMP report should also cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of baseline data and information, generation of baseline data on impacts for ??. MTPA of coal production based on approval of project/Mining Plan.

(iii) A Study area map of the core zone and 10km area of the buffer zone (15 km of the buffer zone in case of ecologically sensitive areas) delineating the major topographical features such as the land use, drainage, locations of habitats, major construction including railways, roads, pipelines, major industries/mines and other polluting sources, which shall also indicate the migratory corridors of fauna, if any and the areas where endangered fauna and plants of medicinal and economic importance are found in the area.

(iv) Map showing the core zone along with 3-5 km of the buffer zone) delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records) and grazing land and wasteland and water bodies.

(v) Contour map at 3m interval along with Site plan of the mine (lease/project area with about 3-5 km of the buffer zone) showing the various surface structures such as buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within/adjacent to the ML), green belt and undisturbed area and if any existing roads, drains/natural water bodies are to be left undisturbed along with details of natural drainage adjoining the lease/project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., highways, passing through the lease/project area.

(vi) Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area. Impacts of project, if any on the landuse, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations. Extent of area under surface rights and under mining rights.

S.N.	ML/Project Land use	Area under Surface Rights (ha)	Area Under Mining Rights (ha)	Area under Both (ha)
1.	Agricultural land			
2.	ForestLand			
3.	Grazing Land			
4.	Settlements			
5.	Others (specify)			

Area Under Surface Rights

S.N.	**Details**	**Area (ha)**
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Others (specify)	
	TOTAL	

(vii) Study on the existing flora and fauna in the study area carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. The flora and fauna details should be furnished separately for the core zone and buffer zone. The report and the list should be authenticated by the concerned institution carrying out the study and the names of the species scientific and common names) along with the classification under the Wild Life Protection Act, 1972 should be furnished.

(viii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working plan/scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps should also be included.

(ix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

(x) Collection of one-season (non-monsoon) primary baseline data on environmental quality ? air (PM_{10}, $PM_{2.5}$, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, AS, etc), noise, water (surface and groundwater), soil along with one-season met data.

(xi) Map of the study area (core and buffer zone) clearly delineating the location of various monitoring stations (air/water/soil and noise ? each shown separately) superimposed with location of habitats, wind roses, other industries/mines, polluting sources. The number and location of the stations should be selected on the basis of the proposed impacts in the downwind/downstream/groundwater regime. One station should be in the upwind/upstream/non-impact non-polluting area as a control station. Wind roses to determine air pollutant dispersion and impacts thereof shall be determined. Monitoring should be as per CPCB guidelines and standards for air, water, noise notified under Environment Protection Rules. Parameters for water testing for both ground and surface water should be as per ISI standards and CPCB classification of surface water wherever applicable.

(xii) Impact of mining and water abstraction and mine water discharge in mine on the hydrogeology and groundwater regime within the core zone and 10km buffer zone including long?termmodelling studies on the impact of mining on the groundwater regime. Details of rainwater harvesting and measures for recharge of groundwater should be reflected wherever the areas are declared dark/grey from groundwater development.

(xiii) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.

(xiv) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users should be provided.

(xv) Impact of choice of mining method, technology, selected use of machinery - and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations.

(xvi) Impacts of mineral transportation ?within and outside the lease/project. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place. Examine the adequacy of roads existing in the area and if new roads are proposed, the impact of their construction and use particularly if forestland is used.

(xvii) Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Examine whether existing roads are adequate to take care of the additional load of mineral and their impacts.

(xviii) Examine the number and efficiency of mobile/static water sprinkling system along the main mineral transportation road within the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality.

(xix) Impacts of CHP, if any on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.

(xx) Conceptual Final Mine Closure Plan along with the fund requirement for the detailed activities proposed there under. Impacts of change in land use for mining operations and whether the land can be restored for agricultural use post mining. \

Table 1 Stage-wise Cumulative Plantation

S.N.	**YEAR***	**Green Belt**		**External Dump**		**Backfilled Area**		**Others (Undisturbed Area/etc)**		**TOTAL**	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	1st year										
2.	3rd year										
3.	5th year										
4.	10thyesr										
5.	15thyear										
6.	20th year										
7.	25th year										
8.	30th year										
9.	34th year (end of mine life)										
10.	34-37th Year (Post-mining)									85*	2,12,500

*As a representative example

(xxi) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be furnished.

(xxii) Details of cost of EMP (capital and recurring) in the project cost and for final mine closure plan. The specific costs (capital and recurring) of each pollution control/mitigative measures proposed in the project until end of mine life and a statement that this is included in the project cost.

(xxiii) Integrating in the Env. Management Plan with measures for minimising use of natural resources ?water, land, energy, raw materials/mineral, etc.

(xxiv) R&R: Detailed project specific R&R Plan with data on the existing socio-economic status (including tribals, SC/ST) of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.

(xxv) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.

(xxvi) Public Hearing should cover the details as specified in the EIA Notification 2006, and include notices issued in the newspaper, proceedings/minutes of public hearing, the points

raised by the general public and commitments by the proponent made should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxvii) Status of any litigations/ court cases filed/pending in any Court/Tribunal on the project should be furnished.

(xxxvii) Submission of sample test analysis of:

(xxxvii) Characteristics of coal - this includes grade of coal and other characteristics ? ash, and heavy metals including levels of Hg, As, Pb, Cr etc.

(xxxviii) Copy of clearances/approvals ?such as Forestry clearances, Mining Plan Approval, NOC from Flood and Irrigation Dept. (if req.), etc.

FORESTRY CLEARANCE

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland	Balance area for which FC is yet to be obtained	Status of appl. for diversion of forestland
		If more than one, provide details of each FC			

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ANNEXURE-7

GENERIC TOR FOR AN OPENCAST-CUM-UNDERGROUND COALMINE PROJECT

(i) An EIA-EMP Report would be prepared for a combined rated capacity of**??..**MTPA for OC-cum-UG project which consists of ??. MTPA for OC and ???. MTPA for UG in an ML/project area of ??ha based on the generic structure specified in Appendix III of the EIA Notification 2006.

(ii) An EIA-EMP Report would be prepared for ??. MTPA rated capacity cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modelling for ???. MTPA of coal production based on approval of project/Mining Plan for ??.. MTPA. Baseline data collection can be for any season except monsoon.

(iii) A map specifying locations of the State, District and Project location.

(iv) A Study area map of the core zone and 10km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km area of the buffer zone should be given.

(v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.

(vi) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.

(vii) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.

(viii) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., approach roads, major haul roads, etc.

(ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.

(x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.

(xi) Break up of lease/project area as per different land uses and their stage of acquisition.

LANDUSE DETAILS FOR OPENCAST PROJECT

S.N.	**LANDUSE**	**Within ML Area (ha)**	**Outside ML Area (ha)**	**TOTAL (ha)**
1.	Agricultural land			

2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

LANDUSE DETAILS FOR UNDERGROUND PROJECT

S.N.	ML/Project Land use	Area under Surface Rights (ha)	Area Under Mining Rights (ha)	Area under Both (ha)
1.	Agricultural land			
2.	ForestLand			
3.	Grazing Land			
4.	Wasteland			
5.	Water Bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

Area Under Surface Rights

S.N.	**Details**	**Area (ha)**
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Others (specify)	
	TOTAL	

(xii) Break-up of lease/project area as per mining operations.

(xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.

(xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM_{10}, $PM_{2.5}$, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil along with one-season met data.

(xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be presented in comparison to desirable limits.

(xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora

and fauna, or if the project falls within 15 km of an ecologically sensitive area, then a comprehensive Conservation Plan should be prepared and furnished along with comments from the CWLW of the State Govt.

(xvii) Details of mineral reserves, geological status of the study are and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and final mine closure plan should also be shown in figures.

(xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.

(xix) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.

(xx) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing though the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.

(xxi) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.

(xxii) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.

(xxiii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long?termmodelling studies on. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there us a declining trend of groundwater availability and/or if the area falls within dark/grey zone.

(xxiv) Impact of blasting, noise and vibrations.

(xxv) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.

(xxvi) Impacts of mineral transportation ?within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.

(xxvii) Details of waste generation ?OB, topsoil ? as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OBdump heights and terracing should based on slope stability studies with a max of 28^{o} angle as the ultimate slope. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.

(xxviii) Impact and management of wastes and issues of rehandling and backfilling and progressive mine closure and reclamation.

(xxix) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and ETP in mine. Recycling of water to the max. possible extent.

(xxx) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine.

(xxxi) Risk Assessment and Disaster Preparedness and Management Plan.

(xxxii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.

(xxxiii) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF given below) and selection of species (local) for the afforestation/plantation programme based on original survey/landuse.

Table 1: Stage-wise Landuse and Reclamation Area (ha)

S.N.	Land use Category	Present (1st Year)	5th Year	10th Year	20th year	24th Year (end of Mine life)*
1.	Backfilled Area (Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL	110	110	110	110	110

* Representative case as an example

Table 2: Stage-wise Cumulative Plantation

S.N.	YEAR*	Green Belt		External Dump		Backfilled Area		Others (Undisturbed Area/etc)		TOTAL	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	1st year										
2.	3rd year										
3.	5th year										
4.	10th year										
5.	15th year										
6.	20th year										
7.	25th year										
8.	30th year										
9.	34th year (end of mine life)										
10.	34-37th Year (Post-mining)									85	

* Representative case as an example

(xxxiv) Conservation Plan for the endangered/endemic flora and fauna found in the study area and for safety of animals visiting/residing in the study area and also those using the study area as a migratory corridor.

(xxxv) Conceptual Final Mine Closure Plan, post mining land use and restoration of land/habitat to pre- mining. A Plan for the ecological restoration of the area post mining and for land use should be prepared with detailed cost provisions.

Table 3: Post-Mining Landuse Pattern of ML/Project Area (ha)

S.N.	**Land use during Mining**	**Land Use (ha)**				
1.	External OB Dump	Plantation	Water Body	Public Use	Undisturbed	TOTAL
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
4.	Built up area					
5.	Green Belt					
6.	Undisturbed Area					
	TOTAL	85				**110**

(xxxvi) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.

(xxxvii)Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.

(xxxviii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.

(xxxix) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxxx) In built mechanism of self-monitoring of compliance of environmental regulations.

(xxxxi) Status of any litigations/ court cases filed/pending on the project.

(xxxxii) Submission of sample test analysis of:

Characteristics of coal - this includes grade of coal and other characteristics ?ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.

(xxxxiii) Copy of clearances/approvals ? such as Forestry clearances, Mining Plan Approval, NOC from Flood and Irrigation Dept. (if req.), etc.

(A) FORESTRY CLEARANCE

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland In the FC	Balance area for which FC is yet to be obtained	Status of appl. for diversion of Balance forestland
		If more than one, provide			

		details of each FC			

Copies of forestry clearance letters (all, if there are more than one)

(A) MINING PLAN APPROVAL
(B) MINING PLAN/PROJECT APPROVAL
Date of Approval of Mining Plan/Project Approval:
Copy of Letter of Approval of Mining Plan/Project Approval

(xxxxiv) Corporate Environment Responsibility:

b) The Company must have a well laid down Environment Policy approved by the Board of Directors.

c) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.

d) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.

d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

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ANNEXURE-8

GENERAL CONDITIONS AND ADDITIONAL POINTS OF TOR

The following general points should be noted:

(i) All documents should be properly indexed, page numbered.
(ii) Period/date of data collection should be clearly indicated.
(iii) Authenticated English translation of all material provided in Regional languages.
(iv) After the preparation of the draft EIA-EMP Report as per the aforesaid TOR, the proponent shall get the Public Hearing conducted as prescribed in the EIA Notification 2006 and take necessary action for obtaining environmental clearance under the provisions of the EIA Notification 2006.
(v) The letter/application for EC should quote the MOEF file No. and also attach a copy of the letter prescribing the TOR.
(vi) The copy of the letter received from the Ministry on the TOR prescribed for the project should be attached as an annexure to the final EIA-EMP Report.
(vii) The final EIA-EMP report submitted to the Ministry must incorporate the issues in TOR and that raised in Public Hearing. The index of the final EIA-EMP report, must indicate the specific chapter and page no. of the EIA-EMP Report where the specific TOR prescribed by Ministry and the issue raised in the P.H. have been incorporated. Mining Questionnaire (posted on MOEF website) with all sections duly filled in shall also be submitted at the time of applying for EC.
(viii) General Instructions for the preparation and presentation before the EAC of TOR/EC projects of Coal Sector should be incorporated/followed.
(viii) The aforesaid TOR has a validity of two years only.

The following additional points are also to be noted:

(i) Grant of TOR does not necessarily mean grant of EC.
(ii) Grant of TOR/EC to the present project does not necessarily mean grant of TOR/EC to the captive/linked project.
(iii) Grant of TOR/EC to the present project does not necessarily mean grant of approvals in other regulations such as the Forest (Conservation) Act 1980 or the Wildlife (Protection) Act, 1972.
(iv) Grant of EC is also subject to Circulars issued under the EIA Notification 2006, which are available on the MOEF website: www.envfor.nic.in

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