

**MINUTES OF THE 33rd EAC (THERMAL & COAL MINING PROJECTS) MEETING
HELD ON 9th -10th APRIL, 2015**

The 33rd EAC (Thermal & Coal mining projects) Meeting was held on **9th -10th April, 2015** 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 31st EAC meeting held on 16th -17th February, 2015.

C. The following proposals were considered.

33.1 Expansion of Surkha (North) Lignite Mine Project (from 3.0 MTPA to 5 MTPA in an ML area of 3672 Ha.; latitude 21^o 26'43" to 21^o 43'00" and longitude 72^o 07' 30" to 72^o 16' 30") of M/s Gujarat Mineral Development Corporation (GMDC) located in District Bhavnagar, Gujarat.–EC based on TOR granted on 22.03.2012.

33.1.1 The proposal is for Expansion of Surkha (North) Lignite Mine Project (from 3.0 MTPA to 5 MTPA in an ML area of 3672 Ha.; latitude 21^o 26'43" to 21^o 43'00" and longitude 72^o 07' 30" to 72^o 16' 30" of M/s Gujarat Mineral Development Corporation (GMDC) located in District Bhavnagar, Gujarat. The proponent made the presentation and informed that:

- i. The project was accorded EC vide letter no.J-11015/234/2006-IA.II(M) Dated 07.05.2007 for production capacity of 3 MTPA.
- ii. TOR was granted to the project vide its letter No. J-11015/274/2011-IA.II (M) dated March 2012 and amended for extension of TOR on 10.09.2014.
- ii. The latitude and longitude of the project are 21^o 26'43" to 21^o 43'00" and 72^o 07' 30" to 72^o 16' 30" respectively.
- iii. Joint Venture: There is no joint venture.
- iv. Coal Linkage : For Merchant sale
- v. Employment generated/to be generated: At present 519 Nos./day employees are working and after expansion 745 nos/day employees will work.
- vi. Benefits of the project: The basic requirement of the community needs will be strengthened by extending health care and educational facilities developed to the community, besides providing drinking water to the villages and building/strengthening of existing roads in the area. GMDC is constructing no. of check dams to increase the ground water level in this area. It is also constructing ponds, helping the schools and local students in getting educational equipments like computer, facilities for rural health centres, etc. The proposed expansion activities will provide employment to persons of different skills. The local population will have preference to get an employment. The employment potential will improve economic conditions of these families directly and provide employment to many other families indirectly who are involved in business and service oriented activities.
- vii. The land usage of the project will be as follows:

Pre-Mining:

S. No	Land use	Within ML area (ha)	Outside ML area (ha)	Total (Ha)
1	Agricultural land	2944.1065	-	2944.1065
2	Forest land	Nil	-	-
3	Wasteland	Nil	-	-
4	Grazing land	39.9022	-	39.9022
5	Surface water bodies	Nil	-	-
6	Settlements	687.9913	-	687.9913
7	Others (specify)	Nil	-	-
Total		3672		3672

Post- Mining:

Sl. No.	Description	Land use (Ha.)					
		Plantation	Water body	Bund	Public use	Un-changed	Total
1.	OB Dump	19.65	0.00	0.00	261.00	0.00	280.65
2.	Top soil Dump	13.35	0.00	0.00	0.00	0.00	13.35
3.	Excavation	768.88	136.00	0.00	110.00	0.00	1014.88
4.	Roads	60	0.00	0.00	1.22	0.00	1.22
5.	Built up area		0.00	0.00	4.65	0.00	4.65
6.	Green Belt		0.00	0.00	0.00	0.00	60.00
7.	Undisturbed Area	239.87	42.00	0.00	5.00	2010.38	2297.25
Grand total (I & II)		1101.75	178.00	0.00	381.87	2010.38	3672.00

Core area: shall remain same

- iv. The total **geological reserve** is 114.72 MT [Block A: 89.56 MT; Block B (Proposed for UGC): 25.16 MT]. The mineable reserve 76.787 MT, extractable reserve is 73.517 MT. The per cent of extraction would be 95.74 %.
- v. The **coal grade** is G / with GCV of 3638. The stripping ratio is 1:9.96 (T/M3). The average Gradient is 4° towards North East. There will be one seam with thickness ranging 1.85 mt. to 13.72 mt.
- vi. The total estimated **water requirement** is 1000 m³/day. The level of ground water ranges from 30 m to 80 m.
- vii. The **Method of mining** would be Open Cast working with conventional equipment (Hydraulic Excavators & Haulers).
- viii. There are 4 external OB dumps & 1 Top Soil Dump. The details are as follows:

Dump No.	Area In Ha	Height M	Total Quantity in Lac M ³	Remarks
W-I	13.35	20	11.90	Top soil
W-II	57.88	55	197.36	In use
W-III	81.92	55	265.00	In use
W-IV	45.18	40	96.00	Proposed
E-I	95.67	55	310.00	Proposed
Total	294.00		880.26	

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One internal dump with Quantity of 644.104 Mbcm in an area of 836.88 ha with an height of 25 meter above ground level.

- ix. The final mine void would be in 177.8 Ha with depth varying from 5 m to 15 m. and the total quarry area is 1014.88 Ha. Backfilled quarry area of 837.08 Ha shall be reclaimed with plantation. A void of 177.8 ha with depth varying from 5 m to 15 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. The **life of mine** is 16 Years.
- xii. Transportation: Surface transportation, by 10-20 T dumpers/trucks for lignite dispatch to consumers and transportation of lignite, to proposed pyrite removal plant feeding bunker.
- xiii. There is no **R & R** involved. There are no PAFs.
- xiv. **Cost:** Total capital cost of the project is Rs. 250 Crores. CSR Cost Rs. 5/- per Tonne of coal production. Environmental Management Cost (capital cost Rs 826.91 Lakhs and annual recurring cost 562.52 Lakhs per tonne).
- xv. **Water body:** Seasonal Malesari Rivulet flows at a distance of 1.6 KM.
- xvi. **Approvals:** Board's approval obtained on 31.08.2013. Mine plan **approval for 5 MTPA capacity is yet to be received from MOC.**
- xvii. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- xviii. Forestry issues: No forest area involved.
- xix. Total afforestation plan shall be implemented covering an area of 2143 ha at the end of mining. Green Belt over an area of 110ha. Density of tree plantation 2000 trees/ ha of plants.
- xx. There are no court cases/violation pending with the project proponent.
- xxi. Public Hearing was held on 12.07.2013 in District: Bhavnagar Gujarat. The issues raised in the PH includes Sulphur content in lignite; employments; gauchar land; Arrangement of high school for girls; Compensation of land; dust control; Plantation etc.

33.1.2 EC compliance report: The compliance report of the, Regional Office, MoEFCC at Bhopal vide letter no. 3-30/2012(ENV)/222 dated 10.09.2014 was deliberated in the EAC meeting. The Committee has noted the Action Taken for compliance by the Project Proponent inter alia, are as follows:

- i. Top soil (8.30 Lakh M³) was stacked in 9 ha area which has already been used for reclamation and plantation of OB dump area. The plantation has been raised in 6 ha. Top soil from 2 ha of area has been reused on the top of the dumps & its final edge for plantation and for seeding of grass on geo coir matting. The condition is considered as partly completed since mining is a continuous process till life of the mine.
- ii. Presently there exist three external dumps within the lease area namely WI, WII & WIII having a height of 15m , 50, & 45 M respectively. It was argued that height of WII & WIII dumps was raised as per the enhanced mine plan and due to huge shortage of acquired land. The slopes were maintained at 27⁰. Plantation on dumps has been started from financial year 2011-12. Grass seeds of Karad (Dichanthium annulatum) have been sown along with the saplings of Bougainvillea Sp., Nerium indicum, Annona squamosa, Pongania pinnata, Holoptelea integrifolia, Pongania pinnata, Holoptelea integrifolia, Azadiracht indica, Ficus religiosa etc on dumps. 2.49 ha of slop area of

- WIII OB Dump has been covered under the Geotextile Coir mats for reclamation & dumps stabilization.
- iii. WI dump was very small and does not require such arrangement as submitted. Whereas WII dump is to be extended after completion of land acquisition which is in process. Further, earlier it was planned to extend western edge of the existing WIII dump in western direction by land acquisition outside of lease area. Partly land already has been acquired. Hence, the existing toe of the WIII dump might not be considered as final edge. PA has argued that instead of construction of toe wall, geo-coir matting has been used for dump stabilization.
 - iv. Plantation has been started from the year 2008 in consultation with the forest department as submitted. About 70.275 ha area has been brought under plantation till March'14, which includes 42.608 ha of land area and 27.667 ha of reclaimed dumps. Species namely, Azadirachta indica, Delonix regia, Annona squamosa, Pongamia pinnata, Holoptelea integrifolia, Senna surattensis, etc, have been planted under green belt development & reclamation of external OB dumps in ML area. Average Plant density of 2185/ha was maintained. The condition is considered as partly complied since mining is a continuous process till life of the mine.
 - v. Overburden removal & lignite loading was started from 5/4/2008 and 14/12/2008 respectively. Backfilling of about 109.1432 ha has been completed. The backfilled area shall be reclaimed and planed after achieving sufficient level w. r. t. ground partly with tree species. And majority will be developed as agriculture land and pasture in lieu of gauchar land acquired as intimated during visit. The condition is considered as partly complied since mining is a continuous process till life of the mine.
 - vi. About 6.6 ha of gauchar land has been developed along the toe of WIII dump. Further, it was assured that the gauchar land shall be developed on backfilled area after completion of backfilling after achieving sufficient level w. r. t. ground level & thereafter development of gauchar will be hand over to the district authorities as per existing regulation. The condition is considered as partly complied since mining is a continuous process till life of the mine.
 - vii. Regular third party monitoring of mine seepage and stored water was carried out by MOEF/GPCB approved laboratory as submitted and analytical data do not show anomaly. Monthly ground water levels of wells of surrounding villages (9 locations) was also monitored departmentally and reports for October 2013- July 2014 show within limits. However, installation of piezometers in the mine area is yet to be carried out. The PP was directed to do so.

33.1.3 The Committee, after detailed deliberations noted the following:

- i. Approval of Mining Plan and mine closer plan has not been submitted which is a pre-requisite.
- ii. The Committee asked PP to apply for extension of TORs citing valid reasons for the same.
- iii. Non- compliance of earlier EC conditions was observed and therefore the PP was advised to submit an Action Taken Report with time lines for implementation of the same.

33.1.4 In view of the above the Committee advised proponent to apply for extension of TOR along with the above mentioned information. The committee deferred the project of EC.

33.2 Kaniha Opencast Coal Mine Expansion Project (from 10 MTPA to 14 MTPA in an ML area of 1880 ha; Latitude 21° 03' 04" to 21° 05' 00" N and Longitude 85° 02' 20" to 85° 06' 00" E) of M/s Mahanadi Coalfields Limited, located in District Angul, Odisha- EC under 7(ii) of EIA Notification 2006.

33.2.1 The proposal is for Kaniha Opencast Coal Mine Expansion Project (from 10 MTPA to 14 MTPA in an ML area of 1880 ha; Latitude 21° 03' 04" to 21° 05' 00" N and Longitude 85° 02' 20" to 85° 06' 00" E) of M/s Mahanadi Coalfields Limited, located in District Angul, Odisha- EC under 7(ii) of EIA Notification 2006. The proponent made the presentation and informed that:

- i. The Original EC was granted to the project vide letter no. J-11015/134/2007-IA.II (M) dated 31.10.2007 for 10 MTPA in an area of 1880 Ha. Now, the present request is for enhancement in capacity from 10 MTPA to 14 MTPA capacity within the existing ML of 1880 Ha.
- ii. The latitude and longitude of the project are **21° 03' 04" to 21° 05' 00" N and 85° 02' 20" to 85° 06' 00" E** respectively.
- iii. Joint Venture: No Joint Venture.
- iv. Coal Linkage : M/s NTPC, Talcher Super Thermal Power Station, Kaniha, Angul, Odisha
- v. Employment generated / to be generated: Employment already provided to 848 persons & 195 persons (approx) will be provided.
- vi. Benefits of the project: Increase in Employment Potential; Contribution to the Exchequer (Central & State) & Meeting Energy demand of the nation – linked project to Thermal Power Plant.
- vii. The land usage of the project will be as follows:

Land use details:

Sl. No.	Type of Land	Existing 10.0 Mty	Addl. land for incremental production	Total for 14.0 Mty
1.	Agricultural	501.77	0.00	501.77
2.	Forest	241.60	0.00	241.60
3.	Waste land (govt. & tenancy)	1094.89	0.00	1094.89
4.	Grazing	0.00	0.00	0.00
5.	Surface water bodies	18.80	0.00	18.80
6.	Others (settlement)	22.94	0.00	22.94
Total for mining lease area :		1880.00	0.00	1880.00

Pre-Mining:

Sl. No.	Item	For existing 10.0 Mty	Addl. land for incremental production	Total for 14.0 Mty
1.	Quarry excavation	1131.00	0.00	1131.00
2.	Blasting Danger Zone	373.98	0.00	373.98
3.	Dump area (external)	312.26	0.00	312.26

4.	Infrastructure	75.40	0.00	75.40
5.	Rationalization of project boundary	8.06	0.00	8.06
6.	Diversion of the road	9.30	0.00	9.30
	Mining lease area	1880.00	0.00	1880.00
7.	Residential colony	40.00	0.00	40.00
8.	Rehabilitation site	276.00	0.00	276.00
	Total :	2196.00	0.00	2196.00

Post- Mining:

Post-Closure land use						
S. N.	Category	Land use (in ha)				Total
		Left out void/ water body	Afforested or arboriculture	Land to be converted to Agriculture (conceptual)	Undisturbed Built-up area	
1	Quarry excavation	339.0	241.60	550.40	--	1131.00
2	Safety zone for blasting	--	68.80	--	275.18	343.98
3	OB dump (External)	--	--	312.26	--	312.26
4	Infrastructure	--	15.08	--	60.32	75.40
5	Rationalisation of project boundary	--	8.06	--	--	8.06
6	Diversion of Road	--	4.00	--	5.30	9.30
7	Residential colony	--	4.0	--	36.00	40.00
8	Resettlement colony	--	55.20	--	220.80	276.00
	Total	339.0	396.74	862.66	597.60	2196.00

Core area:

Sl. No.	Type of Land	Existing 10.0 Mty	Addl. land for incremental production	Total for 14.0 Mty
1.	Agricultural	501.77	0.00	501.77
2.	Forest	241.60	0.00	241.60

3.	Waste land (govt. & tenancy)	1094.89	0.00	1094.89
4.	Grazing	0.00	0.00	0.00
5.	Surface water bodies	18.80	0.00	18.80
6.	Others (settlement)	22.94	0.00	22.94
Total for mining lease area		1880.00	0.00	1880.00

- viii. The total geological reserve is 755.96 MT. The extractable reserve is 652.97 MT (As on 01.04.2014). The per cent of extraction would be 90.00 %.
- ix. The coal grade is G9 to G12
- x. The stripping ratio is 1.636. The average Gradient is 4.5⁰- 24⁰. There will be 12 seams in 21 combinations (Seam-IVM to Seam-IIB1).
- xi. The total estimated water requirement is 3.70 MLD.

(All fig in MLD)			
	Existing 10.0 Mty	Addl. For 4.0 Mty	Total for 14.0 Mty
Potable	0.89	0.0075	0.90
Industrial	2.07	0.73	2.80
Total	2.96	0.74	3.70

- xii. The level of ground water ranges from 1.95 m to 7.13 m.
- xiii. The Method of mining would be Opencast Mining by Shovel – Dumper.
- xiv. There is 2 external OB dump with Quantity of 160.00 Mm³ in an area of 312.26 ha with height of 85 meter above the surface level and one internal dump with Quantity of 911.71 Mm³ in an area of 1131.00 ha.
- xv. The final mine void would be in 339.00 Ha with depth of 80 m. and the total quarry area of 1131.00 Ha. Backfilled quarry area of 792.00 Ha shall be reclaimed with plantation. A void of -339.0 ha with depth of 80 m (max.) & 20 m (min.) 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 49 years as on 01.04.2014.
- xviii. **Transportation:** Coal transportation in pit and upto siding to loading by Rear dumper/ tipper; loading at siding (Existing Arrangement: by pay loader into NTPC wagon); proposed (SILO into NTPC wagons).
- xix. There is **R & R** involved. There are 1715 PAFs.
- xx. **Cost:** Total capital cost of the project is Rs. **457.77** Crores. CSR Cost Rs. 225.25 Lakhs. R&R Cost Rs. 5158.79 lakhs. Environmental Management Cost Rs. 6375.80 lakhs as per approved PR.
- xxi. **Water body:** Brahmani river is about 1.0 km (East); Singada Jhor is about 0.30 km (south); Tikira river is about 1.25 km (north) Bhalutunguri nadi at a distance of 0.2 km from ML boundary.
- xxii. **Approvals:** Mining plan obtained vide letter no. 34012/(4)2011-CPAM dated 23rd March, 2014 Mine closure plan Approved by MCL Board on 22.06.2011 & corrigendum on 05.02.2014.
- xxiii. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km radius of the project area.
- xxiv. **Forestry issues:** There is 241.60 ha forest area involved of which Stage –II FC for 2.307 has been

granted vide no.8(21)6/ 2000-FC DT: 24.05.06/ 01.06.06. The diversion proposal for 161.80 Ha has been submitted vide state sl. no. 333/09 dt: 11.08.2009 and is under consideration.

xxv. Total **afforestation** plan shall be implemented covering an area of 312.26 ha at the end of mining. Green Belt over an area of 68.80 ha. Density of tree plantation is about 2500 trees/ ha.

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

xxvii. **Public Hearing** was held on 16.05.2006 at Pabitra Mohan High School, Kaniha.

33.2.2 The compliance report of the, Regional Office, MoEFCC at Bhubaneswar **monitored on 08.10.2014** was deliberated in the EAC meeting. The Committee has noted the Action Taken for compliance by the Project which, inter alia, were as follows:

- i. Top soil of quantity of 2.03 Lakh. cu.m. has been excavated and stacked separately for spreading over reclaimed land. Plantation of leguminous plants, as suggested, will be taken up in the coming monsoon. A proposal of 2.60 lakhs for grass carpeting has been made for an area of 0.8 ha.
- ii. At present the mine pit is located at a distance of about 5 km from river Brahmani. Mine is 10 m higher than the HFL of Brahmani river. Tikira nallah is situated at a distance of 2.5 Km from the mine pit and higher by about 6 m than HFL. Embankment between the mine & river will be constructed. Work order issued to CMPDIL for preparation of “Management Plan for prevention and management of Disaster due to mining carried adjacent to river(s)”. Award value - 9.77 Lakhs, Report under submission
- iii. So far Project has planted 1300 nos of saplings near railway siding and 100 nos. inside Project Office and distributed 200 nos. near-by areas. Action has been taken for urban plantation of 10000 nos of saplings in Govt. plots. The species include Neem, Jamun, Karanj, Boula, etc. besides fruit bearing trees such as Mango, Lemon, Orange, Lichhi. Moreover PP is planning to plant nearly 2400 nos of saplings in both sides of concrete CT road during the year 2015-16. 2000 saplings would also be distributed to nearby villagers.
- iv. Mine Closure Plan for Kaniha OCP had been approved by MCL Board on 22/06/11 Corrigendum to the same was also approved by MCL Board on 05.02.2014 and submitted to MOC in April 2014 for Approval.
- v. A Study as per Work Order no. 5028 dt: 19/02/15 for an award value of Rs. 59.44 Lakhs on “**Study** of mine-wise surface run-off and preparation of mgmt. plan for 15 OCP of MCL” awarded to NIT, Rourkela is in progress. Field visit & sample collection work is completed and the report will be submitted by 31/05/15. An amount of Rs.14.86 lakhs has been released on 25/02/2015. Additionally a separate study “Study on sediment flow from Kaniha OCP and its impact on rivers and surface hydrology of the region” is being shortly awarded to CMPDIL for an award value of Rs. 24.41 Lacs.
- vi. The ground water quality is monitored by CMPDIL from tube well at Project Office and well water is monitored at Jamania Village. As per the data all the water quality parameters have been found to be within the limits prescribed. Water level is monitored in the dug wells. Work for the construction of 23 Nos of piezometers covering all the projects of MCL in Talcher Coalfield area has been awarded (WO no. 5155 dt: 27/03/15) to M/s PRB infra Projects Pvt. Ltd., Nagpur at a cost of Rs.1.47 Cr. Work is expected to be completed by 31st Dec 2015.
- vii. Drinking water through portable water tankers is supplied in summer in the villages viz Jarada, Telisingha, Kaniha, Patharamunda etc. Nearly 200KL of drinking water is supplied during summer seasons to these peripheral villages. The average expenditure works out to Rs. 14.70 Lakhs. For artificial ground water recharge a pond of size 2200 Cum with a cost of Rs. 42 Lakhs has been

created near railway siding. Mine sump of capacity 356.40 Million liters, during monsoon & 18 Million litres in other seasons acts as a water reservoir for industrial water use. Roof top rain water harvesting arrangement has also been made at Project Office at a cost of Rs.1.5 Lakhs.

- viii. At present there is no colony in the Project. There is also no workshop constructed. Contractor vehicles are washed and maintenance done outside the mines premises. They were instructed to install ETP for maintenance of their vehicles. Now it has been decided that MCL will construct the ETP. ETP will be commissioned by Dec 2015.

33.2.3 The Committee after deliberation did not recommend granting of EC for expansion of Kaniha Opencast Coal Mine Expansion Project (from 10 MTPA to 14 MTPA) in an ML area of 1880 ha. Decision on the proposal was deferred until submission of the following information:

- i. Approved Mine closure plan.
- ii. Committee noted that though the EC for 10 MTPA was granted on 31.10.2007, no action has been taken for dispatch of coal through silo to the NTPC wagons at railway siding as per EC. The Committee desired that reasons for non-compliance of EC conditions (J-11015/134/2007-IA.II (M) dated 31.10.2007) and time bound Action Plan for the same should be submitted. The Action Plan should also include proposed mitigation measures for transportation of coal from mine to siding.
- iii. Stage -1 FC for 161.80 Ha should also be obtained and submitted to the Ministry.

33.3 Jitpur Colliery Underground Mine (0.6 MTPA Normative and 0.7 MTPA Peak , in an ML area of 163.69 Ha; Latitudes 23° 42' 32" to 23° 43' 14" N and Longitude: 86° 23' 05" to 86° 24' 14" E) of M/s Steel Authority of India Ltd. located in District Dhanbad, Jharkhand. –ToR.

33.3.1 The proposal is for seeking TORs for Jitpur Colliery (0.6 MTPA Normative and 0.7 MTPA Peak , in an ML area of 163.69 Ha; Latitudes 23° 42' 32" to 23° 43' 14" N and Longitude: 86° 23' 05" to 86° 24' 14" E) of M/s Steel Authority of India Ltd. located in District Dhanbad, Jharkhand. The proponent made the presentation and informed that:

- i. The mine is already operational and all the facilities have already been developed for its operation. As the mine is very old one and has been in operation prior to nationalization. Applied for fresh ToR.
- ii. The latitude and longitude of the project are 23° 42' 32" to 23° 43' 14" N and 86° 23' 05" to 86° 24' 14" E respectively.
- iii. Joint Venture: No Joint Venture.
- iv. Coal Linkage: Raw Coal from the Jitpur mine is transported to Chasnalla Washery through Bi-cable Aerial Ropeway. After washing raw coal at Chasnalla Washery, the washed coal is transported to Steel Plants by Rail.
- v. Employment generated / to be generated: As it is an operational mine, a total 243 number of manpower (as on 31/03/2014) is directly employed in the mine and more than that are there for indirect employment. Continuous Miner technology is proposed for extraction of coal from Seam XII. The average daily attendance required to achieve the proposed rated production of 0.6 MTPA is estimated as 294. After considering absenteeism towards authorized leave, sick etc., the men on roll for the project comes to 347.

vi. Benefits of the project: The project will further improve the living conditions of the people. The project will generate direct as well indirect employment. The income thus generated will improve the beneficiaries' living conditions. The following changes in socio-economic status are expected to take place with this project.

- i. The project is having a strong positive employment and income effect, both direct as well as indirect.
- ii. The project is going to have positive impact on consumption behavior by way of raising average consumption and income through multiplier effect.
- iii. People perceive that the coal mining projects help in the development of social infrastructures etc.

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

LAND USE DETAILS :(AREA DETAILS OF MINING LEASE of 163.69 Ha)

The mine is already operational and all the facilities have already been developed for its operation.. As the mine is very old one and has been in operation prior to nationalization.

S.N.	LAND USE	Within ML Area (ha)	Outside ML Area (ha)	TOTAL
1.	Agricultural land	<u>21.34</u>	<u>Nil</u>	<u>21.34</u>
2.	Forest land	<u>Nil</u>	<u>Nil</u>	<u>Nil</u>
3.	Wasteland	<u>37.08</u>	<u>Nil</u>	<u>37.08</u>
4.	Grazing land	<u>Nil</u>	<u>Nil</u>	<u>Nil</u>
5.	Surface water bodies	<u>2.30</u>	<u>Nil</u>	<u>2.30</u>
6.	Settlements	<u>30.01</u>	<u>Nil</u>	<u>30.01</u>
7.	Others (specify)		<u>Nil</u>	
	• Mining Area	<u>5.49</u>		<u>5.49</u>
	• Railway Area	<u>54.30</u>		<u>54.30</u>
	• Other Infrastructure	<u>12.12</u>		<u>12.12</u>
	• Lawn Area	<u>1.05</u>		<u>1.05</u>
	TOTAL	<u>163.69</u>	<u>Nil</u>	<u>163.69</u>

Post- Mining: As this project is an underground project hence virtually no land degradation will take place. The existing underground mine requires no change in the land use/land cover in the lease area. Present land use in the core zone and buffer zone includes the mostly barren & agricultural, except the residential areas where some plants and vegetation are grown. Scattered patches of land are used for cultivation.

viii. The total geological reserve is 19.33 MT. The Mineable is 16.59 MT and extractable reserve is 8.09 MT. The per cent of extraction would be 49-50 %.

ix. The coal grade is Washery Grade III.

- x. The average Gradient is 1 in 6.0 to 1 in 7.6. There will be 08 seams with thickness ranging 0.9m to 10.36m.
- xi. The total estimated **water requirement** is 1510 KLD (Domestic 1110 KLD and Industrial- 400 KLD). Sources for domestic purpose -MADA (Mineral Area Development Authority) & for Industrial purposed -U/g Mine pit water.
- xii. **The Method of mining** : Underground Longwall method in conjunction with hydraulic sand stowing.
- xiii. **The life of mine:** Presently proposed to be 23 years @ Nominal 0.60 MTPA/ Peak 0.7 MTPA (May be modified as per the Mining Plan which is under preparation).
- xiv. **Transportation:** In pit: From the mine to Chasnalla Washery through Bi-cable Aerial Ropeway
Surface to siding: By road: Chasnalla Colliery is having its own Railway siding for transportation of clean coal & middlings to SAIL Steel Plants. Loading at siding: The washed coal & middlings are transported to the SAIL steel plants by Rail.
- xv. There is no **R & R** involved. There are no PAFs.
- xvi. **Cost:** Total capital cost of the project is Rs. 222.69 Crores. CSR Cost: To be incurred as per the guidelines of the Department of Public Enterprise, Govt of India. R&R Cost nil. Environmental Management Cost: Capital provisions for environmental control measures, which includes pollution control arrangements, technical & biological reclamation etc. for the project will be finalized during the preparation of EIA-EMP report.
- xvii. **Water body:** There are two main drains in east and west which are connected to Karijore passing along the western boundary and finally confluences in the river Domodar. The jore is on the dip side of the mine area.
- xviii. **Approvals:** Ground water clearance to be obtained, Board's approval *will be taken during* preparation of Mining Plan. Mining plan is under preparation. Mine closure plan is under preparation.
- xix. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km radius of the project area.
- xx. **Forestry issues:** There is no forest area involved in the Mine lease area.
- xxi. Total **afforestation** plan shall be provided in the EIA-EMP report.
- xxii. There are no **court cases/violation** pending with the project proponent.

33.3.2 Consent to operate granted by Jharkhand State Pollution Control Board vide letter no. DS/8507/169 dated 26.02.2011 was deliberated in the EAC meeting.

33.3.3 The Committee after detailed deliberation recommended the project for granting standard TOR with the addition of following specific TORs in the EIA / EMP study:

- i. Disaster Management Plan be drawn in view of some earlier accidents stated to have occurred in the mine.
- ii. Being a highly gassy mine, possibility, if any, to extract methane gas be explored.
- iii. Continuous monitoring of gases to be undertaken.
- iv. Detailed subsidence study to be made.
- v. Copies of Consent to operate from SPCB.
- vi. Use of mine water/water balance to be detailed out.

33.4 Chasnalla Colliery (Mixed Mine) (1.2 MTPA Normative and 1.5 MTPA Peak) along with expansion of Coal Washery to 4.0 MTPA (expansion of existing Washery to 2.8 MTPA and setting up of new Washery of 1.2 MTPA capacity) in an ML area 230.88 Ha ; Latitudes 23° 40' 03" : 23° 38' 33" N and Longitudes 86° 26' 52" : 86° 27' 57" E) of M/s Steel Authority of India Ltd. located in District Dhanbad, Jharkhand– ToR.

33.4.1 The proposal is for seeking TOR for Chasnalla Colliery (1.2 MTPA Normative and 1.5 MTPA Peak along with expansion of Coal Washery to 4.0 MTPA, in an ML area 230.88 Ha ; Latitudes 23° 40' 03" : 23° 38' 33" N and Longitudes 86° 26' 52" : 86° 27' 57" E) of **M/s Steel Authority of India Ltd.** located in District Dhanbad, Jharkhand. The proponent made the presentation and informed that:

- i. This is the new project for TOR for Chasnalla Colliery (1.2 MTPA Normative and 1.5 MTPA Peak). In addition it is proposed to upgrade the capacity of existing coal Washery to 2.8 MTPA and to setup a new 1.2 MTPA Coking Coal Washery at Chasnalla making a total capacity of Washery to 4 MTPA in an existing ML area of 230.88 Ha.
- ii. Chasnalla washery was designed as a pit head washery to treat 2.04 MTPA of Raw Coal from Chasnalla & Jitpur underground mines.
- iii. Chasnalla Coal Complex basically comprised of 2 opencast projects (West Quarry & East Quarry) and 2 underground Projects (Deep Mines & Upper Seam Project) apart from a centralized Coal Washery for coal preparation. Chasnalla Colliery is being operated by mainly Underground method and partly by Opencast method. **East Quarry** now transferred to Tasra Project as per approved Mining Plan of Tasra by MOC.
- iv. During preparation of Mining Plan of Tasra Opencast project in 2009, as per Ministry of Coal guidelines, for conservation & for avoiding loss of coal in barriers, area of East Quarry (117.30 Ha) was included in the approved Mining Plan of Tasra Opencast Project. However while considering the other peripheral facilities a total area of 243.50 Ha of Chasnalla Lease is included in the project area of Tasra.
- v. Now for taking Environmental Clearance for Chasnalla Colliery, an area of about 230.88 Ha against the total original lease area of 348.18 Ha has been proposed as Chasnalla Area covering Deep Mine, Upper Seam, and West Quarry & the existing & new Washery.
- vi. Requested for title correction in ML area i.e from 348.18 Ha to 230.88 Ha.
- vii. The **latitude and longitude** of the project are 23° 40' 03" : 23° 38' 33" N and 86° 26' 52" : 86° 27' 57" E respectively.
- viii. **Joint Venture:** There is no joint venture.
- ix. **Coal Linkage** : SAIL is having a pit head coal washery of 2.04 MTPA capacity in Chasnalla. However, due to deterioration in ash percentage and change in size fraction of coal, the rated capacity could not be achieved and the washery has operated at a maximum coal throughput of 1.326 MTPA in the near past. SAIL has proposed to upgrade the capacity of existing coal washery to 2.8 MTPA and to setup a new 1.2 MTPA Coking Coal Washery at Chasnalla, in the leasehold area of Chasnalla Colliery. Annual raw coal requirement to meet the production from the upgraded existing washery and the proposed 1.2 MTPA new coking coal washery is around 4.0 MTPA. It is envisaged that around 2.1 MTPA will be sourced from own collieries i.e., Chasnalla & Jitpur, and the balance amount of around 1.9 MTPA will be sourced from CIL through Fuel Supply Agreement with CIL
- x. **Employment generated/to be generated:** As it is an operational mine, a total 621 number of

manpower (as on 31/03/2014) is directly employed in the mine and more than that are there for indirect employment. For the up-graded existing coal washery, the existing man power will be used and no new additional manpower is envisaged. However, for the proposed new 1.2 MTPA washery, total requirement of managerial staff, skilled and unskilled workers will be around 135 based on the equipment and facilities proposed for the project

xi. **Benefits of the project:** The project will further improve the living conditions of the people. The project will generate direct as well indirect employment. The income thus generated will improve the beneficiaries' living conditions. The following changes in socio-economic status are expected to take place with this project.

- i) The project is having a strong positive employment and income effect, both direct as well as indirect.
- ii) The project is going to have positive impact on consumption behavior by way of raising average consumption and income through multiplier effect.
- iii) People perceive that the coal mining projects help in the development of social infrastructures etc.

xii. The land usage of the project will be as follows: (Area Details of Original Mining Lease Of 348.18 Ha)

The mine is already operational and all the facilities have already been developed for its operation. As the mine is very old one and has been in operation prior to nationalization.

S.N.	LAND USE	Within ML Area (ha)	Outside ML Area (ha)	TOTAL
1.	Agricultural land	Nil	Nil	Nil
2.	Forest land	Nil	Nil	Nil
3.	Wasteland	51.93	Nil	51.93
4.	Grazing land	Nil	Nil	Nil
5.	Surface water bodies	75.85	Nil	75.85
6.	Settlements	97.17	Nil	97.17
7.	Others (specify)		Nil	
	• Mining Area	66.08		66.08
	• O.B. Dump	31.0		18.92
	• Existing Washery	12.5		12.5
	• Other Infrastructure	12.17		12.17
	• Green Belt	1.3		1.3
	• Burning Ghat	0.2		0.2
	TOTAL	348.18	Nil	348.18*

*Original lease area of Mine was 384.18 Ha of which 230.88 ha is the ML area dedicated for this project. The remaining area has become part of approved Mining Plan of Taarsa Opencast mine.

Post- Mining:

As this project is mainly an underground project hence virtually no land degradation will take place (excluding meager degradation which may take place due to West Quarry). Though future degradation by OC excavation may be meager but rehandling of surface dumps and backfilling of the excavated area (West Quarry) in the past will have to be done and area reclaimed. The existing underground mine & existing washery require no change in the land use/land cover in the lease area. Minor change due to a small opencast will be there which will be reclaimed after completion of mining by backfilling with overburden. Construction of a new modular washery (1.2 MTPA) is the only appreciable change in land use/land cover. Present land use in the core zone and buffer zone includes the, unirrigated cultivable, water bodies and waste land

- xiii. The total **geological reserve** is 56.432 MT. The Mineable reserve will be ascertained during preparation of Mining Plan and extractable reserve will be ascertained during preparation of Mining Plan. The per cent of extraction would be 45-50% (In the present Jankowice Longwall method of mining with hydraulic sand stowing).
- xiv. The **coal grade** : Washery Grade IV
- xv. The **stripping ratio** is 1:5. The average Gradient is 38-55 degree There will be 15 seams with thickness ranging 1.2 to 26.0 m.
- xvi. The total estimated **water requirement** is 8300 KLD (Washery – 6400 KLD; Domestic- 1660 KLD; Mining – 300 KLD) water will be sourced for Sources from Domestic purpose : Damodar River and for Industrial purpose from Mines pit
- xvii. The level of ground water ranges from 5 m to 10 m.
- xviii. The Method of mining would be Mainly Underground (Jankowice Longwall method of mining with hydraulic sand stowing), partly Opencast (Shovel-Dumper combination).
- xix. There are 4 external OB dump with Quantity of 81.0 lac Cu. M (Approx.) in an area of 31.0 Ha with height of 20-30 m above the surface level. There will be no internal dumps.
- xx. The final mine void will be ascertained during the preparation of Mining Plan.
- xxi. The **life of mine** is presently proposed to be 10 years @ Nominal 1.2 MTPA / Peak 1.5 MTPA (May be modified as per the Mining Plan which is under preparation).
- xxii. **Transportation: Underground Coal transport:** Blasted coal is loaded into tubs by shovelling which in turn are unloaded into chimney and by gravity coal is transported in the chimney through coal chute and loaded into mine cars at chimney bottom. Loaded mine cars are hauled up to pit bottom by 4 Te battery locomotives and mine cars are unloaded in the bunker and through inclined skips coal is transported to the surface. **Surface Coal Transport:** Blasted coal from West Quarry is transported to Coal handling plants by dumpers from the CHP coal is brought to the washery by dumpers . The washed coal is transported from the washery to Railway siding by dumpers & thereafter to the SAIL steel plants by Rail.
- xxiii. There no is **R & R** involved. There are no PAFs.
- xxiv. **Cost:** Total capital cost of the project is Rs. 450 crore. CSR Cost: To be incurred as per the guidelines of the Department of Public Enterprise, Govt of India. R&R Cost: As it is an existing mine, most of the area under reference is developed with surface constructions of colliery complex and no R&R is involved. The land required for location of new washery plant and development of related infrastructure is almost owned by the proponent and a small part only needs to be acquired

from local families. Environmental Management Cost: Capital provisions for environmental control measures, which includes pollution control arrangements, technical & biological reclamation etc. for the project will be finalized during the preparation of EIA-EMP report.

- xxv. **Water body:** The Damodar River, which flows along the southern boundary of ML, forms the major drainage channel in this region. The drainage of the area is controlled by two jores draining in Damodar river viz., Domohani jore and Cilatu (also called Chaitu jore). The course of the Domahani nalla meanders along north-eastern boundary of the colliery and joins with Chetu Jore flowing along eastern boundary of the area which finally drains into Damodar River.
- xxvi. **Approvals:** Ground water clearance to be obtained, Board's approval will be taken during preparation of Mining Plan. Mining plan is under preparation. Mine closure plan is also under preparation.
- xxvii. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km radius of the project area.
- xxviii. **Forestry issues:** There is no forest area involved in the Mine lease area.
- xxix. Total **afforestation** plan shall be provided in the EIA-EMP report.
- xxx. There are no **court cases/violation** pending with the project proponent.

33.4.2 Consent to operate granted by Jharkhand State Pollution Control Board vide letter no. PC/CON(BOK)53/03/ dated 05.02.2015 was deliberated in the EAC meeting.

33.4.3 The Committee after detailed deliberation recommended the project for granting TOR subject to inclusion of following specific TORs in the EIA/EMP study:-

- i. In view of the earlier accidents that are stated to have occurred in the underground mines, PP should submit a Disaster Management Plan.
- ii. To clearly specify the present mine layout and the required expansion for both UG and OC mines.
- iii. Being a highly gassy mine, possibility, if any, to extract methane gas be explored. Also continuous monitoring of gases to be undertaken.
- iv. Detailed subsidence study to be made.
- v. Copies of Consent to operate from SPCB.
- vi. Use of mine water/water balance to be detailed out.
- vii. To study possibility of belt conveyor transport of coal from mines to the washery and from washery to Railway Siding & loading into the railway wagon through silos to reduce the dust generation due to road transport & loading arrangement.
- viii. Combined Impact Assessment/Management Plan be prepared for Mine and Washery.

33.5 Lingraj OCP Expansion project from 13 MTPA to 20 MTPA within the total area of 1493.20 Ha (1410.01 Ha + Outside ML area 83.19 Ha; Latitude 20° 57' 39" to 20° 58' 18" North and Longitude 85° 09' 33" to 85° 12' 12" East) of M/s Mahanadi Coalfields Ltd., located in Talcher Coalfields, District. Angul Orissa. EC based on TOR granted on 21.03.2012.

33.5.1 The proposal is for expansion of **Lingraj OCP from 13 MTPA to 20 MTPA within the total area of 1493.20 Ha (1410.01 Ha + Outside ML area 83.19 Ha; Latitude 20° 57' 39" to 20° 58' 18" North and Longitude 85° 09' 33" to 85° 12' 12" East) of M/s Mahanadi Coalfields Ltd.,**

located in Talcher Coalfields, District. Angul Orissa. The proponent made the presentation and informed that:

- i. TOR was granted vide letter no. J-11015/174/2010-IA.II(M) dated 21.03.2012 & extension of TOR validity was granted on 10.09.2014.
- ii. The EC for 13.0 MTPA was obtained vide letter No. J/11015/223/2005-IA.II (M), dated 02.02.2006.
- iii. The latitude and longitude of the project are 20°57'39" to 20°58'18" North and 85°09'33" to 85°12'12" East respectively.
- iv. Joint Venture: There is no joint venture.
- v. Coal Linkage : Kaniha STPS/ Basket Linkage.
- vi. Employment generated / to be generated: An additional 265 direct employment opportunity for the expansion project. Beside above indirect employments will also be generated.
- vii. Benefits of the project: Improvement in Physical Infrastructure; Improvement in Social Infrastructure; Increase in employment potential; Contribution to the Exchequer (both State and Central Govt.); Post mining enhancement of Green Cover; Improvement of Electrical Power Generation and consequently rise in electric power consumption thereby improvement in overall economic growth of the country.
- viii. The land usage of the project will be as follows:

Sl. No.	Type of Land	Within ML area	Outside ML area	Total Area
1.	Agricultural	828.699	0.00	828.699
2.	Forest	186.311	0.00	186.311
3.	Waste land	306.72	83.19	389.91
4.	Grazing	0.00	0.00	0.00
5.	Surface water bodies	45.00	0.00	45.00
6.	Settlements	43.28	0.00	43.28
6.	Others	0.00	0.00	0.00
Total for mining lease area :		1410.01	83.19	1493.20

Pre-Mining:

Sl. No.	Item	For existing 13.0 Mty (Ha.)	Addl. land for incremental production (Ha.)	Total for 16.0/20 Mty (Ha.)
1.	Quarry excavation	510.851	28.00*	538.851
2.	Blasting danger zone (Safety zone) and magazine (excluding area of OB dump, road diversion and infrastructure)	580.919	--	552.919

3.	OB Dump area (external)	256.03	--	256.03
5.	Infrastructure including CHP, workshop, railway siding, Project Office etc.	51.80	-	51.80
6.	Rationalization of project boundary & diversion of existing coal transportation road.	10.410	-	10.410
	Mining lease area	1410.01	28.00*	1410.01
8.	Residential colony	6.00	-	6.00
9.	Rehabilitation site	77.19	-	77.19
	Total :	1493.20	28.00*	1493.20

Post- Mining:

Post-Closure land use						
S. N.	Category	Land use (in ha)				Total
		Left out void/ water body	Afforested or arboriculture	Land to be converted to Agriculture (conceptual)	Undisturbed Built-up area	
1	Quarry excavation	246.71	186.311	105.83	--	538.851
2	Safety zone for blasting	--	110.58	--	442.34	552.92
3	OB dump (External)	--	--	256.03	--	256.03
4	Infrastructure	--	10.36	--	41.44	51.80
5	Rationalisation of project boundary	--	2.08	--	8.33	10.41
6	Residential colony	--	16.64	--	66.55	83.19
7	Resettlement colony	--		--		
	Total	246.71	325.97	361.86	558.66	1493.20

Core area :

Sl. No.	Type of Land	Within ML area	Outside ML area	Total Area
1.	Agricultural	828.699	0.00	828.699
2.	Forest	186.311	0.00	186.311
3.	Waste land	306.72	83.19	389.91
4.	Grazing	0.00	0.00	0.00
5.	Surface water bodies	45.00	0.00	45.00
6.	Settlements	43.28	0.00	43.28
6.	Others	0.00	0.00	0.00
Total for mining lease area :		1410.01	83.19	1493.20

- ix. The total geological reserve is 484.956 MT. The Mineable reserve 458.31 MT and extractable reserve is 440.31 MT. The per cent of extraction would be 90.80 %.
- x. The coal grade is G10 to G12
- xi. The stripping ratio is 0.69. The average Gradient is 2⁰- 28⁰ Average - 14⁰ There will be 15 seams (Seam-II Bottom IIB to Seam-XIII).
- xii. The total estimated water requirement is 5.73 MLD (Potable:2.86 MLD, Industrial: 2.87 MLD). The level of ground water ranges from 1.25 m to 10.20 m.
- xiii. The Method of mining would be Opencast by Shovel – Dumper.
- xiv. There is 9 external OB dump with Quantity of 8.18 m³ in an area of 256.03 ha with height of 60 to 80 m meter above the surface level and one internal dump with Quantity of 214.05 Mbcm in an area of 292.141 ha.
- xv. The final mine void would be in 246.71 Ha with depth of 185 m. and the Total quarry area is 538.85 Ha. Backfilled quarry area of 292.141 Ha shall be reclaimed with plantation. A void of -246.709 ha with depth of 185 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 17 years as on 01.04.2014.
- xviii. **Transportation** of Coal: Existing arrangement by tipper to Siding & Proposed Conveyor to SILO at siding (Construction started). Siding to loading: Existing arrangement by Pay loader into NTPC wagon & Proposed SILO to NTPC wagon.
- xix. There is **R & R** involved. There are 1134 PAFs.
- xx. **Cost:** Total capital cost of the project is Rs. 383.16 Crores. CSR Cost Rs. 160.75 Crores. R&R Cost Rs. 8.99 Cr. Environmental Management Cost Rs. 25.98 Cr.
- xxi. **Water body:** Brahmani River flows at a distance of 3 km approx. from the project area.
- xxii. **Approvals:** Board's approval obtained on 06.02.2010. Mining plan approved by MoC vide Letter no. 34012/(4)/2011-CPAM Dt. 01.07.2011. Mine closure plan approved by MCL Board on 22.06.2011.
- xxiii. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km radius of the project area.
- xxiv. **Forestry issues:** There is 186.311 ha forest area involved. Forest Clearance (stage II/ Final) for 186.311 ha. has been obtained vide Ref. No. 8-99/87-FC DT: 07.03.89.

- xxv. Total **afforestation** plan shall be implemented covering an area of 256.03 ha at the end of mining. Green Belt over an area of 110.58 ha. Density of tree plantation 2500 trees/ ha of plants.
- xxvi. There are no **court cases/violation** pending with the project proponent.
- xxvii. **Public Hearing** was held on 09.09.2014 at Balanda, Talcher. The issues raised in the PH includes water treatment; air and water pollution; coal fire; proper land compensation; proper R & R measures; water sprinkling; ; provision for funeral ground etc..

33.5.2 EC compliance report: The compliance report of the, Regional Office, MoEFCC at Bhubaneswar vide letter no. 106-102/EPE dt: 10.09.2013 was deliberated in the EAC meeting. The Committee has noted the Action taken for compliance by the Project which, inter alia, are as follows:

- i. Till now, 66 ha. External dump has been technically reclaimed & 65.09 ha. bio-logically reclaimed. Dump no. 1(4.16 ha.), 2&2A(8.56 ha.), 3& 4(25 ha.), 5(9.10 ha.) have been reclaimed completely; whereas dump no. 8 & 9 are reclaimed partially. Dump no. 11 is active dump and no reclamation is started yet on the same. The maximum height of the dump is 57.0 m from the surface level. Due to non-availability of land at the toe of the dump, terracing of the dumps is not possible at present. All the External OB dumps will be re-handled at the end of the project life to fill up the mine void. Hence it is proposed to stabilize the dumps by grassing/ grass seeding /vegetation of local grass etc. till the re-handling is done.
- ii. At present, 86.89 ha. (Ext. OB dump + B/F area) has been technically and biologically reclaimed. Reclamation activity is taken up every year, which is certainly of great economic use to the society. The plants/ trees with wood value, medicinal value, food value etc. will be utilized by the society at the end mining activity for which necessary arrangement by afforestation is being done regularly - almost every year.
- iii. The garland drains and other drains were cleaned/ de-silted in April-May 2014. we also use our small capacity departmental machines for cleaning of drains & muck along the haul roads. The proposal for cleaning of the garland drain in this year has been sanctioned and tendering is under process. The estimated cost is Rs.90000/- only.
- iv. Till date 21.80 ha. area with 64652 nos. trees has been planted over the backfilled area. The programme for reclamation of Backfilled area for next 05 years. Plantation work is also taken up in safety zone areas& vacant places(19.35 ha.)& road side(13.20 kms.) etc. Total plantation made till date is 329609 nos. Native species like Neem, Shisam, Kadamba, Teak, Chakunda, Bel, Jamun, Gamhar, Gauava, Shirish, Chhatian & Karanja etc. are planted.
- v. The ground water quality is monitored by CMPDIL from Deulbera well water. As per the data all the water quality parameters have been found to be within the limits prescribed. Water level is monitored in the dug wells.
- vi. Work for the construction of 23 Nos of piezometers covering all the projects of MCL in Talcher Coalfield area has been awarded (dt: 27/03/15) to M/s PRB infra Projects Pvt. Ltd., Nagpur at a cost of Rs.1.47 Cr. Work will be completed by Dec 2015 end.
- vii. A scheme was prepared in consultation of the officials of the Regional Office, Angul of SPCB, Odisha and submitted to the Regional Office, Angul, After several discussions with Member Secretary, OSPCB, Bhubaneswar it has been concluded in the meeting held on 29.11.2014 a suitable study/ survey should be made by a scientific Institute/ Agency for proper water management of all the mines. Accordingly NIT, Rourkela was approached for the study vide our letter no. MCL/ SBP/ CGM(ENVT)/2014/4795 dated – 02/12/2014 and work order was placed vide

letter no. MCL/SBP/ CGM(ENVT)/ NITR/ WO/ 2015/5028 dated – 19/12/2014. As per the joint assessment made by the OSPCB Officials & MCL Officials the consumption of water for vehicle washing (workshop) is 50 cu.m. per day. Hence generation of effluent will be about 45 cu.m. (90% of consumption) per day. The designed capacity of workshop ETP is 240 cu.m. per day, where as volume of effluent is approximately 45 cu.m. per day. Hence it is clearly seen that the capacity of ETP is adequate enough to handle the available effluent. It is further to say that at present no effluent from the ETP goes out and total effluent (treated) is re-cycled for dust suppression and vehicle washing. It is further to mention that one additional workshop ETP will be constructed in the new field workshop which is going to be constructed in a year or two. This will further reduce the load of present ETP.

- viii. Roof-top rain water harvesting point has been made at 6 points in the official buildings of this Area/ Project at a cost of Rs.8.40 lakh. For recharging of ground water, Open *kuccha* ponds (9 nos.) have been made in nearby villages (Talabeda, Kandhal, Balugaon-Khamar, Kusumpal, Similipal, Biharipur & Kankili). To improve water availability, water is supplied by tanker to 36 nearby villages and 18 Municipality wards in summer.
- ix. Housekeeping has been improved. Discharges from different channels/ drains go out only after necessary treatment/ settling through settling tanks. Water/ discharges go out only during peak monsoon. Adequate arrangements have been made for control and suppression of dust .

33.5.3 The Committee, after detailed deliberations, sought following information for further consideration:

- i. Action Plan for the transport of coal from mine to the siding , loading arrangement at siding and construction of the railway siding in accordance with the EC provision & present status of implementation. Comparative chart for transportation of coal from the existing 13 MTPA vis –a – vis the proposed expansion should also be submitted.
- ii. A revised statement on the queries raised in the Public Hearing and the Action Plan for fulfillment of the commitments given in the Public Hearing be submitted.
- iii. Response to the issues raised by the NGO w.r.t. flora and fauna; Cumulative Impact Assessment ; Ground Water ; Issues with Public Hearing etc. be submitted

33.6 Modification/Exemption of EC conditions for operating in the Coal Block Gare IV/1 to M/s South Eastern Coalfields Limited - EC granted by Ministry vide letter no. J-11015/81/ 2005-IA.II (M) dated 21st May, 2012 in pursuance of Court Order no. 3001/15 dated 27.03.2015

33.6.1 The request of M/s South Eastern Coalfields Limited (SECL) for modification/exemption of EC conditions granted by MoEFCC vide letter no. J-11015/81/ 2005-IA.II (M) dated 21st May, 2012 to M/s Jindal Steel & Power Ltd (JSPL). for operating Coal Block Gare IV/1 was considered by the EAC. The Committee gave an opportunity to M/s SECL for presenting their case and submitted the following in the light of the Order dated 27.03.2015 by the Hon'ble High Court of Delhi in the matter of WP No. 3001/15:

- i. MoEF&CC vide letter No. J-11015/81/2008-IA.II (M) dated 21st May, 2012 had accorded EC to M/s Jindal Steel & Power Ltd. for operating Coal Block Gare IV/1 and Washery subject to

certain specific conditions which inter-alia include (i) coal produced shall be routed through washery; (ii) fly ash generated at their power plant situated at pit head shall be mixed with OB and other washed coal rejects and dumped at designated place; (iii) mine water shall be used for the mine-cum-washery operation and (iv) Coal will be transported by conveyor belt.

- ii. Pursuant to the interim Court Order dated 27.03.2015 of Hon'ble High Court of Delhi, the Ministry of Coal vide its letter no. 13016/2/2015-CA-III dated 30.03..2015 appointed Coal India Limited as a **Custodian** in respect of Gare Palma IV/1 coal mines (Chhattisgarh). Accordingly M/s SECL has been directed for operating mines in the Block Gare IV/1 (Chhattisgarh) till the final outcome of the WP No. 3001/2015 or till further orders and they are entitled to dispose the same in any manner they deem fit.
- iii. In the present scenario, SECL a subsidiary of Coal India Limited is required to act as a custodian akin to the designated custodian vide letter no. 13016/2/2015-CA-III dated 30.03..2015.
- iv. While Coal India Limited has directed SECL to take over the possession and operate the GARE IV/1 coal block and SECL submitted that the High Court order is specific to operation of this block utilizing the requisite manpower of the petitioner (JSPL) to ensure continuity in coal mining operation and production of coal.
- v. SECL further submitted that facilities such as washery, conveyor belt and the power plant does not fall within the custodianship of SECL and therefore some of the conditions stipulated in the EC in this regard cannot be implemented.
- vi. In view of this, M/s SECL vide letter SECL:BSP:GM (WBP/ENVT):2015: 5840 dated 31.03.2015 has requested for exemption/modification to the EC conditions for smooth functioning of the mine and to avoid any violation of the conditions stipulated therein.

33.6.2 The Committee deliberated at length the following issues:

- i. Management of OB in the absence of fly ash and washery rejects
- ii. Management of mine water in the absence of washery
- iii. Transportation of coal in the absence of conveyor belt.

33.6.3 On the basis of the submissions made by SECL and deliberations, the Committee was of the view that conditions related to coal washery and fly ash dumping in the mine are not applicable in the instant case.

33.6.4 In order to ensure continuous coal production at the mine as directed by the Hon'ble High Court of Delhi, the Committee agreed to the following interim arrangement:

- i. The OB is to be managed in the same way as stipulated in the EC albeit without fly ash and Washery rejects.
- ii. In the original proposal, the entire mine water generated was not envisaged to be used in the Washery and therefore the management plan prescribed for treatment of mine water not utilized in the Washery to be drawn.
- iii. On the issue of the coal transportation by road the Committee noted that there would be a major change in air environment due to road transportation of about 6 MTPA/18000 TPD of coal. As an interim measure, the road transport of coal can be permitted, and the PP has to come back with the Rapid Environment study on the impact of road transport on the air quality including route and traffic survey within one month.

33.6.5 The Committee further categorically made it clear that the above decision is only an interim arrangement till further orders of the Hon'ble High Court.

33.7 Modification/Exemption of EC conditions for operating in the block Gare IV/2 and IV/3 to M/s South Eastern Coalfields Limited -EC granted by Ministry vide letter no. J-11015/288/2007-IA.II (M) dated 12th June 2012. in pursuance of Court Order no. 3001/15 dated 27.03.2015

33.7.1 The request of M/s South Eastern Coalfields Limited (SECL) for modification/exemption of EC conditions granted by MoEFCC vide letter no. J-11015/288/2007-IA.II (M) dated 12th June, 2012 to M/s Jindal Steel & Power Ltd (JSPL). for operating Coal Block Gare IV/2 and Gare IV/3 was considered by the EAC. The Committee gave an opportunity to M/s SECL for presenting their case and submitted the following in the light of the Order dated 27.03.2015 by the Hon'ble High Court of Delhi in the matter of WP No. 3001/15:

- i. MoEF&CC vide letter No J-11015/288/2007-IA.II (M) dated 12th June, 2012 had accorded EC to M/s Jindal Steel & Power Ltd. for operating Coal Block Gare IV/2 and Gare IV/3 and Washery subject to certain specific conditions which inter-alia include (i) coal produced shall be routed through washery; (ii) fly ash generated at their power plant situated at pit head shall be mixed with OB and other washed coal rejects and dumped at designated place; (iii) mine water shall be used for the mine-cum-washery operation and (iv) Coal will be transported by conveyor belt.
- ii. Pursuant to the interim Court Order dated 27.03.2015 of Hon'ble High Court of Delhi, the Ministry of Coal vide its letter no. 13016/2/2015-CA-III dated 30.03..2015 appointed Coal India Limited as a Custodian in respect of Gare Palma IV/2 and Gare IV/3 coal mines (Chhattisgarh). Accordingly M/s SECL has been directed for operating mines in the Block Gare IV/1 (Chhattisgarh) till the final outcome of the WP No. 3001/2015 or till further orders and they are entitled to dispose the same in any manner they deem fit.
- iii. In the present scenario, SECL a subsidiary of Coal India Limited is required to act as a custodian akin to the designated custodian vide letter no. 13016/2/2015-CA-III dated 30.03.2015.
- iv. While Coal India Limited has directed SECL to take over the possession and operate the GARE IV/2 and Gare IV/3 coal block and SECL submitted that the High Court order is specific to operation of this block utilizing the requisite manpower of the petitioner (JSPL) to ensure continuity in coal mining operation and production of coal.
- v. SECL further submitted that facilities such as washery, conveyor belt and the power plant does not fall within the custodianship of SECL and therefore some of the conditions stipulated in the EC in this regard cannot be implemented.
- vi. In view of this, M/s SECL vide letter SECL:BSP:GM (WBP/ENVT):2015: 5841 dated 31.03.2015 has requested for exemption/modification to the EC conditions for smooth functioning of the mine and to avoid any violation of the conditions stipulated therein.

33.7.2 The Committee deliberated at length the following issues:

- i. Management of OB in the absence of fly ash and washery rejects
- ii. Management of mine water in the absence of washery
- iii. Transportation of coal in the absence of conveyor belt.

33.7.3 On the basis of the submissions made by SECL and deliberations, the Committee was of the view that conditions related to coal washery and fly ash dumping in the mine are not applicable in the instant case.

33.7.4 In order to ensure continuous coal production at the mine as directed by the High Court of Delhi, the Committee agreed to the following interim arrangement:

- i. The OB is to be managed in the same way as stipulated in the EC albeit without fly ash and Washery rejects.
- ii. In the original proposal, the entire mine water generated was not envisaged to be used in the Washery and therefore the management plan prescribed for treatment of mine water not utilized in the Washery to be drawn .
- iii. On the issue of the coal transportation by road the Committee noted that there would be a major change in air environment due to road transportation of about 6.25 MTPA/20000 TPD of coal. As an interim measure, the road transport of coal can be permitted, and the PP has to come back with the Rapid Environment study on the impact of road transport on the air quality including route and traffic survey within one month.

33.7.5 The Committee further categorically made it clear that the above decision is only an interim arrangement till further orders of the Hon'ble High Court.

33.8 Amod Lignite Mine Project (G-19 Extn.) (1.0 MTPA) of M/s Gujarat Mineral Development Corp. Ltd. (GMDC), located in village Amod, Tehsil Jhagadia, District Bharuch, Gujarat - Amendment to EC.

33.8.1 The proposal is for amendment to EC for Amod Lignite Mine Project (G-19 Extn.) (1.0 MTPA) of M/s Gujarat Mineral Development Corp. Ltd. (GMDC), located in village Amod, Tehsil Jhagadia, District Bharuch, Gujarat. The proponent made the presentation and informed that:

- i. Amod Lignite Mine Project (G-19 Extn.) (1.0 MTPA) was granted Environmental Clearance vide letter no. J-11015/405/2005- IA.II (M) dt. 14.7.2006.
- ii. The Specific Condition no. (ii) of the EC states that “*No mining of associated major mineral such as silica sand shall be undertaken without prior environmental clearance as per laid down procedure*”.
- iii. During lignite mining, OB has to be stored separately in dumps in separate area within lease only. The OB also contained fair amount of silica sand.
- iv. GMDC is receiving requests from various users of silica sand to provide them the silica sand as such without any processing for their product.
- v. Therefore, in view of the better utilization of overburden silica sand and considering mineral conservation aspects, as well as to reduce land degradation by stopping the storage of more overburden material, *amendment in existing Environmental Clearance is requested by permitting the sale of raw silica sand (without any processing) generated as overburden during lignite mining.*
- vi. Production: 4.94 MTPA (peak production) and 3.0 MTPA (rated capacity)
- vii. Silica ML Area: 290.18 Ha (within Lignite ML area)

- viii. Gujarat State Government after due approval from competent authority granted silica sand mining lease to GMDC vide grant order no. MCR-1593-(G-10)-793-chh-1 dated 19/3/12.
- ix. The Mining Plan of Amod Mining Project & Progressive Mine Closure Plan for Silica Sand has also been approved by Commissioner Geology and Mining Department, Government of Gujarat vide CGM/MC/393/4942 Dated 18/02/2014.
- x. Presently, the mine is under operation. The total mine lease area is 384.9618 Ha for lignite. Within this, 290.18 Ha silica sand lease has been allotted. About 140.0 ha area has been excavated upto 31st January 2015. Mine pit after extraction would be 164 ha. The present land use as on January 31, 2015 is as follows:

Sl. No.	Area Used Details	Area Covered (Hectares)
1	Mine Pit	140.00
2	Mine Roads	4.60
3	Silica Sand Stack	13.86
4	Existing Dumps (Top soil stack and old dump)	12.33
5	Nallah	4.36
6	Rehabilitation	8.36
7	Infrastructure	0.05
8	Truck Parking Plot	1.56
	Total	185.12
	Un utilized Area	199.8418

- xi. The proposed post mining land use will be same as that for which EC was granted and is given below (in Ha):

Sl. No.	Land Use Category	Land use
1	Mining pits	164
2	Overburden dump	75.0
3	Mine road, nallah	8.96
4	Top soil dump	8.40
5	Greenbelt	10
6	Others (will not be disturbed)	118.6
	TOTAL (lignite lease)	384.96

- xii. **YEAR WISE SCHEDULE OF SILICA SAND:**

Year	Only OB after silica removal, Lac Tonnes	Silica Sand In Lakh Tonnes
1	1.38	18.55
2	10.76	21.50
3	9.59	25.41
4	2.98	37.81
5	11.18	49.39
Sub-total	35.89	152.66
6-10	59.48	218.07
11-13	12.36	61.99
Grand Total	107.73	432.72

33.8.2 The Committee after detailed deliberation advised project proponent that the mining of the Silica Sand relates to the Non-coal mining Committee. Separate EC for such purpose should accordingly be obtained by PP and same be made available to this Committee for considering the amendment as requested by the proponent. The PP was also advised to submit the approved Mine Closure Plan status vis-à-vis the EC provision. A separate study on the impact on air quality due to increase in silica transportation should also be conducted and the report submitted for consideration.

33.8.3 In view of the above, the Committee deferred its decision on the project until submission of the above information.

33.9 Tapin Opencast Expansion Coal Mine Project of M/s Central Coalfields Ltd. located in villages Tapin and Pindra, in Tehsil Mandu, in District Hazaribagh, Jharkhand - ToR Modification.

33.9.1 The proposal is for modification in TOR of Tapin Opencast Expansion Coal Mine Project of M/s Central Coalfields Ltd. located in villages Tapin and Pindra, in Tehsil Mandu, in District Hazaribagh, Jharkhand. The proponent made the presentation and informed that:

- i. Ministry granted TOR to the project vide letter no. J-11011/155/2013-IA-II(M) dated 20.05.2014.
- ii. The project is situated on the common boundary between districts of Hazaribagh and Ramgarh in Jharkhand.
- iii. There are 16 Blocks in Hazaribagh including Churchu Block (where the project is located).
- iv. Location of Tapin South OCP was inadvertently mentioned as in Ramgarh District instead of Hazaribagh District of Jharkhand.
- v. Earlier approved Phase-1 project area was for 188.66 Ha of land (consisting of non-forest and released & utilized forest land. Now it has been detected that 10.6 Ha of forest land (not yet diverted) falls within the aforesaid project area. The PP requested that the forest area of 10.6 ha may be excluded from the total project area.

vi. Proposed Revision in Project Area

Particular	Area as per TOR (Ha)			Proposed revised Area (Ha)		
	Forest	Non-forest	Total	Forest	Non-forest/ released & utilized forest before 1980	Total
Quarry	0.00	89.78	89.78	0.00	89.78	89.78
Industrial area	0.00	6.75	6.75	0.00	6.75	6.75
Haul road	0.00	1.90	1.90	0.00	1.90	1.90
Ext. Dump	0.00	52.90	52.90	0.00	42.30 (including 24.71 Ha released & utilized forest before 1980)	42.30
Green Belt	0.00	18.64	18.64	0.00	18.64	18.64
Safety zone	0.00	18.69	18.69	0.00	18.69	18.69
Total	0.00	188.66	188.66	0.00	178.06	178.06

33.9.2 After deliberation the Committee recommended for modification of TOR of 1st phase with the following additional changes:

- i. Name of the district in the project title to be changed as Hazaribagh District instead of Ramgarh District of Jharkhand.
- ii. Revision of project area from 188.66 Ha to 178.06 Ha so as to exclude 10.60 Ha forest land (non-diverted) falling below the proposed external OB dump.

33.10 Expansion of Neyveli Mine-II Opencast project (5321.99 Ha to 7193.975 Ha and 10.5 MTPA to 15.0 MTPA) by M/s Neyveli Lignite Corporation Limited in village Neyveli, Tehsil Vridhachalan District Cuddalore, Tamilnadu. Neyveli Mine – II opencast project of M/s. Neyveli Lignite Corporation Ltd at Vill. Neyveli Distt. Cuddalore in Tamil Nadu. EC Modification.

33.10.1 The proposal is for modification in EC of Expansion of Neyveli Mine-II Opencast project (5321.99 Ha to 7193.975 Ha and 10.5 MTPA to 15.0 MTPA) by M/s Neyveli Lignite Corporation Limited in village Neyveli, Tehsil Vridhachalan District Cuddalore, Tamilnadu. The proponent made the presentation and informed that:

- i. Ministry granted EC to the project vide letter no. J-1101530/2001-IA-II(M) dated 24th December, 2002 for Mine-II Expansion (10.5 MTPA to 15.0 MTPA).
- ii. The MoEF Specific condition A(ii) stipulates that "*OB should be stacked scientifically at earmarked dump site(s). The total height of the external dump(s) should not exceed 65 m in two or three stages. Overall slope of the dump should not exceed 28 deg*".
- iii. Now, NLC is facing hardship with restricted dump height of 65 m, in accommodating the overburden in the earmarked dump sites within the additionally acquired land of 225 ha. including

- concurrent refilling in the de-coaled area. The dump management has become very critical.
- iv. Considering the criticality and to avoid acquisition of land additionally for the dump yard, an amendment to the Specific condition A(ii) is requested.
 - v. Need for the above amendment is presented for the kind consideration of EAC.
 - vi. **JUSTIFICATIONS FOR MODIFYING THE EC CONDITIONS**
 - a. Changed mine configuration & mine advance.
 - b. Present working in the deep most section of the selected mining area.
 - c. Shorter dump bench length in the present inside filling area due to the configuration of the mine.
 - d. Existing aquifer conditions of the Mine 2 area which results in (a) very flat dump slopes and larger active dump area and (b) more area for the operation of GWC wells.
 - e. Present large active mining area (excavation front + void + dump front) and consequently the need for large pond area due to large catchment area about 18.5 sq.km.

33.10.2 The Committee after detailed deliberation noted that the changes suggested/requested by proponent were not as per the existing mine plan. The PP was advised to submit approval from the Ministry of Coal for the revised mine plan. Therefore the request was deferred till further submission of same.

33.11 Pakri Barwadih Coal Mine Project (15 MTPA) of M/s National Thermal Power Corporation Ltd. (NTPC) Ltd. located in District Hazaribagh, Jharkand – request for Pakri Barwadih Coal Mine Block.

33.11.1 The proposal is for Change in mining sequence & land use and transportation of coal by road to Banadag railway siding for Pakri Barwadih Coal Mine Project (15 MTPA) of M/s National Thermal Power Corporation Ltd. (NTPC) Ltd. located in District Hazaribagh, Jharkand. The proponent made the presentation and informed that:

- i. EC was granted to the project vide letter no. J-11015/692/2007 -IA-II(M) dated 19th May, 2009.
- ii. Request to grant the Permission for Changes in Mining Sequence (Interim Arrangement); Dump Location ; Transportation of Coal to the Banadag Railway Siding (26.5 Km approx.) through Road for a period of two years ; Wharf Wall loading of coal at Banadag Siding
- iii. Opencast Method (Mine Life of 39 years)
- iv. Working Sequence (West Quarry followed by East Quarry)
- v. Western Quarry (Mining Operations)
 - a. Western Quarry (Yr 1 to Yr 27)
 - b. Only Western Pits WP-1, WP-2 and WP-3 were planned to be started in initial 2 years of mining operations
- vi. Eastern Quarry (Mining Operations)
 - a. Planned to be started in 25th year of mining operation
 - b. Eastern Quarry (Yr 25 to Yr 39)
- vii. Dump Planning

- a. For West Quarry , External Dumps Planned at 3 designated places (Dump ‘A’, ‘B’ & ‘C’)
 - b. Entire Dump of the Eastern Quarry Planned to be placed in the void of West Quarry
- viii. But due to availability of land at site (Area marked by Eastern Quarry), an interim arrangement has been proposed for mining operation including dumping in the area which is a part of Eastern Quarry

33.11.2 The Committee after detailed deliberation sought following information for further consideration:

- i. Revised Mine plan approval from MOC for the proposed changes in mining sequence.
- ii. To submit a comparative statement of the original proposal for which EC was granted and the changes now being proposed along with alternatives regarding OB management.

33.12 Discussion on any other matters with the permission of the Chair.

As requested by the members, the Schedule for the EAC meetings for the next five months was fixed as follows:

- 1. May 14-15, 2015
- 2. June 11-12, 2015
- 3. July 16-17, 2015
- 4. August 13-14, 2015
- 5. September 10-11, 2015

Meeting ended with the vote of thanks to the Chair and Members.

PARTICIPANTS IN 33rd EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 9th - 10th April, 2015 ON COAL SECTOR PROJECTS.

Sl. No.	LIST OF PARTICIPANTS Expert Appraisal Committee (Coal Mining)	
1.	Prof. C.R. Babu	Member
2.	Shri Jawahar Lal Mehta	Member
3.	Shri T. K .Dhar	Member
4.	Shri A. K. Bansal	Member
5.	Shri N. K. Verma	Member
6.	Shri S. S. Bala	Member
7.	Shri. P. D. Siwal	Member
8.	Shri G. S. Dang	Member
9.	Shri N. S. Mondal	Member
10.	Dr. R. Warriar	Director-cum- Member Secretary
11.	Shri P. R. Sakhare	Scientist - "C"

PARTICIPANTS IN 33rd EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 9th - 10th April, 2015 ON COAL SECTOR PROJECTS.

33.1 Expansion of Surkha(North) Lignite Mine Project of **M/s Gujarat Mineral Development Corporation(GMDC)..**

1. Shri Amrish Pal
2. Shri Gunjan Pande
3. Shri B. P. Pati
4. Dr. D. A. Pancholi
5. Shri D. U. Vyas
6. Shri P. K. Samantray
7. Dr. Marisha
8. Shri Pawan Kumar

33.2 Kaniha Opencast Project of **M/s Mahanadi Coalfields Limited..**

1. Shri J. P. Singh
2. Dr. A. K. Samantaray
3. Shri Chandra
4. Shri K. S. Ganapathy
5. Shri S. K. Bhar
6. Shri Jitendra Singh
7. Shri Jyotirmay.Sinha
8. Shri U. P. Sahoo
9. Shri Amrit Sinha
10. Shri N. K. Singh
11. Shri Jaydev

33.3 Jitpur Colliery of **M/s Steel Authority of India Ltd.**

33.4 Chasnalla Colliery of **M/s Steel Authority of India Ltd.**

1. Shri R. Darbari
2. Dr. Siddharth Singh
3. Dr. Raj S. Singh
4. Shri U. K. Re
5. Shri H. P. Sharma
6. Shri Prashant Sharma
7. Shri S. Banarjee

33.5 Lingraj OCP Expn of **M/s Mahanadi Coalfields Ltd.**

1. Shri J. P. Singh
2. Dr. A. K. Samantaray
3. Shri Chandra
4. Shri K. S. Ganapathy
5. Shri S. K. Bhar
6. Shri Jitendra Singh
7. Shri Jyotirmay.Sinha
8. Shri U. P. Sahoo
9. Shri Amrit Sinha
10. Shri N. K. Singh
11. Shri Jaydev

33.6 Gare IV/1 of **M/s South Eastern Coalfields Limited.**

1. Shri U. T. Kanzaokar
2. Shri A. K. Gupta
3. Shri S. R. Tripathi
4. Dr. Anurag Tiwari
5. Shri I. D. Narayan
6. Shri Sanjeev M. Singh
7. Shri Ashutosh Kumar
8. Shri Pawan Kumar

33.7 Gare IV/2 and IV/3 to **M/s South Eastern Coalfields Limited.**

1. Shri U. T. Kanzaokar
2. Shri A. K. Gupta
3. Shri S. R. Tripathi
4. Dr. Anurag Tiwari
5. Shri I. D. Narayan
6. Shri Sanjeev M. Singh
7. Shri Ashutosh Kumar
8. Shri Pawan Kumar

33.8 ` Amod Lignite Mine Project of **M/s Gujarat Mineral Development Corp. Ltd. (GMDC).**

1. Shri Amrish Pal
2. Shri Gunjan Pande
3. Shri B. P. Pati
4. Dr. D. A. Pancholi
5. Shri D. U. Vyas
6. Shri P. K. Samantray
7. Dr. Marisha
8. Shri Pawan Kumar

33.9 Tapin Opencast Expansion Coal Mine Project of **M/s Central Coalfields Ltd.**

1. Shri P. K. Tiwari
2. Dr. Anindya shukla
3. Shri Pushkar
4. Shri S. Singh
5. Shri Manoj Sharma
6. Shri Kanchan Sinha

33.10 Neyveli Mine – II opencast project of **M/s. Neyveli Lignite Corporation Ltd.**

1. Shri M. Ragunathan
2. Shri R. Parmisvan
3. Shri P. R. Muthaiah

33.11 Pakri Barwadih Coal Mine Project of **M/s National Thermal Power Corporation Ltd. (NTPC) Ltd**

1. Shri P. R. Rao
2. Shri Ranjeet Prasad
3. Shri Ravi S. Verma
4. Shri Sunil Kumar Kamal
5. Shri Ajay Kumar
6. Shri A. K. Dah

Generic ToR for coal washery

- i. Siting of washery is critical considering to its environmental impacts. Preference should be 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 and coal should be transported from mine to the washery preferably through closed conveyer belt to avoid air pollution.
- ii. The washery shall not be located in eco-sensitive zones areas.
- iii. The washery should have a closed system and zero discharge. The storm drainage should be treated in settling ponds before discharging into rivers/streams/water bodies.
- iv. A thick Green belt of about 50 m width should be developed surrounding the washery.
- v. A brief description of the plant alongwith a layout, the specific technology used and the source of coal should be provided.
- vi. The EIA-EMP Repot 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 are located within 10km radius. The EIA should also include mitigative measures needed to minimize adverse environmental impacts.
- vii. A Study Area Map of the core zone as well as the 10km area of buffer zone showing major industries/mines and other polluting sources should be submitted. These maps shall also indicate the migratory corridors of fauna, if any and areas of endangered fauna; plants of medicinal and economic importance; any ecologically sensitive areas within the 10 km buffer zone; the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc. alongwith the comments of the Chief Wildlife Warden of the State Government.
- viii. Data of one-season (non-monsoon) primary- base-line data on environmental quality of air (PM₁₀, PM_{2.5}, SO_x and NO_x, noise, water (surface and groundwater), soil be submitted.
- ix. The wet washery should generally utilize mine water only. In case mine water is not available, the option of storage of rain water and its use should be examined. Use of surface water and ground water should be avoided.
- x. Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-a-vis washery should be given. If the source of water is from surface water and/or ground water, the same may be justified besides obtaining approval of the Competent Authority for its drawl.
- xi. 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 specific points where fugitive emissions can arise and specific pollution control/mitigative measures proposed to be put in place. The washed coal and rejects should be transport by train as far as possible. Road transport of washed coal and rejects should generally be avoided. In case, the TPP is within 10km radius, it should be through conveyer belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road be examined in detail and its impacts along with the mitigation measures should be clearly brought out in EIA/EMP report.
- xii. Details of various facilities proposed to be provided in terms of parking, rest areas, canteen etc.to the personnel involved in mineral transportation, workshop and effluents/pollution load from these activities should be provided.
- xiii. Impacts of CHP, if any, on air and water quality should also be spelt out alongwith Action Plan.
- xiv. O.M. no. J-110I3/25/2014-IA.I dated 11th August, 2014 to be followed with regard to CSR activities.
- xv. Details of Public Hearing, Notice(s) issued in newspapers, proceedings/minutes of Public Hearing, points raised by the general public and response/commitments made by the proponent along with the

Action Plan and budgetary provisions be submitted in tabular form. If the Public Hearing is in the regional language, an authenticated English translation of the same should be provided. Status of any litigations/ court cases filed/pending, if any, against the project should be mentioned in EIA.

- xvi. Analysis of samples indicating the following be submitted:
 - Characteristics of coal prior to washing (this includes grade of coal, other characteristics of ash, S and heavy levels of metals such as Hg, As, Pb, Cr etc).
 - Characteristics and quantum of coal after washing.
 - Characteristics and quantum of coal rejects.
- xvii. Details of management/disposal/use of coal 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 rail as far as possible.
- xviii. Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC is being 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 shall be pre-requisite for consideration of EC.
- xxii. Wastewater /effluent should conform to the effluent standards as prescribed under Environment (Protection) Act, 1986
- xxiii. Details of washed coal, middling and rejects along with the MoU with the end-users should be submitted.

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT for EC

- (i) An EIA-EMP Report shall 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 to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A toposheet specifying locations of the State, District and Project site should be provided.
- (iv) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/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 study area 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 on the land use.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, 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 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (viii) A detailed Site plan of the mine showing the 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 -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, 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 should be indicated.
- (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 as per the approval of Irrigation and flood control Department of the concerned state.
- (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 in the map along with the status of the approval of the competent authority.
- (xi) Break up of lease/project area as per different land uses and their stage of acquisition should be provided.

LANDUSE DETAILS FOR OPENCAST PROJECT should be given as per the following table:

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 plan should be provided.
- (xiii) Impact of changes in the land use due to the project if the land is predominantly agricultural land/forestland/grazing land, should be provided.
- (xiii) **One-season (other than monsoon) primary baseline data** on environmental quality - air (PM₁₀, 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 should be provided.
- (xiv) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones 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. Observed values should be provided along with the specified standards.
- (xv) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a **Comprehensive Conservation Plan** along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (xvi) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided 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. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (xvii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xviii) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xix) Detailed water balance should be provided. The break-up of water requirement for the various mine operations should be given separately.
- (xx) Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users in the upstream and downstream of the project site. should be given.
- (xxi) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area

- falls within dark/grey zone.
- (xxii) Impact of blasting, noise and vibrations should be given.
 - (xxiii) Impacts of mining on the AAQ and predictions based on modeling using the ISCST-3 (Revised) or latest model should be provided.
 - (xxiv) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
 - (xxiv) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
 - (xxv) Details of waste OB and topsoil generated as per the approved calendar programme, and their management shown in figures as well explanatory notes tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use should be given. OB dump heights and terracing based on slope stability studies with a max of 28° angle as the ultimate slope should be given. Sections of final dumps (both longitudinal and cross section) with relation to the adjacent area should be shown.
 - (xxvi) Efforts be made for maximising progressive internal dumping of O.B., sequential mining , external dump on coal bearing area and later rehandling into the mine void.--to reduce land degradation.
 - (xxvii) Impact of change in land use due to mining operations and plan for restoration of the mined area to its original land use should be provided.
 - (xxviii) Progressive Green belt and ecological restoration /afforestation plan (both in text, figures and in the tabular form as per the format of MOEFCC given below) and selection of species (native) based on original survey/land-use should be given.

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 to the 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					

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

* As a representative example

(xxix) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.

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

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

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

(xxxi) 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 in the mine should be given.

- (xxxii) Risk Assessment and Disaster Preparedness and Management Plan should be provided.
- (xxxiii) Integration of the Env. Management Plan with measures for minimizing use of natural resources - water, land, energy, etc. should be carried out.
- (xxxiv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- (xxxv) 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 should be given.
- (xxxvi) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
- (xxxvii) 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.
- (xxxviii) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details 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.
- (xxxix) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
- (xl) Status of any litigations/ court cases filed/pending on the project should be provided.
- (xli) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xlii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

FOREST CLEARANCE: Details on the Forest Clearance should be given as per the format given:

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			

ANNEXURE -5

GENERIC TORs FOR AN UNDERGROUND COALMINE PROJECT

- (i) An EIA-EMP Report shall 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 to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... **MTPA** of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/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 study area should be given.
- (iv) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, 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.
- (v) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (vi) A detailed Site plan of the mine showing the 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 -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, 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 should be indicated.
- (vii) Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified.

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	

- (viii) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a **Comprehensive Conservation Plan** along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (ix) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided 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. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (x) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xi) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xii) **One-season (other than monsoon) primary baseline data** on environmental quality - air (PM₁₀, 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 should be provided.
- (xiii) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones 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. Observed values should be provided along with the specified standards.
- (xiv) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xv) Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
- (xvi) 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.
- (xvii) 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 should be provided.
 - (xviii) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
 - (xix) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
 - (xx) Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
 - (xxi) The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
 - (xxii) Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
 - (xxiii) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
 - (xxiv) Greenbelt development should be undertaken particularly around the transport route and CHP. 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 submitted.
 - (xxv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
 - (xxvi) 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 should be given.
 - (xxvii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
 - (xxviii) 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.
 - (xxix) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details 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.

- (xxx) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
- (xxxi) Status of any litigations/ court cases filed/pending on the project should be provided.
- (xxxii) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxxiii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

Details on the Forest Clearance should be given as per the format given:

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			

GENERIC TORs FOR AN OPENCAST-CUM-UNDERGROUND COALMINE PROJECT

- (i) An EIA-EMP Report would be prepared for a combined peak capacity ofMTPA for OC-cum-UG project which consists of MTPA in an ML/project area of ha 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 to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... **MTPA** of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) The ToRs prescribed for both opencast and underground mining are applicable for opencast – cum-underground mining.

**33rd EAC (THERMAL & COAL MINING PROJECTS) MEETING
SCHEDULED FOR 9th -10th April, 2015**

AGENDA

**Venue: Brahmaputra Conference Hall, First floor, Vayu Wing, Indira Paryavaran Bhawan,
Jorbagh, New Delhi-110003.**

Pl. check the MoEF website: <http://environmentclearance.nic.in/Report/Default3.aspx>

Important Note:

- i. Please send the information-1” as by-mail, per in word “check format and also a signed & scanned copy, to the Member-Secretary at warrrier@nic.in at least one week prior to the EAC meeting.**
- ii. Without this information, EAC has discretion to invite the proponent for the meeting.**
- iii. Please also provide a copy to the EAC Members during the meeting.**
- iv. No consultant is permitted into the meeting who has no accreditation with Quality Council of India (QCI) /National Accreditation Board of Education and Training (NABET) as per the MoEF OM dated 2nd December, 2009.**

COAL MINING PROJECTS

Thursday, 9th April, 2015

10:00 AM -10:15 AM: Confirmation of Minutes

33.13 10:15 AM –11:45 AM: Expansion of Surkha(North) Lignite Mine Project (from 3.0 MTPA to 5 MTPA in an ML area of 3672 Ha.) of **M/s Gujarat Mineral Development Corporation (GMDC)** located in District Bhavnagar, Gujarat –**EC based on TOR granted on 22.03.2012**

33.14 11:45 AM – 1.00 PM: Kaniha Opencast Project expansion in production from 10 MTPA to 14 MTPA and lease area 1880 ha), of **M/s Mahanadi Coalfields Limited**, District Angul, Odisha. **EC under 7(ii) of EIA Notification, 2006.**

LUNCH

33.15 2:00 PM – 2:45 PM: Jitpur Colliery with production of coal, Nominal 0.6 MTPA/ Peak 0.7 MTPA, total lease area 163.69 Ha. Latitudes 23° 42’ 32” to 23° 43’ 14” N and Longitude: 86° 23’ 05” to 86° 24’ 14” E, of **M/s Steel Authority of India Ltd.** District Dhanbad, Jharkhand. –**ToR.**

33.16 2:45 PM –3:30 PM: Chasnalla Colliery with production of coal, Nominal 1.2 MTPA / Peak 1.5 MTPA along with expansion of Coal Washery to 4.0 MTPA, in an ML area 348.18 Ha Latitudes 23°40’03”-23°38’33”N and Longitudes 86°26’52”-86°27’57”E of **M/s Steel Authority of India Ltd.** District Dhanbad, Jharkhand. – **ToR.**

33.17 3:30 PM –4:30 PM: Lingraj OCP Expn. (13 MTPA to normative 16 MTPA peak prod. of 20 MTPA within ML area of 1410.020) of **M/s Mahanadi Coalfields Ltd.,** located in Talcher Coalfields, dist. Angul, Orissa. **EC based on TOR granted on 21.03.2012.**

- 33.18 4:30 PM –5:00 PM:** Modification/Exemption of EC conditions for operating in the Coal Block Gare IV/1 to **M/s South Eastern Coalfields Limited** - EC granted by Ministry vide letter no. J-11015/81/ 2005-IA.II (M) dated 21st May, 2012 in pursuance of Court Order no. 3001/15 dated 27.03.2015
- 33.19 5:00 PM –5:30 PM:** Modification/Exemption of EC conditions for operating in the block Gare IV/2 and IV/3 to **M/s South Eastern Coalfields Limited** -EC granted by Ministry vide letter no. J-11015/288/ 2007-IA.II (M) dated 12th June 2012. in pursuance of Court Order no. 3001/15 dated 27.03.2015

Friday, 10th April, 2015

- 33.20 10:00 AM –11:00 PM:** Amod Lignite Mine Project (G-19 Extn.) (1.0 MTPA) of **M/s Gujarat Mineral Development Corp. Ltd. (GMDC)**, located in village Amod, Tehsil Jhagadia, District Bharuch, Gujarat -**Amendment to EC.**
- 33.21 11.00 PM - 12.00 PM** Tapin Opencast Expansion Coal Mine Project of **M/s Central Coalfields Ltd.** located in villages Tapin and Pindra, in Tehsil Mandu, in District Hazaribagh, Jharkhand - **ToR Modification.**
- 33.22 12.00 PM -1.00 PM** Neyveli Mine – II opencast project of **M/s. Neyveli Lignite Corporation Ltd** at Vill. Neyveli Distt. Cuddalore in Tamil Nadu. **EC Modification.**

LUNCH

- 33.23 2:00 PM - 3:00 PM:** Pakri Barwadih Coal Mine Project (15 MTPA) of **M/s National Thermal Power Corporation Ltd. (NTPC) Ltd.** located in District Hazaribagh, Jharkand – request for **Change in mining sequence & land use and transportation of coal by road to Banadag railway siding for Pakri Barwadih Coal Mine Block.**
- 33.24 3:00 PM onwards** - Discussion on any other matters with the permission of the Chair.
