

MINUTES OF THE 63rd EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 17th-18th DECEMBER 2012 IN NEW DELHI.

COAL MINING PROJECTS

The 63rd meeting of the reconstituted EAC (T&C) was held on 17th-18th December 2012 in Scope Convention Centre, Scope Complex, New Delhi to consider the projects of coal mining sector. The list of the participants of EAC and the proponents are given at Annexure-1 and 2 respectively.

Confirmation of the minutes of the 61st Expert Appraisal Committee (EAC) (Thermal & Coal Mining) meeting held on 19th -20th November 2012 was as confirmed.

MONDAY, 17TH DECEMBER, 2012

1. The Committee discussed the report of its visit to Jharia Coal Field area. The Committee visited the Jharia coalfield keeping in view that over the last few years, this Committee (as well as the previous Committee) have been dealing with many proposals from BCCL in respect of new mining projects and expansion of existing projects in the Jharia Coal Field area. Detailed presentations were made in the past to this Committee and the previous Committee regarding the special problems of fire and subsidence in the Jharia Coal Field area. The history of this problem alongwith the recommendations of various experts group constituted by the Ministry of Coal to mitigate the problems in this area and also brought to the notice of this Committee. While prescribing the TOR and recommending for EC in respect of new projects or expansion of projects in this area, the EAC has been taking care to ensure that the conditions prescribed are in consonance with the Jharia Action Plan. The EAC therefore, during its visit has (i) made an assessment of the ground reality with respect to environmental management of abandoned mines and operating mines, management of coal fires and subsidence and R&R issues under Jharia Action Plan, Master Plan and Jharia Rehabilitation Development Authority, (ii) interacted with the various implementing authorities (BCCL, CMPDI, DGMS, JRDA and others) for assessing the problems facing in the implementation of Jharia action plans approved by Government of India and to find out the ways to address them, and (iii) interacted with local R&D scientific organizations (CIMFR) and Academic Institutions (Indian School of Mines) to seek their views on the problems of coal fires and subsidence, and restoration of degraded landscapes and their possible involvement in addressing the environmental and social issues in JCF. The report of the visit was approved by the Committee with the following observations:

- i. Project Proponent has the responsibility to reduce pollution load in the CEPI area and need to be undertake mitigative measures.
- ii. In case of violation, the proponent should pass a Board Resolution so as not to repeat the violation and credible action be initiated by the State Govt as per OM of the MoEF dated 12.12.2012
- iii. Violation cases should be recorded in the minutes as declaration by the proponent
- iv. The report may be processed by the MoEF and be uploaded into the website of the MoEF.

2. Expansion of Lakhanpur OCPPH-II (from 15.0 MTPA to 20.0 MTPA Peak in an area of 2485.00 ha) of M/s Mahanadi Coalfields Limited in village Ghanmal, Banjipali, Khuntamahul, Khairkuni, Tingismal, Ubada, Darlipali, Kusaloi, Karlajori, Khaliapali, Soldia, Kudaloi and Lakhanpur. Tehsil Jharsuguda, District Jharsuguda, State Odisha. (EC under clause 7 (ii) of the EIA notification 2006)

2.1 Lakhanpur OC Expansion Project (15.0 Mty) is a running mine started from 1991 and located in Ib Valley Coalfield, Jharsuguda district , Odisha. The Lakhanpur OC Expn. Ph-II (from 15.0 MTPA to 20.0 MTPA Peak in an area of 2485.00 ha) of M/s Mahanadi Coalfields Limited proposal is for Environmental Clearance under Para 7 (ii) of EIA Notification. Lakhanpur OC Expansion Project (15.0 Mty) is a running mine started from 1991 and located in Ib Valley Coalfield, Jharsuguda district, Odisha. The Lakhanpur OC Expansion Project (15.0 Mty) was accorded Environmental Clearance vide letter No.J-11015/638/2007-IA.II (M) dt: 12/07/2008. Detailed EIA study of the core and buffer zones (10 km radius) has already been made during the preparation of EIA-EMP of Lakhanpur OC Expansion Project (15.0 Mty).

2.2 The proposal was earlier considered in the 53rd Expert Appraisal Committee (EAC) [Thermal and coal Mining] meeting held on 16- 17th July 2012. The application for 25% increase in Environmental clearance as stated in clause 7 (ii) of the EIA notification 2006, for Lakhanpur OC Expansion Project (phase-II) from 15.0 Mty to 18.75 Mty was submitted on 27/03/2012. The said application was discussed in the 53rd Expert Appraisal Committee (EAC) [Thermal and coal Mining] meeting held on 16- 17th July 2012 at MoEF, New Delhi. After detailed deliberation EAC observed that clause 7 (ii) of the EIA notification 2006 has not placed restrictions on companies for preparing projects with only 25% expansion in production. The Committee after discussions decided to return this application and desired MCL to submit, at the earliest, the detailed project report for peak capacity / expansion potential of the project.

2.3 The proponent informed the Committee that :

2.3.1 The project report of Lakhanpur OC Expansion (Ph-II), Normative capacity 15.0 Mty (Peak capacity 20 Mty) was approved in 100th meeting of MCL Board held on 27/9/2008. The proposed expansion project will meet the coal demand from the coalfield, especially to the new consumers and reduce the gap between demand and availability.

2.3.2 The coal production for the year 2011-12 was 14.99 Mt and coal production upto Nov, 2012 is 8.40 Mt. Presently 0.36 Mt (2.4%) of coal is produced by conventional drilling blasting and 14.63 Mt (97.6%) is produced by Surface Miner. Incremental Coal will be produced by Surface Miner. The application for 25% increase in Environmental clearance as stated in clause 7 (ii) of the EIA notification 2006, for Lakhanpur OC Expansion Project (phase-II) from 15.0 Mty to 18.75 Mty was submitted on 27/03/2012.

2.3.3 The land requirement for peak 20 MTPA capacity is, of the total ML area of 2697 ha, 328.83 ha is forestland, 2368.17 ha is non-forest land, including 212 ha for R&R colony. Of the total ML area, 1441.64 ha is quarry area, 706.40 ha is for safety zone (of which 38.40 ha for external OB dump falls in safety zone), 188 ha is for infrastructure, 148.96 ha is for rationalization of project boundary, 60 ha for residential colony, 152ha is for resettlement site.

2.3.4 For 15 MTPA mining would be opencast with shovel-dumper and use of surface miner.

2.3.5 The details of the land usage is as under:

RECLAMATION OF MINED OUT AND MINING LEASE AREA	
Environmental	Particulars

parameters	Existing 15.0 Mty capacity	20.0 Mty
Total land involved	2697.00	-
Mining lease area	2485.00	-
Forest land	328.83	-
Non-forest land	2156.17	-
Land usage of mining lease area (ha)	2485.00	-
Area broken-up	412.117 (as on Nov., 2012)	-
Area to be broken-up	--	1029.523
Area not to be broken-up	--	1043.36
Solid Waste Management		
External dumping	Area - 17.50 ha Volume of OB - 1.94 Mcum	OB quantity of 0.30 Mm ³ will be dumped in the area of 20.90 ha temporarily.
Internal dumping	Area - 210.174 ha Volume - 105.65 Mcum	A quantity of 732.86 Mm ³ OB will be additionally backfilled internally in remaining area of 1059.296 ha.

2.3.6 No additional land, manpower or other resources are required.

2.3.7 The proposed expansion in production i.e. from 15 Mty to 20 Mty is planned to be made by increasing the no. of operational working days and increasing the effective working hours per day and by increasing the efficiency. The incremental production will be made through eco-friendly Surface Miner which does not involve any drilling, blasting or crushing operations.

2.3.8 The AQIP analysis using ISCST3 revealed that the incremental SPM and RPM levels for this capacity Expansion are within the permissible limit. Therefore, the incremental production will not have any significant impact on the environment. All environmental parameters discussed in the following slides is favoring for consideration of due diligence.

2.3.9 Details of production in last five years is as under:

S.no	Year	Production (MT)
i.	2007-2008	10.33

ii.	2008-2009	11.78
iii.	2009-2010	13.06
iv.	2010-201	14.01
v.	2011-2012	15.01

- 2.3.10 Total Mineable Reserves is 284.24 MT as on 1.4.12. Number of Seams is one Lajkura seam. Grade of coal Mostly F&G. Depth of mine minimum 12m and 165 m(maximum). OB Removal since inception is 132.09Mm³ upto 31.03.2012. Stripping Ratio is 2.34cum/te. Manpower (Existing) is 803 nos. Total depth of mine is 165m and present depth of mine is 89m..
- 2.3.11 The transportation of Coal by 35 T Dumper and OB by 100 T Dumper. The capacity of existing MGR railway siding (2 km) and Y-curve siding (8km) is adequate to dispatch enhanced coal production of 20.0 Mtpa. Coal is transported to öYö curve siding, (MGR) ULTS by tippers. Silo loading system is being planned dispatch of 15 Mty. The estimated OB generation during balance life of the mine is 838 Mm³.
- 2.3.12 It was informed that an amount of 1.94 Mm³ of OB has been stored in one external OB dump in an area of 17.50 ha in the existing project. OB quantity of 0.30 Mm³ will be dumped in the area of 20.90 ha temporarily. It was clarified that no additional external dumping of OB is proposed in the expansion project. OB of 105.65 Mm³ has been stored in an area of 210.174 ha and it is proposed to additionally backfill an estimated 732.86 Mm³ of OB in the expansion project. A quantity of 732.86 Mm³ OB will be additionally backfilled internally in remaining area of 1059.296 ha. At the post mining stage, a void in 84.26 ha with 123 Max depth will be left as water body.
- 2.3.13 Of the total, 1717.73 ha would be under the plantation at the end of mine. Balance life of the expansion project is 19 years. Water level in core area is 4.36 m bgl to about 6.52m bgl(pre-monsoon) and 3 m bgl to about 4.82m bgl is post ómonsoon season.
- 2.3.14 Mine water discharge in peak season would be 48484 m³/day. Ib River is about 3.25 km from the ML, Lilari nallah is about 0.5 km, and a seasonal nallah ó Phulijori nallah, which is a tributary of Lilari Nallah flowing within the mining lease, requires diversion. Hirakud Reservoir is about 4 km from the ML.
- 2.3.15 A number of Reserve Forests fall in the buffer zone - Bikramkhol RF, RajpurRF, Rameda RF, Arhparah RF. There is no additional R&R involved.
- 2.3.16 Total PAFs for the existing project will be 1279. Resettlement sites are at Ganesh Nagar and Jagannath Nagar. Of the total no PAF,s 1279 Khairkuni (369)&Ghanamal(30), Banjipali(412), Ubuda(312), Tingismal(20), Kuntamahul(31), Kusraloi (95), Kalajori(11), Khaliapali, Lakhampur, Soldia (part), Kudaloi (part). R&R of Ghanamal, Banjipali, Khuntamahul villages have been completed and 296 PAFs resettled in rehabilitation site. Resettlement sites are at Ganesh Nagar and Jagannath Nagar, 262 nos. opted for cash and Remaining 584 PAFs to be resettled. 612 PAFs provided employment, 15 PAF,s opted for cash.
- 2.3.17 Total expenditure incurred on last five year is Rs 414.35 Lakh.

2.4 Public Hearing: The Public hearing was held on 27.07.2007. The main issues raised were on dumping of OB materials haphazardly in the OB dump areas and the dumps are not covered with plantation, employment to the affected local people, free medical facilities in their hospitals to the affected people, heavy fugitive emission, public road is being used by for coal transportation, establishment of a technical training institute in the area, heavy air pollution, water scarcity, water pollution in Lilari Nallah subsequently to Hirakud reservoir, Deforestation due to mining, Noise pollution due to blasting, Spreading of deadly deceases, Socio economic imbalance, Proper utilization of fund for compensatory afforestation, coal transportation tippers overloaded and uncovered, Fire in mine. Drinking water supply through pipe line, Water pollution in Bandhabahal Kanta etc. The status of compliance of earlier Environment conditions stipulated by ministry has also been presented. Total mine closure cost calculated as per the above guideline comes to Rs.16835.63 lakhs. The proponent assured to take necessary action on the concerns and suggestions made during the public hearing.

2.5 The Committee after deliberation, sought following information for further consideration in the next EAC meeting:

- i. Expansion case need to be considered as per the recent OM of the MoEF dated 19 December, 2012.
- ii. production plan increase over 15 MTPA to 20 MTPA is taking place after 16 yrs. reflecting no urgency and committee advised them to come with revised production plan
- iii. Mitigative measures should be taken to reduce dust pollution load (as one of the conditions). The details of the same may be provided.
- iv. If the production increases, the OB dump areas will be increased. Therefore, these areas need to be minimized.
- v. Avenue plantation, GRASSING and reclamation of OB dump should be done.
- vi. The proponent should prepare action plans e.g. long term and short term, for improvement of environment. Assurance for environment improvement in time bound manner should be submitted/provided
 - a) Sprinkler should be provided near OB dump and before blasting to suppress dust.
 - b) Black top roads should be provided to prevent fugitive dust emission.
 - c) Revised mining plan of Lakhanpur OCP should be submitted.
 - d) Sand stone should be used as construction material and be given to local people.
 - e) OB dumping schedule seems to be very critical and should be presented before the Committee.
 - f) The area and depth of void should be re-examined and be reduced.
 - g) The Committee will make a visit to the MCL mines so as to appraise itself on ground realities.

3. Lajkura OCP Expn. (Expn. from 1 MTPA to 2.5 MTPA normative and a peak capacity 3 MTPA in ML area of 641.36 ha) of M/s Mahanadi Coalfields Ltd., located in dist. Jharsuguda, Orissa (EC based on TOR granted on 29. 12.2008). – Internal discussion on the proposal for environmental clearance in two Phases (For Internal consideration)

- 3.1 The Committee was informed that the proposal was earlier considered in the EAC meeting held on 17-18 September 2012. The Committee, after deliberations, recommended the above cited project for grant of Environmental Clearance with specific conditions along with standard conditions: (i) 30 meter width should be provided to green belt; (ii) Social audit should also be done through an Institute of repute and details of the report be submitted to Ministry; (iii) A letter should be submitted to MoEF for breakup of expenditure incurred on CSR activity in rupees; (iv) To plan urgently for mechanized loading of railway wagon at the railway siding to reduce dust generation from pay loader loading.
- 3.2 The proponent informed in the meeting of February, 2012 that the project is presently working within the existing ML area of 252.29 ha within 1 MTPA production capacity. It further informed that since forestry clearance is still awaited for the 156.67 ha of forestland involved in the expansion project, EC may be given for expansion in production from 1 MTPA to 3 MTPA within the existing ML area of 252.29 ha and upon receiving the FC, the EC could be granted for the expansion in ML area of 721.29 ha. However, the proponent did not mention the same in the September meeting and has submitted a written request vide letter no. MCL/HQ/Env/F-73/2012/3163 dated 22.11.2012 reiterating that the statement made in the February meeting and requested that EC may be given for expansion for production from 1 MTPA to 3 MTPA within the existing ML area of 252.29 ha and after the receipt of the FC, EC could be granted for the expansion in ML area of 721.29 ha.

- 3.3 The Committee recommended for EC for expansion for production from 1 MTPA to 3 MTPA within the existing ML area of 252.29 ha with the following observations:
- i. Proponent should not operate in the forest area without Forestry Clearance.
 - ii. The area of expansion will be same for expansion form 1 MT to 3 MT.
 - iii. Since the proponent has been operating exceeding the limit of production for which the EC was granted construes as violation case. Therefore, this may be processed by the MoEF as per the relevant OMs. A Resolution of Board of Directors of the Company may be submitted to the MoEF.
 - iv. The EC is recommended without forest land. EC with forest land can be granted once the stage ó I Forest Clearance is obtained.
- 3.4 **The Committee recommended the Environmental Clearance for 2.5 (Normative) and 3 Mty (Peak) capacity in existing Mining lease area of 252.29 ha.**

4. Hingula-II OC Expn. Project (Phase-III) (12 MTPA TO 15 MTPA and expansion of ML area From 544.40ha to 1741.95ha.) of M/s Mahanadi Coalfields Limited in Tehsil Jharsuguda, District Jharsuguda, Odisha.

4.1 The proponent made a presentation and informed that:

- i. Hingula-II OCP was granted EC on 31.10.2007 for 12 MTPA capacity. The existing production is 4.9 MTPA. The present proposal is for expansion in production from 12 MTPA to 15 MTPA and expansion in ML area from 544.40 ha to 1741.95 ha and 610 ha to 1870 ha including the outside land 65.60 ha for R&R and 128.05 ha land in expansion project.
- ii. Singhada Jhor flows along the northern boundary of the mine. A number of nalas ó Gurudia Nala, Sinha Jhor and Masani Jhor flowing through the ML join the Singhada Jhor. The project involves construction of an embankment along the Singhda Jhor and diversion of nalas following the ML, which would be realigned to their original course at the edge of the ML.
- iii. It was clarified that no external OB dumps are to be created near the Singhada Jhor.
- iv. The additional area of 1197.55 ha involves 435.15 ha of forestland. An application for diversion of forestland of 440.53 ha has been made on 28.02.2011. It was informed that the expansion project would commence after obtaining FC.
- v. In expansion, the total mine block will be worked in two stages to extract all the workable seams.
- vi. In Stage-I, Central and northern part of the total block which is having favorable stripping ratio will be worked in two quarry sections west quarry & east quarry. West quarry will be worked initially followed by east quarry. Overburden from western quarry will be temporarily dumped on south eastern part of the block where mining will be done in Stage-II. In Stage-II, Southern part of the total block which is having higher stripping ratio will be worked in years beyond 26 years (western part of remaining southern area will be worked first and eastern part of southern area will be worked at last stage) overburden from this stage will be filled in mined out area of stage-I and also in its own void area. In Stage-III, South-eastern part of the block will be worked at the last stage of mine when sufficient void is available in stage-I quarry so that temporary external dumps in this area will be rehandled and brought back to voids of stage-I mining operations. As mining is taken up at last stage (from 26 to 37 years) in south-eastern area of the block, void will be left in this area only, but not in northern portion where mining activity will be completed earlier.
- vii. The depth of void in this southern area (around 100m) is also less compared to the northern side (around 177 m). After completion of mining operations the upper tier of the internal dump which is 30 m above ground level will be rehandled and brought back to southern voids to

reduce the void depth to less than 70m. The southern void cannot be filled upto ground level due to lack of overburden at this stage from this mine, but can further be filled from overburden from dip side blocks. The details are as follows:

Mining steps	Quarry	Coal (in mt)	Overburden (in M.cum)	Stripping ratio (in cum./t)	Seam to be mined	Depth of quarry	
						Max.	Min (m)
Stage-I	Existing Quarry	21.78	10.16	0.47	VIII & IX	49.0	12.80
	West Quarry	215.58	281.21	1.30	II, III, IV, V, L2	173.0	78.0
	East Quarry	168.77	332.69	1.97	II, III, IV, V, L2	177.00	104.00
	Total :	406.13	624.06	1.54			
Stage-II	South Quarry	107.79	380.31	3.53	ID ó IV B	125.00	40.00
	Grand Total :	513.92	1004.37	1.95			

- viii. The post-mining land use, the reclaimed land will be used for productive purposes such as agriculture. It was informed that the total excavation land is 1140.76 ha for the incremental production which includes safety zone area of 173.75 ha and external OB dump area of 17.34 ha of existing 12.0 Mty project. External dump area of 17.34 ha would be merged with excavation area of incremental production. The details are as under:

Sl. No.	Item	For existing 12.0 Mty	Addl. land for incremental production	Total for 15.0 Mty
4.	Safety zone for expansion	--	184.25	184.25
5.	Infrastructure including CHP, magazing, etc.	77.10	47.29	124.39
6.	Rationalization of project boundary	7.43	12.34	19.77
7.	Diversion of the road	--	4.00	4.00
	Mining lease area	544.40	1197.55	1741.95
8.	Residential colony	22.00	28.00	50.00
9.	Rehabilitation site	43.60	34.45	78.05
	Total :	610.00	1260.00	1870.00

- ix. The additional area of 1197.55 ha involves 435.15 ha of forestland. 194.64ha is Agricultural land 548.25 ha is Waste land, 8.38ha is for Surface water bodies, 11.13 ha is others.
- x. It is observed that in pre-mining agricultural land in the mining lease area is 333.62 ha, whereas the land available for agriculture after mine closure is 888.35 ha. Similarly, forest land has been converted to non-forest for mining purpose is 435.150 ha and the reclaimed land available for afforestation is 422.55 ha. Forest enhancement ratio will be 1 time and Agriculture make-up ratio 2.70 times. The pre-mining land of same extent of forest cover will be available after post-closure period but the availability of agricultural land will be increased by 2.7 times. In post mining stage, of the total 1870 ha, 1409.54 ha Quarry excavation, 184.25ha Blasting danger zone. 124.39 ha infrastructure, 19.77 ha rationalization of project boundary, 4 ha for Diversion of Road, 50 ha Residential colony, 78.05 ha for Resettlement site. Plantation will be in 323.29 ha area. Water body would be in 64.16 h.
- xi. The OB management plan indicated the reduction of the depth of the final water body to 40m. Total volume of OB to be removed from the mine would be 1022.41 Mm³ and total volume of coal to be removed would be 336.95 Mm³. Volume of OB in the external dumps for the existing project 1.95 Mm³ and total Volume of OB in the temporary dumps for expansion project . In post mining closure of the total 1409.54 ha area, 1217.74ha area would be backfilled area which includes 290 ha Above ground level with 30 m height, 236 ha Area in which backfilling completed to pre-determined or ground level. 571.57 ha area in which backfilling is below ground level (within 25m below ground level) with 0-7.5m depth, 120.17 ha Area is partially backfilled, 191.80 ha is unfilled void with 35-70m depth in post mining but no unfilled void in post mine closure., 788.86ha area in which backfilling completed to pre-determined or ground level with 1022.41 mm³ OB backfilled, the depth before filling ob 40-177m, 342.68 ha area area in which backfilling is below ground level (in western part of southern quarry) remaining void in 17.13ha area with 0-7.5 m depth , 278 ha area is left out partial unfilled void in eastern part of southern quarry with remaining void in 157.65 ha void with 35-70 mt depth Total void available in the backfilled area and partially unfilled left-out void is 174.78 Mm³. The left out partially unfilled void is final water body in the mined out pit or quarry.
- xii. The maximum depth of the quarry with partial backfilling would be 70.0 m. About 111.13 Mm³ of overburden material would be needed to fill-up void to bring-up the depth 40.0 m. This excess overburden material can be brought from the new mine in the dip side of the Hingula OCP. The south of the left out void or water body is non-coal bearing area and the reserve forest. Hence, this water body shall be earmarked for water harvesting for fauna living in the forest area.
- xiii. The taxonomic enumeration of flora and fauna has been carried out for the Hingula OC Expn. Project (15.0 Mty) of core and buffer zone of Talcher coalfield by the Department of Environmental Sciences and the School of Life Sciences, Sambalpur University, Orissa in December 2008. The Study report shows existence of Schedule-I fauna in the core and buffer zone of the project. A list of fauna under different schedules of the Wildlife (Protection) Act 1972, was found in the core and buffer zone of the project which contains schedule 6 I 7 II Fauna eg Monitor lizard, Python, common Peafowl, Wild Pig, Jackal.
- xiv. The status of compliance of conditions in the earlier Environmental Clearance was presented. Regional Office of the Ministry at Bhubaneswar reported that there is no serious violation noticed. Non-compliance of environment stipulations was communicated to the project proponent.

4.2 The Committee after deliberation, sought following information for further consideration in the next EAC meeting :

- i. Details of the calendar plan of production and OB generation and dumping external (both dumps shown separately), internal for existing and expansion incorporating the plan for re-handling.
 - ii. The Committee sought details of post-mining land use for use of the reclaimed land for productive use such as agriculture. The Committee desired that the OB management plan be re-looked to reduce the depth of the final water body to be 40m depth. The Committee sought a list of flora/fauna authenticated by PCCF (WL) or by any recognised institution that there is no presence of Schedule-I fauna in the study area.
 - iii. The committee noted the urgency expressed by the proponents for increase in production. It was pointed out to them that their application is with forest land for which Stage-1 clearance is awaited. Committee noted that the proposed west quarry does not involve any forest land and can be worked faster and advised the project proponents to come back with application for EC for west quarry area and later for the rest with forest land.
- 4.3 Committee also advised to explore other mining solutions e.g. high wall mining etc. to reduce forest land and other land degradation. for other sending separately

The Committee recommended the project and the proponent was asked to submit application for West quarry which is without forest land to meet the incremental production.

- 5 Of the total ML an area of 1197.55 ha, 544 ha additional land is required. 11 villages with 650 PAFs will be displaced.
- 6 Out of total PAFs under R&R 1701 PAFs, 918 PAFs of 12 MTPA and 783 PAFs of proposed 3 MTPA, 255 opted for cash and 780 will be provided employment.
- 7 Stage I forestry clearance yet to be obtained. 435 .15 ha forest land is involved.
- 8 As mining causes irreversible changes to land and the MCL projects involve 6072 ha total land. Committee desired that proponent should prepare a statement and have master plan for the land use of mind closure. 4 Mine has been closed under mining closure activity.
- 9 R&R in involved Rs. 6000-3, 00,000/- kept for R&R policy. Additional Rs. 3,80,000/- kept for making huts.
- 10 Stage óI Forest Clearance may take time so proponent should come again after stage óI clearance as the land which involves forest land would be mined after 20 years.

5. Orient UG Mine I & II (from 0.35 MTPA to 0.87 MTPA in an ML area of 1857.24ha) of M/s Mahanadi Coalfields Ltd., Tehsil Brajraj nagar, Dist. Jharsuguda, Orissa (EC based on TOR granted on 11.07.2008)

5.1 The proposal was earlier considered in EAC meeting held on 23-24 May 2011 wherein the Committee desired that the coal being transported by road be dispatched by conveyor system that may be established within 2-3 years. The loading should be by bulk loaders. The Committee observed that the data generated on baseline environmental quality is old (2005-06) and noted that the same data has been shown for two different seasons - pre-monsoon and post monsoon which is not realistic. The Committee also observed that no monitoring station has been provided in the southern direction (down wind direction) which should be established. The Committee desired that a one season data which includes PM₁₀ and PM_{2.5} should be collected for the same season as meteorological data and furnished. The Committee sought details of distance of Ib River (HFL) from the mine operations. The Committee also sought a detailed expenditure for CSR carried out during 2010-11 for Rs 51.04 crores and a Plan for 2011-12. The Committee sought FC for the forestland involved in the project. The Committee decided to further consider the proposal based upon receipt of the aforesaid details.

5.2 The proponent made a presentation and informed that:

- i. The coal being transported by road will be dispatched by conveyor system which will be established within 2-3 years to a common CHP and loading should be by bulk loaders.
 - ii. Orient U/G Mine No.1&2 is situated at about 800 m from the railway siding. Provision of conveyor system from the mine head to the siding was studied which reveals that it is not feasible because of small quantum of coal to be handled at the siding. Practically, one rake is being loaded every 2/3 days and transportation through conveyer from pit-head upto siding will essentially require installation of rapid train load out system. Thus, investment is not economically viable for such a small quantity handling.
 - iii. Coal production ranges from 389 te/shift to 951 te/shift. Number of trips needed by 16 te capacity tippers range from 24 to 59.
 - iv. Control Measures are being adopted for reducing dust pollution generated from transportation and as well as loading and unloading.
 - v. Water tankers, Avenue plantation exist on both sides of the coal transport road. One perforated pipe, overhead sprinkling arrangement, covered trucks / tippers, 20 nos. of fixed gun type water sprinklers, routine environmental monitoring is being done regularly.
 - vi. Fresh baseline data has been generated on environmental quality for air, water, noise and soil has for pre-monsoon season (March, April and May 2012). PM₁₀ and PM_{2.5} values range from 64 µg/m³ to 115 µg/m³ and 19 µg/m³ to 37 µg/m³ respectively. SO₂ and NO_x values varied between 11.0 to 17.0 µg/m³ and 12.9 to 24.6 µg/m³ respectively. All the values are found to be within the standards except PM₁₀.As desired by Committee, ambient air quality data for PM₁₀ and PM_{2.5} has been generated for the same season.
 - vii. The RL of High flood level (HFL) of the Ib river is 195.47 m above msl. The RL of the bench mark of the Orient U/G Mine No.1&2 is 241.005 m above MSL. The maximum depth cover of the mine is 320 m bgl and minimum depth cover is 63 m bgl. Ib River from the mine is 2.54 km. considering hydro-geological set-up of the area, the estimated radius of influence is 972 m. Hence inundation of the mine is not predicted due to high flood level of Ib river.
 - viii. Detailed expenditure for CSR was carried out during 2010-11 for Rs.51.04 crores and a Plan for 2011-12 has been prepared. Detailed expenditure, activity-wise, incurred in the CSR by MCL For the year 2010 ó 11 was Rs 5347.38 and for the year 2011-12 was Rs 2833.76Lakhs. The proposed expenditure for for 2012-13 has been estimated at Rs 215.62 Lakhs.
 - ix. Total forest land area within the mining lease hold area of Orient Mine No.1&2 is 82.213 ha.
 - x. The site inspection report/recommendation of C.F./Addl. Chief Conservator of Forest (Central), MoEF, Bhubaneswar for stage-I forest clearance with respect to the forest diversion proposal application under section-2 of F C Act, 1980 has been sent to the MoEF, New Delhi on dtd.26/11/2012.
- 5.3 The Committee after deliberation recommended the project for Environmental Clearance with following specific conditions:
- i Transport from mine to siding with covered tippers and with mine 3 coal arrangement for mechanised conveyor loading of railway wagons .
 - ii Avenue plantation should be provided with suitable width.
 - iii The frequency of water spraying should be increased in addition to water spraying through mobile water tanker to reduce dust pollution.
 - iv. The Ambient Air Quality data generated by proponent should be checked by Dr Shiv Attri, Member, EAC.

- v. The Social Audit should be conducted for the CSR Activity carried out in the area for the year 2011-12 other than the TISS eg Xavier institute, Sambalpur University etc. The report of the same should be uploaded into the Company's website. A copy of the audit report should be circulated to all the members of Committee.
- vi. All the schools in MCL area should be provided with Black Boards, toilets etc. More funds should be spent on CSR activities
- vii. Financial progress and Physical progress should be monitored.

6. Ananta OCP Expn. Project, Phase-III (Normative Capacity 15.0 Mty, Peak Capacity 20.0 Mty) in an expansion in area from 691.091 ha to 1419.821 ha) of M/s Mahanadi Coalfields Ltd., Tehsil Talcher, District:Angul, Odhisa

6.1 The proponent gave a presentation and informed that:

- i. Ananta OCP is an operating mine since 1991 and its current approved capacity is 12 MTPA (14th July, 2006). As on 01/12/2012 total reserve available within the existing 12 Mty project boundary is 12.0 Mt. Thus, the mine can operate for only one year in the existing boundary and thereafter the mine will be required to progress in the expansion area for which EC & FC are required to avoid discontinuity of the coal production from the mine. Hence continuing with the existing Projects in the expansion area is the best possible option because of ready to use infrastructure, HEMMs, Skilled manpower non requirement of external OB dump etc.
- ii. Mine plan was approved by MoC for Ananta OC Expansion project (Normative 15.0 Mty; Peak 20.0Mty) vide letter No.43012/(1)/2008-CPAM dated 30.03.2009. EMP (Capital) Cost Rs 5735.83 Lakhs and recurring cost 6954.85 Lakhs. Capital cost of project is Rs. 207.28 Crores.
- iii. The details of the total land requirement are as under:

Sl. No.	Type of Land	Existing 12.0 Mty	Addl. land	Total for 20.0 Mty
1.	Agricultural	190.74	168.320	359.060
2.	Forest	68.85	237.85	306.703
3.	Waste land	388.65	298.35	687.08
4.	Grazing	0.00	0.00	0.00
5.	Surface water bodies	25.87	10.87	36.74
6.	Others (Govt. Land)	16.90	13.34	30.24

Total for mining lease area :	691.091		1419.821
--------------------------------------	----------------	--	-----------------

The details of break up of land use are as under:

Sl. No.	Item	For existing 12.0 Mty			Addl. land for incremental production (8.0 Mty)			Total for 20.0 Mty		
			Non-forest	Total		Non-forest	Total		Non-forest	Total
1.	Quarry excavation	68.85	305.042	373.892	237.853 ss	356.317	594.17	306.703	661.359	968.062
2.	Blasting danger zone	24.84	179.159	203.999	80.776*	123.62	123.62	80.776*	327.619	327.619
3.	dump area (external)	--	23.200	23.200	--	--	--	--	23.20	23.200
4.	Infrastructure	--	90.000	90.000	--	--	--	--	90.00	90.000
5.	Diversion of Road	--	--	--	--	4.00	4.00	--	4.000	4.000
6.	Rationalisation of project boundary	--	--	--	--	6.94	6.94	--	6.940	6.940
	Mining lease area (1 to 6)	93.69	597.409	691.091	237.853	490.877	728.73	306.703	1113.118	1419.821
7.	Residential colony	--	117.559	117.559	--	126.00	126.00	--	243.559	243.559
8.	Rehabilitation colony	--	117.559	117.559	--	126.00	126.00	--	243.559	243.559
	Outside Lease area (6 to 7)	--	117.559	117.559	--	126.00	126.00	--	243.559	243.559
	Total :	93.69	714.96	808.650	237.853	616.88	854.7	306.70	1356.67	1663.38

							3	3	7	0
--	--	--	--	--	--	--	---	---	---	---

- iv. Additional forest land for expansion project has been changed from 224.73 ha to 237.853 ha (13.123ha) as per the DGPS surveyed map which has been verified and authenticated by ORSAC (Orissa Space Application Centre)
- v. Diversion of 62.67 ha of forest land for Ananta OC Expn. (for 12.0 Mty) project has been approved by Asst. Inspector General of Forest vide letter No.F.No.8-43/2004-FC, Govt. of India, MoEF (FC Division, dated 16th November,2004.Proposal for Diversion of Forest land (Stage-I) has been submitted to CCF(Nodal) in April-2010. As per latest requirement, Detailed DGPS Survey and authentication by Odisha Space Application Centre (ORSAC) has been completed in May, 2012, Tree Enumeration, Pillar posting, Compensatory Afforestation Scheme, Wild Life Management Plan etc already completed. Compliance under FRA (Forest Right Act) completed for Nine villages out of Total Ten villages involved.Proposal for Diversion of Forest land (Stage-I) has been submitted to CCF(Nodal) in April-2010. As per latest requirement, Detailed DGPS Survey and authentication by Odisha Space Application Centre (ORSAC) has been completed in May, 2012.
- vi. Tree Enumeration, Pillar posting, Compensatory Afforestation Scheme, Wild Life Management Plan etc have already been completed. To meet the above demand, the capacity of Ananta OC Expn. has been proposed to be enhanced to normative capacity 15.0 Mty (i.e. 3.0 Mty incremental) and peak capacity 20.0 Mty. An additional land 728.73 ha is required for the expansion project including 237.85 ha (revised after DGPS Survey) of forest land.
- vii. Coal Reserve is 329.59 MT.18 No. of seams will be worked (excluding local seams). Average Stripping Ratio 2.21 m³/t, Grade of coal is Mostly F & G. Life of the Expansion Project is 22 years.
- viii. Total O.B. to be removed will be 791.61 M.cum. Quarry Depth will be 70 m (Minimum) and 265 m (Maximum).
- ix. Major coal production will be done by using Surface Miner. Drilling, blasting, crushing and other dust generation activities will be eliminated and quality of coal can be improved. Surface Miner coal production will be about 85 to 90% of the total coal production.
- x. Coal transportation will be by dumper/tipper which will be limited within the quarry itself. From Feeder-Breaker arrangement/receiving hopper at pit top coal will be transported by conveyor only for loading into the railway wagon through SILO loading arrangement. This will totally eliminate surface coal transportation by tippers.Further coal will be transported by railway which will be loaded through silo. Work for silo construction has already been started by the contractor in August 2012.Work for concreting the coal transportation roads has already been awarded which will reduce the dust pollution. This will eliminate truck movement and pay loader loading on surface.
- xi. Ground water level in core area is less than 6.70 m bgl to about 10.55 m bgl. Only potable water will be drawn from the Brahman river through the Integrated Water Supply Scheme (IWSS) of Talcher Coalfield. Industrial and fire fighting water demand will be met mainly from the recycling of treated industrial effluent and mine discharge water. Mine discharge in Monsoon period 24344m³/day. Bangaru Jhar is flowing through the expansion area and need to be diverted. Expansion project will disturb the Bangaru jhara stream during 5th year of mining operation. Bangaru jhara stream lies on coal bearing area of expansion area. This needs to be diverted for extending the mine. The elevation or height on either side of the stream bed varies from 20 to 22.0 m. The mining depth below Bangaru jhara stream is 155m bgl. An amount of Rs.20crore has been provided in the project report for diversion and restoration of the Bangaru jhar stream.
- xii. **Wild life issues:** The area is not the migratory route for any wild animal. Both core and buffer zones are found to be free from ecologically sensitive and biologically rich areas/habitats, such as national parks, sanctuaries, biosphere reserves and areas rich in genetic resources. Schedule óI fauna like Monitor lizard, Python, Common peafowl and Schedule óII fauna like Jackal, Wild pig, Kutra,

Proponent has made broad plan for conservation of the fauna which used the habitat of the study area like more afforestation of locally available species. Plantation of edible fruit bearing trees, natural water holes, Fire protection and prevention measures, restore the original habitat by planting natural species. Rs 20 Crores has been allocated for conservation of fauna and flora.

- xiii. In the existing project, 1005 families from 5 villages were affected for which 100% R&R Completed. In the Expansion Project 689 families from 10 villages namely Ekadal (178), Hilloi (154), Rakas (139), Brundabanpur (22), Ajatipur (25), Rangamatia (30), Korihan (35), Dinabandhupur (50), Biraramchandrapur (9) and Kantapada (47) will be affected. Compliance under FRA (Forest Right Act) completed for Nine villages out of Total Ten villages involved. For the Extension Project R&R Policy of Odisha, 2006 is being followed. Rs.4136.827 lakh has been allocated for R&R of 689 PAF of Expansion project. For Extension Project Resettlement will be at Gurjang or as per their choice through cash compensation. At Gurjang, 150 plots are available out of total 305 nos of plots. Approximately Rs. 5 Crores have already been incurred in developing the site and all infrastructures like drinking water supply, electricity supply, roads, drains, boundary wall, community centre, school, Mandir, cremation ground etc have been provided.
- xiv. Rs.5.00 per tone of coal per annum will be spent towards corporate social responsibility. The CSR budget for 2012-13 would be Rs.55.15 lakhs. Action Plan for CSR for 5 years has been prepared. Rs.750 lakhs has been kept for fourth year and Rs. 13208.5 lakhs for the balance life of the project.
- xv. **Public Hearing:** The public hearing was held on 27.07.2011. The main issues were raised were arrangement for permanent supply of drinking water to nearby villages throughout the year, separate coal transportation road from public road, employment, proper solid waste management, development of green belt and avenue plantation in the area, controlled blasting and the fire in the coal yard, allocation of separate fund for development of roads, health, education and drinking water supply etc. The proponent has assured to take appropriate action on the issues raised during the public hearing.
- xvi. Compliance to conditions of environmental clearance and environmental management of Ananta OCP (12.0 mty) was presented. Violation cases were noticed by the Regional Office of the Ministry at Bhubaneswar and non-compliance of the conditions communicated to project proponent.

6.2 The Committee after deliberation recommended the project for Environmental Clearance with following specific conditions:

- i. There will be no void left. The OB should be rehandled and filled in the void to be filled up to ground level. Voids with 265m depth are not permitted.
- ii. Permission should be obtained from Water Resource Dept, State Govt. for diversion Bangaru jhar stream.
- iii. Latest one season AAQ data should be generated. The data should be shown to Dr Shiv Attri, Member, EAC for his comments.
- iv. The presence of Arsenic, Mercury (Hg), Geranium (Ge) maybe investigated.
- v. Forest cover should be provided around Dera village.
- vi. Investigation for effect of fluoride on human health specifically on children be done. Alternate fluoride free water be supplied to villagers.
- vii. Continuous monitoring in the change in ecology be carried out by ecologist, biologist, social scientist.
- viii. EC may be granted subject to the obtaining of the FC.

- i. **Proposed Gare Pelma Sector III Opencast-cum-Underground Coal Mine Project (5MTPA normative and 6.5 MTPA peak) with pit head coal washery of 5 MTPA of M/s Goa Industrial Development Corp. located in dist. Raigarh, Chhattisgarh – (EC based on TOR granted on August, 2009 and modification of TOR dated 23.06.2011)- Further consideration**

7.1 The proposal was earlier considered in EAC meeting held on 17 September 2012. The Committee sought clarification that: (i) middling-cum-rejects should be utilized in their own power plant; (ii) Since the allocation of coal was made on Govt. dispensation, the coal cannot be used by/traded to private parties and any re-routing of coal for power generation should have the prior approval of the MOC. This may be obtained and details furnished to the MoEF; (iii) The Committee observed that as the linked Thermal Power Plant is at a distance of about 137 km, the requirement of a washery may not be necessary and this should be re-examined; (iv) Accounting of material balance of each product e.g. coal and middling (and also rejects if agreed after review) is required and should be furnished based on the normative (5 MTPA) and peak capacity (6.5MTPA) of the coal mine and the records of every batch of washing should be maintained and uploaded on the company website;(v) Since most of the issues raised in the Public Hearing have not been addressed properly, the issues raised in the PH should be brought out in a tabular form viz. name of complainant along with issues raised, issues addressed by the proponent along with specific budgetary provisions on these activities under CSR; (vi) A copy of the forestry clearance for surface rights and mining rights for the forestland found in the total project area of 714.35ha; (vii) Committee desired that the sale of power should be to Govt. dispensing route. The power produced by KSK can be sold to Govt. regulated tariff as per CRC; (viii) Committee informed that M/s Goa Industrial Development Corp. would be responsible for proper use of power by Govt. dispensing route; (ix) Cumulative Impact Assessment Study should be done within proposed of mine and neighboring areas for adverse impact on air quality, water quality, noise level, ground water due to mining.

7.2 The Proponent made presentation and informed that;

- i. As per the present arrangement between Goa-IDC & KSK, KSK will set up the washery for upgrading the coal quality. The washery is necessitated because the coal produced by Open Cast mining has higher ash percentage and lower GCV, as compared to the design parameters of the Boiler. In view of this, KSK has informed that the washery with following 3 product separations is proposed. The Ash percentage of washed coal 34%, Middlings is 51% .The Rejects (with 92.7% Ash) will be back-filled in the Internal/External Dump along with the Over Burden.
- ii. Justification for setting up the Washery was presented & discussed during the meeting. However at the insistence of EAC, KSK agreed in the meeting to put up a two-product Washery instead of three-product Washery.
- iii. Accounting of material balance of each product e.g. coal and middling (and also rejects if agreed after review) is required and should be furnished based on the normative (5 MTPA) and peak capacity (6.5MTPA) of the coal mine and the records of every batch of washing should be maintained and uploaded on the company website.
- iv. The issues raised during the Public Hearing were discussed & the efforts being made by the proponent especially in CSR activities were appreciated by EAC.
- v. A copy of the forestry clearance for surface rights and mining rights for the forestland found in the total project area of 714.35ha was submitted by the proponent. The document was accepted by EAC.
- vi. The proponent re-confirmed that power produced by KSK utilizing coal from Gare Pelma Sector III coal block shall be sold only to Government Utilities in compliance with CERC tariff guidelines.
- vii. The Cumulative Impact Assessment on air quality, water quality, noise level, ground water due to mining in Buffer Zone has already been studied and provided in EIA/EMP report will be submitted to MoEF.

7.3 The Committee after deliberation recommended the project for Environmental Clearance with following specific conditions:

- i. Committee was informed that whenever allocation of coal block was done to State Govt., the State Govt. cannot form joint venture with private parties. This policy of GOM should be confirmed from

the Ministry of Coal. There is also a policy uncertainty after the recent CAG report. The following options seems to be under consideration (i) Natural resources through auction but public interest should be taken into consideration; (ii) Coal block allocation to public sector such as GIDC. Ministry of Environment & Forests should also check Inter-Ministerial Group's recommendation, in view of fresh policy likely to be announced by Government of India on allocation of coal blocks.

- ii. Middling-cum-rejects should be utilized in their own power plant. KSK shall not give any rejects to SV Power and entire coal will be used in the 1800 MW end use project being implemented by KSK Mahanadi Power Company.
- iii. Since the allocation of coal was made on Govt. dispensation, the coal cannot be used by/traded to private parties and any re-routing of coal for power generation should have the prior approval of the MOC. This may be obtained and details furnished to the MoEF.
- iv. **Environment Clearance is recommended subject to the policy announced by Ministry of Coal and Ministry of Power. MoEF should consult the Ministry of Coal and Ministry of Power before processing this recommendation for further approval.**

8. Padmapur Extn. Deep Opencast Mine(Prod. Capacity 2.50 MTPA (Normative) 3.25 MTPA (Peak) in an area of 837.19 ha) of M/S Western Coalfield Ltd. Dist.Chandrapur, Maharashtra-(TOR)

8.1 The proposal is for new opencast mine. The proponent had made a presentation and informed that :

- i. Of the total land 837.19 ha, 64.20 ha is forest land,689.31 ha is Agriculture land,70.70 ha is waste land,12.98 ha is settlement. The total land requirement for this project is 837.19 ha. Out of this 771.51 ha has already been acquired and balance Land i.e. 65.68 ha (20.98 ha agricultural land and 44.70 ha forest land) is to be acquired. The land use out of 837.19 ha ,231.22 ha will be for quarry area, 175.17 ha is for External OB dump, 3.96 ha is for road, 26.04 ha for built-up area/infrastructure, 400.80 ha is undisturbed area,8 ha is land for Kitadi village shifting.
- ii. Mining be will by Shovel Dumper -combination. The depth of mine would be 100-180m. The gradient of Seam-1 is in 3.8 to 1 in 6, Total Average thickness considered will be 16.45-21.96m , Mineable reserves 10.85MT. The average Stripping Ratio is 5.79m³/T.
- iii. Total Volume of OB 62.85 Mm³ will be generated, out of which 35.13Mm³ will be in External Dump and 27.72 Mm³ OB in internal Dump. Backfilling will be started in 6th year onwards. The balance void of this project will be backfilled by OB of adjoining Bhatadih OC mine.
- iv. In post mining stage, total471.64 ha will be under plantation with 1475.04 nos of trees.
- v. Drainage of area isErairiver, Motaghatnala.The ground water level in core area is 8.3 mbgl ó 12.8m bgl(Pre-monsoon)and 1.6 -8,1 m bgl in Post-monsoon. Total water requirement would be 7M³/day,3.80m³/day domestic requirement.
- vi. The CSR cost would be Rs 5/T of coal as per CIL policy.
- vii. The coal transportation will be by covered trucks Manpower are 452nos. life of the project is 8 years .
- viii. **Forestry issues:** The Forest clearance of 58.54 ha forest land has been obtained vide No 8-39/85-FC Dt 8.1.1998 and 5.66 ha forest land vide letter No 8-7/91-FC Dt 16.10.1998.Balance 44.70 ha Forest land land for which FC is yet to be obtained. Due to the proposed change in land use of forest land under possession, FC for 44.70 ha land will be required.

8.2 The Committee after deliberations ,sought the following information /Clarification for further consideration of project for TOR

- i. The land after mining should be reclaimed and bring back to agriculture land.

- ii. There are large numbers of OB dumps, voids, abandoned mines. An integrated plan for all the closed mines and active mine, voids, OB dumps should be provided.
- iii. Contour map /Plan for OB is required to be submitted.
- iv. Land use break-up for pre-mining should be provided clearly.
- v. Master Plan is required for last 50 years as the acquisition of new mines are being taken up and old mines with reserve abandoned. The closed and abandoned mine should be reclaimed and land should be used for Agriculture.
- vi. Mine & Mineral Development regulation Act should also be applied to coal mining as well. The mine can not be abandoned if t ecol is still available and no new mines should be acquired.
- vii. Master Plan should be prepared for entire area providing detail of first mined out the area completely for its resources and then move into new area. Restoration of the area be made for agriculture use.
- viii. If proponent moves to new area without full extraction, then it will be violation of Mines & Mineral Rules.
- ix. The OD dump is near the nala but the proponent proposed to construct 50 mt embankments.
- x. Public Hearing was conducted on 2003.
- xi. Nala should be diverted in such way that the natural flow of should not be affected. State Water Resource Department permission is required.
- xii. Proponent should provide contour map. Natural drainage pattern should not be disturbed Initial planning is required for diversion of river/nala.
- xiii. Entire hydrology of the area should be investigated. In this process, nallah/River, if they are passing through the mining area, it should be diverted in consultation with Dr.Chitley. The natural flow water should not be disturbed (as TOR condition)
- xiv. No External OB dump should be left at the end of mining
- xv. Tadoba óAndheri Tiger Reserve is 3-4 km from ML area because of that the area has large number of water bodies.
- xvi. Impact of Mining on Tadoba óAndheri Tiger Sanctuary should be assessed. The Chief Wild Life Warden be consulted for presence of Mine in Tadoba-Andheri Tiger Reserve Buffer area. A letter is required from CWLW.
- xvii. Compliance of earlier EC accorded to the project should be provided.
- xviii. Copy of Stage-I forest clearance applied to State Forest Dept. is required as 44.70 ha is forest land.
- xix. The assessment of the river basin e also be carried out.

9. Visapur Opencast Mine of production capacity of 1.00 MTPA (Normative) 1.25 MTPA(Peak) in an ML area of 1057.97 ha)of M/S Western Coalfield Ltd. Dist.Chandrapur ,Maharashtra-(TOR)

9.1 The proponent made the presentation and informed that:

- i. The proposal is for new opencast mine. Of the total land 1057.97ha, 97.99 ha is Agriculture land, 486.69 ha is waste land, 3.54 ha is settlement. Land use out of total 1057.97 ha , 165.50ha is for excavation area, 282.51ha is for External OB dump, 54.80 ha is for backfilling in void area, 43.20ha is for embankment, 42.00 ha is for road/ infrastructure, 461.96 ha is rationalization area, safety zone, river & nala diversion, 8 ha is for rehabilitation of Arwat, Charwat & Mana villages out side ML area.
- ii. The mining will be by Shovel Dumper -combination.
- iii. The depth of mine will be 54 -144 m, Gradient of Seam-1 is 1 in 5 to 1 in 10. The total Average thickness considered is 11.62-3.00m, Mineable reserves is 20.98 MT. The Average Stripping Ratio is 6.84 m³/t. Grade of Coal is -Eø The ROM/GCV is 4614 Kcal/kg.
- iv. The total volume of OB 143.49 Mm³ will be generated, out of which 11.90 Mm³ would be in decaled void of HL OC, 42.22 Mm³ and 40.95 Mm³ in external OB dump, 31.13 Mm³ existing internal dump of HL OC. The effective backfilling is 56% of the total overburden quantity. For external dumping, no

additional land is proposed for acquisition. The balance land is required for quarry operations, river/nala diversion and safety barrier.

- v. **Forestry & Wilde life issues:** There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone.
- vi. In post mining stage, total 552.69 ha will be under plantation with 1381.725 no of trees. Drainage of area is Erai river flows at a distance of 6.7 km from the lease boundary. Water table is in the range of 2.8m - 11.35 m bgl in the core zone and 2.3-13.2 m bgl in the buffer zone. Ground water level in core area is 3.2mbgl ó 14.1 m bgl (Pre-monsoon) and 1.0 -4.5m bgl in Post- monsoon. Total water requirement would be 7M³/day.
- vii. The CSR cost will be Rs 5/T of coal as per CIL policy.
- viii. The coal transportation would be by tarpaulin covered trucks. Manpower are 403 nos. life of the project is 26 years .Cost of Environment protection (Capital) will be 50lakhs and in addition to above a provision of Rs. 3/te has been made towards environmental pollution control under revenue head throughout the mine life.
- ix. The R&R cost would be RS 1173884 Lakhs. Cost of project is Rs.287.9237 Crores. Visapur mine is 35 km from Tadoba-Andheri Tiger Reserve.
- x. The OB is being used for filling abandoned quarry. There is abandoned mine with 70mt depth. Proponent proposed to dump the OD of proposed mine in abandoned mine void. There is a barrier between Visapur and Hindustan Lalpeth mine which is still operating. Proponent proposed diversion of Erai River .committee observed that River flow is from North to South .The proposed project may block the flow of the perennial river by creating reservoir.

9.2 The Committee sought following information for further consideration of project for TOR:

- i. Effect of mining on Era River be assessed.
- ii. Design expert from Water Resource Department should be consulted for diversion of river as it is a very critical issue.
- iii. Justification should be provided for 4 MT coal productions in 4-5 years of mine operation only.
- iv. Reasons for abandoned the old mines.
- v. Separate sheets, detail of abandoned mines should be provided. Proposed mine details should be provided on separate sheet simultaneously.
- vi. Impact of Mining on Tadoba ó Andheri Tiger Sanctuary should be assessed. Consult the Chief Wild Life Warden for presence of Mine in Tadoba- Andheri Tiger Reserve Buffer area. A letter is required from CWLW.

10. Kiloni, Manora Deep, Baranj I-IV Captive Coal Blocks (Integrated Baraj OCP)(Expansion in Prod. Capacity from 2.5 to 5.0 MTY and expansion in area from 1075 ha to 1533.20 Ha.) of M/s Karnataka EMTA Coal Mines Ltd. Vill. Chakbaranj, Dist. Chandrapur, Maharashtra-(TOR)

10.1 The proponent made the presentation and informed that:

- i. Baranj I-IV, Manora Deep and Kiloni . Coal Blocks in Wardha Valley Coalfields, Chandrapur Dist. Maharashtra, was allotted to Karnataka Power Corporation Ltd. vide Govt. of India, Ministry of Coal no. 47011/1(1)2002-CPAM/CA dated 10/11/2003M/s Karnataka Power Corporation Ltd (KPCL) formed a joint venture company, Karnataka EMTA Coal Mines Limited (KECML), with Eastern Mineral & Trading Agency (EMTA), for mining of the allotted coal blocks.
- ii. The mining plan was approved by Ministry of Coal vide no. 13016/12/2004-CA dated 8.12.2004 for 2.5 MTY. EC granted by MOEF vide No.J-11015/400/2005 ó IA.II (M) dated 18/05/2006. Mining operations started in 2008-2009. KPCL is adding a third unit of 500MW

capacity at Bellary TPS in the 11th Five Year Plan. Coal requirement is to be met from the captive block.

- iii. The revised Mining Plan for 5.0 MTY capacity approved by Ministry of Coal vide no. 13016/18/2004-CA-I (Part) dated 24.8.2011 Quarry operations in Manora Deep and Baranj-II blocks will be extended into area, earlier excluded due to blasting restrictions within 3 km of the Ordnance Factory Boundary, after obtaining permission from DGMS and Ministry of Defence.
- iv. It is proposed to get these restrictions removed by adopting non-blasting mining technology of ripping of OB by high powered Ripper Dozers / Terrain Leveller within the 3 km restricted area. The nearest point at the end of mining will be approximately 2 km from the Ordnance Factory perimeter wall. No change in the area of the captive block and net geological reserve of coal. Extractable reserve increased from 103.64 MT in the earlier Mining Plan, to 126.50 MT in the Revised Mining Plan.
- v. CIMFR, Dhanbad has been engaged for detailed study and preparation of the EIA/EMP. Integrated Baranj Opencast Project is located in Wardha Valley Coalfield, Dist. Chandrapur (Maharashtra). Nagpur-Chandrapur State Highway (SH-264) passing through Kiloni Coal Block.
- vi. A metalled road passes over the coal blocks through Manora, Tanda and Chinchora villages, joins the SH-264. The mine is about 2km from the boundary of Ordnance Factory, Chanda in the South East side. The proposal is for 2 phases, Phase-I in 1457.20 Ha and Phase-II in 1533.20 Ha. Of the total 1533.20 Ha, 160.40 ha is forest land, 1276.21 ha is Agricultural, 8.72 ha is waste land, 3.07 ha is grazing land, 24.21 Ha is surface bodies, 60.59 ha others.

PROPOSED LAND USE BREAK UP OF INTEGRATED BARANJ OPENCAST MINE				
Sl. No.	Particulars	Total Land Requirement (Ha.)		
		EAC Approved (2.5 MTY)	Proposed Expansion (5.0 MTY)	
			Phase - I	Phase - II
A.	Within Lease Boundary			
1	Quarry area	963.25	1101.0	1177.0
2	External OB Dump	240.0	240.0	240.0
3	Top Soil Dump	25.00	-	-
4	Infrastructures	6	6	6
5	Embankment	15	15	15
6	Others (including safety zone)*	207.95	95.20	95.20
	Sub-Total (A)	1457.20	1457.20	1533.20

B.	Outside Lease Boundary			
1	Colony & Township	20	20	20
	Total (A+B)	1477.20	1477.20	1553.20

Year wise coal production		
S.No.	Year	Production in MT
1.	2008-09	0.99 MT
2.	2009-10	2.25 MT
3.	2010-11	2.27 MT
4.	2011-12	2.19 MT
	Total	7.70T

- vii. Net Coal Reserves is 156.91 Mt. Average thickness of Coal proposed to be worked 9.5m (single section) to 13.0 (Double section) Initial proposed quarry depth 25 m to 220m. External O.B. Dumps 240.0 Ha) .126.5 Mt. Mineable Coal, 906.23 Mm³ OB & Stripping Ratio is 7.16 Cum/t.
- viii. The mining will be by Shovel Dumper Combination & Ripper Dozers / Terrain Leveller Surface Miners for Coal, Maximum Quarry width at floor 870m. Max. OBR at rated capacity is 45.4 Mm³/year. The year of achieving target production of 5 MTPA is at 4th year.
- ix. Total OB generated 906.23 Mm³ in integrated project, sector A total OB generation would be 439.49 Mm³, which includes the OB of Baranj IV 68.76 Mm³, Kiloni 207.34 Mm³, Baranj III - 163.39 Mm³, Sector-B total OB generation would be 466.74 Mm³ which include OB from Baranj I 41.92 Mm³, Baranj II-64.82 Mm³, Manora Deep 360 Mm³. 886 ha internal OB dump area and 169.9 ha external OB dump area would be reclaimed. There will be two external OB dump in 240 ha area with 60 mt height.
- x. In Post mining stage, the 1533.20 ha will be reclaimed by afforestation and 20 ha area to be used as Colony & Township.
- xi. The R&R will involve Out of 1269 PAF of Baranja Mokasa village and 350 PAF of Chakbaranj will be rehabilitated in Rehabilitation site of village Kodara in an area of 22.68 ha area. 195 PAF has already moved from Baranja Mokasa. The project affected families 195 have been shifted. Rehabilitation site at Village Kudrara. Rs. 4, 54,04,925/- has been spent towards civic amenities .
- xii. Mine closure cost would be Rs. 202.64 crore.
- xiii. **Public Hearing:** The earlier Public Hearing was held on 18.06.2005. The issues raised were company has not obtained no objection from Grampanchayat, getting appropriate rate of land with the satisfaction of PAP, lowering of water level, of employment, measures taken by company to avoid effect of pollution on crops, However with regard to Chekbaranj & Baranj Mokasa NOC without resolution is being issued. Policy for utilization of coal in Maharashtra, Karnataka State will be benefited by coal mining from Chandrapur District and people of Chandrapur District will suffer from pollution and Environmental degradation hence we oppose to this project. Project authority has not given details about effect on water level, effect on environment, land acquisition rate etc. Total Environment

management cost (Capital) isRs 4858.80 Lakhs .Total Life of the Mine27 Years. Manpower 567 Nos. Capital cost is Rs. 977.03Crores

10.2.1 The committee after detailed deliberation of the project sought further clarifications for TOR :

- i. Committee informed that the subsequent post CAG report stated that Coal block allotted to Govt. dispensation rout cannot form Joint Venture Company with Private parties. If there is change in policy Karnataka Power Plant to check up from Ministry of Coal
- ii. The paper of de allocation of EMTA Block of Gaurangdih should be provided. Power should be sold at regulated tariff.1000MW long term PPA with Kernataka .Details of long term PPA should be provided to MoEF.
- iii. CIL allocation cancelled by MOC on 12.07.2012 and life of mine also reduced to 27 years.
- iv. Prepared detailed document along with Chronological events for allocation of coal block and the same should be circulated to all members of committee.
- v. As the mine is in close vicinity of ordinance factory, Permission of Ministry of Defense is required .
- vi. Phase óI project is without Forest land but Phase óII project with Forest land.
- vii. Detailed R&R Plan is required. Copy of same should be submitted to MoEF.
- viii. The mine is 10 km away from Tadoba-Andheri Tiger Reserve.A certificate is required from CWLWfor the distance to Tadoba-Andheri Tiger Reserve from the mine.
- ix. There are three nallas which going to join WardhaRiver. Topo sheet of nala diversion with contour map is required.
- x. Permission from State Flood and Irrigation Dept. is required .Drainage map of Wardha river should be provided as nala which join Konda which ultimately joins Wardha River.
- xi. Detailed Action Plan of Hydrogeology detail of nala to be diverted should be provided in consultation with Flood & Irrigation Department .Diversion Plan of nala is to be submitted.
- xii. The OB would be rehandled and backfilled in void/water body and entire area would be leveled upto ground level. There would be no OB dump at the end of mining.
- xiii. The Committee desired that separate proposal should be submitted for washery in Phase óI
- xiv. An Action Plan of CSR and R&R are required.
- xv. Phase ówise Plan for resettling of PAF should be prepared and submitted.

11. Rajgamar Dipside (Deavnara) underground Coal Mine Production Capacity 0.6 MTPA &in the mining Lease Area of 730 ha) M/s Deavnara Coalfields Pvt.Ltd. At Villages, Rajgamar, Tewanara and Godma ,Tehsil Korba, Dist. Korba, Chhattisgarh-(TOR)

1. The proponent made the prostration. It was informed that it is green field project. Deavnara Coalfields Pvt. Ltd. (DCPL).A Joint Venture Company incorporated on 19.08.2011 for implementation of the Coal Mining Project at Rajgamar Dipside (Deavnara) Coal Mine.Government of India, Ministry of Coal (MoC) allocated Rajgamar Dipside (Deavnara) Coal Block (RDDCB), Korba Coalfield of Chhattisgarh under captive dispensation route for end use to M/s API Ispat &Power tech Pvt. Ltd., New Delhi and M/s C. G. Sponge Manufacturers Consortium Coalfield Pvt. Ltd., Raipur, Chhattisgarh (14.10.2011).The project is allocated under captive dispensation route for consumption at their respective EUP. DCPL has initiated all the necessary steps for implementation of the Coal Mining Project in the allocated coal block.MOC Allocation: 38011/2/2007-CA-I(Part-II), dated 14.10. 2011. Application for Forest Clearance for 554.376 Ha has been submitted on 18-04-12. Of the total ML area of730 Ha, 554.376 ha is Forest land, 7.090 ha is Government Revenue Land, 168.534 ha is Agriculture land. 715 ha land is under mining right and15 ha under surface right.: The mine lease area include 80.00 Ha of area worked by SECL under Rajgamar Colliery, having 10.00 Ha All Right Area and 70.00 HA Mining Right Area. The area have two old abandoned mine entries (Incline No. 8 and 9) and workings in Seam R-IV (Middle +Bottom) and Seam R-II standing on pillars and water logged. The proposed 10.00 Ha surface right forest area has already been broken by SECL, so infrastructure of proposed mine will be established in the

said land and balance 5.00 Ha all right area will be acquired for construction of ventilation shaft and its approach road. The location is outside the CEPI area. Project under consideration is an underground coal mine & proposed to be developed by semi-mechanized bord & pillar method and caving. Major part of the seams have swings N-S to NW-SE. There are total 6 numbers of faults (largely south-westerly direction) present in the Block. Out of six coal seams, R-II in the most promising seam from thickness and quality point of view Geological Reserves 78.463 MT, Mineable Reserves 46.840 Mte (>1.5 m). Net Extractable Reserves 16.92 Mte (>1.5m) Quality (Grade) of Coal as per GR All Seams have Grade A to F and average Grade D in Workable Seams R-IV and R-II. There is no National Park, Wildlife sanctuary, Defence installation or sensitive area located within 15 km radius of the proposed mine. The main drainage is controlled by Phulakdi and Gurma Nalas which are draining into Hasdeo River. The Phulakdi Nala is flowing from North-East to South-West direction along the South Eastern boundary of coal the block. The Highest Flood Level (HFL) is 314.00 m. The water requirement of the proposed coal project is estimated to be 180 m³/day. The industrial requirement is estimated to be 130 KLPD which will be met from mine water pumping. While the Drinking water requirement 50m³/day shall be met from boreholes proposed within ML area. Necessary permissions from competent authorities shall be obtained. The water requirement will be met from the mine pumped water. Total manpower required to achieve 2000 TPD works out to 957 out of which 796 manpower will be deployed underground and 161 manpower will be deployed on surface. CSR activities will be taken and provision for Rs 5/tonne of coal produced will be made. CSR details shall be provided as per the need based survey. Cost of project is Rs. 150 Crores. Life of mine is 34 years.

2. The committee after detailed deliberation recommended project for TOR:

- i. The Subsidence study should be carried out.
- ii. Prevention of fire in the pillar of coal which would be left unextracted.
- iii. There would be no change in external surface drainage area.
- iv. Measures to be taken to recharge the ground water.
- v. Transportation of coal by mechanically covered truck.
- vi. Avenue plantation should be provided at the coal transportation route.
- vii. Examine the option for Korba Railway siding for coal transportation as coal goes to Raipur upto 200km by roads which generate dust pollution.

12. Pit head captive wet washery(1.8 MTPA in an area of 21ha) located in GarePelma IV/8 Coal Mine of M/s Jayeswal Neco Ltd., Tehsil Garghora dist. Raigarh, Chhattisgarh - (EC based on TOR granted on 08.04.2010).

12.1 The proponent made the presentation and informed that:

- i. The proposal is for establishment of a captive coal washery of 1.8 million tonnes per annum (MTPA) capacity of raw coal by wet process and in a total area of 21 ha which also has the linked Steel Plant at Siltara, Raipur (operational). The proponent made a presentation. It was informed that the proposal is for establishment of a new (proposed) commercial coal washery (wet process) in a land of 10.25 acres near village Khamaria, district Raigarh, Chhattisgarh. M/s Jayeswal Neco Industries Limited, to whom a coal block has been allotted.
- ii. The 1.8 MTPA Coal Washery on 10.336 ha land inside ML area of Gare-Pelma Captive Coal Block IV/8 Captive coal mines of JNIL IV/4 Coal Block M/s Jayeswal Neco Industries Limited.
- iii. The mining capacity of IV/8 block is 1.2 MTPA. The mining capacity of IV/4 block is 0.48 MTPA, expansion to 1.0 MTPA.
- iv. Total ROM coal available with JNIL is 2.2 MTPA. 5500 T/Day ROM with 40 -45 % Ash will be washed. Washed coal 1650 T/Day with 28 to 30% Ash and S < 0.5% .1650 TPD washed

- coal taken to Steel Plant at Siltara, Raipur (operational). Middling + Fines 3850 TPD with 45 - 48% Ash, S 6 0.5% taken to 600 MW TPP at Hamirpur, Raigarh and coal linkage awaited.
- v. It is a closed circuit washery with no discharge. Water Requirement is 240 kl/day .Source of Water accumulated in mine pits will be used for coal washing. Wastewater shall be treated and reused for coal washing.
 - vi. **Forestry and wild life issues:** There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 15 km buffer zone.
 - vii. Fresh water make to washing circuit 215m³/day (100% re-circulated). Dust Suppression & Gardening 20 m³/day, Domestic uses is 5 m³/day. The wastewater from the coal washing process will be treated and 100% recycled for coal washing. The domestic wastewater will be treated in septic tanks and disposed in soak pits. Garland drains with sedimentation pond will be provided to desilt the storm water before flowing into stream. Spent oil and lubricants will be collected in drums and sold to CECB / CPCB authorized re-processors. No wastewater will be discharged into natural streams.
 - viii. The coal transportation will be by road. JNIL developed dedicated road from Gare IV/4 (Banjikhoh) to Milupara (2 km). JNIL developed 2.2 km dedicated road from Gare IV/4 (Bankheta) to Dongamouha ¹ JNIL along with Monnet developed dedicated road from Millupara to Hukradipa passing through Gare IV/8 (8.8 km). Thereafter BOOT road is used till Raigarh (approx. 50 km). Coal movement done by 35 T dumpers. Trained drivers used. Greenbelt shall be developed all around the plant boundary. 33% of the land area shall be developed as greenbelt (3.4 ha). The capital cost investment for the environment management has been estimated approximately 150 lakhs. 10% of the capital cost has been earmarked as annual recurring expenses.
 - ix. **Public Hearing:** The public hearing for the proposed 1.8 MTPA Coal Washery was held on 8th June 2012. Issues raised were Road accidents during heavy vehicle movement, Employment of tribal girls / ladies of the affected area, Discharge of mine water in Kelo river and Sajara Nala , source of water for coal washery, area under PESA , no diversion of land for 10 years and no Gram Shabha has been conducted, elephant affected area, work proposed under CSR, Plantations,

12.2 The Committee after detailed deliberations recommended for the EC with the following specific conditions:

- i. As large numbers of existing and proposed neighboring mines and industries in the area, the Cumulative Impact Assessment study of entire coal mining area should be carried out by proponent.
- ii. The entire water of the area is acidic due to presence of Pyrites people use carbonate to increase alkanity. Proponent may take measures to reduce the acid in water. Recharging of groundwater is required.
- iii. Schedule-1 Fauna- Peacock, Sloth bear and Elephant reported in area. Proponent should contribute on proportionate basis in Wild Life Conservation Plan prepared by state Govt. for conservation of flora and fauna
- iv. Thick green belt of 50 mt should be provided all around the plant area with native species as watery is polluting the area.
- v. The coal washery plant and area should be completely covered.
- vi. One season (non-monsoon) primary base-line data on Environment quality (PM₁₀&PM_{2.5}) should be done.
- vii. All the internal roads within washery should be made of concrete

- viii. Electrical equipment should be dust proof and properly protected.
- ix. Transportation of 60km Bhupdeopur by road should be by mechanically covered trucks and later on upto Raipur by rail. As requested by proponent to allow road transportation of coal untill railway siding comes in the area, the Committee has suggested that a written commitment be submitted by the proponent in this regard.
- x. CSR 1% of the cost of project i.e. Rs. 44.50Crores for upliftment of surrounding villages

ANNEXURE-1

PARTICIPANTS IN 63rd EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 17th -18th DECEMBER, 2012 ON COAL SECTOR PROJECTS.

1.	Shri V.P. Raja	í	í	í	í	í	Chairman
2.	Prof. C.R.Babu	í	í	í	í	í	Member
3.	Shri T.K. Dhar	í	í	í	í	í	Member
4.	Shri J. L. Mehta	í	í	í	í	í	Member
5.	Prof. Roonwal	í	í	í	í	í	Member
6.	Dr.Manoranjan Hota	í	í	í	í	í	Director MOEF & Member Secretary
7.	Dr. RubabJaffer	í	í	í	í	í	Scientist B, MOEF

Special Invitee

8.	RajivkumarGarg	í	í	í	í	í	Advisor (Environment & Forest) CIL
----	----------------	---	---	---	---	---	------------------------------------

Annexure-2

PARTICIPANTS IN 63rd EXPERT APPRAISAL COMMITTEE (THERMAL & COAL MINING) IN THE MEETING HELD ON 17th-18th DECEMBER 2012 ON COAL SECTOR PROJECTS

1. M/s Mahanadi Coalfields Ltd.,

1. Shri D. Bhattacharya GM, MCL
2. Shri S. K. Bhar (Sr. Manager)
3. Shri A. K. Singh, Dir (P&P)
4. Shri B C Tripathi, GM (Env.), MCL
5. Shri A K Samantray, Chief Manger (Env.), CMPDI
6. Shri K S Ganapathy, Chief Manager, CMPDI
7. Shri S. J. Jervo, (Sr. Manager) Mining
8. P.M. Prasad (G.M. Hingula)
9. Shri A. Kumar (G.M. Ananta)
10. Shri S. Ray Chaudhary (G.M. OC)

2. M/sGoa Industrial Development Corp.

1. ShriFaizi O. Hashmi, MD, GIDC
2. Shri G Satyanarayana
3. ShriAsimTripathy
4. Shri N. K. Prasad, Consultant
5. Shri S. Puranik, Consultant

3. M/s Western Coalfields Ltd.,

1. Shri S.K Jagnamia, RD, CMPDI

2. Shri R. M. Wanare, General Manager (Env.)
3. ShriKaushikChakraborty, GM (Env.), WCL
4. Dr. Debabrata Das, Assistant Manager (Hydrogeologist)-CMPD

4. M/s Karnataka EMTA Mining Pvt. Ltd.

1. ShriNaryanPrasd
2. Shri A.K. Tooley
3. Shri S.C. Chatterjee
4. Shri A.R. Sharma
5. Shri T. Sannappa
6. Shri G. Purusotham
7. ShriNirmal Kr. Singh

5. M/s Deavnara Coalfields Pvt. Ltd.

1. ShriShantanuPuranik
2. Shri Ashok Jamkar
3. ShriGagan Pant
4. ShriPrashantLaharia
5. Shri Ajay Kr. Singh

6. M/s JaveswalNeco Industries Ltd

1. Shri R.K. Sikr
2. Shri S.K. Moitra
3. Shri S.K. Swain
4. Dr S.S. Garg, General Manager
5. ShriPankajSinha JNIL
6. ShriAlokRajan

ANNEXURE-3

GENERIC TOR FOR COAL WASHERY

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

- (i) A brief description of the plant, the technology used, the source of coal, the mode of transport of incoming unwashed coal and the outgoing washed coal. Specific pollution control and mitigative measures for the entire process.
- (ii) The EIA-EMP report should cover the impacts and management plan for the project of the capacity for EC is sought and the impacts of specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. If the washery is captive to a coal mine/TPP/Plant the cumulative impacts on the environment and usage of water should be brought out along with the EMP.
- (iii) A Study area map of the core zone and 10km area of the buffer showing major industries/mines and other polluting sources, which shall also indicate the migratory corridors of fauna, if any and the areas where endangered fauna and plants of medicinal and economic importance are found in the area. If there are any ecologically sensitive areas found within the 15km buffer zone, the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc should be shown and the comments of the Chief Wildlife Warden of the State Government should be furnished.
- (iv) Collection of one-season (non-monsoon) primary base-line data on environmental quality ?air (PM₁₀, PM_{2.5}, SO_x and NO_x), noise, water (surface and groundwater), soil.
- (iv) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations vis-à-vis washery should be given separately. Source of water for use in mine, sanction of the competent authority in the State Govt..and examine if the unit can be zero discharge including recycling and reuse of the wastewater for other uses such as green belt, etc.

- (vi) Impact of choice of the selected use of technology and impact on air quality and waste generation (emissions and effluents).
- (vii) Impacts of mineral transportation - the entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place.
- (viii) Details of various facilities to be provided for the personnel involved in mineral transportation in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Examine whether existing roads are adequate to take care of the additional load of mineral [and rejects] transportation, their impacts. Details of workshop, if any, and treatment of workshop effluents.
- (ix) Impacts of CHP, if any on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.
- (x) Details of green belt development.
- (xi) Including cost of EMP (capital and recurring) in the project cost.
- (xiv) Public Hearing details of the coal washery to include details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xv) Status of any litigations/ court cases filed/pending on the project.
- (xvi) Submission of sample test analysis of:
 - I Characteristics of coal to be washed- this includes grade of coal and other characteristics ?ash, S and and heavy metals including levels of Hg, As, Pb, Cr etc.
 - II Characteristics and quantum of washed coal.
 - III Characteristics and quantum of coal waste rejects.
- (xvii) Management/disposal/Use of coal waste rejects
- (xviii) Copies of MOU/Agreement with linkages (for stand alonewashery) for the capacity for which EC has been sought.
- (xxxvi) Submission of sample test analysis of:
 - Characteristics of coal to be washed- this includes grade of coal and other characteristics ?ash, S

Washery Details	Washery- (MTPA)	Expn. of Washery (.. MTPA to .. MTPA		TOTAL (MTPA)	Ash content (%)	Obtained from/End User
Raw Coal (ROM)						
Washed Coal						
Middling + Coal Fines						
Coal Rejects						

(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.

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT

- (i) An EIA-EMP Report would be prepared for ??.. **MTPA** rated capacity in an ML/project area of ??ha based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for ??. **MTPA** rated capacity cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modelling for ??? **MTPA** of coal production based on approval of project/Mining Plan for ???**MTPA**. Baseline data collection can be for any season except monsoon.
- (iii) A map specifying locations of the State, District and Project location.
- (iv) A Study area map of the core zone and 10km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km area of the buffer zone should be given.
- (v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (vii) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.
- (viii) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., approach roads, major haul roads, etc.
- (ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.
- (x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.
- (xi) Break up of lease/project area as per different land uses and their stage of acquisition.

LANDUSE DETAILS FOR OPENCAST PROJECT

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

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

- (xii) Break-up of lease/project area as per mining operations.
- (xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.
- (xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (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.
- (xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be provided based on desirable limits.
- (xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I fauna, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a comprehensive Conservation Plan should be prepared and submitted with EIA-EMP Report and comments from the CWLW of the State Govt. also obtained and furnished.
- (xvii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures.
- (xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.
- (xix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xx) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.
- (xxi) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.
- (xxii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term modelling studies on. 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.
- (xxiii) Impact of blasting, noise and vibrations.
- (xxiv) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.
- (xxv) Impacts of mineral transportation within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral

and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.

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

Project	Total waste generation (Mm3)	Topsoil (Mm3)	Total OB generation (Mm3)	Total OB in Ext. Dump	Total OB Backfilled (Mm3)
Original Project (ha)					
Expansion Project (ha) (balance life)					
TOTAL (Mm3)					

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

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

S.N.	Land use Category	Present (1 st Year)	5 th Year	10 th Year	20 th year	24 th Year (end of Mine life)*
1.	Backfilled Area (Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with					

	plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL	110*	110*	110*	110*	110*

* As a representative example

Table 2: Stage-wise Cumulative Plantation

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

7.	25 th year										
8.	30 th year										
9.	34 th year (end of mine life)										
10.	34-37 th Year (Post- mining)								85		

* As a representative example

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

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

S.N.	Land use during Mining	Land Use (ha)				
		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	85				110

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

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

- (xxxix) Risk Assessment and Disaster Preparedness and Management Plan.
- (xxxii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.
- (xxxiii) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.
- (xxxiv) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.
- (xxxv) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.
- (xxxvi) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xxxvii) In built mechanism of self-monitoring of compliance of environmental regulations.
- (xxxviii) Status of any litigations/ court cases filed/pending on the project.

(xxxix) Submission of sample test analysis of:

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

(xxxx) Copy of clearances/approvals ? such as Forestry clearances, Mining Plan Approval,

NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

(A) FORESTRY CLEARANCE

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

(B) MINING PLAN/PROJECT APPROVAL

Date of Approval of Mining Plan/Project Approval:

Copy of Letter of Approval of Mining Plan/Project Approval

(xxxxi) 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.

—

GENERIC TOR FOR AN UNDERGROUND COALMINE PROJECT

- (i) An EIA-EMP Report should be prepared for a peak capacity of **????.. MTPA** over an area of **????.. ha** addressing the impacts of the underground coalmine project including the aspects of mineral transportation and issues of impacts on hydrogeology, plan for conservation of flora/fauna and afforestation/plantation programme based on the generic structure specified in Appendix III of the EIA Notification 2006.. Baseline data collection can be for any season except monsoon.
- (ii) The EIA-EMP report should also cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of baseline data and information, generation of baseline data on impacts for ?? MTPA of coal production based on approval of project/Mining Plan.
- (iii) A Study area map of the core zone and 10km area of the buffer zone (15 km of the buffer zone in case of ecologically sensitive areas) delineating the major topographical features such as the land use, drainage, locations of habitats, major construction including railways, roads, pipelines, major industries/mines and other polluting sources, which shall also indicate the migratory corridors of fauna, if any and the areas where endangered fauna and plants of medicinal and economic importance are found in the area.
- (iv) Map showing the core zone along with 3-5 km of the buffer zone) delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records) and grazing land and wasteland and water bodies.
- (v) Contour map at 3m interval along with Site plan of the mine (lease/project area with about 3-5 km of the buffer zone) showing the various surface structures such as buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within/adjacent to the ML), green belt and undisturbed area and if any existing roads, drains/natural water bodies are to be left undisturbed along with details of natural drainage adjoining the lease/project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., highways, passing through the lease/project area.
- (vi) Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area. Impacts of project, if any on the landuse, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations. Extent of area under surface rights and under mining rights.

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

Area Under Surface Rights

S.N.	Details	Area (ha)	Forestland	Agr. land	Wasteland	Settlements	Others (ha)

			(ha)	(ha)	(ha)	(ha)	
1.	Buildings						
2.	Infrastructure						
3.	Roads						
4.	Others (specify)						
	TOTAL						

- (vii) Study on the existing flora and fauna in the study area carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. The flora and fauna details should be furnished separately for the core zone and buffer zone. The report and the list should be authenticated by the concerned institution carrying out the study and the names of the species scientific and common names) along with the classification under the Wild Life Protection Act, 1972 should be furnished.
- (viii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working plan/scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps should also be included.
- (ix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (x) Collection of one-season (non-monsoon) primary baseline data on environmental quality ? air (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.
- (xi) Map of the study area (core and buffer zone) clearly delineating the location of various monitoring stations (air/water/soil and noise ? each shown separately) superimposed with location of habitats, wind roses, other industries/mines, polluting sources. The number and location of the stations should be selected on the basis of the proposed impacts in the downwind/downstream/groundwater regime. One station should be in the upwind/upstream/non-impact non-polluting area as a control station. Wind roses to determine air pollutant dispersion and impacts thereof shall be determined. Monitoring should be as per CPCB guidelines and standards for air, water, noise notified under Environment Protection Rules. Parameters for water testing for both ground and surface water should be as per ISI standards and CPCB classification of surface water wherever applicable.
- (xii) Impact of mining and water abstraction and mine water discharge in mine on the hydrogeology and groundwater regime within the core zone and 10km buffer zone including long-term modelling studies on the impact of mining on the groundwater regime. Details of rainwater harvesting and measures for recharge of groundwater should be reflected wherever the areas are declared dark/grey from groundwater development.
- (xiii) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.
- (xiv) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
- (xv) Impact of choice of mining method, technology, selected use of machinery - and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations.

- (xvi) Impacts of mineral transportation ?within and outside the lease/project. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place. Examine the adequacy of roads existing in the area and if new roads are proposed, the impact of their construction and use particularly if forestland is used.
- (xvii) Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Examine whether existing roads are adequate to take care of the additional load of mineral and their impacts.
- (xviii) Examine the number and efficiency of mobile/static water sprinkling system along the main mineral transportation road within the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality.
- (xix) Impacts of CHP, if any on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.
- (xx) Conceptual Final Mine Closure Plan along with the fund requirement for the detailed activities proposed there under. Impacts of change in land use for mining operations and whether the land can be restored for agricultural use post mining.

Table 1 Stage-wise Cumulative Plantation

S.N.	YEAR*	Green Belt		External Dump		Backfilled Area		Others (Undisturbed Area/etc)		TOTAL	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	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-									85*	2,12,500

	mining)										
--	---------	--	--	--	--	--	--	--	--	--	--

*As a representative example

- (xxi) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be furnished.
 - (xxii) Details of cost of EMP (capital and recurring) in the project cost and for final mine closure plan. The specific costs (capital and recurring) of each pollution control/mitigative measures proposed in the project until end of mine life and a statement that this is included in the project cost.
 - (xxiii) Integrating in the Env. Management Plan with measures for minimising use of natural resources ?water, land, energy, raw materials/mineral, etc.
 - (xxiv) R&R: Detailed project specific R&R Plan with data on the existing socio-economic status (including tribals, SC/ST) of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.
 - (xxv) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.
 - (xxvi) Public Hearing should cover the details as specified in the EIA Notification 2006, and include notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments by the proponent made should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
 - (xxvii) Status of any litigations/ court cases filed/pending in any Court/Tribunal on the project should be furnished.
 - (xxviii) Submission of sample test analysis of:
 - (xxix) Characteristics of coal - this includes grade of coal and other characteristics ? ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxx)Copy of clearances/approvals ?such as Forestry clearances, Mining Plan Approval, NOC from Flood and Irrigation Dept. (if req.), etc.

(A) FORESTRY CLEARANCE

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland	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 TOR FOR AN OPENCAST-CUM-UNDERGROUND COALMINE PROJECT

- (i) An EIA-EMP Report would be prepared for a combined rated capacity of??..MTPA for OC-cum-UG project which consists of ?? MTPA for OC and ??? MTPA for UG in an ML/project area of ??ha based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for ?? MTPA rated capacity cover the impacts and management plan for the project specific activities on the environment of the region, and the environmental quality ?air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modelling for ??? MTPA of coal production based on approval of project/Mining Plan for ??.. MTPA. Baseline data collection can be for any season except monsoon.
- (iii) A map specifying locations of the State, District and Project location.
- (iv) A Study area map of the core zone and 10km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage of rivers/streams/nalas/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km area of the buffer zone should be given.
- (v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note of the land use. Satellite imagery per se is not required.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and unirrigated, uncultivable land (as defined in the revenue records), forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (vii) A contour map showing the area drainage of the core zone and 2-5 km of the buffer zone (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated as a separate map.
- (viii) A detailed Site plan of the mine showing the various proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area and if any, in topography such as existing roads, drains/natural water bodies are to be left undisturbed along with any natural drainage adjoining the lease /project and modification of thereof in terms of construction of embankments/bunds, proposed diversion/rechannelling of the water courses, etc., approach roads, major haul roads, etc.
- (ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.
- (x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.
- (xi) Break up of lease/project area as per different land uses and their stage of acquisition.

LANDUSE DETAILS FOR OPENCAST PROJECT

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

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

LANDUSE DETAILS FOR UNDERGROUND PROJECT

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

Area Under Surface Rights

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

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

- (xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.
- (xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (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.
- (xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be presented in comparison to desirable limits.
- (xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the project falls within 15 km of an ecologically sensitive area, then a comprehensive Conservation Plan should be prepared and furnished along with comments from the CWLW of the State Govt.
- (xvii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and final mine closure plan should also be shown in figures.
- (xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.
- (xix) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.
- (xx) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xxi) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.
- (xxii) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.
- (xxiii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term modelling studies on. 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.
- (xxiv) Impact of blasting, noise and vibrations.
- (xxv) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.
- (xxvi) Impacts of mineral transportation within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.
- (xxvii) Details of waste generation OB, topsoil as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OB dump heights and terracing should be based on slope stability studies with a max of 28° angle as the ultimate slope. Sections of dumps (ultimate) (both longitudinal and cross section) with relation to the adjacent area should be shown.
- (xxviii) Impact and management of wastes and issues of rehandling and backfilling and progressive mine closure and reclamation.

- (xxix) Flow chart of water balance. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. Details of STP in colony and ETP in mine. Recycling of water to the max. possible extent.
- (xxx) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine.
- (xxxi) Risk Assessment and Disaster Preparedness and Management Plan.
- (xxxii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.
- (xxxiii) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF given below) and selection of species (local) for the afforestation/plantation programme based on original survey/landuse.

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

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

* Representative case as an example

Table 2: Stage-wise Cumulative Plantation

S.N.	YEAR*	Green Belt		External Dump		Backfilled Area		Others (Undisturbed Area/etc)		TOTAL	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	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)									85	

* Representative case as an example

- (xxxiv) Conservation Plan for the endangered/endemic flora and fauna found in the study area and for safety of animals visiting/residing in the study area and also those using the study area as a migratory corridor.
- (xxxv) Conceptual Final Mine Closure Plan, post mining land use and restoration of land/habitat to pre-mining. A Plan for the ecological restoration of the area post mining and for land use should be prepared with detailed cost provisions.

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

S.N.	Land use during Mining	Land Use (ha)				
		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	85				110

- (xxxvi) Including cost of EMP (capital and recurring) in the project cost and for progressive and final mine closure plan.
- (xxxvii) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.
- (xxxviii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project.
- (xxxix) Public Hearing should cover the details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made by the proponent should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xxxx) In built mechanism of self-monitoring of compliance of environmental regulations.
- (xxxxi) Status of any litigations/ court cases filed/pending on the project.
- (xxxxii) Submission of sample test analysis of:
- Characteristics of coal - this includes grade of coal and other characteristics ?ash, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxxxiii) Copy of clearances/approvals ? such as Forestry clearances, Mining Plan Approval,
- NOC from Flood and Irrigation Dept. (if req.), etc.

(A) FORESTRY CLEARANCE

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

(B) MINING PLAN /PROJECT APPROVAL

Date of Approval of Mining Plan/Project Approval:

Copy of Letter of Approval of Mining Plan/Project Approval

(xxxi) 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.

—

GENERAL CONDITIONS AND ADDITIONAL POINTS OF TOR**The following general points should be noted:**

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

The following additional points are also to be noted:

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