

**MINUTES OF THE 9TH EAC (THERMAL & COAL MINING PROJECTS)
MEETING HELD ON 20TH – 21ST JANUARY, 2014 IN NEW DELHI.**

The 9th EAC (Thermal & Coal mining projects) Meeting Scheduled for 20th – 21st January, 2014 in New Delhi to consider the proposals in coal mining sector. The list of participants of EAC and the proponents are given at Annexure-1 and 2 respectively.

B. Confirmation of Minutes: The Committee confirmed the minutes of the 7th EAC meeting held on 12-13th December, 2013 with the following amendments: .

Gevra OCP project

The title “ Gevra OCP project [Expansion from 35 MTPA (normative) to 37.00 MTPA (peak) in ML area of 4058.146 ha] of M/s South Eastern Coalfields Limited, dist. Korba, Chhattisgarh - EC under 7(ii) of EIA Notification 2006” be corrected accordingly wherever applicable.

C. The following proposals were considered:

9.1 Piparwar Opencast expansion project of (Normative capacity 10 MTPA to 12.50 MTPA and Peak capacity 11.5 MTPA to 14.5 MTPA in an ML area 1120.25 ha) of M/s Central Coalfield Ltd., Dist. Chatra, Jharkhand - EC under 7(ii) of EIA Notification 2006. - Further Consideration

9.1.1 The proposal is of environmental clearance for expansion, under 7(ii) of EIA Notification 2006, of Piparwar Opencast project of M/s Central Coalfield Ltd., Dist. Chatra, Jharkhand from 10 MTPA to 12.50 MTPA (normative) and 11.5 MTPA to 14.5 MTPA (peak) in an ML area 1120.25 ha.

9.1.2 The proposal was considered in the 75th EAC held on 3rd - 4th June, 2013 and 5th EAC held on 25-26 November, 2013. The Committee after deliberation sought the following information for further consideration:

- i. The time frame and an action plan by which the Railway Siding is to be completed
- ii. Number of vehicles that have no Pollution Under Control Certificate (PUC).
- iii. Piezometers are yet to be installed and water quality was not monitored. Action Taken in this regard be submitted.
- iv. An action plan with regard to the observations/findings of the compliance report from the Regional Office of the MoEF be submitted.

9.1.3 The Committee deliberated on the Report of the RO MOEF visa-vis the commitments made by the Proponent which are as follows. The proponent has further informed that:

- i. All vehicles have valid PUC certificate.
- ii. Two Railway Siding shall be completed by June, 2014 at an estimated cost of Rs 15.0 Lakh.
- iii. All sets (4 nos.) of piezometers will be installed by 15th Feb. 2014.
- iv. All the vehicles have valid PUC certificate. Vehicles engaged in coal transportation also have valid PUC certificate. One Engineer has been authorized to check the road-worthiness & mandatory requirements for each of the trucks deployed.
- v. 36 dug wells are routinely monitored by CMPDI in pre & post monsoon seasons in the surrounding villages. The monitoring records are maintained.

- vi. Areas have been identified for plantation. Pits for plantation will be dug by 28th Feb. 2014. 300 nos. of fruit bearing species (mango, jackfruit, guava etc.) will be planted during July, 2014. The estimated cost shall be Rs. 0.25 Lakh
- vii. The OB dump along the conveyor system is about 1.0 km in length. Formation of benches with proper sloping (at 28°) has been completed for 125 m. Benches with proper sloping for remaining length (875 m) will be completed by March, 2014 and plantation will be done during monsoon season.
- viii. 9.6 km long concrete coal transportation road completed. Concretization of remaining 4.2 km long coal transportation road will be completed by June 2014. Estimated cost: Rs. 18.90 Crore.
- ix. Efforts have been made for ground water recharge by construction of ponds. 22 nos. of ponds constructed in villages Behera, Billari, Kisto, Karo, Kalyanpur, Rajdhan, Bijan, Benti. Construction of check dams have been made at Benti nallah – 3 nos; Mangardaha nallah – 1 no. Additional construction of 2 check-dams on Kalyanpur Nallah, one check-dam each on Benti & Mangardaha nallah will be done by March 2014.
- x. Application for Consent to operate submitted on 04-04-2013 for the period 01-04-2013 to 31-03-2014.
- xi. Higher PM10 values in dry months are due to fugitive emissions from mining operations like coal transportation. Necessary measures have been taken that include: entire coal transportation road is being concretized.
- xii. In order to avoid coal transportation by road, the Railway Siding Project is being monitored on priority basis so that it is completed by June, 2014. Introduction of Rail transportation of coal will drastically reduce PM10 concentration.
- xiii. CMPDIL has procured PM_{2.5} samplers and monitoring of PM_{2.5} will start from April, 2014.
- xiv. Overloading of trucks has been stopped completely.
- xv. Separate executives have been posted at Project and Area level exclusively as Environment Officers.

9.1.4 The Committee deliberated on the submissions of the Proponent, report submitted by the Regional Office as well as the compliance report presented by the proponent. The proponent also mentioned that they have submitted the revised compliance report to the RO, MoEF for vetting. The RO, MoEF has submitted the revised compliance report. Keeping in view the submissions made by the Proponent, the **Committee has recommended the project for granting environment clearance with following specific conditions:**

- i. Two Railway Sidings shall be completed by June, 2014. No coal transportation by road shall be permitted thereafter.
- ii. All piezometers shall be installed by 15th Feb. 2014 and report sent to Central Ground Water Board and the RO, MOEF.
- iii. All vehicles shall have valid Pollution Under Control Certificates.
- iv. Benches with proper sloping for remaining length (875 m) will be completed by March, 2014. A progressive action plan on these issues be submitted to the RO, MOEF by August 2014.
- v. 9.6 km long concrete coal transportation road shall be completed within four months. Progressive action on these issues be submitted to the RO, MOEF by December, 2014 along with expenditure and photographic evidence.
- vi. Check-dams on Benti & Mangardaha nallah shall be constructed by March 2014.
- vii. Monitoring of PM_{2.5} shall start from April, 2014 and report submitted to the SPCB and

- RO, MOEF.
- viii. The proponent should appoint environment engineers/ecologist for monitoring environment issues.
 - ix. Plantation shall be completed by July, 2014. A status report in this regard be submitted to the RO, MOEF by August, 2014.
 - x. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.

9.2 Bhubaneswari Opencast Expansion project of (20 MTPA to 25 MTPA in ML area 658.724 ha) M/s Mahanadi Coalfields Ltd. Village Hensmul, Dist. Anugul, Orissa - EC under 7(ii) of EIA Notification 2006 - Further Consideration

9.2.1 The proposal is of Bhubaneswari Opencast project (expansion in production capacity from 20 MTPA to 25 MTPA in ML area 658.724 ha) of M/s Mahanadi Coalfields Ltd. Village Hensmul, Dist. Anugul, Orissa - EC under 7(ii) of EIA Notification 2006.

9.2.2 The proposal was considered in the 2nd EAC held on 3-4th October, 2013. The Committee after deliberations has observed that the proponent has not complied with the earlier conditions in the EC which include the following:

- i. Source apportionment study as stipulated in the EC has not yet been initiated.
- ii. Compliance status of Phase-2 FC is to be submitted.
- iii. The transportation of coal from the mine to washery and from washery to silo was to be done through conveyor belt. It was noted that no construction in this regard has been initiated. Orders for washery are yet to be placed. The Committee desired that action in this regard be taken urgently and be completed within 18 months. This was agreed to by the Proponent.
- iv. Compliance of the final production capacity be submitted.
- v. Compliance of plantation in and around the ML area as stipulated in the EC be submitted.
- vi. Details of the washery and tippers be submitted.
- vii. Action plan and the commitment for change of the conveyor belt be submitted.
- viii. Proponent was advised to submit a comprehensive compliance of the conditions in the EC granted and submit report duly certified by the RO, MoEF, Bhubaneswar for further consideration.

9.2.3 The Committee has deliberated on the Report of the RO MOEF visa-vis the commitments made by the proponent which are as follows.

- i. The Source Apportionment Study for which the works order has been placed to ARAI, Pune. The Report will be submitted within 4 months i.e., 27/03/2014.
- ii. Tender for construction of Washery-Conveyor-Silo is under process and award of work and completion of construction will take at least 3 years' time. Completion of the above work is not possible within 18 months and if at all any short-cut arrangement is made, the expenditure will become infructuous after setting up the main infrastructure. It is committed to implement the Action Plan by 01/01/2017. Land has been acquired and fencing is under construction, NIT ready and to be floated.
- iii. Planning, Design & Engineering, erection/ installation along with all associated civil and structural works, testing, successful commissioning of coal washing plant including PGT with two years critical spares, operation and maintenance for supply of washed coal of requisite quality at the designated delivery places and disposal of

- washery rejects on BOM is ready. There will not be any tipper for feeding of coal to washery. Coal will come through belt conveyor from the receiving pit.
- iv. EC has been granted for 20 MTPA in Nov.2012 and production achieved during 2013-13 was 17.93 MT. This year 20 MT will be achieved and there is further scope for additional production from this mine and therefore EC has been sought for 25 MTPA..
 - v. The additional 5 MTPA of coal production in Bhubaneswari OCP will be transported to the power plant consumers only through Rail Mode.
 - vi. The proposed additional 5 MTPA of coal production in Bhubaneswari OCP will be transported to the power plant consumers only through Rail Mode.
 - vii. MCL will establish conveyor system from mine to siding, without considering the intermediate washery arrangement, within 24 months' time, and thus our earlier commitment in this regard stands revised.
 - viii. MCL will ensure that only native species are planted by the Forest Department in the plantation programme of this project.

9.2.4 The Committee after detailed deliberations has recommended the project for granting Environment Clearance with the following specific conditions;

- i. The report of ARAI, Pune on Source Apportionment Study be submitted to the concerned State Pollution Control Board and the Regional office of the MoEF submitted within 4 months i.e., 27/03/2014.
- ii. There will not be any tippers for feeding of coal to washery. , Coal will come through belt conveyor from the receiving pit
- iii. Transportation of coal to consumers only through rail Mode.
- iv. The conveyor system from Mine to Siding, without considering the intermediate washery arrangement, shall be established within 24 months i.e. by January, 2016. This is already highly delayed.
- v. Only native species to be planted by the Forest Department in the plantation programme of this project.
- vi. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.

9.3 Expansion of Lakhanpur OCP (expansion from 15 MTPA to 18.75 MTPA in the existing ML area of 2697 ha) of M/s Mahanadi Coalfields Ltd, Jharsuguda, Orissa - EC under 7(ii) of EIA Notification 2006 - Further Consideration

9.3.1 The proposal is of expansion (under 7(ii) of EIA Notification 2006) of Lakhanpur OCP of M/s Mahanadi Coalfields Ltd, Jharsuguda, Orissa for environment clearance from 15 MTPA to 18.75 MTPA in the existing ML area of 2697 ha.

9.3.2 The proposal was considered in the 63rd EAC meeting held on 17th -18th December, 2012 and 5th EAC held on 25-26 November, 2013. The Committee after deliberation sought following information for further consideration:

- i. Compliance was unsatisfactory which suggests that the MCL is indifferent towards the EC conditions stipulated in the EC. EAC recommends that MoEF may bring this to the notice of the CMD, MCL and Coal India Ltd.
- ii. The Committee noted that the Proponent has not taken adequate steps for controlling pollution and was advised to implement the conditions stipulated in the EC with letter and spirit.
- iii. The Compliance report of the RO, MoEF mentioned that Certifying Officer has recommended that until an independent Environment Officer is appointed with

- adequate powers, it may not be possible to comply with the stipulated conditions.
- iv. Management of OBD is totally unscientific and need to be reworked.
- v. The Committee has noted that the proponent has exceeded the production in 2007-2008. This construes a violation case and need to be dealt by the Ministry as per the existing OMs. The proponent was advised to stick to the capacity of production as stipulated in the EC.
- vi. The Committee will make a visit to the MCL mines to appraise itself the ground realities.
- vii. Wagon loading through silo shall be completed within 2 years.

9.3.3 M/s MCL submitted that it is committed to the production of coal vis-à-vis the protection of environment and also to the compliance of the Conditions as stipulated in the EC. M/s MCL has further submitted that it will take environmental issues seriously. The proponent has further stated that:

- i. The breach in the Bund has already been in June-2013 and now no water is going directly to the Lilari Nullah.
- ii. Back filled area of 162 ha will be planted after extraction of bottom coal seam. Gap Plantation will be taken up in next monsoon to enhance survival rate. Presently almost all the area within the safety zone is under plantation.
- iii. Presently, all the dip-side workings are active. Once all the coal is extracted the faces will be stabilized with internal backfilling and thereafter it will be biologically reclaimed.
- iv. The ground water level and quality is being monitored regularly. Action has been initiated for installation of new peizometers, Monitoring will start by Nov.2014.
- v. Reviving of the existing ground water tank and pump house for recycling and reuse of treated water from the ETP will be completed by May-14.
- vi. There are two ETPs of 240 M³/day existing as of now. Another ETP of 240 M³/day capacity is under construction for additional effluent of 200 M³/day for the 5 Mty incremental production and shall be commissioned by Feb.-14.
- vii. Final mine closure plan has been approved by MCL Board. Mine closure cost as per the mine closure plan is Rs.168.35 Cr (Feb 2011 cost base). An escrow account for this purpose has been opened in Union Bank of India and Rs.2527.36 Lakh has been deposited in the account till date.
- viii. Dumping and haul road in Quarry 3 & 4 had mainly contributed in higher RPM. Presently no dumping is being done there and the haul road is also diverted.
- ix. The coal transportation by road which earlier passed through Jurabaga village, has now been bye-passed to join NH-49 directly. The recent data of Nov 2013 of the Village is (RPM in µg/m³): Ubuda (92) & Tingismal (86).
- x. All the field workers have been issued PPE and are wearing them. Sensitization programmes are being done regularly regarding the use of PPEs.
- xi. In addition, General Manager (Operation)/ Addl. GM has been posted at Area level with adequate executive and financial powers. Environment Functionaries are now reporting directly to him.
- xii. As the UTLS system has become very old and is semi- automatic and there is no further scope of change in the system and the New Silo with latest technology has

- already been programmed for this project. Additional coal dispatch through the existing UTLS is neither feasible nor required.
- xiii. Presently 2.7 MTPA is dispatched through MGR and this can be increased to 5 MTPA so as to meet the requirement of OPGC, if required. Thus the entire additional 3.75 MTPA proposed coal production will be transported through MGR/New Railway Siding (Rail Mode only).
 - xiv. The transportation lead has already been reduced from 14 km to 3 km, resulting in reduction of dust generation. The new coal transportation road passing through the two mines of Lakhanpur and Belpahar OCP is completely temporary, over the coal bearing area having multiple seams and over the undulating and frequently undulated terrain. Despite of this a feasibility survey will be carried out and if it is technically feasible, conveyor system shall be introduced so as also to reduce the problem.
 - xv. Top soil will be utilised concurrently, wherever feasible. Further if concurrent utilization of the generated top soil is not possible, the top soil dump would be preserved by plantation of grass seeds and leguminous species and the utilization from the top soil dump is as fast as possible and the area of top soil dumping is kept as minimum as practicable.
 - xvi. Regular monitoring of water from the clear water tank shall be started from next month i.e. February, 2014
 - xvii. Re-use of the water from clear water tank with its quality shall be checked periodically from February, 2014.
 - xviii. The project has exceeded the production in the FY: 2007-08 by an amount of 0.332 Mt. (i.e. the project has produced 10.332 Mt as against and EC of 10.0 Mt.). The EC was for 10.0 MTY granted vide letter no.J-11015/44/96 –IA.II (M) dt: 24.10.1996. This excess production of 0.332 Mt. during the FY: 2007-08 was prior to the OM no. J-11013/41/2006-IA.II(I) dt: 16.10.2010 & subsequent OM no. J-11013/41/2006-IA.II(I) dt: 12.12.2012 which deals with proposals involving violation of EIA Notification, 2006. It is therefore, this may not be construed as violation. However, in line with the spirit of the above mentioned Oms, we are submitting the Board's Resolution for no future violation of E(P) Act, 1986.

9.3.4 The Committee deliberated on the submissions of the Proponent, report submitted by the Regional Office as well as the compliance report presented by the proponent. The Committee was of the view that the revised compliance be vetted by the RO, MoEF. The Committee has asked the Member Secretary to take up the matter with the concerned RO, MoEF for vetting/comments of the compliance report submitted by the Proponent. The vetted compliance report be examined for any discrepancy and be circulated to the Members of the EAC. The sub-Committee of the EAC, however, will take a view after the site visit of the mines. The Committee has however stipulated the following specific conditions:

- i. The proponent may be granted from 15 to 18.75 MTPA, an increase of 25%, as per the OM dated 19.12.2012
- ii. Back filled area of 162 ha will be suitably planted after extraction of bottom coal seam
- iii. Action for installation of additional piezometers be initiated and the monitoring of ground water be started latest by November, 2014. Recycling and reuse of treated water from the ETP shall be completed by May, 2014.

- iv. New ETP of 240 M³/day capacity under construction for additional effluent of 200 M³/day for the 5 Mty incremental production shall be commissioned by Feb.2014.
- v. The incremental coal production shall be transported through MGR/New Railway Siding.
- vi. Feasibility survey will be carried out for the installation of conveyor belt. From mine to the rly. Siding where coal is presently transported by road. If it is technically feasible, conveyor system shall be introduced.
- vii. Regular monitoring of water from the clear water tank shall be started from next month i.e. February, 2014
- viii. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.
- ix. De-silted sludge shall be used for mine fill and not dumped elsewhere.
- x. Silo system should be cater to full mine production capacity
- xi. Extra Production be dispatched through mechanized loading only.
- xii. At the end of mining, there shall be no external OB dumps.
- xiii. The Proponent submitted that they have exceeded the production in 2007-08, which was much before the OM of the MOEF. EAC observed that MoEF may take appropriate action from the procedural point of view.

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

9.4.1 The proposal is of Begunia Underground Coalmine Project (0.33 MTPA in an ML area of 236 ha) of M/s SAIL, located at Dist. Bardhaman, West Bengal EC based on TOR granted on 19.05.2011

9.4.2 The proponent made the presentation and informed that:

- i. The project was accorded TOR vide letter no. J-11015/59/2011-IA.II (M) dated 19.05.2011.
- ii. The latitude and longitude of the project are 23⁰42'46" to 23⁰44'00" N and 86⁰48'48" to 86⁰50'20" E respectively.
- iii. There is no change in land use in Lease area.
- iv. The total geological reserve is 4.9526 MT. The mineable reserve 4.2400 MT, extractable reserve is 2.5439 MT. The per cent of extraction would be 36.59 %.
- v. The coal grade: Medium coking coal (Steel Grade, S-I & S-II to washery grade -II). The stripping ratio is not applicable. The average Gradient is 1 in 6 (smaller part) to 1 in 8/9 (major part). There will be seven coal seams. Out of seven coal seams, only one seam (Begunia seam) has been found workable with thickness ranging between 2.60 to 3.20m
- vi. The total estimated **water requirement** is 3700 m³/day. The Ground water level ranges from 4.28 to 8.55 m.
- vii. The **Method of mining** would be by Board & Pillar Method with SDL/LHD.
- viii. There are no OB Dumps as (Coal extraction will be done by Underground Mining Method).
- ix. The seasonal data for ambient air quality has been documented and all results

- at all stations are within prescribed limits.
- x. The **life of mine** is 14 Years.
 - xi. **Transportation:** Coal transportation in pit from underground to surface through conveyors, Surface to Siding Through covered trucks and loading at siding through covered trucks to the ISP by trucks by road.
 - xii. There is no R & R involved. There are no PAFs.
 - xiii. **Cost:** Total capital cost of the project is Rs. 99.46 Crores. Cost of production Rs. 1255/Tone. CSR Cost will be as per the company guideline (~2% of the profit). No R&R Cost. Environmental Management Cost Rs. 54.74 Lakh/Year (Rs. 2.53/Tonne).
 - xiv. **Approvals:** Ground water approval not applicable. Board's approval obtained on 12.12.2013. Mining plan/Mining closure plan approval from MOC not yet obtained.
 - xv. **Wildlife issues:** There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
 - xvi. **Forestry issues:** No forest land involved for mining.
 - xvii. **Total afforestation** plan shall be implemented covering an area of ---- ha at the end of mining. Green Belt over an area of 3.5 ha. Density of tree plantation 7500 trees/ ha of plants.
 - xviii. There is no court case/violation pending with the project proponent.
 - xix. **Public Hearing** was held on 26.02.2013 at Welfare Center, L.C. Road, Kulti, Burdwan, West Bengal. The issues raised in the PH include the Effects of pollution from the proposed project on the local residents and over all benefit of the project, compensation package, employment, arrangement of water supply construction of flyover and treatment of mine water etc. The proponent has made commitments to the issues raised during the PH.

The proponent has further submitted that:

- xx. The mining of quantity of coal has been reduced due to safety reason.
- xxi. The main incline mouth complex will be situated within the surface boundary of SAIL Growth Works, Kulti.
- xxii. No land is to be acquired for development of the main incline complex and related surface infrastructures
- xxiii. Sand stowing plant will be located on the company acquired land.
- xxiv. Land will have to be acquired only for development of connecting roads of sand stowing plant and other related infrastructures.
- xxv. Block is mostly covered with alluvium except at few places where Barren Measures are exposed.
- xxvi. Strike of the formation in block is NNW-SSE in the N & NW part of the block. In rest of the block the strike is more or less E - W.
- xxvii. General dip of the strata is towards south and is about 10⁰ in the N & NW part and 5⁰ in the rest of the block.
- xxviii. Barakar and Damodar Rivers forms main drainage of the area.
- xxix. A total of 7 coal horizons have been established in Mahatadih-Raidih Block, Out of this, only Begunia seam has been found workable. Begunia seam is a good quality medium coking coal
- xxx. Considering the geo-mining conditions & seam gradient, the block is feasible for exploitation by underground (UG) method.

- xxxi. Semi-mechanized Bord & Pillar method with SDL/LHD in conjunction with hydraulic sand stowing has been found to be the most suitable method.
- xxxii. Incline No. 2 will be fitted with conveyors for coal transport.
- xxxiii. Blasted coal from the face will be carried and loaded onto the pony belts by LHDs/SDLs in each of the three districts. Pony belts will deliver coal to a gate belt conveyor installed out-by of the district, which, in turn, will load coal to trunk conveyors for transportation to the surface.
- xxxiv. Coal from hopper shall be loaded into mechanically covered trucks and sent to the steel plants by road. Trucks of a minimum 25-T capacity will be used to minimize number of trips per day for coal transport.
- xxxv. Limiting the speed of vehicles to reduce dust generation and noise level. Regular sprinkling of water at all strategic dust generating points. Enclosing belt conveyors to prevent coal dust generation and emission. Regular wash of the wheels of the dumper and other transporting vehicles.
- xxxvi. Development of green belt and plantation of trees along the road side and open spaces to arrest airborne dust movement.
- xxxvii. Avoidance of overloading and regular maintenance of roads.
- xxxviii. Details of the land use are as follows:

CLASS	AREA (Ha)
Forest	458.94
Degraded	273.27
Plantation	294.84
Agricultural	24273.75
Land with Scrub	1054.81
Land without Scrub	72.08
Stony/Rocky area	118.45
Mining Activity	1115.96
River	3011.98
Reservoir/Pond	2468.96
Settlement	5009.72
Industries	118.11
Total Area	38,271

- xxxix. The Begunia block comprising core and buffer zone, no endangered flora and fauna species available. The area does not fall under any ecologically sensitive area and hence no conservation plan prepared. However, mixed flora consists of the following species: - Amaltas, Mahua, Gamhar, Bid, Semal, Bel, Dhatura, Salai, Kusum, Sisam, Palash, Pipal, Bar, Ber and Sirish etc are found in the area. The area is not very rich in floral and higher fauna.
- xl. The fragmented and poor vegetative cover, industrial activities and human settlement and agricultural activities restricts forest and natural vegetation, hence, faunal habitat are in patches around the periphery of Maithon reservoir.
- xli. Varieties of birds are observed, including aquatic species, especially in the winter season. Amongst birds the bulbul, the white-breasted kingfisher, magpie robin, spotted dove, mayna, pigeon, parakeet etc. are prominent.
- xlii. Prominent mammalian wild species include Bengal fox, civet cat, black napped hare; squirrel, jackals and porcupines.
- xliii. Amongst reptiles, several poisonous like cobra, viper, krait and non-poisonous snakes (like boa, rat snakes, green whip, Bronze backed tree snake etc.). The garden lizard and monitor lizard are also seen.

- xliv. Variety of butterflies (like common grass yellow/common jezebel) and insects (such as beetles, spiders, red ants, and flies) are spotted in abundance in the study zone.
- xlv. No rivers/nullas are shown on the surface contour map above the mining area and Barakar River flows at quite distance. There is no existence of any worked out seam above or below Begunia seam as the block is a virgin one. However, all the statutory precautions against inundation need to be followed.
- xlvi. Measures proposed to prevent possible inundation of the underground mine workings include
- xlvii. All entries to the mine shall not be less than 1.5m above the HFL; adequate pumping arrangement will be provided; self drainage of water from the panels to the main sump; all other precautions against danger of inundation due to surface and underground water, as required under the provisions of CMR, 1957, will be taken.
- xlviii. As depillaring with stowing is proposed for extraction of panels, the possibility of formation of surface cracks is minimal. Even then, if such cracks occur, they should be sealed to prevent air/water intrusion into depillared zone. All other statutory provisions under the CMR, 1957 with regard to precautions against subsidence must be complied with. Care will be taken to divert the surface run off water by making garland drains which will be progressively provided over individual or set of panels commensurate with the panel extraction operations. Subsidence will be periodically monitored and record maintained as per the DGMS stipulation.
- xlix. Sufficient fund allocation has been made towards environmental management and monitoring by way of direct capital. A recurring cost of Rs. 54.74 lakhs per annum will also be spent on environmental management.

9.4.5 The Committee deliberated on the submissions of the Proponent and sought the following information for further consideration of the proposal:

- i. The Proponent may explore the feasibility of transportation of coal by Rail or Ropeway.
- ii. Details of distribution of aquifer.
- iii. Details of sand stowing as well as the source of sand/ sand mining to be submitted along with details of sand mining lease.
- iv. A study on Hydro-geology may be carried out and report submitted
- v. A study on subsidence be carried out and report submitted to the Ministry.
- vi. Detailed information on heat, humidity, degree of gaseousness etc. be submitted and measures taken to improve safety and working condition.
- vii. A confirmatory letter for allocating Rs. 50 lakhs per annum towards CSR activities as committed during deliberations.
- viii. The approved mine plan and the mine closure plan be submitted,
- ix. The issues raised and commitments made during the PH may be submitted in tabulated form as advised.

9.5 Jampali OCP (3 MTPA in a ML area of 658.10 ha) of M/s South Eastern Coalfields Ltd. located in dist. Raigarh, Chhattisgarh- EC based on TOR granted on 23.10.2008 - Further Consideration

9.5.1 The proposal is of Jampali OCP (3 MTPA in a ML area of 658.10 ha) of M/s South Eastern Coalfields Ltd. located in dist. Raigarh, Chhattisgarh-

9.5.2 The proposal was considered in the 29th-30th August 2011 and 50th EAC held on 18th-19th June 2012.

9.5.3 The proposal was last considered in the EAC (T&C) meeting held on 29th-30th August 2011 and the Committee after discussions had recommended the project for environmental clearance. The Ministry had however, desired that the representations received by the Ministry from Shri Raghuvir Pradhan of Ekta Parishad and from Shri Ramesh Agarwal of Jan Chetana during the Public Hearing of Jampali OCP should be placed before the Committee for consideration. The proponent made a presentation before the Committee.

9.5.4 The Committee observed that the response was vague. The Committee sought a point-wise reply in tabular forms in 3 columns on the various issues raised in the two representations. The Committee noted that the Conservation Plan should be more detailed. The proponent has submitted as under:

- i. It is an open cast coal mining project of M/s South Eastern Coalfields Ltd, to which Ministry accorded TOR vide letter no. J-11015/305/2008-IA.II (M) dated 23.10. 2008.
- ii. The latitude and longitude of the project are 22^o16'17" and 22^o17'50" North and 83^o16'52" and 83^o19'26" East respectively.
- iii. The land usage of the project will be as follows:

Pre-mining:

S. No.	Type of Land use	Area in ha.
1.	Quarry area	398.00
2.	Ext dump	32.40
3.	Infrastructure	2.00
4.	Roads	2.60
5.	Township	22.50
6.	Safety zone	200.60
	Total	658.10

Post-mining:

S. No.	Type of Land use	Area in ha.
1.	Reclaimed dump	281.40
2.	Green belt	2.00
3.	Safety zone	103.19
4.	Water body	30.00
5.	Township	22.50
6.	Roads	2.60
7.	Agriculture area	218.40

	Total	658.10
--	--------------	---------------

Core area

S. No.	Type of Land use	Area in ha.
1.	Quarry area	398.00
2.	Ext dump	32.40
3.	Infrastructure	2.00
4.	Roads	2.60
5.	Township	22.50
6.	Safety zone	200.60
	Total	658.10

- iv. The total geological reserve is 50.889 million tons. The mineable reserve 31.30 MT, extractable reserve is 31.30 MT. The per cent of extraction would be 90%.
- v. The coal grades are Grade E to F.
- vi. There will be three Seams with thickness of Seams to be worked on will be 1.20m to 6.07m with the stripping Ratio (Av)- 4.35. Maximum thickness of Seams 6.07 m.
- vii. The average Gradient would be 2 to 5 degree.
- viii. The total estimated water requirement is 253m³/d & Peak demand 320m³/d. The level of ground water ranges Pre-monsoon water level vary from 3.20m to 9.45m (Average:6.32 m) Post-monsoon water level varies from 1.15 m to 4.50 m(Average: 2.82m).
- ix. There are two external OB dump with Quantity of 6.20 MCuM in an area of 32.40 ha with height of 30-45 m. and one internal dump with Quantity of 130 MCuM in an area of 278.61ha with height of 30-45 m.
- x. The final mine void would be in 30 ha with depth of 20 m. and the Total quarry area is 398 Ha. Backfilled quarry area of 384.60Ha shall be reclaimed with plantation.
- xi. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
- xii. The **life** of mine is 17 Years.
- xiii. **Transportation:** Coal transportation in pit to surface by trucks, Surface to Siding by trucks, siding to loading wagons will be rail / road.
- xiv. There is R & R involved. There are 114 PAFs for these production.
- xv. **Cost:** Total capital cost of the project is Rs. 47.72 Crore. CSR Cost Rs 5.00/tonne of production. R&R Cost 310.08 Lakhs. Environmental Management Cost is Rs. 355.55 lakhs.
- xvi. **Water body:** There are Kurket river & its tributary nallah, this river is located to the east of the block and flows from north to south.
- xvii. **Approvals:** Mining Plan was approved – 29.7.2008.
- xviii. **Board's Approval:** Project Report for 2.00MTY was approved by SECL Board on 19.01.2006. Further peak production for 3.00MTY was approved by SECL Board on 29.07.2008.
- xix. **Wildlife issues:** Comprehensive plan for conservation of flora & fauna of Rs 457.50 lakh has already been prepared & submitted to PCCF (wild life) CG Govt. Raipur through APCCF (land management) Raipur for approval.
- xx. **Forestry issues:** Total forest area involved for mining **251.646** ha. FC has been granted vide letter no. F.no-8-08/2013-FC dtd. 18th December, 2013 for 251.646 ha. Extent of forest land in the project is 343.56Ha. (91.914Ha of forest land falls in safety zone which is not to be acquired)
- xxi. Total **afforestation** plan shall be implemented covering an area of 384.60 ha at the

end of mining. Green Belt over an area of 105 ha and Reclaimed internal dump would be 281.60ha. Density of tree plantation 2500 trees/ha of plants.

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

xxiii. **Public Hearing:** Public hearing was held on 19.02.2010 at Jampali Village.

9.5.5 The issues raised during the public hearing were regarding All the land holders should be given employment; Prevention of dust emission due to the mine should be properly controlled. Free Medical treatment should be provided by the SECL. Mine should be opened 2 to 3 km from the village so that the villagers get sufficient time for rehabilitation; No outsiders should be given employment. Land holders should be made shares holders in the company; Employment should also be given to persons who are not land holders; Tubewell, water tank, road, community hall, education facility and lighting should be provided in Kudumkhela village; The new rehabilitation policy of Chattisgarh should be followed; Compensation paid to the land holders should be at the rate of Rs. 20 Lakhs per hectare; plantation should be made ; Prevention for industrial accident and pollution; Developmental activities for poor section of society like medical education and social; The land owners have not divided the land between their families, so every member of the family and villagers who do not have land should get employment. The proponent has given assurances to address the issues raised during the Public Hearing.

9.5.6 CLARIFICATION TO THE OBSERVATIONS OF EKTA PARISHAD, RAIGARH

- i. The land use indicates that the project does not contain any reserve forest. Jampali is a Greenfield project and field survey for bio- diversity study (core and buffer zone) was carried out by M/s. Richardson & Cruddas (1972) Ltd, Chennai a Govt. of India undertaking. A Wild life plan (flora & fauna conservation plan) has been prepared & included in the EMP.
- ii. Separate provisions of fund & responsibility have been made for flora & fauna Conservation and are given in the EIA/EMP report.
- iii. Damage to ecology will be minimised, afforestation will be carried out by CG Rajya Van Vikas Nigam. It will include native species and other forest species also. The reclaimed dumps and water body will serve as faunal habitat.
- iv. Post mining 384.60 Ha of land will be returned as forest vis-a-vis 248.56 Ha of forest land required during mining. Also 218.40 Ha of land will be returned for agriculture & allied use against 245.80 Ha of agriculture land acquired for mining purpose.
- v. The proponent has submitted action plan on the direct and indirect impact of the mining that include providing LPG connection to employees so that domestic consumption of coal and wood is eliminated; a work plan of 20 years has been prepared at a cost of Rs 1.50 crore to reduce biotic pressure on nearby forest; saplings of fuel wood species will be distributed free of cost to nearby villages throughout the operation phase of mine, i.e., for 20 years, so that their dependence on forest for fuel wood is reduced; conservation of water holes / water bodies; ambient air quality model has predicted that the impact of dust on nearby villages / area will be within the statutory limits of 200ug/m³; provision of mobile water sprinkler, fixed sprinklers; proposed rail corridor will also help in mitigation of levels of dust due to coal transportation.
- vi. The control of the dust emission due to open dumps has been fully planed in the EMP through proper dump stabilization i.e. stacking & stabilizing ;
- vii. As per original mine closure plan an external dump having a volume of 6.20 M.CuM over an area of 32.40 Ha was planned which was merged with the internal dump. The area of planned internal dump was 278.61 Ha and volume was 130.00 M.CuM. The height of composite dumps was planned between 30m - 45m.
- viii. Dumps will be re-handled to release land blocked by overburden dumps for agriculture.

- ix. The total estimated amount of OB to be re-handled for filling of void and creating space for agricultural and allied activities will be 73.0 M.CuM. The volume of void will reduce from 54.0 M.CuM to 6.0 M.CuM and its depth will reduce from 50 – 86 m to about 20 m.
- x. Dumps are not located on the sides of Kurket River.
- xi. Garland and catch drains are proposed to arrest silt load during monsoon.
- xii. It is a Greenfield project and therefore, the question of using huge quantity of water (0.189Kl/day) from 02 bore wells as mentioned in the complainant's letter seems to be not justified.
- xiii. The mine water after treatment will be utilized mostly for industrial use, dust suppression and raising plantation. Surplus mine water will be discharged into Kurket river after treatment. To protect surface water quality sedimentation pond, WETP & DETP are proposed in the project report.
- xiv. Ground water level has been monitored at 24 locations in study area. Only domestic demand will be met by tube wells and industrial demand will be met by treated mine water. Impact on mining expected to be within 300 meters from mine edge.
- xv. Jampali OC Mine is not an expansion project. It is a greenfield project. It is proposed to have 1.55 Km long and 3.75m wide haul road for to and fro movement of OB and coal inside the project, which will have no impact on accident rate outside the mine. A black-topped approach road of 2.5 KM length and 5m width is proposed for the project and will safely handle the coal traffic. For abatement of air pollution avenue plantation has been proposed along the roads. Four lane State highway (Gharghoda-Dharamjaygarh) has been proposed for widening, which will take care of coal traffic.
- xvi. R&R site has been finalized at Phagugram village about 5 km from the proposed project. Infrastructure will be provided in rehabilitated village that include Pond & Bore Wells; School Building; Dispensary Building & Panchayat Bhawan; Children Park etc.
- xvii. No diversion / modification of the Kurket river /existing drainage system at any stage has been proposed in the EMP. Garland drain of about 13 km along periphery of mine proposed to take care of surface runoff.
- xviii. As per revised mine closure plan (Scenario IV) the dumps will be re-handled to release land blocked by overburden dumps for agriculture. The volume of void will reduce from 54.0 M.CuM to 6.0 M.CuM and its depth will reduce from 50 – 86 m to about 20 m.

9.5.7 CLARIFICATION TO THE OBSERVATIONS OF JAN CHETANA, RAIGARH

- i. Public hearing was conducted on 19.02.2010 under the supervision of Regional Officer CECB, Raigarh and ADM, Raigarh in a peaceful & systematic manner where opportunity was given to all persons and all objections and suggestions raised were recorded.
- ii. The notice for public hearing was published in Times of India, New Delhi & three local Newspapers - Samachar Doot, Dainik Bhaskar and Dainik Navbharat on 18.01.2010. PH held on 19.02.2010. Copy of EMP given to all concerned Sarpanch / Secy & related officials. Public Hearing was conducted as per EIA Notification 2006.
- iii. The notice for public hearing alongwith draft EMP was given by Regional officer, CECB to Sarpanch of Gram Panchayats of Fagugram, Pusalda, Kurmibhavana, Kurumkela, Kusumghat, Baroud, Jampali, Gharghodi, Porda, Singmouza, Nagdaraha, Pandripani, Dharamjaygarh by letter no. 1792 dtd. 18.01.2010. The notice was also published in Times of India, New Delhi & three local Newspapers- Samachar Doot, Dainik Bhaskar and Dainik Navbharat on 18.01.2010 for wide publication.
- iv. Public hearing successfully held on 19.02.2010. Public hearing at local levels has verifications of law and order issues. SECL preferred hearing by CECB with co-

- operation of local district administration. No request was made to MoEF or any other agency for conducting Public hearing.
- v. Land has been acquired under Coal Bearing Area (Acquisition & Development) Act, 1957, which is an act of Government of India. A legal opinion on acquisition & diversion of land was sought by SECL. The observation of Advocate Sri R.K.Gupta & Swati Raj Gupta, of High Court of Chhattisgarh, Bilaspur which advised that “ In my considered opinion, in view of the provisions contained in the Act of 1957 for SECL there is no legal impediment in proceeding ahead in the project as pointed out in the complaint dated 19.02.2010 and SECL should move ahead with the project completing all legal formalities in this regard”
 - vi. A number of mines of SECL and other companies are planned in Raigarh district. These areas are deficient in Railway infrastructure. Ministry of Railways, State Govt . and other industries – both Private and Public Sector are jointly investing in a rail corridor connecting the proposed coal mines with Raigarh and Korba.
 - vii. The location of ambient air quality monitoring station is based upon the prevailing wind direction for the post monsoon season and the distance is restricted to 2.00 Kms , as it covers almost all the receptors likely to be affected by coal mining operations .
 - viii. Six samples for water quality test have been taken as per the existing standards. The mine water after treatment will be utilized mostly for industrial use, dust suppression and raising plantation. Surplus mine water will be discharged into Kurket river after treatment.
 - ix. To protect surface water quality sedimentation pond, WETP & DETP are proposed in the project report. Ground water level has been monitored at 24 locations in study area.
 - x. Occupational health survey (PME/ IME) is statutorily conducted for the employees as the mine starts. Further, health camps are regularly being organized in Jampali village.
 - xi. During implementation of R&R plan, 190 nos.of land oustees from the two villages, namely, Jampali and Singhmouza will be rehabilitated as per the Revised CIL Policy on R&R which includes all the important R&R issues pertaining to the project.
 - xii. The coal is not proposed for washing. However, Hg will be ascertained if washery is planned in future.
 - xiii. EIA Report of Jampali was prepared by M/s. Richardson & Cruddas (1972) Ltd, Chennai having a laboratory duly recognized by MoEF / CPCB & a Govt. of India undertaking company.
 - xiv. The project involves 190 numbers of land oustees from two villages namely Jampali and Singh Mouza .
 - xv. A total of 114 families will be resettled. The R&R package will be based upon CIL R & R and CG State R & R Policy. Survey of PAFs & assets completed in Sept 2010. R&R site identified at Phagugram village about 5km from project.
 - xvi. Area of R&R site is 14.7 Ha which will have infrastructure including Pond & Bore Wells for drinking water supply; School Building; Dispensary Building & Panchayat Bhawan; Children Park; Road, culverts and drains

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

- i. The Coal transportation shall be done by the mechanically covered trucks for three years i.e. upto January, 2017 and thereafter it shall be by rail. The proposed railway siding which is three KM away should be brought near the mine.
- ii. Mechanical bulk loading on railway wagons should be through CHP/ silo.
- iii. Post mining all external OB dumps will be re-handled to release land blocked by overburden dumps for agriculture into the mine void and final mine void be reduced from 54 McM to 6 McM and depth from 86 m to 20 m.
- iv. No diversion / modification of the Kurket river /existing drainage system at any stage

- v. Ground water level should be monitored
- vi. Dust emission due to open dumps should be controlled.
- vii. Land will be returned for agriculture & allied use after the mining is over.
- viii. Afforestation should be carried out that may include native species and other forest species also. The reclaimed dumps and water body will serve as faunal habitat.
- ix. Separate provisions of fund & responsibility should be made for flora & fauna Conservation
- x. Total of 114 families will be resettled. Project involves 190 numbers of land oustees from two villages namely Jampali and Singhmouza .
- xi. Mercury monitoring will be carried out if washery is planned in future.
- xii. The PP should implement the R&R plan that include 190 nos.of land oustees from two villages, namely, Jampali and Singhmouza will be rehabilitated as per the Revised CIL Policy
- xiii. Surface water quality in the sedimentation pond should be protected,
- xiv. Occupational health survey (PME/ IME) should be carried out to check the health of the inhabitants and the workers of the mine.
- xv. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.

9.6 Manikpur Open Cast Mine Expansion. Project (from 2.0 MTPA to 3.5 MTPA in an ML area of 1,018.925 ha of M/s South Eastern Coalfield Limited, in dist. Korba, Chhattisgarh - EC based on TOR granted on 16.06.2008 - Further consideration.

9.6.1 The proposal is of Manikpur Open Cast Mine Expansion. Project (from 2.0 MTPA to 3.5 MTPA in an ML area of 1,018.925 ha of M/s South Eastern Coalfield Limited, in dist. Korba, Chhattisgarh.

9.6.2 The proposal was considered in the 7th EAC held on 12-13th December, 2013. The Committee after deliberation sought the following information for further consideration of the proposal:

- i. The proponent has stated that the capacity expansion of the project is from 2.0 to 3.5 MTPA (in place of 2.5 to 3.5 MTPA). Therefore the title in the agenda may be corrected accordingly.
- ii. The Committee has noted that the moratorium has been lifted with effect from 17.09.2013. The Committee, therefore, decided to make a field visit of the mine so as to see the status of mining activities vis-à-vis environmental impact issues before the project is further deliberated in the EAC. The Committee has constituted a sub-Committee consisting Mr. J. L. Mehta, Mr. T. K. Dhar and Shri N. K. Verma and the Member Secretary of the Committee.
 - iii. Topo sheet showing the High Flood level of Hasdeo river be provided
 - iv. Data given in the OB management and mine closure land use are not clearly depicted. The details of OB dumps, internal filling and final void be submitted to with reference to mine closure plan approved by the MoC.
 - v. The OB be rehandled completely.
 - vi. The height of OB dumps particularly dump along the river should be in the range 60 meter.
 - vii. Details progressive backfilling be submitted.
 - viii. Compliance of the NoC Of the SPCB be provided
 - ix. The PP has stated that the electricity Gen. from NTPC and to the Chhattisgarh Electricity Board will be affected.
 - x. Details of top soil management be submitted.
 - xi. The details of date, units of the baseline data should be provided.

- xii. Mine void are to be filled by mine OBs and be brought down to near ground level.
- xiii. The Proponent shall submit the details of rehandling plan.
- xiv. The Proponent shall submit corrigendum w.r.t. AAQ data of 2006.
- xv. The detailed action plan for CSR activities be submitted.
- xvi. The project has exceeded the limit of production which may construe as violation case.

The proponent has further stated that:

- i. The proponent has stated that the capacity expansion of the project is from 2.0 to 3.5 MTPA (in place of 2.5 to 3.5 MTPA) which has been corrected.
- ii. Topo sheet has been provided
- iii. The management of overburden as per mine closure plan shall be as follows:

Year	Coal production (Mtes)	OB removal (Mcum)	Dump Plan(Mcu.m)		Dump Area (Ha.)		Dump area available for reclamation (Ha)		No. of plantation/2500 Nos/Ha.
			External	Internal	External	Internal	External	Internal	
1st Year	2.5	7.75	4.45	3.30	12.7	4.0	-	-	Nil
2 nd - 10 th Year Cummulat.	31.0	85.0	49.7	35.3	48.0	79.0	-	-	Grass to be provided
11 th - 20 th year cummulat.	35.0	100.0	100.0	-	175.0	-	200.0	-	500000
21 st - 30 th year cummulat.	33.0	79.55	79.55	-	144.67	-	263.07	-	657675

Final land use details with reference to mine closure plan

Sl. No	Particulars	Quarry (After backfilling & reclamation)	Safety zone as green belt	Infrastructure, Colony etc.	R.R Site	Others	Grand Total
1	Afforested area	169.140	3.700	-	-	290.000	462.840
2	Cultivated land	-	-	-	-	-	-
3	Final Void(water body)	321.000	-	-	-	-	321.000
4	Other	-	-	-	-	191.675	112.565
5	Built-up Area	-	-	35.250	8.160	-	43.410
Total Land for the project		490.140	3.700	35.250	8.160	481.675	1018.925

- iv. The seam gradient at Manikpur OC is around 1 in 3 to 1 in 5. at such steep slope forming of stable dump is not feasible. Even if dump is formed with artificial measures, it will pose a constant risk to the safety of the workers while the mine remains in operation. Based on the above fact, the entire OB has been proposed to be dumped outside the quarry. Total volume of OB generated will be 272.30 mcum. Hence, bringing back such high volume is not practically possible.
- v. However, 1.5 -2 mcum of OB can be accommodated in the quarry for the preparation of haul roads, berms, platforms for various installations etc.
- vi. Due to steep seam, since inception, the mine has been planned in such a sequence that OB of a quarry which is in operation, is backfilled into a quarry which is exhausted.
- vii. The mine voids of eastern quarry no. 2 & far east quarry after their exhaustion were backfilled by OB of the then operating quarries. Western quarry will be backfilled by mine OB eastern quarry no - 1 .
- viii. Similarly, eastern quarry no - 1 can be filled with the overburden generated in future while mining the eastern side property. However, rehandling of approx. 2.56 mcum of top soil will be done.
- ix. OB dumps in Manikpur OC have been planned within the already degraded land only i.e. either in already exhausted quarries or above existing dumps.
- x. Dumps are proposed in 30m tiers with an intervening berm of 30m in between two tiers, thus restricting the overall angle of slope below 26 degrees.
- xi. Considering the observation of EAC, reduction in height of OB dump along the river has been reexamined and the following options are presented:

OPTION-II: If height of OB dump is restricted to 60 mtrs along the river, this will involve degradation of 36 ha of additional virgin land area.

OPTION-III: If the intervening berm between the tiers above 60m and 90m is increased from 30m to 100m, volume of OB dump will be reduced by 2.5 mcum which may be accommodated on the eastern side dump.

- xii. The compliance of NOC of SPCB has been provided.
- xiii. The Proponent has stated that the electricity generation from NTPC and to the Chhattisgarh electricity board will be affected and submitted a letter from Chhattisgarh State Power Generation Company has been provided. The requirement of CSEB TPS is 8500t/day i.e. 3.10 mt / annum
- xiv. 2.56 MCum of top soil will be generated in the project and the same will be managed.
- xv. Removed top soil shall be stock-piled in 3-4 mtr layers till such time, the top soil cannot be spread directly over leveled OB dump. Stockpiled materials shall be selectively placed on a stable area, not disturbed, and protected from wind and water erosion, unnecessary compaction, and contaminants which lessen the capability of the materials to support vegetation when redistributed. After the final grading the topsoil would be redistributed in a manner that achieves an approximate uniform stable thickness. If the duration of stacking of top soil exceeds 1 year, the top soil will be suitably amended through manure and organic material to maintain its fertility.
- xvi. Stage wise programme of top soil management

Year	OB Removal Mcum	Top Soil Generated Mcum	Top Soil Generated Cumulative, Mcum	Dump Programme Mcum		Area available for reclamation, Ha	Top Soil Used Mcum	Top Soil Used Cumulative Mcum	Top Soil Stored Mcum
				External	Internal				
1 - 5	45.25	0.47	0.47	0.00	45.25			0.00	0.47
6 - 10	47.50	0.47	0.94	32.95	14.55			0.00	0.94
11 - 15	50.00	0.51	1.44	50.00	0.00	100.00	0.81	0.81	0.63
16 - 20	50.00	0.51	1.95	50.00	0.00	75.00	0.61	1.42	0.53
21 - 25	45.50	0.40	2.35	45.50	0.00	75.00	0.61	2.03	0.32
26 - End	34.05	0.21	2.56	34.05	0.00	65.00	0.53	2.56	0.00
Total	272.30	2.56		212.50	59.80	315.00	2.56		

- xvii. CSR activities and expenditures that will be incurred are: In 2011-2012 Rs. 20.55 lakhs; 2012-2013 Rs. 35.50 Lakhs; 2013-14 Rs. 48.20 Lakhs 2014-15: Rs. 70.00 lakhs; in 2015-16:Rs. 90.00 lakhs which include various activities.
- xviii. The Committee also has deliberated on the report of the Sub-Committee that visited on 11-13 January, 2013 and approved the report. The report is annexed at Annexure-VIII to the Minutes of the Meeting.

9.6.3 The Committee after a detailed deliberation has recommended the project for granting Environmental Clearance with the following recommendations:

- i. The top soil is kept separately for use at later date.
- ii. The final external OB dump height will be around 60m. and internal dumping will be maximised and eastern quarry 2 ext. O.B. dump will be fully utilised for O.B. dumping to the aforesaid height.
- iii. Improvement in the sewage treatment can be improved by maintaining operating parameters (MLSS & MLVSS) for which regular testing shall be done and level of MLSS & MLVSS including F/M ratio is maintained as per Standard Operating Procedure (SOP).
- iv. Shift the CHP conveyor system layout from over Eastern Quarry no.2 to across the OB dump for safety of the men and m/cs and also making available this area for OB dump from active mine.
- v. Install inpit crushing arrangement initially at 150m level in the main Jatraj seam to crush the coal produced from this seam and then transport the same by series of belt conveyors upto the existing CHP and carry the coal from upper Jatraj, E & F seams upto surface by dumpers/trucks through flanks and then will be handled separately in the proposed mine CHP and then transport to siding No. 2 for dispatch by rail.
- vi. An appropriate organization may be engaged to examine and study for protective measures required covering shifting any portion of OB dump needed, dump height, pitching work on river side, etc., considering the high flood level (HFL), topography and past rainfall data.

- vii. The PP is advised to spend an amount not less than Rs. 100 lacs per year for the financial years 2014- 15 and 2015- 16 and w.e.f. from 2016-17 the expenditure on CSR shall be made @ Rs 5/M Ton as per CIL Policy.
- viii. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.

9.7 Expansion of Mine-1 A (from 3 MTPA to 7 MTPA) M/s Neyveli Lignite Corp. Ltd. Dist. Cuddalore, Tamil Nadu – TOR - Further Consideration

9.7.1 The proposal is of Expansion of Mine-1 A (from 3 MTPA to 7 MTPA) M/s Neyveli Lignite Corp. Ltd. Dist. Cuddalore, Tamil Nadu.

9.7.2 The proposal was considered in the EAC held on 23 -24th January 2012. The project proponent during the last EAC meeting gave presentation on three projects namely;

1. Devangudi Lignite Mine Project (2 MTPA in an area of 1566 ha in a total ML area of 25,900 ha) of M/s Neyveli Lignite Corp. Ltd., located in dist. Cuddalore, T.N. (TOR).
2. Expansion of Mine-1 A (from 3 MTPA to 7 MTPA) of M/s Neyveli Lignite Corp. Ltd., located in dist. Cuddalore, T.N. (TOR).
3. Restructuring of Mine-1 Lignite Mine (reduction from 10.5 MTPA to 8 MTPA and expansion in ML area from 2762 ha to 3219 ha) of M/s Neyveli Lignite Corp. Ltd., located in dist. Cuddalore, T.N. (TOR)

The project proponent mentioned that the proposal is for opening a new Devangudi lignite mine of 1566 ha and of 2 MTPA production capacity. It was informed that Devangudi lignite mine project forms a part of a mining lease of 25,900ha allotted to M/s Neyveli Lignite Corp. and is flanked by two mines- Mine 1 and Mine 2. Two rivers – Vellar and Manimuktha flow at a distance of 100m. It was informed that sea is about 50km from the mines and the strata in between comprises of Cuddalore sandstone and forms an impervious barrier preventing sea-water ingress. It was stated that monitoring of water quality of the water table in the study area (upto depth of confined aquifers) has not shown any salinity in groundwater. It was informed that of the 259 sq.km of ML, mining is restricted to 73 sq.km of which 40 sq.km is quarry area. It was informed that two external OB dumps of 45 ha and 134 ha in an area of 179 ha and a max. height of 60m are proposed to accommodate 60 Mm³ of OB and the balance 342 Mm³ of OB would be backfilled. At the post mining stage, a void would be left as a water body. Life of the mine is 25 years.

The Committee noted that the area is fertile agricultural land and with double crops. It was also noted that the area is traversed by a number of rivers and their tributaries and streams and tanks. The Committee after discussions sought the following details:

- (i) whether the mines of the total ML area of 259 sq.km form a part of the Cauvery delta, although the Consultants for Items 3 & 4 clarified that the mine does not form a part of the Cauvery delta. In this regard, the Committee sought details of reports available on the Study of Cauvery Basin and location of the mines on a landuse map including detailed drainage map based on satellite imagery (1: 10,000).

- (ii) Study report sought in earlier EC granted for Mine-1 on impact of mining on Neyveli Basin and on seawater ingression.
- (iii) SC Judgement on change of land use of double crop agricultural land for non-agricultural purposes.

The Committee was also of the view that an independent view of eminent experts such as Prof. M S Swaminathan or of a recognised agricultural University should be obtained on the matter of large scale acquisition of good fertile agricultural land for mining and its irreversible damage. The Committee was also of the view that the view of expert such as Dr. Arijit Dey, former member EAC be obtained on the matter of groundwater exploitation and impacts thereon. The Committee also desired that waste management of all the mines within the ML area of 256 sq.km be examined on an integrated approach to minimise external OB dumping and to maximise backfilling and minimise destruction of fertile agricultural land.

The Committee decided that all the three above proposals including Items 3 and 4 should be further considered only after obtaining response on the aforesaid issues.

9.7.3 In response to the observations of the EAC the Proponent has submitted that:

- i. The project was accorded EC earlier vide letter no. J-11015/18/2098-IA.II (M) dated 01.03.1999.
- ii. The latitude and longitude of the project are 11° 32' 0" N to 11° 36' 0" North and 79° 31' 0" E to 79° 32' 30" East respectively.
- iii. The land usage of the project will be as follows:

Pre-Mining: Active mining area is 556.71 Ha.

Post- Mining - Land Reclaimed with plantation is 1501.8 Ha, Final void with water body is 281.26 Ha

LAND USE IN CORE ZONE

Sl. No.	Name of the village	Classification-wise Extent of lands in Hectares (Revenue classification within brackets)						Total
		Forest	Agricultural		Culturable Waste (Govt. Tharisu)	Not available for cultivation		
			Irrigated (Patta/Wet)	Un-irrigated (Patta Dry)		Common facility (Govt. Poramboke)	Earmarked For Housing (Govt. Natham)	
1	Thenkuthu (To be acquired)	0	8.9300	150.2014	6.7100	19.6815	6.4710	191.9939
2	Vadakuthu (To be acquired)	0	9.9200	26.8950	1.5950	13.1300	0.0000	51.5400
3	Therkumelur (Possession with NLC)	0	0.0000	109.8000	6.0400	0.7700	0.0000	116.6100
4	Veludayanpattu (Possession with NLC)	0	2.6073	16.4534	0.0000	2.4332	0.0000	21.4939
		0	21.4573	303.3498	14.3450	36.0147	6.4710	381.637

- iv. The total geological reserve is 242.57 MT. The mineable reserve 218.31 MT, extractable reserve is 212.86 MT. The per cent of extraction would be 97.5 %.
- v. The coal grade is 2672 kcal/kg. The stripping ratio is 1:7. The average Gradient is 17 m. There will be three seams.
- vi. The total estimated water requirement is 1425 m³/day. The level of ground water ranges from 70m to 80m below ground level. Final void of 281.26 Ha at a depth of 70 m from surface level which is proposed to be converted into water body.
- vii. The Method of mining would be Opencast deploying Bucket wheel Excavator & Conveyor with spreader. Shovel-Dumper Technology for removal of old Dump for short period..
- viii. As Mine-IA OB is dumped into Mine-I void, there is no external Dump yard was planned for Mine-IA. No further external dump is planned for Mine-IA Expansion. There is one internal dump having an area of 1401 Ha with of 20 m each deck (In five decks) with a total quantity of 1129.70 Mm³.
- ix. The life of mine is 27 Years.

- x. Transportation: Coal transportation in pit by belt conveyor and stockyard to Thermal Station through belt conveyor.
- xi. There is R & R involved. There are 639 PAFs (SIA study is under progress)
- xii. Cost: Total capital cost of the project is Rs. 1453.3 Crores. CSR Cost Rs. 5.44 / Ton. R&R Cost Rs. 8.95 crores. Environmental Management Cost Rs.13.01 Crores (Under Expansion Project head) + Rs. 84.90 Lakhs (under Revenue Head 2013-14)
- xiii. Water body : There is no river/Nallha flowing near or adjacent to the proposed mine.
- xiv. Approvals: Ground water clearance obtained on 04.02.2003. Mining plan has been prepared. Mining plan is being submitted to MOC for approval. MOC approval No.43012 (272010-CPAM) Dt.31/03/2011 (For existing Mine)
- xv. Certificate of compliance of earlier EC from MoE&F Regional Office has been obtained on 08.11.2013, since the proposal is for expansion.
- xvi. Wildlife issues: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- xvii. Forestry issues: Not applicable. As there is no Forest Land involved.
- xviii. Total afforestation plan shall be implemented covering an area of 1783.06 Ha at the end of mining. Green Belt over an area of 91.80 ha. Density of tree plantation 400 trees/ ha of plants.
- xix. There are no court cases/violation pending with the project proponent.
- xx. The proposed Expansion of Mine-IA is to extract lignite at the rate of 7.0 MTPA from 3.0 MTPA.
- xxi. It is proposed to annex an area of 382.00 ha with the existing project area of 1624 Ha.
- xxii. Out of 382 Ha of land 138 Ha is already under the possession of NLC. Balance 244 Ha area needs to be acquired in part of villages Thenkuthu and Vadakuthu Cuddalore District in Tamilnadu.
- xxiii. Open cast mechanized method & deploying Specialized Mining Technology (SME) comprising of Bucket Wheel Excavators (BWE), Conveyors, Spreader being adopted will be continued. Shovel-Dumper Technology would be used at New Surface Bench for a short period to overcome the high Stripping Ratio.

CAPACITY			
STAGE	MINE-I	MINE-IA	TOTAL
Existing	10.50	3.00	13.50
Expansion	-2.50	4.00	1.50
Final	8.00	7.00	15.00

AREA			
STAGE	MINE-I	MINE-IA	TOTAL
Existing	3178.14	1623.80	4801.94
Expansion	457.00	382.00	839.00
Final	3635.14	2005.80	5640.94

- xxiv. NLC, approached the Cauvery River Water Authorities of Tamilnadu Public Works Department (PWD), Tanjore, to ensure whether Neyveli Lignite region is part of Cauvery delta. After examining, Superintending Engineer, PWD, Tanjore informed

- that NLC ML area is not falling in Cauvery Delta. Northern boundary limit of Cauvery Delta is up to Grand Anicut, Thirumanur, Anakarai, Mahendra palli (Coleroon river) villages. Hence, Neyveli Field is not part of Cauvery Basin.
- xxv. NLC in consultation with the CGWB, Chennai, established 11 observation wells in strategic locations between NLC mining area and up to the coast to monitor confined aquifers below lignite seams and to monitor saline water intrusion, if any. NLC and CGWB are jointly monitoring these wells for water levels and water quality study. No change in water quality observed.
 - xxvi. Ground water flow from Southwest boundary and replenishing the reservoir. Existence of thick clay between mines & coastline does not allow the spreading of pumping contour. From salt water intrusion model, observed no sign of saline water intrusion as fresh water still flows towards sea.
 - xxvii. NLC is continuously monitoring the Hydro-dynamics of the region. Pumping from the mines is restricted to the upper confined aquifer for creating a local depression in the mine pit, hence its impact over a distance is insignificant. The sea (Bay of Bengal) is about 32 kms away from Neyveli. The water quality observation reveals no saline water intrusion towards land. A separate division was formed for monitoring the meteorological, hydrological conditions of the entire basin including the sea coast. In addition, a separate Centre for Applied Research and Development (CARD) established by NLC is taking care of the analytical part of the ground water.
 - xxviii. For safe mining pumping from deep seated aquifers below lignite seam has no impact on phreatic aquifer. Water level fluctuates depending on monsoon and also exploitation for irrigation and domestic purposes from this aquifer. Mine pumping from deep seated aquifers below lignite seam (>80m) has no impact on shallow phreatic aquifer.
 - xxix. All the hydrographs shown above are for the wells falling within 6Km radial distance from center of mine pumping. Depending upon the vagaries of monsoon the Water level fluctuates between 3m to 13m below ground level.
 - xxx. For safe mining the pumping operations in mines are carried out from this aquifer occurring 90m to 100m below ground level. By pumping, a local depression in the pressure surface is created in a small area where lignite is being mined out.
 - xxxi. There is no significant impact beyond NLC active mine pit area. The Confined aquifer wells near the Coast Fluctuates between +12m and -10m and near the mines between -15m and -30m
 - xxxii. On reviewing the report furnished by NLC, Dr Arjit Dey's Observations, suggestions and Action plan by NLC has been prepared.
 - xxxiii. NLC and CGWB jointly devised the regional ground water monitoring strategy
 - xxxiv. About 150 numbers of shallow phreatic aquifer wells and 80 numbers of deep piezometer wells were established.
 - xxxv. From the above data Monitoring of discharge, drawdown and lateral extend of cone of depression on real time basis and validation of ground water model are done & will be continued.
 - xxxvi. Even after restructuring of Mine-I & IA there is no increase in pumping quantity and after 2018 the pumping is drastically coming down as Mine-I needs very little pumping due to its movement towards up dip direction

- xxxvii. Regular monitoring of ground water and ground water modeling studies will be continued.
- xxxviii. Optimization of ground water pumping program in mines will be followed as practiced presently by bringing pump wells very closer to the lignite excavation and operating judiciously.
- xxxix. Rainwater harvesting system in all the major office buildings.
- xl. Having vast township area, all the rain water from dwellings are coursed in the drains and collected in a pond artificially created with check dam and percolation wells recharging the shallow aquifer system.
- xli. Salinity interface monitoring system will be continued with the present monitoring wells established under consultation with CGWB along the coast
- xlii. Artificial ground water recharge to aquifers.
- xliii. Recharge to aquifers in Nadiyapattu & Maligampattu village (NW & North of Neyveli)
- xliv. Recharge to deeper aquifers in North West of Mine-II region
- xlv. Recharge to shallow aquifers North of Mine-IA region
- xlvi. Rain water harvesting structures in all major buildings of NLC
- xlvii. The mine pit water which is a mixture of rain water and seepage is having pH of more than 6.5 and monitored frequently and hence there is no acid drainage.
- xlviii. Final void will be filled with clay soil unto the roof of lignite exposure side . Hence there will not be any contact of surface water with lignite exposure.
- xlix. The water quality issues and mitigations during post mining scenario will be monitored.
 - 1. The entire overburden will be filled back into mine void and there is no proposal to carry the overburden to outside dump.
 - li. The outside dumping program of all the existing mines at NLC region is completed and progressive internal filling is being carried out.
 - lii. At present all the Mine working (Mine-I,IA & II) at NLC lease area are scheduled to be completed concurrently (between 2038 to 2041).
 - liii. In the Restructuring of Mine-I&IA project there is no proposal to dump above ground level.
 - liv. Sufficient voids are available in respective Mines to accommodate
 - lv. the OB excavated for the remaining life of Mines and hence, integrating dumping activities between mines are not envisaged.
 - lvi. The net increase of Lignite production after restructuring of Mine-I & IA is 1.50 MTPA only. Correspondingly 18.0 Mm³ of OB will be excavated and dumped into existing void.
 - lvii. The entire mined out area and outside dump yard area will be reclaimed and afforested systematically and progressively.

9.7.4 The Committee after a detailed deliberations has recommended for granting ToR with standard ToRs in addition to general ToRs with specific conditions that the points raised by the Committee in earlier meeting need to be reflected in the EIA/EMP report

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

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

9.8.2 The proposal was considered in the EAC held on 23 -24th January 2012. The project proponent during the last EAC meeting gave presentation on three projects namely;

1. Devangudi Lignite Mine Project (2 MTPA in an area of 1566 ha in a total ML area of 25,900 ha) of M/s Neyveli Lignite Corp. Ltd., located in dist. Cuddalore, T.N. (TOR).
2. Expansion of Mine-1 A (from 3 MTPA to 7 MTPA) of M/s Neyveli Lignite Corp. Ltd., located in dist. Cuddalore, T.N. (TOR).
3. Restructuring of Mine-1 Lignite Mine (reduction from 10.5 MTPA to 8 MTPA and expansion in ML area from 2762 ha to 3219 ha) of M/s Neyveli Lignite Corp. Ltd., located in dist. Cuddalore, T.N. (TOR)

During the presentation the project proponent mentioned that the proposal is for opening new Devangudi lignite mine of 1566 ha and of 2 MTPA production capacity. It was informed that Devangudi lignite mine project forms a part of a mining lease of 25,900ha allotted to M/s Neyveli Lignite Corp. and is flanked by two mines- Mine 1 and Mine 2. Two rivers – Vellar and Manimuktha flow at a distance of 100m. It was informed that sea is about 50km from the mines and the strata in between comprises of Cuddalore sandstone and forms an impervious barrier preventing sea-water ingress. It was stated that monitoring of water quality of the water table in the study area (upto depth of confined aquifers) has not shown any salinity in groundwater. It was informed that of the 259 sq.km of ML, mining is restricted to 73 sq.km of which 40 sq.km is quarry area. It was informed that two external OB dumps of 45 ha and 134 ha in an area of 179 ha and a max. height of 60m are proposed to accommodate 60 Mm³ of OB and the balance 342 Mm³ of OB would be backfilled. At the post mining stage, a void would be left as a water body. Life of the mine is 25 years.

The Committee noted that the area is fertile agricultural land and with double crops. It was also noted that the area is traversed by a number of rivers and their tributaries and streams and tanks. The Committee after discussions sought the following details:

- (i) whether the mines of the total ML area of 259 sq.km form a part of the Cauvery delta, although the Consultants for Items 3 & 4 clarified that the mine does not form a part of the Cauvery delta. In this regard, the Committee sought details of reports available on the Study of Cauvery Basin and location of the mines on a landuse map including detailed drainage map based on satellite imagery (1: 10,000).
- (ii) Study report sought in earlier EC granted for Mine-1 on impact of mining on Neyveli Basin and on seawater ingress.

- (iii) SC Judgement on change of land use of double crop agricultural land for non-agricultural purposes.

The Committee was also of the view that an independent view of eminent experts such as Prof. M S Swaminathan or of a recognised agricultural University should be obtained on the matter of large scale acquisition of good fertile agricultural land for mining and its irreversible damage. The Committee was also of the view that the view of expert such as Dr. Arijit Dey, former member EAC be obtained on the matter of groundwater exploitation and impacts thereon. The Committee also desired that waste management of all the mines within the ML area of 256 sq.km be examined on an integrated approach to minimise external OB dumping and to maximise backfilling and minimise destruction of fertile agricultural land. The Committee decided that all the three above proposals including Items 3 and 4 should be further considered only after obtaining response on the aforesaid issues.

9.8.3 In the present discussion EAC discussed Restructuring of Mine-1 Lignite Mine (reduction from 10.5 MTPA to 8 MTPA and expansion in ML area from 2762 ha to 3219 ha) of M/s Neyveli Lignite Corp. Ltd., located in dist. Cuddalore, T.N. In response to the observations of the EAC the Proponent has submitted that:

- i. The project was accorded TOR vide letter no. J-11015/11/1988-IA.II (M) dated 06.03.1989.
- ii. The proposal is for Restructuring of Mine-I (From 10.5 to 8.0 MTPA) Area Expansion-457 Ha
- iii. The latitude and longitude of the project are 11° 33' 00'' N to 11° 35' 00'' North and 79° 28' 00'' E to 79° 32' 00'' East respectively.
- iv. The land usage of the project will be as follows:

Pre-Mining - Active mining area is 1437.9 Ha

Post- Mining - Post Mining: Land Reclaimed with plantation is 3381.66 Ha, Final void with water body is 253.48 Ha

Core area:

Sl. No.	Name of the village (and status of Land Acquisition)	Classification-wise Extent of lands in Hectares (Revenue classification within brackets)					Total	
		Forest	Agricultural		Culturable Waste (Govt. Tharisu)	Not available for cultivation		
			Irrigated (Patta/Wet)	Un-irrigated (Patta Dry)		Common facility (Govt. Poram-boke)		Ear-marked For Housing (Govt. Natham)
1.	Ammeri (To be acquired)	0.0000	37.7650	187.5900	1.7500	37.0550	4.6600	268.8200
2.	Ammeri (Possession with NLC)	0.0000	0.00	0.00	0.00	31.5750	0.0000	31.5750
3.	Vadakku-vellore (to be acquired)	0.0000	40.0300	41.0700	6.0950	49.8050	11.8850	148.8850
4.	Vadakku-vellore (Possession with NLC)	0.0000	0.00	0.00	0.00	7.3000	0.0000	7.3000
Total		0.0000	77.7950	228.6600	7.8450	125.7350	16.5450	456.5800

- lviii. The total geological reserve is 191.77 MT. The mineable reserve 172.59 MT, extractable reserve is 168.28 MT. The per cent of extraction would be 97.5 %.
- lix. The coal grade is 2672 kcal/kg. The stripping ratio is 1:5. The average Gradient is 1 in 100. There will be three seams with thickness ranging upto 17 m.
- lx. The total estimated water requirement has been reduced as no additional water requirement. The level of ground water ranges from 70m to 80 m below ground level. void of 253.48 Ha at a depth of 60m from surface level which is proposed to be converted into water body
- lxi. The Method of mining would be Opencast by Board & Pillar Method.
- lxii. The Existing External Dump yard area is 478.14 Ha and External Dump quantity is 239.1 Mm³. Now internal dumping is carried out. No further external dump is planned for the project. There is one internal dump having an area of 2795.3 Ha with of Each Deck height is 20m (Total Five Decks) with a total quantity of 1958.83 Mm³
- lxiii. The life of mine is 27 Years.
- lxiv. Transportation: Coal transportation in pit by belt conveyor and stockyard to Thermal Station through belt conveyor
- lxv. R & R activity is involved. There are no 843 PAFs (SIA study is under progress).
- lxvi. Cost: Total capital cost of the project is Rs. 4.87 Crores. CSR Cost Rs. 5.44 / Ton. R&R Cost Rs. 11.80 Crore. Environmental Management Cost Rs.210.0 Lakhs (For 2013-14, Under Revenue Head)).
- lxvii. Water body : There is no river/Nallha flowing near or adjacent to the proposed mine.
- lxviii. Approvals: Ground water clearance approval obtained on 04.02.2003. Board's approval obtained on 30.04.2013. Mining plan has been prepared and is being submitted to MOC for approval. Mining closure plan {MOC approval No.43012 (272010-CPAM) Dt.31/03/2011 (for Existing mine)}.
- lxix. Wildlife issues: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

- lxx. Forestry issues: There is no Forest land involved.
- lxxi. Total afforestation plan shall be implemented covering an area of 3635.14 ha at the end of mining. Green Belt over an area of 108.22 ha. Density of tree plantation 400 trees/ ha of plants.
- lxxii. There are no court cases/violation pending with the project proponent.

- lxxiii. Neyveli Lignite Corporation Limited, (NLC) a Navratna Company of Government of India, is engaged in exploitation of the Lignite deposits.
- lxxiv. Over 50 year old 600 MW TPS-I at Neyveli, which is in operation since 1961 is proposed to be replaced by 1000 MW New Neyveli Thermal Power Station (NNTPS) in the year 2015-16.
- lxxv. Environmental Clearance was obtained on 21.10.2010 and thereafter Government of India sanctioned NNTPS in June, 2011 (Rs.5907.11 Crore).
- lxxvi. The present proposals is for Restructuring of Lignite production of Mine-I from 10.5 to 8.0 MTPA (along with Expansion of Mine-IA from 3.0 to 7.0 MTPA) to sustain the Lignite area in part of villages Ammeri and Vadakku Vellore in Cuddalore District of Tamilnadu.
- lxxvii. Open cast mechanized method deploying Specialized Mining Technology (SME) comprising of Bucket Wheel Excavators (BWE), Conveyors and Spreader being adopted will be continued.
- lxxviii. Production till the end of life of proposed linked Thermal Power Station (NNTPS) of 1000 MW.
- lxxix. To enhance Lignite Reserve, it is proposed to annex 457 Ha to the existing project

9.8.4 **The Committee after a detailed deliberations has recommended** for granting ToR with standard ToRs in addition to general ToRs with specific conditions that the points raised by the Committee in earlier meeting need to be reflected in the EIA/EMP report

9.9 Manoharpur Opencast Coalmine Project (8 MTPA) of M/s Orissa Power Generation Corp. Ltd. located in Ib Valley, Dist. Sundergarh, Orissa (EC based on TOR granted on 11.07.2008) in a total project area of 977.876 ha of which 653.509 ha is within the coal block and 324.367 ha is outside the coal block - Environment Clearance – further consideration of mine plan.

9.9.1 The proposal is of Manoharpur Opencast Coalmine Project (8 MTPA) of M/s Orissa Power Generation Corp. Ltd. located in Ib Valley, Dist. Sundergarh, Orissa (EC based on TOR granted on 11.07.2008) in a total project area of 977.876 ha of which 653.509 ha is within the coal block and 324.367 ha is outside the coal block.

9.9.2 The proposal has already been recommended by EAC in the meeting held on 07.11.2012 and could not be processed for issuance of EC for want of approved revised mine plan. The proponent submitted mine plan vide letter no. 3951 dated 21st December, 2013. The mine plan was approved by MOC vide letter no. 13016/28/2012-CA-I dated 11th December, 2013.

9.9.3 **The Committee noted above information on the mining plan and recommended for granting Environment Clearance** with specific conditions as stipulated in its meeting held on 6th -7th November, 2012.

9.10 Nawapara UG Expansion (0.18 MTPA to 0.36 MTPA Normative & 0.55 MTPA Peak in the total Project Area 442.14 ha) of M/s South Eastern Coalfields Ltd. Dist. Surguja, Chhattisgarh - EC based on TOR granted on 10.11.2009

9.10.1 The proposal is for Nawapara UG Expansion (0.18 MTPA to 0.36 MTPA Normative & 0.55 MTPA Peak in the total Project Area 442.14 ha) of M/s South Eastern Coalfields Ltd. Dist. Surguja, Chhattisgarh- EC based on TOR granted on 10.11.2009.

9.10.2 The proponent made the presentation and informed that:

- i. The project was accorded TOR vide letter no. J-11015/301/2009-IA.II (M) dated 10.11.2009.
- ii. The latitude and longitude of the project are $23^{\circ}12'00''$ and $23^{\circ}14'53''$ N and $83^{\circ}04'23''$ and $83^{\circ}07'53''$ E respectively.
- iii. The land usage of the project will be as follows:

Pre-Mining: The total land area is 442.14ha of which Government land 23.69ha and Tanancy land is 346.47ha

Post-Mining: Underground mining. Predicted maximum subsidence 2.01m, Max. slope change: 27.40mm/m Thus major impacts on the surface features like natural drainage pattern, buildings, water bodies, roads etc will be Negligible.

Core area: Area under which mining will be carried out: 427.39ha; Mineral storage : 2.00ha ; Service buildings & roads: 6.73ha ; Effluent treatment plant: 0.20 ha; Township : 3.52ha; Others (Magazine with safety zone) : 2.30ha. Thus Total : 442.14 ha.

- iv. The total geological reserve is 45.458 MT. The mineable reserve 12.630 MT, extractable reserve is 12.630 MT. The per cent of extraction would be 60 %.
- v. The coal grade is C/G5 . The stripping ratio is not applicable. The average Gradient is 3 degree.
- vi. There will be only one seam with thickness ranging from 1.20m to 2.50m
- vii. The total estimated water requirement is 610 m³/day. The level of ground water ranges from 1.40 m to 8.75 m.
- viii. The Method of mining would be Underground mining.
- ix. There will be no OB dumps as it is underground mine.
- x. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
- xi. The life of mine is 19 Years.
- xii. Transportation: Coal transportation in pit: face to pit top through belt conveyors, Surface to Siding through trucks and loading at siding by rail/road.
- xiii. There is no R & R involved. There are no PAFs. However there are 9 PAPs.
- xiv. Cost: Total capital cost of the project is Rs. 42.554 Crores. CSR Cost Rs. 5.00 per tonne. R&R Cost nil as no R&R involved. Environmental Management Cost 174.136 Lakhs.
- xv. Water body : Gulphuli nala located North-North East direction. No river flows within 20 kms from the mine.
- xvi. Approvals: Ground water clearance is not required as project falls in white category. Board's approval obtained on 17.08.2009. Mine plan / mine Closure plan was approved by SECL Board on 18.05.2013.
- xvii. Wildlife issues: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.

- xviii. Forestry issues: Total forest area involved 71.98 ha. Final FC has been obtained vide 8-46/99-FC dtd. 25.01.2001..
- xix. Total afforestation plan shall be implemented covering an area of 25 ha at the end of mining.
- xx. There are no court cases pending with the project proponent.
- xxi. Violation due to excess production during 2009-2013.
- xxii. Public Hearing was held on 29.08.2011, in the Premises of Additional Collector, Ambikapur.. The issues raised in the PH includes the drinking water facility, employment , trucks carrying coal are to be covered with tarpaulin, restriction on transportation during school time (starting and end of the school), compensation etc. The proponent has made commitments to addressed issues raised during the PH.

The Proponent has further submitted that:

- i. The mine discharge has been gainfully utilized for industrial purposes like dust suppression, green belt development and workshop use.
- ii. The groundwater quality in the area is potable.
- iii. Excess mine discharge, after treatment, is discharged into nearby agricultural field for irrigation use.
- iv. The impact on ground water levels is anticipated vary from 398 to 722 m from mine edge of the mine.
- v. The project is providing necessary arrangements under CSR for water supply to the affected people and improve the ground water recharge/water levels.
- vi. SECL monitors the impact of mining on ground water levels.
- vii. Major noise levels generates from surface activities including coal transportation, fan house etc.
- viii. Green belt has already been developed around infrastructure area and around fan evasee for noise attenuation .
- ix. Proper noise protective equipments (ear muffs etc.)is provided to the persons likely exposed in high noise level area.
- x. Proper maintenance of machines and coal transporting vehicles will be ensured to minimize noise.
- xi. CSR fund for project is Rs 5 % of net profit or Rs @ 5/- tonne of Production, whichever is more

9.10.3 The issues raised during Public Hearing include: Avoidance of encroachment along the road; Outsiders are getting registration of land; Proper system is required Development of affected people. Regular cleaning in temple and garden; Drinking water to nearby villages and road for transportation is to be provided. Public health should not affect; Company should take effective steps to protect the environment; shelter sheds are be made; Land owner should get employment and compensation; Any damage to land and house the company will be responsible; Medical facility and school bus is required; Mine water discharge shall be filtered before allowing it in field; Employment should be given to all land owners who's land is acquired; Trucks carrying coal are to be covered with tarpolin; Transportation at the time of starting and end of school shall be stopped. Coal should not be issued for domestic purpose, water sprinkling should be done in summer. Plantation shall be done along road. Compensation should be paid to the affected land owners. For awareness and to avoid an accident Information of mining operations should be given to interested people; Water table is decreasing, and causing shortage of water for drinking and agriculture; Plantation should be done on available land. People cannot understand technical information. Deforestation is going on. Plantations is not required if available forest is protected. Affected should get proper benefit. Farms are affecting. Community hall should be constructed.

9.10.4 The Committee after detailed deliberation sought additional information for further consideration.

- i. Monitoring of Ground water using the piezometer
- ii. Details of transportation of coal may be submitted. The proponent may also make a feasibility study for having railway siding near the mine.
- iii. The proponent has exceeded production in 2009-2013 which construes violation. MOEF may take appropriate action as per the existing OM and that the proponent may submit the Board's Resolution for not repeating the violation.
- iv. Detailed action plan on subsidence, transport of coal, CSR and public hearing may be submitted.
- v. The Compliance Report to the EC granted on 7.1.2002 be submitted as per the existing OM duly vetted by the Regional Office of the MOEF.

9.11 Kusmunda OCP Expansion (15.0 MTPA Normative & 18.75 MTPA Peak and the total Project area 2536.656 ha of which Phase I: 1673.62 ha; Phase II: 2536.656 ha) of M/s. South Eastern Coalfields Ltd., District Korba, Chhattisgarh- EC under 7(ii) of EIA Notification 2006

9.11.1 The proposal is of Kusmunda OCP Expansion (15.0 MTPA Normative & 18.75 MTPA Peak and the total Project area 2536.656 ha of which Phase I: 1673.62 ha; Phase II: 2536.656 ha) of M/s. South Eastern Coalfields Ltd., District Korba, Chhattisgarh- EC under 7(ii) of EIA Notification 2006

9.11.2 The proponent made the presentation and informed that:

- i. Environment clearance obtained on 03.06.2009. Now application submitted under 7(ii) of EIA Notification, 2006 for expansion.
- ii. EC Compliance report of the MoEF's Regional Office, Bhopal has been obtained on 03.01.2014.
- ii. The latitude and longitude of the project are 22° 15' 18" to 22° 21' 30" N and 82° 38' 39" to 82° 42' 08" E respectively.
- iv. The land usage of the project will be as follows:

Pre-Mining:

S.N	Particulars	Forest Land	Ten. Land	Govt/ Other Land	Total
(a)	PHASE I	205.96*	1040.63	427.03	1673.620
(b)	PHASE II (Including land given in Phase I)	253.489**	1695.995	586.752	2536.236

MoM_January, 2014 EAC(Coal)

* Proposal due for 1st Stage Clearance from MoEF Delhi

** Additional Forest Land Clearance is under process.

Post-Mining:

Sl.No.	Activities	Agriculture land	Forest land	grazing	waste	Water body	Total Area
1	Void/ Water body	0.00	0.00	0.00	0.00	199.32	199.32
2	Reserve for quarry expansion	0.00	0.00	212.0	0.00	0.00	212.0
3	Reclaimed internal OB dump	0.00	655.0	0.00	0.00	0.00	655.0
4	Safety zone	93.19	10.5	57.39	0.00	0.00	161.08
5	Rehabilitation	20.0	49.0	0.95	0.00	0.00	69.95
6	Colony	8.0	30.0	2.25	0.00	0.00	40.25
7	External dump	0.00	325.0	0.00	0.00	0.00	325
8	Infrastructures	82.15	59.46	158.39	0.00	0.00	300
9	Service road	5.50	0.00	2.45	0.00	0.00	7.95
10	Others	382.39	47.089	136.212	0.00	0.00	565.686
	Total	591.23	1176.0	569.642	0.00	199.32	2536.236

Core area:

Phase I :

Forest Land	:	205.96Ha
Govt. Land	:	427.02Ha
Agri./Tenancy Land	:	1040.63Ha

Land Use during Mining

S.NO.	purpose	Mining Lease Area				Total
		Government		Non-Government		
		Forest	Other	Agriculture	Other	
1	Area to be excavated	43.00	107.00	630.00	0.00	780.00
2	Storage for Top soil	0.00	0.00	3.00	0.00	3.00
3	Overburden/Dumps	3.00	83.00	239.00	0.00	325.00
4	Mineral storage	0.00	0.00	0.00	0.00	0.00
5	Infrastructure (W/Shop, Admin. Building)	59.46	158.39	82.15	0.00	300.00
6	Roads	0.00	2.45	5.50	0.00	7.95
7	Green Belt	0.00	0.00	10.00	0.00	10.00
8	Rehabilitation	49.00	0.95	20.00	0.00	69.95

	Site(outside mine)					
9	Colony(outside mine)	30.00	2.25	8.00	0.00	40.25
10	Safety Zone	10.50	55.00	20.05	0.00	86.00
11	Other specific (future mining)	11.00	17.99	22.48	0.00	51.47
	TOTAL	205.96	427.03	1040.63	0.00	1673.62

Phase II :

Forest Land	:	253.489 Ha
Govt. Land	:	586.752 Ha
Agriculture/Tenancy Land	:	1695.995 Ha

Land Use during Mining

Sl. NO.	purpose	Mining Lease Area				Total
		Government		Non-Government		
		Forest	Other	Agriculture	Other	
1	Area to be excavated	54.44	146.11	865.77	0.00	1066.32
2	Storage for Top soil	0.00	0.00	3.00	0.00	3.00
3	Overburden/Dumps	3.00	83.00	239.00	0.00	325.00
4	Mineral storage	0.00	0.00	0.00	0.00	0.00
5	Infrastructure(W/Shop, Admin. Building)	59.46	158.39	82.15	0.00	300.00
6	Roads	0.00	2.45	5.50	0.00	7.95
7	Green Belt	0.00	0.00	10.00	0.00	10.00
8	Rehabilitation Site(outside mine)	49.00	0.95	20.00	0.00	69.95
9	Colony(outside mine)	30.00	2.25	8.00	0.00	40.25
10	Safety Zone	10.50	57.39	80.19	0.00	148.08
11	Other specific (future mining)	47.089	136.212	382.385	0.00	565.686
	TOTAL	253.489	586.752	1695.995	0.00	2536.236

- iv. The total geological reserve is 886.68MT. The mineable reserve 415.03MT, (as on 31.03.2013), extractable reserve is 415.03MT(as on 31.03.2013). The per cent of extraction would be 90 %.
- v. The coal grade is F. The stripping ratio is 1.42 cum / Te of coal. The average Gradient is 4-10 Degree. There will be three seams with thickness ranging between 2.86m to 60.83m.
- vi. The total estimated water requirement is 8420 m³/day. The level of ground water ranges from 3.11m to 6.00 m. Void 199.32Ha at a depth of 235.00mtrs, which is proposed to be covered into water body.
- vii. The Method of mining would be by opencast with Shovel – Dumper Combination method.
- viii. There are fourteen external OB Dumps covering an area 325 ha. With the

height upto 30 m. The quantity will be 60Mm³. There is one internal dumps covering an area 655.00 Ha. with the height upto 60 m. The quantity will be 647.66 MT. There is total 1066.32 ha quarry area.

- ix. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
- x. The life of mine is 31 Years (as on 01.04.2010).
- xi. Transportation: Coal transportation in pit by tipper, Surface to Siding by tipper and loading at siding by belt conveyor and rail.
- xii. There is R & R involved. There are 2199 PAFs.
- xiii. Cost: Total capital cost of the project is Rs. 1188.21 Crore (Based on Project Report January 2008). CSR Cost Rs. 187.50 Lakhs/ year. R&R Cost Rs 3087.80 lakhs. Environmental Management Cost Rs. 4970.51 Lakhs.
- xiv. Water body : The Hasdeo River, Ahiran Nadi, Kholar Nullah and many small channels joining Hasdeo river
- xv. Approvals: Ground water clearance obtained on 25.11.2005. Board's approval obtained on 13.06.2008. Mining plan approval is not applicable as it is an expansion proposal. Mine Closure Plan approval on 28.10.2013
- xvi. Wildlife issues: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- xvii. Forestry issues: Total forest area involved 253.489 ha for mining. Total forest land is 253.489 Ha. of CJJ & BJJ in nature and its application for diversion/ regularization has been submitted to MOEF. For 205.961 Ha Forest land – application for diversion / regularization has been submitted to MOEF New Delhi. For 47.592 Ha. forest land - Only 40.544 ha revenue forest land has been notified under section- 7 (balance 6.985Ha. Revenue forest land may be acquired in future within 50 MTY PR which is under preparation.) Application for diversion / regularization of 40.544Ha. forest land has been submitted on dated 14.11.2010 for regularization at C.C.F.L.M. Office Raipur. Balance Forest land for which Stage -1 FC is not available is 253.489 Ha.
- xviii. Total afforestation plan shall be implemented covering an area of 1086.41 ha at the end of mining. Green Belt over an area of 106.41Ha . Density of tree plantation 2500 trees/ ha of plants.
- xix. A case has been filed under Sec. 44/47 of Water Act, Sec. 21/22, 37, 39 of Air Act, 15, 16 of EPA, 1986, against over production of coal in 2008-09 (Case No. 128/2012 Judicial Magistrate, Class I, Katghora). The matter is Pending at Honourable Court, Katghora Distt. Korba (C.G.)
- xx. Public Hearing was held on 27.08.2008 at Indra Stadium, Kusmunda.
- xxi. Pre-monsoon depth to water levels varies from 2.88 m to 9.90 m (Avg. 6.39 m) below ground level. Post-monsoon depth to water levels varies from 1.59 m to 6.95m (Avg. 4.27 m) below ground level. Average seasonal water level fluctuation is 0.48 m to 5.52 m (Avg. 3.00 m).
- xxii. The mine discharge has been gainfully utilised for domestic and industrial purposes like dust suppression, green belt development and workshop use.
- xxiii. Excess mine discharge, after treatment, is discharged into the Local land and drainage.
- xxiv. Total 18.22 Lakh saplings planted out of which 13.17 Lakh Saplings of mixed species planted on dump top, around infrastructure , roads & plain land.
- xxv. Backfilling is in progress and from 2011-12 only internal dumping is being done. 73 Ha of the internal dump has been biologically reclaimed.
- xxvi. 4.64 Kms. of fixed water sprinkler (121 Post) commissioned along coal transport road. 14 Kms. of black topped roads. At CHP 16 nos. Rain Guns have been provided along with 4 nos. Mist Sprinklers. 14 Mobile Water

- Sprinklers have been provided.
- xxvii. Covered conveyor belts for coal transport
- xxviii. Extensive plantation carried out in Mine & other areas till date.
- xxix. The fund for the CSR is allocated based on 5% of the retained earnings of previous year subject to minimum of R 5/- per ton of coal production of previous year.
- xxx. Out of the above, 80% is allocated for CSR activities to be carried out in the vicinity of Coalfield, within a radius of 25 kms.

9.11.3 The Committee has deliberated upon the Compliance report submitted by the RO, MOEF vide its letter 03.01.2014. While maximum conditions stipulated in the EC no. J-11015/1205/2007-1A.II(M), Dated 3rd June 2009, some conditions such as transportation of coal, restoration of top soil, garland drains, siltation pond, retaining wall, plantation in decoaled area, compliance to the dust emission norms are partly complied. . The Committee has suggested that this may be stipulated as conditions and that the proponent should enhance its efforts for compliance of these standards.

As a part of the monitoring mechanism, the Committee has advised that the proponent should submit the compliance report each year to the Concerned State Pollution Control Board and the RO, MOEF.

9.11.4 The Committee after deliberations on the submissions of the Proponent and the compliance report of the RO, MOEF has recommended for granting Environmental Clearance with the following specific conditions:

- i. There shall be no external OB dumps after the mine is over
- ii. The OB should be completely re-handled into the mine void.
- iii. The proponent should engage environmental personnel for the project.
- iv. The dust emissions and fugitive emissions should be controlled.
- v. All other conditions stipulated in the EC no. J-11015/1205/2007-1A.II(M), Dated 3rd June 2009 should form as the conditions.
- vi. The Committee has noted that the proponent has exceeded the production against the quantity specified in the EC. A case has been filed in the Court of Judicial Magistrate, Class I, Katghora which is Pending. MOEF may take appropriate action in the legal matter.
- vii. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.

9.12 Tapin South Expansion OCP (0.06 MTPA to 2.00 MTPA Normative & 0.6 MTPA to 2.50 MTPA Peak in an ML area 134.56 ha to 188.66 ha for Phase-I and 223.05 ha to 277.15 ha for Phase-II), M/s Central Coalfields Limited, Dist. Ramgarh, Jharkhand- TOR

9.12.1 The proposal is of Tapin South Expansion OCP (**0.06 MTPA to 2.00 MTPA Normative & 0.6 MTPA to 2.50 MTPA Peak in an ML area 134.56 ha to 188.66 ha for Phase-I and 223.05 ha to 277.15 ha for Phase-II**), M/s Central Coalfields Limited, Dist. Ramgarh, Jharkhand

9.12.2 The proponent made the presentation and informed that:

- i. It is an expansion project. Pre-1994 Mine. No Environment Clearance has been obtained for existing mine. First time applied for TOR.
- ii. The latitude and longitude of the project are 23°49'27" & 23°50'00" N and 85°28'17" &

85°29'27" respectively.

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

Pre-Mining & Post-Mining: Details will be given in Draft EIA /EMP report.

Core Area :

Sl. No.	Particular	Total Land required (Phase I + Phase II)			Land required (Phase I)		
		Forest Land (Ha)	Non Forest Land (Ha)	Total Land (Ha)	Forest Land (Ha)	Non - Forest Land (Ha)	Total Land (Ha)
1	Quarry	28.96	149.33	178.30	0	89.78	89.78
2	Industrial area	4.36	7.61	11.97	0	6.75	6.75
3	Haul road	0	1.9	1.90	0	1.9	1.9
4	External OB Dump	0	52.9	52.90	0	52.9	52.9
6	Green Belt	0	14.92	14.92	0	18.64	18.64
7	Safety zone	1.65	15.52	17.17	0	18.69	18.69
8	Total	34.97	242.18	277.15	0	188.66	188.66

iv. The total geological reserve is 72.47 MT. The mineable reserve 36.56 MT, extractable reserve is 36.56 MT. The per cent of extraction would be --- %.

v. The coal grade is W-IV. The stripping ratio is 3.51(Cum/Tonne). The average Gradient is 3-10 deg. There will be ten seams with thickness ranging upto 0.12 m to 16.44 m .

vi. The total estimated water requirement is 271 m³/day. The level of ground water ranges from 3 m to 12 m. A void of area 10.90 ha at a depth of maximum 110 m is proposed to be converted into a water body after mine closure.

vii. The Method of mining would be by opencast with Shovel – Dumper Combination method.

viii. There are one external OB Dumps covering an area 52.90 ha. With the height upto 90 m. The quantity will be 23 m³. There is one internal dumps covering an area 134.58 ha. with the height upto 90 m above ground level. The quantity will be 105.31 m³.. There is total 89.78 Ha phase I and 178.3 Ha phase II quarry area. Maximum Quarry Depth 155m below ground level

ix. The life of mine is 20 Years.

x. Transportation: Coal transportation in pit by dumper, Surface to Siding by truck and loading at siding by rail

xi. There is R & R involved. There are 200PAFs.

xii. Cost: Total capital cost of the project is Rs. 331.98 Crores. CSR Cost Rs. 5.00 per tonne. R&R Cost Rs 210 Crores. Environmental Management Cost Rs. 2028.18 Lakhs).

xiii. Water body: River: The drainage of the block is controlled by easterly flowing Bokaro river which flows through the center of the coalfield. Nallha: A

tributary of Bokaro River, Jharna Nala flows from north to south and joins Bokaro River.

- xiv. Approvals: To be applied for Ground water clearance. Board's approval obtained on September, 2012. Mining plan Approval from MOC is yet to be obtained. Mine Closure Plan approval on September, 2012
- xv. Wildlife issues: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- xvi. Forestry issues: Total forest area involved 34.97 ha for mining. Nil for Phase-I and 34.97 ha for Phase-II (including safety zone of 1.65 ha). Stage 1 under process for phase II.
- xvii. Total afforestation plan shall be implemented at the end of mining. Green Belt will be developed with a density of tree plantation 2500 trees/ ha of plants.

- xviii. There are no court cases/violation pending with the project proponent.

9.12.3 The **Committee after deliberations on the submissions of the Proponent recommended for granting TOR** with the following specific TORs in addition to other general TORs:

- i. Based on the submission of the proponent that they be granted TOR for Phase-1 of the project with no forest land involved with a total ML area of 188.66 ha.
- ii. The proponent to submit the revised EIA/EMP report with non-forest area with a revised mining plan during EC presentation.
- iii. The feasibility of transportation of coal by rail and also by the mechanically covered trucks passing through main roads to be examined.
- iv. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.

9.13 Jaganathpur 'A' Underground Coalmine Project (0.6 MTPA in an ML area of 1034 ha) of M/s West Bengal Mineral Development & Trading Corp. Ltd., located in Raniganj Coalfields, Dist. Burdwan, West Bengal - Extension of Validity.

9.13.1 The proposal is of Jaganathpur 'A' Underground Coalmine Project (0.6 MTPA in an ML area of 1034 ha) of M/s West Bengal Mineral Development & Trading Corp. Ltd., located in Raniganj Coalfields, Dist. Burdwan, West Bengal.

9.13.2 The TOR was granted to the project 27.06.2011. Additional TOR was granted on 10.02.2012. The proponent requested for extension of validity of TOR as there is a delay in preparation of EIA/EMP report.

9.13.3 The Project Proponent did not attend the meeting. The project was deferred.

9.14 Jaganathpur 'B' Underground Coalmine Project (0.8 MTPA in an ML area of 862 ha) of M/s West Bengal Mineral Development & Trading Corp. Ltd., located in Raniganj Coalfields, West Bengal - Extension of Validity.

9.14.1 The proposal is of Jaganathpur 'B' Underground Coalmine Project (0.8 MTPA in an ML area of 862 ha) of M/s West Bengal Mineral Development & Trading Corp. Ltd., located in Raniganj Coalfields, West Bengal.

9.14.2 The TOR was granted to the project 30.09.2011. The proponent requested for extension of validity of TOR as there is a delay in preparation of EIA/EMP report.

9.14.3 The Project Proponent did not attend the meeting. The project was deferred.

9.15 Gare IV/6 Coal Mine Project (OC and UG) (4 MTPA in an area of 381.42 ha) and Coal Washery (4 MTPA) in an ML area of 381.42 ha of M/s Jindal Steel & Power Ltd., Tehsil Tamnar, district Raigarh, Chhattisgarh - EC based on TOR granted on 19.10.2012- Further consideration.

9.15.1 The proposal is of Gare IV/6 Coal Mine Project (OC and UG) (4 MTPA in an area of 381.42 ha) and Coal Washery (4 MTPA) in an ML area of 381.42 ha of M/s Jindal Steel & Power Ltd., Tehsil Tamnar, district Raigarh, Chhattisgarh. TOR was granted on 19.10.2012.

9.15.2 Environmental Clearance was granted to 4 MTPA Gare IV/6 with coal washery on 18.05.2009. The Environmental Clearance was challenged in the National Green Tribunal (NGT) vide appeal no. 3/2011 (T) (NEAA no. 26 of 2009), which set aside the EC and directed for re-conduct of public hearing. As a follow up of the NGT's directions, the proponent submitted fresh application for TOR and EC. MOEF had granted fresh Term of Reference vide letter No. J-11015/214/2012.IA.II(M) dated 19.10.2012. Public Hearing was conducted at village Tehlirampur, Tehsil Tamnar, Dist. Raigarh, Chhattisgarh on 25.09.2013.

9.15.3. The proposal was considered in the 7th EAC held on 12-13th December, 2013. The Committee after deliberation sought following information for further consideration of the proposal:

- i. The proponent has submitted that the land acquisition has partly done. The details of the land acquisition be submitted.
- ii. The issues raised and of the commitment of the proponent during Public Hearing along with the action plan and budgetary provision be submitted in a tabular form for further consideration.
- iii. The embankment wall shall be built 15 m from the HFL of nalla
- iv. The transportation of coal shall be by mechanically covered trucks.
- v. No fly ash shall be dumped into the mine void.
- vi. A comparative analysis of conditions of earlier EIA and the present EIA be submitted.
- vii. The action plan for depletion of Ground Water be submitted.
- viii. The analysis of water quality data be supplemented with no. date, time, unit.
- ix. The details of wildlife management plan particularly w.r.t. elephant movement be submitted.
- x. The details on the CAG report may be submitted in a form of an affidavit.
- xi. The details of CSR activities along with the budgetary provision be submitted.
- xii. A detailed reply along with action plan and the budgetary provision for addressing the issues of massive increase in traffic, impacts on Kelo River, the impact of decrease of ground water, impact on climate change and the backfilling by thermal power plant fly ash.
- xiii. The impact of rail corridor on crossing Hasdeo Arand forest landscape.
- xiii. A detailed reply along with action plan and the budgetary provision for addressing the issues of massive increase in traffic, impacts on Kelo River, the impact of decrease of ground water, impact on climate change and the backfilling by thermal power plant fly ash.
- xiv. The impact of rail corridor on crossing Hasdeo Arand forest landscape.

9.15.4 The proponent has submitted the responses to the points raised by the Committee, inter-alia, the Public Hearing:

- i. Part of the land required for coal mine has been acquired by the company. The details are given under. Application for acquisition of private land of 254.341 Ha (Non-Tribal Land= 98.142 + Tribal Land= 156.199) and Government land of 33.513 Ha has been submitted to the State Government on 23-07-2008. 28 Ha out of 98.142 Ha Non-tribal land has been acquired by direct negotiation. Surface right over 156.199 Ha of Tribal land and remaining Non-Tribal land will be acquired through State Government under the Land Revenue Code, 1959 for which application has been filed as mentioned above. 33.513 Ha of Government land will be transferred by the State Govt. in favor of our company after Mining Lease Agreement is signed with State Government. Stage I Forest clearance for 93.566 Ha has been granted by MoEF on 30-12-2010. Stage II will be obtained on receipt of Environmental Clearance.
- ii. JSPL is committed not to discharge any water from colony, washery and workshop in the Kelo River. This waste water will first be treated and will then be utilised for plantation, dust suppression as well as meeting the water requirements of coal washery.
- iii. The surplus unutilised mined out water will be first treated in the surface water tank to settle the suspended solids and thereafter after carrying out the quality checks, will be discharged in Kelo river as per statutory discharge norms.
- iv. The mine pit will be surrounded by garland drain, the water from which will be led to settling tank, thereafter, the water will be released to the Kelo river after settlement of suspended solids. Thus, the water from catchment outside the pit, will continue to make its way to Kelo river and will not go to the mine pit.
- v. The proponent has allocated budgetary provisions for construction of settling tank- Rs.300 lakhs; effluent treatment plant (workshop)- rs.30 lakhs; garland drains- rs. 40 lakhs
- vi. It was explained during Public Hearing that the company will be taking adequate measures so that there shall be no increase in road accidents due to increase in number of trucks movement on the road. The road transport will be used only for a short period till the East Rail Corridor is constructed for which agreement has already been signed between IRCON, Chhattisgarh Government and SECL.
- vii. The new EIA Report mentions that an MoU between the IRCON International, the Chhattisgarh Government and SECL has been signed to build around 300 km of rail corridor at an estimated cost of Rs. 4000 crores to facilitate transportation of coal and passenger traffic. The East Rail Corridor will be utilized for movement of coal to the end use plants of JSPL and NSPL. Once the corridor is operational the traffic load on road will be reduced.
- viii. EIA Report notes that additional 30 trucks/ hr. would be added to the existing traffic after the mine becomes operational. These studies have been done as per the norms of Indian Roads Congress code.
- ix. The proponent will widening and strengthening the road between the mine & the end use plant
- x. The proponent will take necessary precautionary measures such as providing speed breakers , Mandatory training and awareness programs for drivers, Regular health check-ups of drivers and helpers, Road development and maintenance, speed Governors etc
- xi. The Hydro-geological study has indicated that there will be no appreciable effect on ground water due to mining
- xii. it is proposed to construct one Gabion structure on Kelo river and 10 bunds on various natural drains around the mine lease area for rain water harvesting. Six number of

- recharge trenches with recharge wells are proposed in surrounding villages to utilise the overland flow from the open field during monsoon season
- xiii. Piezometers for Water monitoring will be installed and regular monitoring of Ground water level will be carried out.
- xiv. The proponent has allocated Budgetary Provision: Rs 55 lacs for Rainwater Harvesting, maintenance for bore wells and overhead tanks are included in Rs 230 lacs revenue budget provided for CSR Activities etc.
- xv. JSPL submitted that cumulative impact assessment study carried out by him is not superficial. Data were used which are in public domain have been taken and properly checked but also data of various industries and mining projects was collected. Additionally, baseline data was collected in study area from Oct-Dec 2012 by NABL & MOEF accredited laboratory was also used. Total of 16 existing and proposed industries were studied for cumulative impact that were on air quality, water resources and quality of ground water and surface water, ecology and fisheries etc. The study gives a comprehensive view of ground realities in compliance with the TOR conditions.
- xvi. However, in case MoEF/CECB (State Government) wants to conduct a cumulative Impact study over the area, JSPL is willing to cooperate and contribute proportionately to the cost of such study.
- xvii. JSPL submits that back filling of the Mine Void with ash from the TPP along with overburden of the mine is necessary from 3rd year of mining operations for the reasons viz: Compliance of Environment Clearance and Consent to Establish (4x150 MW) of Dongamahua Captive Thermal Power Plant require backfilling of fly ash to be one of the important mode for utilization of fly ash; Notification of MoEF dated 3-11-2009 specifically allows backfilling of mine out areas; TPP Ash will be used for backfilling in a scientific manner and in accordance with the approved Mine Closure Plan and after taking due approval of DGMS; Prior Experience of JSPL in scientific back filling of Gare Palma IV/1 Mine of JSPL without any adverse impact on Environment.
- xviii. DGMS had permitted fly ash filling in opencast working vide letter dated 14.03.2009 for operating coal mine at Gare IV/1. The permissions by the DGMS have been renewed on regular basis and are subsisting.
- xix. The CAG Report does not pertain to any environmental issue or any particular individual company. An affidavit by JSPL has been submitted to MoEF stating the CAG Report is not under CBI investigation. However, CBI is investigating all the coal blocks which have been allocated after 1993. Since the present block is also allotted after 1993, the CBI is also investigating the same. The company has submitted all the information desired by CBI and till date no FIR has been lodged by the CBI for this Coal block.
- xx. As and when the stage of acquisition of land is reached, provisions of PESA would be duly followed.
- xxi. This objection has been raised without understanding the provisions of PESA. There is no violation of PESA Act as the provisions of PESA shall become applicable at the time of land acquisition.
- xxii. As required under EIA Notification, 2009, a summary was accordingly submitted in Hindi as well as in English. The provision therefore, has been fully followed and thus there is no violation of the EIA Notification, 2006. It was explained during the Public Hearing that it is not correct to say that new EIA report is based on data of 2009. On the other hand, the new EIA report has been prepared based on data collected during 1st October to 31st December 2012 (Post- monsoon).
- xxiii. JSPL is committed to construct an embankment of appropriate height to safeguard against high floods. Building of embankment wall at a distance of 15 m from HFL of Kelo River will result in sterilization of substantial quantity of coal in the mine.

Construction of embankment after a safe distance of 15 meter from the right bank of Kelo River will take care of environmental concerns as well as potential of surface inundation of the Mine.

- xxiv. It may please be noted that in comparison to earlier EIA/ EMP, there is no major change in the project/mining features such as location, lease area, mining methodology, mining plan, etc in the present EIA. Changes between the earlier EIA/ EMP and the present EIA have been detailed in a comparative chart are as follows:

Sr. No	Details	EIA/EMP May 2008	EIA/EMP November 2013
	No of villages	5	6
	Forest land	92.823 Ha	93.566 Ha
	Private land	256.992 Ha	254.341 Ha
	Government land	31.605 Ha	33.513 Ha
	Life of mine(OC & UG)	52years	34 years (approx)
	OC life	21 years	23 years
	UG life	37 years. From 13 th year upto end of mine life (47 th year)	From 8 th year and continues up to 34 th year
	Cost of project	300 crores	479 crores

- xxv. Latest water quality analysis of upstream and downstream of the proposed project in Kelo, as per Schedule VI of Environment (Protection) Rules, 1986 has been done in line with the required parameters mentioning the time, date and units. A copy of the Report dated 02.01.2014 of ANACON Labs, NABL accredited laboratory are as follows:

Parameter	Kelo River upstream	Kelo River Downstream	Confluence Point of Kelo River & Bendra Nala	Limits as per Schedule VI
pH	7.59	7.53	7.09	5.5-9.0
Total Suspended solids (mg/l)	BDL	16.2	28.4	100
Total Dissolved Solids (mg/l)	289	352	307	-
Biological Oxygen Demand (BOD) (27° C for 3 days) (mg/l)	BDL	2.7	2.7	30

Dissolved Oxygen (mg/l)	6.6	6.8	5.6	-
Chemical Oxygen Demand (mg/l)	4.7	8.4	8.1	250

- xxvi. A Wildlife Conservation Plan already has been prepared by experts in the field which was duly approved by PCCF (Wildlife), State Govt of Chhattisgarh.
- xxvii. The Mine Lease area and study area (10 Km) do not lie in the migratory routes of elephants. No report of loss of human life has been recorded during the period January 2010- October 2013. Damage to crops & property was reported.
- xxviii. It was also reported that elephants from Orissa enter Raigarh forest division near villages of Barkachar, Chhakabahal & Kenanibahal, which are away from the buffer zone of the project area.
- xxix. However, stray movements of elephants have been reported in Villages Semijor , Hinjhar, Chhirwani, Nawapara, Kachkoba, etc within 10 KM radius of project area but quite far away of the project (in the periphery of 10 km radius)
- xxx. A financial outlay of Rs. 342.25 lacs has been provided for the Wildlife Conservation. This entire amount has been deposited with DFO, Raigarh on 23-01-2012. This outlay of expenditure also includes expenditure on measures for Elephant conservation & associated activities.
- xxxi. JSPL, as a condition of the Stage – I of Forest Clearance, has to earmark 1 % of the market price of total coal produced annually and deposit the same with State Forest department for the protection and development of forest and wild life of the area as part of the CSR.
- xxxii. JSPL has already deposited Rs 64.50 Lakh as the total value of the market price of expected production of 1.5 Million Tonne during the 1st year and a bank guarantee for Rs 1.72 Crore for subsequent years, when the mine will produce 4 Million Tonnes annually.
- xxxiii. This amount will be in addition to Rs 3.4225 Crore, which has been deposited for implementation of the approved Wild Life Conservation Plan. JSPL, under the Stage – I Forest Clearance, has also given an undertaking to the State Forest Department to contribute proportionately to the Regional Wild Life Management Plan, which is under preparation.
- xxxiv. Since receipt of earlier Environmental Clearance dated 18-05-2009, JSPL is continuously working for the upliftment of locals and development of the region. Till date a total of Rs. 9.05 crores has been spent.
- xxxv. The CSR activities include education, health, sports, arts and culture, sustainable livelihood, infrastructure. The proposed budget for CSR activities is Rs 600.00 lacs over a period of three years as capital cost with Revenue / recurring expenditure of Rs. 230.00 Lac
- xxxvi. Action plan and the budgetary provision have been prepared for addressing the issues of (1) road safety issues due to increase in traffic; (2) impacts on Kelo River due to water discharge; (3) the impact of decrease of ground water due to mining; (4) backfilling of fly ash generated from thermal power plant fly ash have already been covered.
- xxxvii. As regards the impact on climate change, in case MoEF/ CECB gives any specific direction, JSPL will abide by the same.
- xxxviii. The Hasdeo Arand forest area does not fall in the proposed rail corridor and is faraway from last railway station -Korba of this Rail Corridor
- xxxix. A Memorandum of Understanding has been signed between Government of Chhattisgarh, South Eastern Coalfields Ltd. and IRCON International Ltd. on

03.11.2012 for construction of a rail corridor. The rail corridor is expected to be completed in a period of three years

- xl. JSPL along with other Mine operators of Gare Palma sector will also use this rail corridor for movement of coal to end use plants.
- xli. JSPL will construct a railway siding near to the coal mine for using this rail corridor for transporting coal to JSPL steel plant and Steel Plant of NSPL.

9.15.5 Committee after deliberations on the submissions of the Proponent, has recommended for granting environmental clearance with the following specific conditions:

- i. There shall be no discharge of water from colony, washery and workshop in the Kelo River. This waste water will first be treated and will then be utilised for plantation, dust suppression as well as meeting the water requirements of coal washery.
- ii. The surplus unutilised mined out water shall be first treated in the surface water tank to settle the suspended solids and thereafter after carrying out the quality checks, will be discharged in Kelo river as per statutory discharge norms.
- iii. The proponent will widen and strengthen the road between the mine & the end use plant
- iv. The proponent will utmost precautionary measures during transportation of coal.
- v. Rain water harvesting shall be carried out.
- vi. Piezometers for Water monitoring shall be installed and regular monitoring of Ground water level shall be carried out
- vii. There shall be no back filling of the mine void with ash from the TPP along with overburden.
- viii. The Company has stated that it has submitted all the information sought by CBI and till date no FIR has been lodged by the CBI for this Coal block. The EC will therefore be subject to outcome of the CBI investigation.
- ix. As and when the stage of acquisition of land is reached, provisions of PESA shall be duly followed.
 - x. Construct of an embankment be made in order to safeguard against high floods.
 - xi. Building of embankment wall shall be at a distance of 15 m from HFL
- xii. It was also reported that elephants from Orissa enter Raigarh forest division near villages of Barkachar, Chhakabahal & Kenanibahal, which are away from the buffer zone of the project area. However, stray movements of elephants have been reported in Villages Semijor , Hinjhar, Chhirwani, Nawapara, Kachkoba, etc within 10 KM radius of project area but quite far away of the project (in the periphery of 10 km radius). Therefore, a Wildlife Conservation Plan already shall be prepared with duly approved by PCCF (Wildlife), State Govt of Chhattisgarh for its implementation. Adequate funds as directed by PCCF (Wildlife) shall be deposited with the State Government,
- xiii. Environmental clearance to the proposal is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the Standing Committee of National Board for Wildlife, as applicable.
- xiv. As a condition of the Stage – I of Forest Clearance, the proponent shall earmark 1 % of the market price of total coal produced annually and deposit the same with State Forest department for the protection and development of forest and wild life of the area.
- xv. The proponent shall give an undertaking to the State Forest Department to contribute proportionately to the Regional Wild Life Management Plan, which is under preparation
- xvi. The proponent shall make an action plan along with budgetary provision for the CSR activities that may include education, health, sports, arts and culture, sustainable

- livelihood, infrastructure. The proponent has committed a budget for CSR activities is Rs 600.00 lacs over a period of three years as capital cost with Revenue / recurring expenditure of Rs. 230.00 Lac per annum, after commissioning of the mine.
- xvii. The proponent shall prepare an Action plan and the budgetary provision for addressing the issues of (1) road safety issues due to increase in traffic; (2) impacts on Kelo River due to water discharge; (3) the impact of decrease of ground water due to mining;
 - xviii. The proponent shall abide by any specific direction from MoEF/ CECEB with regard to the impact on climate change.
 - xix. Road transport of all coal will be by mechanically covered trucks only for 3 yrs.
 - xx. Rly. Siding will be taken to the mine site from the proposed rly. Corridor which is expected within 3 yrs. And mechanised CHP/SILO loading arrangement will be done simultaneously for loading into wagons.

9.16 Rawanwara North Coal Block Underground Coalmine Project (1.4 MTPA over 1680.593 ha) of M/s SKS Ispat & Power Ltd., located in PENCH-KANHAN VALLEY DIST. CHINDWARA, MADHYA PRADESH - EC based on TOR granted on 17.08.2011

9.16.1 The proposal is for Rawanwara North Coal Block Underground Coalmine Project (1.4 MTPA over 1680.593 ha) of M/s SKS Ispat & Power Ltd., located in PENCH-KANHAN VALLEY DIST. CHINDWARA, MADHYA PRADESH

9.16.2 The proponent made the presentation and informed that:

- i. The project was accorded TOR vide letter no. J-11015/252/2009-IA.II (M) dated 17.08.2011.
- ii. The latitude and longitude of the project are 22° 12'40" - 22° 14'37" N and 78° 47'20" - 78° 51' 18" E respectively.
- iii. The land usage of the project will be as follows:

Pre-Mining*: 1670 ha (forest – 491 ha, agriculture – 1015 ha, habitation – 16 ha, water body – 90 ha, waste lan - 52 ha, Road etc. – 6 ha)

Post- Mining* - 1670 HA (agriculture-05 ha, habitation-06 ha, water bodies-45 ha, waste land -1614 ha)

(*Later on Area reduced to 1554 HA after joint survey with WCL.)

Core area – 1554 HA

- iv. The total geological reserve is 170.22 MT. The mineable reserve 79.00 MT, extractable reserve is 55.3 MT. The per cent of extraction would be 36 %.
- v. The coal grade is A-G (range), C-D (mean). The stripping ratio is not applicable since this is underground mine. . The average Gradient is 80 - 100 due N and NW. There will be six seams with thickness ranging upto 4.46 m.
- vi. The total estimated water requirement is 235 m3/day. The level of ground water ranges from 4.57 m to 15.14 m.
- vii. The Method of mining would be by Board & Pillar Method.
- viii. There are no OB Dumps as (Coal extraction will be done by Underground Mining Method).
- ix. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.

- x. The life of mine is 17 Years.
- xi. Transportation: Coal transportation in pit by dumper, Surface to Siding by tipper and loading at siding by pay loaders
- xii. There is no R & R involved. There are no PAFs.
- xiii. Cost: Total capital cost of the project is Rs. 300 Crores. CSR Cost Rs. 1.5 crores/year. R&R Cost Nil. Environmental Management Cost (capital cost rs.50.4 crores, annual recurring cost rs.1.15 crores).
- xiv. Water body : this is UG mine; although river Pench and Ghatmali nala and Kondra nala flowing on the lease area
- xv. Approvals: For ground water clearance applied on 07.08.2010, and again requested vide letter dated 14.11.2013 to regional director, cgwb Bhopal for issue of the final approval letter. Board's approval obtained on ---. Mining plan has been approved on 12.07.2010 ?????. Mine Closure Plan approval on 12.07.2010.
- xvi. Wildlife issues: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- xvii. Forestry issues: Total forest area involved 375 ha for mining. Applied for forest clearance ON 19.10.2010, details forwarded by MP state forest department to moef, vide letter dated – 04.02.2013.
- xviii. Total afforestation plan shall be implemented covering an area of 6.08 ha at the end of mining. Green Belt over an area of 6.08 ha. Density of tree plantation 2500 trees/ha of plants.
- xix. There are no court cases/violation pending with the project proponent.
- xx. Public Hearing was held on 03.03.2012.

9.16.3 The Committee after deliberations on the submissions of the Proponent, has sought the following information for further consideration:

- i. Details of transportation of coal be submitted.
- ii. The proponent should, in an Affidavit, state that it is not under any investigation by CBI and IMG.
- iii. Mine plan approval dated 12.07.2010.
- iv. The details of the Public Hearing be given in a tabular manner indicating the issues raised, comments of the proponent, Action Plan along with budgetary provisions.
- v. The Checklist should be resubmitted in a proper manner.
- vi. Details of subsidence and the CSR activities along with the budgetary provision be submitted.
- vii. Letter from NTCA be submitted with regard to whether the project is within the Tiger Corridor.

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

9.17.1 The proposal is for Cluster No.11 (11 mines of a combined production capacity of 9.1 MTPA (normative) 9.9 MTPA (peak) capacity in a combined ML area of 4218 ha) of M/s

Eastern Coalfields Ltd., located in Raniganj Coalfields, West Bengal.

9.17.2 The TOR was granted to the project 13.01.2012. Since, there is a delay in data generation for EIA study due to large area involved and tendering formalities therefore needs extension of validity of TOR. The Draft EIA & EMP is under preparation and likely to be submitted to WBPCB in February, 2014. The anticipated date of Public Hearing is in April 2014

9.17.3 The **Committee has recommended the extension of TOR** by one year i.e. 12.01.2015

9.18 Cluster No. 10 of 24 mines (Expn. from 2 MTPA to 7.2 MTPA (peak) in a combined ML area of 6349 ha of M/s Eastern Coalfields Ltd., located in Raniganj Coalfields, Dist. Burdwan, West Bengal – Extension of TOR Validity.

9.18.1 The proposal is for Cluster No. 10 of 24 mines (Expn. from 2 MTPA to 7.2 MTPA (peak) in a combined ML area of 6349 ha of **M/s Eastern Coalfields Ltd.**, located in Raniganj Coalfields, Dist. Burdwan, West Bengal

9.18.2 The TOR was granted to the project 30.09.2011. Since, there is a delay in data generation for EIA study due to large area involved and tendering formalities therefore needs extension of validity of TOR. The Draft EIA & EMP is under preparation and likely to be submitted to WBPCB in February, 2014. The anticipated date of Public Hearing is in April 2014

9.18.3 The **Committee has recommended the extension of TOR** by one year i.e. 12.01.2015

9.19 Cluster 12 comprising of 17 mines of a combined prod. capacity of 13.321 MTPA with a peak production of 22.289 MTPA in a combined ML area of 11164 ha of M/s Eastern Coalfields Ltd, located in Raniganj Coalfields, in Tehsil Haripur Block, dist. Burdwan, West Bengal - Extension of TOR Validity.

9.19.1 The proposal is for Cluster 12 comprising of 17 mines of a combined prod. capacity of 13.321 MTPA with a peak production of 22.289 MTPA in a combined ML area of 11164 ha of **M/s Eastern Coalfields Ltd**, located in Raniganj Coalfields, in Tehsil Haripur Block, dist. Burdwan, West Bengal

9.19.2 The TOR was granted to the project 15.06.2011. The TOR modification was given on 02.12.2011. Since, there is a delay in data generation for EIA study due to large area involved and tendering formalities therefore needs extension of validity of TOR. The Draft EIA & EMP has been submitted to WBPCB in December, 2013. The anticipated date of Public Hearing is in February, 2014

9.19.3 The **Committee has recommended the extension of TOR** by one year i.e. 02.12.2014

9.20 Cluster 2 (3 mines of 0.36 MTPA with a peak prod. of 0.45 MTPA in a combined ML area of 1018 ha) M/s Eastern Coalfields Ltd., located in Raniganj Coalfields, dist. Burdwan, West Bengal - Extension of TOR Validity.

9.20.1 The proposal is for Cluster 2 (3 mines of 0.36 MTPA with a peak prod. of 0.45 MTPA in a combined ML area of 1018 ha) **M/s Eastern Coalfields Ltd.**, located in Raniganj Coalfields, dist. Burdwan, West Bengal

9.20.2 The TOR was granted to the project 19.05.2011. Since, there is a delay in data generation for EIA study due to large area involved and tendering formalities therefore needs extension of validity of TOR. The public hearing was held on 09.09.2013. The final EIA & EMP has been prepared and is will be submitted by March, 2014.

9.20.3 **The Committee has recommended the extension of TOR** by one year i.e. 18.05.2014

9.21 Cluster 6 (9 UG mines of a combined prod. capacity of 1.013 MTPA normative and 1.750 MTPA peak in a total combined ML area of 4775 ha) M/s Eastern Coalfields Ltd., located in Raniganj Coalfields, dist. Burdwan, West Bengal - Extension of TOR Validity

9.21.1 The proposal is for Cluster 6 (9 UG mines of a combined prod. capacity of 1.013 MTPA normative and 1.750 MTPA peak in a total combined ML area of 4775 ha) **M/s Eastern Coalfields Ltd.**, located in Raniganj Coalfields, dist. Burdwan, West Bengal

9.21.2 The TOR was granted to the project 09.02.2011. The TOR modification was given on 29.02.2012. Since, there is a delay in conducting Public Hearing by SPCB due to Panchayat Election in the State in the Month of July, 2013. Therefore needs extension of validity of TOR. The Public Hearing was done 29.11.2013. The final EIA & EMP is under preparation and likely to be submitted by May, 2014.

9.17.3 **The Committee has recommended the extension of TOR** by one year i.e. 29.02.2015

9.22 Cluster 7 (4 UG mines of a prod. capacity of 0.18 MTPA normative and 0.24 MTPA peak in a combined ML area of 2313 ha) M/s Eastern Coalfields Ltd., located in Raniganj Coalfields, dist. Burdwan, West Bengal - Extension of TOR Validity.

9.22.1 The proposal is for Cluster 7 (4 UG mines of a prod. capacity of 0.18 MTPA normative and 0.24 MTPA peak in a combined ML area of 2313 ha) **M/s Eastern Coalfields Ltd.**, located in Raniganj Coalfields, dist. Burdwan, West Bengal

9.22.2 The TOR was granted to the project 27.06.2011. The TOR modification was given on 29.02.2012.. Since, there is a delay in conducting Public Hearing by SPCB due to Panchayat Election in the State in the Month of July, 2013. Therefore needs extension of validity of

TOR. The Public Hearing was done 27.12.2013. The final EIA & EMP is under preparation and likely to be submitted by April, 2014.

9.17.3 The **Committee has recommended the extension of TOR** by one year i.e. 28.02.2015

9.23 Cluster 5 M/s Eastern Coalfields Ltd., located in Raniganj Coalfields, dist. Burdwan, West Bengal - Extension of TOR Validity.

9.23.1 The proposal is for Cluster 5 M/s Eastern Coalfields Ltd., located in Raniganj Coalfields, dist. Burdwan, West Bengal.

9.23.2 The TOR was granted to the project 03.12.2010. The TOR modification was given on 29.02.2012.. Since, there is a delay in conducting Public Hearing by SPCB due to Panchayat Election in the State in the Month of July, 2013. Therefore needs extension of validity of TOR. The Public Hearing was done 26.12.2013. The final EIA & EMP is under preparation and likely to be submitted by April, 2014.

9.17.3 **The Committee has recommended the extension of TOR** by one year i.e. 28.02.2015

9.24 Dulanga Opencast Coal Mining Project (7 MTPA in an area of 803.71ha which includes 567.19 ha of ML and 236.52 ha outside the ML) of M/s National Thermal Power Corporation Ltd (NTPC), Ib valley coalfields, Dist. Sundergarh, Orissa - EC based on TOR granted on 17.01.2008 –Reconsideration

9.24.1 The proponent has submitted that:

- i. The project was accorded TOR vide letter no. J-11015/1140/2007-IA.II(M) dated 17.01.2008.
- ii. The latitude and longitude of the project are 21° 50'40"N to 22° 01'30' N and 83°42'06" E to 83° 53'43" E respectively.
- iii. The land usage of the project will be as follows:
- iv. Lease Area: 765.37 Ha (Private- 311Ha, Govt-149.62Ha, Forest- 304.75Ha)
- v. The total geological reserve is 197.20 MT (As per revised mining plan. Ist revision.). The mineable reserve 156.03 MT, extractable reserve is 152.03 MT. The per cent of extraction would be 77.09 %.
- vi. The coal grade is B to G with max concentration of F & G Grades . The stripping ratio is 2.59 m³/t. The average Gradient is 5-11 degree.
- vii. There will be fifteen seams with thickness ranging from 40 – 45 m (total coal).
- viii. The total estimated water requirement is 1500 m³/day at peak production. The level of ground water ranges from 5m – 20m .
- ix. The Method of mining would be Mechanized Open cast mining with shovel-dumper combination & CSM for two seams. There will be one external OB dump and one internal dump. Internal Dump: 365.50 Mm³ in 413.17 Ha. External Dump: 28.5 Mm³ in 82.3 Ha
- x. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
- xi. The **life of mine** is 24 years (excluding construction period of 2 years).
- xii. **Transportation:** Coal transportation in pit: Rear Dumper, Surface to Siding through

- Conveyor belts and loading at siding by rail.
- xiii. There is R & R involved. There are no PAFs. However there are 1036 PAPs.
 - xiv. **Cost:** Total capital cost of the project is Rs. 644.00 Crores. CSR & R&R Cost Rs. 339.33 Crore. Environmental Management Cost 10.46 Crore.
 - xv. **Water body :** Garia Nallah flowing through the middle of the property almost along the strike line of the seams. It is a tributary to Basundhara nalla which joins in Ib river. Ib river is a tributary to Mahanadi over which mighty Hirakud Dam is built. Two subsidiary nallas – Baidhara Nala and Nala B entering the property in the south-western boundary of the property which also join Garia Nala before exiting the block.
 - xvi. **Approvals:** Applied for Ground water clearance . Board’s approval obtained on 06.03.2013. Mine plan / mine Closure plan was approved on 14.08.2012.
 - xvii. **Wildlife issues:** Site Specific Wildlife Conservation Plan prepared and duly approved by PCCF (Wildlife) & CLWL, Odisha vide letter no. 9597/1WL(C)SSP-270/2012 dated 30.12.2013.
 - xviii. **Forestry issues:** Total forest area involved 323.09 ha. Final FC has been obtained.
 - xix. Dulanga Coal Mining Project : Stage-I Forest Clearance: Accorded vide letter dated 10.01.2014.
Darlipali STPP : Stage-I Forest Clearance: Accorded vide letter dated 14.08.2013. MoEF categorized this block under “No-Go” for mining, in May 2010 - Cleared from “No-Go” by MoEF on 29.06.2011 after reduction of (87 Ha) forest area from the block. Revised Mining Plan, based on reduced mine area, approved by MoC on 14.08.2012.
EAC recommended EC for Dulanga Project on 21.03.2012 and for Darlipali STPP on 09.01.2012.
 - xx. Total afforestation plan shall be implemented covering an area of 466.46 ha at the end of mining. Green belt will be developed over 9.91 ha.
 - xxi. There are no court cases pending with the project proponent.
 - xxii. There is no Violation case pending in this proposal.
 - xxiii. Public Hearing was held on 02.07.2010.

9.24.2 The Committee after deliberations on the submissions of the Proponent has recommended for granting environmental clearance with the following specific conditions:

- i. OB dump along the western side of an area of 244 ha would be brought to almost ground level for post-mining land use by rehandling of an estimated 112 Mm³ of OB during 5 years after end of mine life (EOL). However, the dump along the east would be about 30m above ground level.
- ii. An estimated 112 Mm³ of OB is proposed to be re-handled from the eastern and western OB dumps.
- iii. It was stated that an area of 286.74 ha within the ML (which includes an area of 226.23 ha of quarry area) and an area of 179.72 ha outside the ML would be developed with plantation.
- iv. No fly ash from the linked TPPs shall be used in backfilling of the void without undertaking an environmental feasibility study and without prior approval of this Ministry under EIA Notification, 2006.
- v. Option-3 may be adopted, as committed by the proponent, as the most feasible option for diversion of Garia Nala, Baidhara Nala and Nala B and its realignment, whereby the plan for their diversion to be taken up during the 8th and 10th year.
- vi. The fluoride in the groundwater both in dug wells and by installing peizometers in the study area at appropriate locations be monitored.

- vii. Transport of coal to Darlipalli TPS located at a distance of about 10km shall be by MGR.
- viii. A detailed R&R Plan shall be formulated in consultation with the various stakeholders as per prevalent R&R Policies and would cover R&R for individuals and for the displaced community as a whole.
- ix. An amount of Rs 67.69 lakhs has been already spent on CSR and further, a provision of Rs 30-40 crores shall be earmarked for CSR for the first 5 years and Rs 5/T of coal as recurring expenditure adjusted to the annual inflation rate.
- x. An integrated calendar plan of production including the details re-handling separately in external and internal dumps should be furnished to MOEF for record.
- xi. Temporary OB dumps which require re-handling should be stabilised with grass and shrubs.
- xii. Data available with the Rajiv Gandhi National Drinking Water Mission, Department of Rural Development be studied and recommendations therein for removal/treatment of fluorides, TDS, etc, in drinking water be followed for providing safe drinking water to R&R colony and to the nearby villages.
- xiii. R&R Plan should provide specific time-schedule for completion of the various activities in the R&R Plan. The detailed R&R and CSR Action Plans be prepared and implemented.
- xiv. Mining shall be carried out as per statuette at a safe distance from Garia Nala and its diversion canal and the diverted Baidhara nala and Nala 'B' Nala flowing within the lease boundary. The bund/embankment to be constructed along diverted canal of Garia nala shall be designed taking into account the highest flood level, based on past data, so as to guard against mine inundation.
- xv. Topsoil shall be stacked properly within the ML with proper slope at earmarked site of 3.84 ha and shall be concurrently used for reclamation and development of green belt within a year of its generation.
- xvi. A temporary external OB dump in an area of 106.62 ha and of 60m height for the initial period of 2.5 years shall be created for dumping 38.5 Mm³ of OB, which would be reclaimed with plantation and after 2.5 to 3 years. There would be no external OB dumping from 5th year onwards. The temporary OB dumps which require re-handling shall be stabilised with grass and shrubs.
- xvii. Area brought under afforestation shall be not less than 466.46 ha which includes 286.74 ha within the ML and 179.72 ha outside the ML would be reclaimed with plantation, which includes 351.23 ha of reclaimed quarry, 106.50 ha of reclaimed external OB dump, 3.84 ha of topsoil dump, 2.75 ha of coal stockyard, 2.14 ha of surface water reservoir and an area of 83.74 ha undisturbed shall be developed into green belt within the first 3 years.
- xviii. Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilised for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly.
- xix. The entire transportation of 21,210 TPD of coal from the mine to the linked Darlipalli Super Thermal Power Plant shall be by MGR only with wagon loading by Silo. Transportation of coal by road is not permitted.
- xx. An STP shall be provided for the township/colony to treat the domestic effluents to prescribed standards and for their reuse in project activities.
- xxi. Area brought under afforestation shall be not less than 466.46 ha which includes 286.74 ha within the ML and 179.72 ha outside the ML would be reclaimed with plantation, which includes 351.23 ha of reclaimed quarry, 106.50 ha of reclaimed external OB dump, 3.84 ha of topsoil dump, 2.75 ha of coal stockyard, 2.14 ha of surface water reservoir and an area of 83.74 ha undisturbed shall be developed into green belt within the first 3 years.

- xxii. A Project specific Wildlife Conservation Plan prepared for Rs 73 lakhs as capital costs and Rs 61 lakhs (annual) for the project for conservation of wild fauna including Elephant, Sloth Bear and a number of Schedule-II fauna found in the study area and for conservation of their habitat shall be implemented in consultation with the Forest and Wildlife Departments of the State Government. The Plan shall include creation of a passageway (undisturbed area through the block as a passage for the free movement of the elephants and for wild animals which may venture into the coal mine areas) at all stages of the mine operation in conjunction with the neighbouring mines which come up in the area to allow movement of these fauna through the project area. The passageway shall be forested with species from the natural habitat to provide connectivity to enable them to reach the neighbouring forests unhindered. Solar fencing would be done along the quarry which would be shifted as the mine develops. Grasslands shall be developed as part of Habitat Restoration in the study area and tree and plant species such as bamboo which constitute the natural diet of the elephants and plant species suitable for bears shall be developed as part of mine reclamation and eco-regeneration of the study area regularly visited by the elephants. At the post mining stage, the mine shall be restored as a habitat for the wildlife found in the pre-mining stage. The WL Plan shall include the use of sirens to alert the animals during MGR movement, sensitising the rail drivers and minimising speed during such crossings shall also be implemented.
- xxiii. The project authorities shall also participate in a Regional Conservation Plan as and when prepared in the future by the State Govt. for the conservation of flora-fauna found in the region as a whole.
- xxiv. The progress made on the implementation of the Wildlife Conservation Plan shall be monitored by creation of a Committee which includes experts in ecology and wildlife. The status of budgetary provision of capital and revenue expenditure on the various activities under the Project specific and Regional WL Conservation Plan and the status of the Plans shall be regularly reported to the MOEF RO, Bhubaneshwar and also uploaded on the company website.
- xxv. Third Party monitoring of implementation of WL Conservation Plan shall be carried out and for monitoring the utilisation of funds earmarked for implementation of the WL Plan.
- xxvi. A detailed R&R Plan shall be formulated for the 417 PAPs and 309 homestead losers as per R&R Policy of the State Govt. and shall be completed within December 2014. R&R shall include specific income generation schemes, skill development and capacity building, etc. The details of status of implementation and expenditure on the various activities under the R&R Action Plan for the total budget of R&R shall be uploaded on the company website.
- xxvii. CSR Plan with a total budgetary provision of Rs 15.92 crores (capital) and 7.34 crore/annum (recurring cost) shall be implemented for the life of the project. The details of village-wise activities undertaken for the amount of Rs 67.69 lakhs already spent on CSR shall be uploaded on the company website and further, details of village-wise activities for provision of Rs 30-40 crores for CSR for the first 5 years and Rs 5/T of coal as recurring expenditure shall also be provided in the annual report and the compliance report furnished to MOEF RO, Bhubaneshwar.
- xxviii. An amount of Rs 1592 lakhs (capital costs) and Rs 734 lakhs (recurring) costs earmarked for EMP shall be implemented and details thereof furnished as part of the compliance report and also uploaded on the company website.

9.25 Bina OCP expansion of coal mining project (6 MTPA to 7.5 MTPA (Peak) in an area of 1728 ha) of M/s Northern Coalfields Limited in village Bina/Karbari, Tehsil Dudhi (UP)/ Singrauli (MP), Singrauli Coalfield, States Sonebhadra (Uttar Pradesh)/

Singrauli, Madhya Pradesh - EC based on TOR granted on 30.11.2011 - Further Consideration.

9.25.1 The proposal was considered in the Expert Appraisal Committee held on 8th - 9th January, 2013 and recommended for grant of Environmental Clearance. However, in pursuance to the circular of the MoEF J-11011/618/2010-IA-II(i) dated 30th May, 2012, the proponent was requested to submit, inter alia, the compliance report from the RO, MoEF. The proposal was again considered in the EAC meeting held on 3-4 October, 2013 and the Committee observed that:

- i. The Proponent has exceeded the production capacity as against the stipulated quantity in the EC. Appropriate action may be taken as per the existing procedure.
- ii. There are many inconsistencies such as health studies carried out by a certain non-medical institute, construction of ETP has not been completed, Coal Handling Plant (CHP) not operational, Occupational health issues are not addressed properly, etc.
- iii. The proponent should submit the revised compliance report duly verified by the RO for further consideration.
- iv. Plan of action on issues raised by the EAC in its meeting held on 8th -9th January, 2013

The Committee after deliberation desired to reconsider the project after the receipt of the information.

9.25.2 The revised compliance report has submitted by RO, MOEF vide its letter no. IV/ENV/UP/MINE-11/187/2006/567 dated 11.12.2013. The proponent has submitted the following:

- i. In Bina OCP, the conditions of ETP, STP, CHP and Health survey issues were already complied as per the earlier compliance report of Regional Office, MOEF dated 18.07.2013.
- ii. The ETP and STP are functioning properly since more than 12 years.
- iii. The CHP is working as per its capacity.
- iv. The health study has been done for contractual workers and the local residents in Apr-July 2013 by NCL Medical Team and the State Govt. in November 2013
- v. Regular health check up in the form of IME/PME is being one for all worker employed in the mine. During 2012 total 407 nos. of employees were undergone PME. The PME is being carried out every year for employees and no case of any occupational health disorder or abnormality was found. The Medical Board of health study was comprised of Dr. S.K.Dubey, MO, Robertsganj Distt. Hospital, Dr. Nandini De, CMO, NSC, Dr. S. Adhikari, Med. Supdt., Bina Hospital, Dr Neha Kumari, Sr. MO, NSC, Dr. Abhishek, Sr. MO, Kakri Dispensary, Dr. Rajat, Sr. MO, Bina Hospital was held in the month on November 2013.
- vi. A total 175 persons were examined in the ratio of 44.5 and 55.5 as male and female respectively. The impact of environmental pollution on the people in village was negligible with a few abnormalities detected as : Osteoarthritis / Backache-03; Increased blood sugar-05; Hypertension-04; URTI-16; Anaemia-02; Br. Asthma-01; Pterygium-01; Ch. Cough-02; Nystagmus-01; The medical study indicates that there is no significant impact on the health of people due to mining activities. In addition, the PAs also provided supplementary document for health study of the employees and contractual workers residing in nearby village of Bina Project.
- vii. Study indicated that the medical board examined 618 contractual workers of Bina Project. This study includes respiratory disorders, hearing impairment, deficiency in

vision and the report of the study done in 2012. The medical study indicates that there is no significant impact on the health of people due to mining activities.

- viii. In the previous submitted certified compliance report vide specific condition, no (viii), therein it is already stated that the “Crusher has been provided with mist spraying system, dust extraction & ventilation system. All belt conveyors were found closed & water spraying arrangement has been found at transfer points. High efficiency bag filters has been installed”. The CHP is in operation since 1992, ETP is in operation since 1999.

9.25.3 The Committee has deliberated on the submissions by the Proponent and the revised compliance report submitted by the RO, MoEF and **recommended for granting the Environmental Clearance** with the following specific conditions. The Committee was of the opinion there are more scopes for the improvement of the environmental conditions vis-à-vis general quality of the environment in and around mining activities:

- i. The water body (void) should be backfilled so that at the end of the mining there would be no water body and whole area will be reclaimed.
- ii. It was observed that the soil and water may be contaminated with Mercury. As a matter of abundant precaution, the EAC desired that decontamination measures should be taken to reduce the mercury pollution in the area. Indian Medical Association (IMA) should be engaged to ascertain the exact numbers of people/villagers affected with Mercury, if any.
- iii. Fugitive emission is major problem. Adequate measures need to be taken so that the emissions are within the prescribed limit.
- iv. Monitoring the Ambient Air Quality should be carried out by including new parameters viz. PM₁₀ and PM_{2.5}
- v. MoEF may take a view with regard to re-imposition of Moratorium in Singrauli area vis-a-vis Bina project .
- vi. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.

9.26 Krishnashila OCP expansion coal mining project (4 MTPA to 5 MTPA (Peak) in an area of 851.78 ha) of M/s Northern Coalfield Ltd., in Village Marrak, Tehsil Anpara, District Sonbhadra, Uttar Pradesh - EC based on TOR granted on 12.01.2012 - Further Consideration.

9.26.1 The proposal was considered in the Expert Appraisal Committee held on 8th - 9th January, 2013 and recommended for grant of Environmental Clearance. However, in pursuance to the circular of the MoEF J-11011/618/2010-IA-II(i) dated 30th May, 2012, the proponent was requested to submit, inter alia, the compliance report from the RO, MoEF. The proposal was again considered in the EAC meeting held on 3-4 October, 2013 and the Committee observed that:

The compliance report submitted by the RO, MoEF was deliberated. The Committee observed that:

- i. The Proponent has exceeded the production capacity as against the stipulated quantity in the EC. Appropriate action may be taken as per the existing procedure.
- ii. There are many inconsistency viz. health studies carried out by a certain non-medical institute (i.e. ICFRE), construction of ETP has not been completed, Coal Handling Plant (CHP) has not yet been established, etc.
- iii. The proponent should submit the revised compliance report duly verified by the RO for further consideration.
- iv. The proponent should submit the plan of action raised during the Public Hearing.

MoM_January, 2014 EAC(Coal)

The Committee after deliberation desired to reconsider the project after the receipt of the information.

9.26.2 The revised compliance report has submitted by RO, MOEF vide its letter no. IV/ENV/UP/MINE-11/187/2006/565 dated 11.12.2013. The proponent has submitted the following:

- i. With regard to the Health study carried out by a certain non-medical Institute (i.e.ICFRE), the proponent has informed that he PME is being carried out every year for employees and no case of any occupational health disorder or abnormality was found. A health study was conducted on 22 Nov 2013 for villagers. The medical board of health study was comprised of Dr. D.K. Singh, Med. Supdt. CHC Ghorwal, Dr. Ambrish Singh, MO, CHC Ghorwal, Dr. S.P. Singh, MO CHC Ghorwal, Dr. R.P. Singh, CMO, Bina Hospital, Dr. Saurav Kumar, Med. Supdt. NSC, Dr. T.R. Karmakar, Med. Supdt. NSC, Dr, D.J. Bora, Sr. MO, NSC. The medical report states that the Nehru Shatabdi Chikisalaya medical team, NCL Jayant conducted health study in and around the village with population of about 500 persons. A total 111 person were examined in the ratio of 52:63 as male and female respectively. The impact of environmental pollution on the people in village was negligible with abnormalities detected as; Osteoarthritis/Backache-02 ; Increased blood sugar-04 ; Hypertension-06; Low vision-06; Depression-01; Br. Asthma-01; Pterygium-01; The medical study indicates that there is no significant impact on the health of people due to mining activities. In addition the PA also provided supplementary document for health study of the employees and contractual worker residing in nearby village of Krishnashila Project. This study was also carried out by the medical board, Bina Hospital, Bina Project NCL. Study indicated that the medical board examined 21 employees of NCL in 2012, and as for TB, Asthma and deafness/loss of hearing are concerned, no incidence of these disease has been found. Study of the person, residing in nearby villages and working as contractual workers were carried out. About 402 persons have been medically examined and the report of the study done in 2012 is eventually produced by the PA. The medical study indicates that there is no significant impact on the health of people due to mining activities.
- ii. With regard to construction of ETP, the proponent has submitted that tender has been invited for commissioning of integrated ETP for Krishnashila Project . The tendering has been delayed which should have come into enforcement. The proponent has submitted that there is no effluent generated at Krishnashila OCP and presently there is no requirement of an ETP. However, an ETP has been proposed as future requirement for which the design has been finalised and tendering has also been done. (One small O&G trap / treatment facility has been developed recently). The dumper washings are being done at Bina where there is sufficient addl. capacity in the ETP
- iii. The Coal Handling Plant (CHP) is in the process of installation. The CHP is expected to be completed within 1 year 2 months. However, the coal is going to be transported by tubular conveyor belt directly to the power plant and road transport shall be totally eliminated.

9.26.3 The **Committee has** deliberated on the submission by the proponent and the revised compliance report submitted by the RO, MoEF and **recommended for granting the Environmental Clearance** with the following specific conditions. The Committee was of the opinion there are more scopes for the improvement of the environmental conditions vis-à-vis general quality of the environment in and around mining activities:

- i. The water body (void) should be backfilled so that at the end of the mining there would be no water body and whole area will be reclaimed.
- ii. It was observed that the soil and water may be contaminated with Mercury. As a matter of abundant precaution, the EAC desired that decontamination measures should be taken to reduce the mercury pollution in the area. Indian Medical Association (IMA) should be engaged to ascertain the exact numbers of people/villagers affected with Mercury, if any.
- iii. Fugitive emission is major problem. Adequate measures need to be taken so that the emissions are within the prescribed limit.
- iv. Monitoring the Ambient Air Quality should be carried out by including new parameters viz. PM₁₀ and PM_{2.5}
- v. The commissioning of integrated ETP for Krishnashila Project should be completed by December, 2014 and a compliance report may be submitted to RO MOEF.
- vi. The Coal Handling Plant (CHP) is in the process of installation should be completed by December, 2014 and a compliance report may be submitted to RO MOEF
- vii. Coal shall be transported by tubular conveyor belt directly to the power plant and road transport shall be totally eliminated.
- viii. MoEF may take a view with regard to re-imposition of Moratorium in Singrauli area vis-a-vis Krishnashila project .
- ix. Proponent should expeditiously take up the matter with the Coal India to create an Environment Cadre for future employment in Coal India and its subsidiaries.

9.27 Kapurdi Lignite Open Cast Mine project of Temporary capacity enhancement from 3.75 MTPA to 7 MTPA in ML area of 3223.5110 ha for 4 years as per Calendar Program of M/s Barmer Lignite Mining Company Ltd., Dist. Barmer, Rajasthan

9.27.1 The proposal is of Kapurdi Lignite Open Cast Mine project for temporary capacity enhancement from 3.75 MTPA to 7 MTPA in ML area of 3223.5110 ha for 4 years as per calendar Program of M/s Barmer Lignite Mining Company Ltd., Dist. Barmer, Rajasthan seeking for the ToR. The proponent has made a presentation and submitted that:

- i. M/s Barmer Lignite Mining Co Ltd (BLMCL) is a Joint Venture between Rajasthan State Mines & Minerals Ltd (a Govt. of Rajasthan Company, 51%) and Raj West Power Ltd (49%) stakeholder.
- ii. Barmer Lignite Mining Company Limited (BLMCL) was incorporated for meeting the Lignite requirement of 1080 MW (8 x 135MW) Thermal Power Plant of Raj West Power Ltd (RWPL), from the Kapurdi and Jalipa Lignite Blocks
- iii. All 8 units of RWPL have been commissioned in March, 2013.
- iv. RWPL supplying 100% power through Long Term PPA to Rajasthan Discoms, at the tariff determined by Rajasthan Electricity Regulatory Commission.
- v. The entire lignite produced by BLMCL from these mines is for the exclusive use as fuel for this power project

- vi. Lignite requirement at 7 MTPA to meet annual normative requirement at current GCV levels
- vii. Kapurdi mine operational with capacity of 3.75 MTPA
- viii. Jalipa mine could not be started in time due to land acquisition problem
- ix. To mitigate the issue, BLMCL has already applied to MoC for revision of Mining Plan of Kapurdi Lignite Mine (KLM) with a revised calendar program
 - x. The proposed revised calendar program calls for capacity enhancement of KLM to 7 MTPA for first four years
 - xi. After four years the capacity to be tapered down to commensurate with increase in Jalipa production.
 - xii. Combined production level shall never breach the already approved 9 MTPA.
- xiii. The Standing Committee of MoC on 20th May 2013 has approved the revised Mining Plan of Kapurdi for a capacity of 7.0 MTPA, temporarily for a period of 4 years.
- xiv. The Project is being closely monitored by the Cabinet Committee on Investment (CCI)

Particulars	Kapurdi	Jalipa
Approved Capacity	3.75 MTPA	6.0 MTPA
Mineable Reserves	129 Mt	311 Mt
ML Area	3223 ha	3982 ha
EC	Originally Granted for 3 MTPA & subsequently enhanced to 3.75 MTPA	Granted
Land	Acquired	Possession being handed over
Production	Achieved rated capacity	Yet to commence

- xv. Latitude:25056'00'' to 25058'00'' ;Longitude: 71021'22'' to 71022'20''
- xvi. Total Lease area: 3223.511 hectares

- xvii. Land Use before acquisition
- xviii. Agricultural Land : 2709.53 Ha
- xix. Waste Land : 283.42 Ha
- xx. Water Bodies Incl. dry Channels : 189.26 Ha
- xxi. Others : 41.30 Ha
- xxii. Forest Land: Nil
- xxiii. MoEF granted Environment Clearance for 3.0 MTPA vide letters No-J-11015/472/2007-IA.II (M) dated 10/12/2008, 20/05/2010
- xxiv. Environment Clearance granted for 3.75 MTPA vide letter no. J-1015/12/2013-IA.II(M) dated 24.12.2013.
- xxv. Mine started developmental activities in April 2010 and achieved it's Rated Capacity i.e., 3 MTPA in the year 2012-13
- xxvi. Expected to reach 3.75MT of production in January, 2014.
- xxvii. The Public Hearings with respect to Kapurdi and Jalipa were conducted on 18.03.2008 & 20.09.2008 respectively and were based on the above EIA-EMP reports which covered the combined impact of both mines on the total area. (i.e. for the combined capacity of 10 MTPA)
- xxviii. CALENDAR PROGRAMME OF PRODUCTION – PROPOSED

Year	Calendar Year	Lignite Production		
		Kapurdi	Jalipa	Total
0	2009-10	0	0	0
-2	2010-11	0.14	0	0.14
-1	2011-12	1.70	0	1.70
1	2012-13	6.00	0	6.00
2	2013-14	7.00	0	7.00
3	2014-15	7.00	0.50	7.50
4	2015-16	6.00	3.00	9.00
5	2016-17	4.5	4.5	9.00
6	2017-18	4.5	4.5	9.00
7	2018-19	4.5	4.5	9.00
8	2019-20	4.5	4.5	9.00
9	2020-21	4.5	4.5	9.00
10	2021-22	4.5	4.5	9.00
11	2022-23	4.5	4.5	9.00
12	2023-24	4.5	4.5	9.00
13	2024-25	4.5	4.5	9.00
14	2025-26	4	5	9.00

15	2026-27	4	5	9.00
16	2027-28	4	5	9.00
17	2028-29	4	5	9.00
18	2029-30	3.5	5.5	9.00
19	2030-31	3.5	5.5	9.00
20	2031-32	3.5	5.5	9.00
21	2032-33	3.5	5.5	9.00
22	2033-34	3.5	5.5	9.00
23	2034-35	3.5	5.5	9.00
24	2035-36	3.5	5.5	9.00
25	2036-37	3.5	5.5	9.00
26	2037-38	3	6	9.00
27	2038-39	3	6	9.00
28	2039-40	3	6	9.00
29	2040-41	3	6	9.00
30	2041-42	3	6	9.00
31	2042-43	2.45	6.09	8.54
	Total	129.79	144.09	273.79

xxix. SALIENT POINTS OF THE PRESENT CAPACITY ENHANCEMENT

Change in Lease/ Project area No Change

Change in the Mining method No Change

Change in combined production of 9 MTPA taking Kapurdi & Jalipa together as already approved . No change.

xxx. The increase in production is by rescheduling in the calendar program of Kapurdi maintaining overall combined ceiling of 9MTPA for both mines.

xxxi. There will be no increase in deployment of manpower considering both Kapurdi & Jalipa mine together

xxxii. The increased deployment of manpower at Kapurdi will be transferred in Jalipa mine as soon as Jalipa mine starts picking up production levels

- xxxiii. There shall be no change in total nos. of machines for the combined capacity of 9MTPA The increase in equipment at Kapurdi will be utilized in Jalipa mine after initial four years and the total machineries/equipment of Kapurdi and Jalipa at any point of time shall not exceed the combined approved configuration
- xxxiv. There shall be no increase in water requirement as assessed in the combined impact assessment studies for the two contiguous Kapurdi and Jalipa mines .The total approved water requirement is 3008 cum/day and the water used for proposed capacity enhancement will be within this limit. As such no additional water requirement is involved
- xxxv. There shall be no Involvement of additional road transportation No. (No Public Road is Used)
- xxxvi. Environmental quality parameters are being Monitored regularly & are within prescribed limits
- xxxvii. **Justifications:**
 - a. Both Kapurdi & Jalipa form part of a contiguous reserve and are in fact the same deposit divided by an imaginary line.
 - b. Considering contiguous nature of the 2 blocks, combined impact assessment studies for 10 MTPA mining submitted twice as per directions of MoEF while granting EC for capacity of 3 and 6 MTPA for Kapurdi and Jalipa.
 - c. The Kapurdi & Jalipa blocks were allotted by MoC as separate blocks only due to two different geological reports.
 - d. MoEF appreciated the close proximity of the blocks and directed vide specific condition no 1 of EC of Jalipa Mine to remove the boundary.
 - e. The power plant, which entirely depends on lignite from these mines is fully commissioned and is supplying much needed power to Rajasthan.
 - f. The operating power plant is likely to be shut down in another 15-20 days due to non-availability of lignite once lignite production from Kapurdi achieves 3.75 MTPA
 - g. The standing committee of MoC, has already approved the Mining Plan for Kapurdi for an enhanced capacity of 7.0 MTPA for temporary period of 4 years.

9.27.2. The Committee has noted that:

- i. The proponent was granted EC for expansion from 3 MTPA to 3.75 MTPA in ML area of 3223.5110 ha as recently as in December, 2013 and that both Kapurdi & Jalipa form part of a contiguous reserve with the same deposit divided by an imaginary line.
- ii. Considering contiguous nature of the 2 blocks, combined impact assessment studies for 10 MTPA mining were considered by the EAC and EC was granted for capacity of 3 and 6 MTPA for Kapurdi and Jalipa respectively.
- iii. The Kapurdi & Jalipa blocks were allotted by MoC as separate blocks only due to two different geological reports.
- iv. The standing committee of MoC, has already approved the Mining Plan for Kapurdi for an enhanced capacity of 7.0 MTPA for temporary period of 4 years.
- v. The mining lease of Jalipa has not been transferred to the proponent so as to enable it to go for mining. The Jalippa mines is envisaged to start production in four years' time.

9.27.3 Keeping in view the submissions of the proponent that the mining lease of Jalipa has not been transferred to the proponent so as to enable it to go for mining and that Jalippa mine is envisaged to start production in four years' time and that the power plant, which entirely depends on lignite from Kapurdi and Jalipa mines is fully commissioned and is supplying much needed power to Rajasthan, **the Committee has recommended for granting ToR to the Kapurdi Mines.** Since the Kapurdi mine is an operational mine and that the enhancement

to 7 MTPA is only for four years i.e. up to 31st January, 2018, the EAC **recommended for waiving of the Public Hearing**. After four years' time (i.e. 31st January, 2018) the Kapurdi Mines has to come back to 3.75 MTPA.

9.28 Discussion & any other matters with the permission of the Chair.

The Committee suggested that the MOEF should devise a suitable mechanism to monitor the EC conditions at least once in three years so that the corrective and mitigative action if any can be taken at appropriate time.

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

Annexure 1

PARTICIPANTS IN 9th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 20th -21st JANUARY, 2014 ON COAL SECTOR PROJECTS.

Sl. No.	LIST OF PARTICIPANTS Expert Appraisal Committee (Coal Mining)	
1.	Shri A. S Lamba	Chairman
2.	Prof. C.R. Babu	Member
3.	Shri Jawahar Lal Mehta	Member
4.	Dr. T. K .Dhar	Member
5.	Shri N. K. Verma	Member
6.	Dr. S. D. Attri	Member
7.	Dr. G. R. Rathnavel	Member
8.	Shri P. D. Siwal	Member
9.	Dr. Manoranjan Hota	Director & Member Secretary
10.	Shri. P. R. Sakhare	Deputy Director

PARTICIPANTS IN 9th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 20th -21st JANUARY, 2014 ON COAL SECTOR PROJECTS.

9.1 Piparwar Opencast expansion project of **M/s Central Coalfield Ltd.**

1. Shri P. K. Sinha
2. Shri T. K. Nag
3. Dr. A. Sinha
4. Dr. Manoj Kumar
5. Shri Alok Kumar
6. Shri Pushkar
7. Shri Soumitra Singh
8. Shri N. K. Verma

9.2 Bhubaneshwari Opencast Expansion project of **M/s Mahanadi Coalfields Ltd.**

1. Shri J. P. Singh
2. Shri A. Kumar
3. Shri B. N. Jha
4. Shri Jitendra Singh
5. Dr. A. K. Samantaray
6. Shri S. K. Bhar
7. Shri D. Bhattacharya
8. Shri R. C. Sahoo
9. Shri S. J. Jena
10. Dr. S. Jha

9.3 Lakhanpur OCP of **M/s Mahanadi Coalfields Ltd**

1. Shri J. P. Singh
2. Shri A. Kumar
3. Shri B. N. Jha
4. Shri Jitendra Singh
5. Dr. A. K. Samantaray
6. Shri S. K. Bhar
7. Shri D. Bhattacharya
8. Shri R. C. Sahoo
9. Shri S. J. Jena
10. Dr. S. Jha

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

1. Shri R. Darbari
2. Dr. Anindya Sinha
3. Shri Maila Srinivasu
4. Shri Santosh Kumar Singh
5. Shri Ahmad

6. Shri B. K. Sinha
7. Shri A. Shrivastava
8. Dr. Abhay Kumar

9.5 Jampali of **M/s South Eastern Coalfields Ltd.**

1. Shri B. Dayal
2. Shri U. K. Singh
3. Shri Anoop Ghosh
4. Shri Amit Saxena
5. Shri R. P. Thakur
6. Shri U. T. Kanzarkar
7. Shri Monaj Kumar
8. Shri A. K. Gupta
9. Shri R. K. Chopra
10. Shri S. R. Tripathi
11. Shri Kushagra Vashishth
12. Shri Manoj Kumar

9.6 Manikpur of **M/s South Eastern Coalfield Limited.**

1. Shri B. Dayal
2. Shri U. K. Singh
3. Shri Anoop Ghosh
4. Shri Amit Saxena
5. Shri R. P. Thakur
6. Shri U. T. Kanzarkar
7. Shri Monaj Kumar
8. Shri A. K. Gupta
9. Shri R. K. Chopra
10. Shri S. R. Tripathi
11. Shri Kushagra Vashishth
12. Shri Manoj Kumar

9.7 Mine-1 A of **M/s Neyveli Lignite Corp. Ltd.**

1. Shri Karthikeyan
2. Shri M. Rangunathan
3. Shri Shakil Ahmad
4. Shri Raveesh Nandan Singh
5. Shri Shailesh Vimal
6. Shri P Kalaiseoor
7. Shri M. S. Ravindranath

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

1. Shri Karthikeyan
2. Shri M. Rangunathan
3. Shri Shakil Ahmad
4. Shri Raveesh Nandan Singh
5. Shri Shailesh Vimal
6. Shri P Kalaiseoor
7. Shri M. S. Ravindranath

9.9 Manoharpur of **M/s Orissa Power Generation Corp. Ltd.**

1. Shri Omkar Joshi
2. Shri Suman Chattaraj
3. Dr. Kshirod Brahma
4. Shri P. K. Jena
5. Shri K. Murali
- 6. Shri M. B. Mathur**
7. Shri Ram Sharan

9.10 Nawapara of **M/s South Eastern Coalfields Ltd.**

1. Shri R. P. Thakur
2. Shri B. Dayal
3. Shri U. T. Kanzarkar
4. Shri Monaj Kumar
5. Shri Amit Saxena
6. Shri H. K. Gaur
7. Shri S. R. Tripathi
8. Shri A. K. Gupta
9. Shri T. Chakrabarty

9.11 Kusumunda of **M/s. South Eastern Coalfields Ltd.**

1. Shri R. P. Thakur
2. Shri B. Dayal
3. Shri U. T. Kanzarkar
4. Shri Monaj Kumar
5. Shri Amit Saxena
6. Shri H. K. Gaur
7. Shri S. R. Tripathi
8. Shri A. K. Gupta
9. Shri T. Chakrabarty

9.12 Tapin South of **M/s Central Coalfields Limited.**

1. Dr. A. Sinha
2. Shri Alok Kumar
3. Shri S. Singh
4. Shri Pushkar
5. Shri P. K. Sinha
6. Dr. Manoj Kumar

9.13 **Jaganathpur 'A' of M/s West Bengal Mineral Development & Trading Corp. Ltd.,**

Absent

9.14 **Jaganathpur 'B' of M/s West Bengal Mineral Development & Trading Corp. Ltd.,**

Absent

9.15 **Gare IV/6 of M/s Jindal Steel & Power Ltd.,**

1. Shri Anand Goel
2. Shri Satya Prakesh
3. Shri R. S. Sharma
4. Dr. I. N. Rao
5. Shri Yogesh
6. Shri Sanjeev
7. Shri Brajesh Srivastav
8. Shri K. K. Singh
9. Shri M. K. Dhar
10. Shri Shambhu Azad
11. Dr. C. N. Ghosh
12. Shri B. D. Sharma

9.16 **Rawanwara of M/s SKS Ispat & Power Ltd.**

1. Shri B. R. Choudhary
2. Shri R. L Bhatia
3. Dr. S. S. Gurg
4. Shri Sinha
5. Shri Ajay

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

1. Shri Ramesh Chandra
2. Shri J. N. Biswal
3. Shri Anand Sekhar
4. Shri Gopal Prasad

9.18 **Cluster No. 10 of M/s Eastern Coalfields Ltd.**

1. Shri Ramesh Chandra
2. Shri J. N. Biswal
3. Shri Anand Sekhar
4. Shri Gopal Prasad

9.19 **Cluster 12 of M/s Eastern Coalfields Ltd.**

1. Shri Ramesh Chandra
2. Shri J. N. Biswal
3. Shri Anand Sekhar
4. Shri Gopal Prasad

9.20 **Cluster 2 of M/s Eastern Coalfields Ltd.**

1. Shri Ramesh Chandra
2. Shri J. N. Biswal
3. Shri Anand Sekhar
4. Shri Gopal Prasad

9.21 **Cluster 6 of M/s Eastern Coalfields Ltd.**

1. Shri Ramesh Chandra

2. Shri J. N. Biswal
3. Shri Anand Sekhar
4. Shri Gopal Prasad

9.22 Cluster 7 of **M/s Eastern Coalfields Ltd.**

1. Shri Ramesh Chandra
2. Shri J. N. Biswal
3. Shri Anand Sekhar
4. Shri Gopal Prasad

9.23 Cluster 5 of **M/s Eastern Coalfields Ltd.**

1. Shri Ramesh Chandra
2. Shri J. N. Biswal
3. Shri Anand Sekhar
4. Shri Gopal Prasad

9.24 Dulanga of **M/s National Thermal Power Corporation Ltd (NTPC).**

1. Shri R. K. Baderia
2. Dr. Vijay Prakash
3. Shri Pankaj Dhyani
4. Shri Sanjiv kumar Singh
5. Shri Amit

9.24 Bina OCP of **M/s Northern Coalfields Limited.**

1. Shri N. Das
2. Shri B. K. Sharma
3. Shri W. C. Dumka
4. Shri Rakesh Kumar
5. Shri Vinod Kumar Pandey
6. Shri V. K. Bajaj
7. Shri Atal Bihari
8. Shri V. N. Dupattawala
9. Shri M. K. Prasad
10. Shri A. N. Bahadur

9.25 Krishnashila OCP of **M/s Northern Coalfield Ltd.,**

1. Shri N. Das
2. Shri B. K. Sharma
3. Shri W. C. Dumka
4. Shri Rakesh Kumar
5. Shri Vinod Kumar Pandey
6. Shri V. K. Bajaj
7. Shri Atal Bihari
8. Shri V. N. Dupattawala
9. Shri M. K. Prasad
10. Shri A. N. Bahadur

9.25.1 Kapurdi Lignite Open Cast Mine of **M/s Barmer Lignite Mining Company Ltd.,**

MoM_January, 2014 EAC(Coal)

1. Shri Umesh Gupta
2. Shri Pramod Menon
3. Shri Gore Koley
4. Shri Amrendra Kumar
5. Shri Harshavardhan

GENERIC TOR FOR COAL WASHERY

-
- (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-alone washery) for the capacity for which EC has been sought.
- (xxxvi) Submission of sample test analysis of:
 - Characteristics of coal to be washed- this includes grade of coal and other characteristics ? ash, S

(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/re-channelling of the water courses, etc., approach roads, major haul roads, etc.
- (ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion/modification of drainage and their realignment, construction of embankment etc. should also be shown on the map.

- (x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown.
- (xi) Break up of lease/project area as per different land uses and their stage of acquisition.

LANDUSE DETAILS FOR OPENCAST PROJECT

S.N.	LANDUSE	Within ML Area (ha)	Outside ML Area (ha)	TOTAL
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

- (xii) Break-up of lease/project area as per mining operations.
- (xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.
- (xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (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 breakup 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 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.
 - (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/land use.

Table 1: Stage-wise Land use 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					

MoM_January, 2014 EAC(Coal)

	(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)					
		OB	Plantation	Water Body	Public Use	Undisturbed	TOTAL
1.	External Dump						
2.	Top soil Dump						
3.	Excavation						
4.	Roads						
4.	Built up area						

MoM_January, 2014 EAC(Coal)

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

ANNEXURE -5

GENERIC TOR FOR AN UNDERGROUND COALMINE PROJECT

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

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

Area Under Surface Rights

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

- (vii) Study on the existing flora and fauna in the study area carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. The flora and fauna details should be furnished separately for the core zone and buffer zone. The report and the list should be authenticated by the concerned institution carrying out the study and the names of the species scientific and common names) along with the classification under the Wild Life Protection Act, 1972 should be furnished.
- (viii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working plan/scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps should also be included.
- (ix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing 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, PM2.5, SOx, NOx 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-mining)									85*	2,12,500

*As a representative example

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

Area under Surface Rights

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

- (xii) Break-up of lease/project area as per mining operations.
- (xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.
- (xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (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.
- (xxxii) Risk Assessment and Disaster Preparedness and Management Plan.
- (xxxiii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.
- (xxxiiii) 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								
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.
- (xxxixii) 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.
- (xxxixiii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval,
NOC from Flood and Irrigation Dept. (if req.), etc.

(A) FORESTRY CLEARANCE

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

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

- (A) MINING PLAN APPROVAL
- (B) MINING PLAN/PROJECT APPROVAL

Date of Approval of Mining Plan/Project Approval:

Copy of Letter of Approval of Mining Plan/Project Approval

(xxxixiv) 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
