

MINUTES OF THE 67th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 4th-5th FEBRUARY, 2013 IN NEW DELHI.

COAL MINING PROJECTS

The 67th meeting of the reconstituted EAC (T&C) was held on 04th - 05th February 2013 in Scope Complex, New Delhi to consider the projects of coal mining sector. The list of participants of EAC members and the proponents are given at Annexure 1 and 2 respectively. The minutes of the 65th meeting of EAC (T&C) held on 8th - 9th January, 2013 was confirmed.

Monday, 4th February 2013

1. Tawa –III Underground Coal Mine Project (0.48 MTPA (normative) and 0.60 MTPA (peak) rated capacity in a total ML area is 205.56 ha Coal Mine Project of M/s Western Coalfields Ltd. Distt. Betul, Madhya Pradesh (EC Based on TOR dated 23.12.2010)

1.1. The proposal is for opening of a new Tawa-III U/G expansion coal mine project (0.48 MTPA (Normative) to 0.60 MTPA (Peak) and 205.56 ha area) of M/s Western Coalfield Ltd. (WCL), Dist., Betul. M. P. It is situated at the right side of the existing Tawa-II UGP. The coal proposed to supply to M.P. Power Generating Company Ltd, Sarni, Dist. Baitul. The proponent made a presentation and informed that:

- i. The total mine lease area for Tawa-III U/G is 205.56 ha. Out of the total ML area of 205.56 ha, 139.49 ha. is forest land & 62.73 ha is agriculture land (Tenancy land) and 3.34 ha is Government Land. Out of which, 197.91 ha land area under mining right, 5.55 ha area under all right & 2.10 ha under surface right. 62.73 ha – agriculture land (tenancy land) & 3.3 ha Govt. land would be acquired under CBA ACT, 1957 & 139.49 ha. The forest land has been acquired under the Forest Act, 1980.
- ii. In the post-mining stage of total ML area of 205.56 ha, 7.65 ha is for mine infrastructure including approach road etc and 197.91 ha area remain undisturbed. The proposed TAWA-III UG mine can be approached from existing Tawa-II UG mine by forest road (2 km). Tawa-II underground mine can be approached from Ghoradongri.
- iii. Total geological reserves is 16.49 Mt. The mineable reserve is 6.863. The coal grade is 'D' (non-coking) 'E' & 'C'.
- iv. There are 3 nos of seams. The thickness of workable seams viz. lower workable Seam – 2.25 m, Bagdona seam is 1.80 m, IA Seam is 2.00 m. The average gradient of seam is 1 in 7.5 to 1 in 10. Ultimate working depth varies from 80 m - 440m. The mining below the ground will be restricted to 15 m from the bank of Tawa Reservoir.
- v. Tawa River forms the western boundary of the mine. It was informed that the mouth of the Inclines would be 6m above the HFL of the River.
- vi. Mining would be by Bord & Pillar with solid blasting & mechanical loading by LHD on belt conveyor with caving. A CHP has been provided near incline no. II to handle entire production of coal from mine. Ground water level is in the range of 4.45 -6.2m bgl (pre-monsoon) and 2.6-3.95m bgl in post monsoon season. Total water requirement is 500m³/day, 180 m³/day industrial and 370m³/day domestic. Some underground mines of Pathakhera area are near closure due to exhaustion of coal reserves.
- vii. It is proposed Tawa-III UG mine for gainful utilization of the plant and machineries and manpower available from these closing mines.

- viii. The anticipated maximum possible subsidence likely to occur over the mining area is 2.7m, which is likely to take place over the panels R4 of Lower Workable seam, Q4 of Bagdona seam and P4 of IA seam. The estimated maximum possible slope and tensile strain likely to occur are 28.36 mm/m and 14.18 mm/m.
- ix. Transportation of coal from underground to surface will be by belt conveyor and from coal bunkers to Satpura TPS, Sarni by trucks at a distance of about 8-9 km. Satpura Dam is located in the southern edge of the block is connected to Sarni (5 km) by all-weather road built by MPSEB.
 - x. The life of the mine is 21 years.
 - xi. No R&R is involved.
- xii. The capital cost of project 105.6926 crores. The mine closure cost is Rs 20,556,000 Lakhs and Rs 1,353,576 Lakhs/annum. The environmental management cost (capital) is Rs. 50lakhs and the revenue cost would be at the rate of Rs. 6.00 per Tonne.
- xiii. The project was approved by WCL Board on 22.10. 2010.
- xiv. **Wildlife issues:** There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found within the core zone and in the 10 km buffer Zone.
- xv. **Forestry issues:** The process of obtaining Forest Clearance has been initiated. The proposal for 4.740 ha of forest land under All Right and 96.860 ha under Mining Right has been registered with MP State Forest Department vide no. Betul/NET/WCL/2011-12 dated 21.12.2011. The proposal is under process at CCF, Betul. The counting of trees has been completed. Application for Mobile Mapper Plan with DD of Rs. 8000 submitted vide letter no. 19 dated 21.05.2012 to Forest Department.
- xvi. **Public Hearing:** The Public Hearing was held on 15.12.2011. The issues raised were employment, depletion of ground water level in the villages of the WCL mine, mine should not pass below the agriculture land because of land subsidence in nearby area e.g. Shobhapur village and Chhatarpur village, the land has subsided in 10km. Mining should be carried out in forest land, compensation for Rabi & Kharif crops etc.

1.2 After detailed discussion, the Committees sought following information for further consideration:

- i. Tawa –III underground mine requires acquisition of about 7.5 ha of Forest area for construction of incline and development of other important requirement of underground mining operation. A further acquisition of 139.49 ha of forest land is required by way acquisition of mining right even though, except for possible subsidence, the land will remain unaffected. Considering this, a copy of application made for forest clearance needs to be sent to this Committee.
- ii. The area is possibly in the Tiger Corridor or in the fringe of Tiger Corridor, this needs to be properly demarcated and certified both by Chief Wild Life Warden of the area and National Tiger Conservation Authority (NTCA).
- iii. Since the area is surrounded by forests, the transportation of coal is an important issue. It is understood that all the coal mined is meant for Thermal Power Plants of MPPGC at Sarni, dist: Betul, Madhya Pradesh. This Power station is roughly 6-7 km from proposed Tawa-III mines. Project Proponent must design an appropriate transportation system and should consider option like belt conveyor or aerial ropeway etc. Road transportation will not be accepted, since it will involve fugitive dust having adverse impact on nearby forests. It will also be involved widening of forests road which in turn will lead to ribbon development on both side of road over period of time.
- iv. The presentation indicated that subsidence studies can lead to maximum subsidence of 2.7 mt. It needs to make clear as to whether stowing is not being considered only on grounds of the extra cost involved. The Cost-Benefit of stowing needs to be examined. A system will need to be put up in place for continuous monitoring of subsidence.

- v. It is understood that there are closed mines in the Patherkhera area and that Tawa-III is being proposed in replacement of mine in same area which has stopped operation. It is necessary to undertake a study of the Ground Water balance in the closed mines. In addition, in the proposed mine at Tawa –III, more peizometers need to be installed at the level at which the mining will actually be taking place.
- vi. The committee noted that a joint project is being initiated with the Ground Water Survey & Development Agency (GWSDA) Maharashtra by WCL to show all data pertaining to ground balance in the district of Chandrapur, Yawatmal Nagpur. This joint Project needs to work out in diligent fashion clearly trying to correlate ground water data at the depth of 40-60 mt with mining activity at 100-500 mt which will not lead to any correlation of useful inferences.
- vii. The Committee was keen to know, whether besides an area directly impacted by subsidence, they will also be penumbra region surrounding the direct region which will also get impacted. The mitigative measures proposed to be taken to handle this impact needs to be clearly brought out.
- viii. During presentation, it came out that about 37% of the population is living in 10 km radius of the proposed project who are dependent on Minor Forests Produce (MFP) for their livelihood. What is proposed to be done either to protect their existing livelihood or provide them alternative livelihood needs to be brought out clearly.
- ix. The Committee is concerned with the general fact that mining creates an irreversible change in land use. In a country where human population is continuously increasing, such irreversible change in livelihood creates new social stress and likely marginalization of number of people. Keeping this in mind, as new mines are opencast, it is equally important to look into closure and restoration of old mines. For this purposes, the Committee will like to have information of all closed mines in WCL area after the formation of WCL. After obtaining this list along with proposals for TOR/ EC, the Committee will look into activity undertaken in closed mine to bring it back to productive use.
- x. The project proponent informed that they are mining seams about 1.5 mt thick. The committee desired that the project proponent explore Method and Technology below 1.5 mt thick seam as coal conservation measures. Such seams have been worked in other countries.
- xi. The project proponent informed that there are no coal seams below seam-IA .The committee advised that this mine should be taken under mine closure.
- xii. In 7.5 ha of land under all right and surface right to be acquired, minimum numbers of trees to be felled by Planning & Designing infrastructure and incline.
- xiii. While going through the proceeding of Public Hearing, it was noticed that one member of Public has raised the issue of compensation of Kharif & Rabi crop which may get damaged because of mining. It was pointed out by project proponent that the Agricultural lands are not expected to be impacted except by way of possible subsidence.
- xiv. A clear reply needs to be provided to the gentleman who raised quarry and others even than even though all steps to be taken to mitigate subsidence impact ,if any damaged is caused to standing crop because of subsidence ,appropriate compensation will be paid

2. Tawa –II Underground Coal Mine Project (0.60 MTPA normative and 0.95 MTPA (peak) of a total ML area of 523.75 ha) of M/s Western Coalfields Ltd. Distt. Betul, Madhya Pradesh (EC Based on TOR dated 23.12.2010)

2.1 The proposal is for extension of the existing underground Tawa-II U/G. The expansion project is requested from 0.75 MTPA (Normative) to 0.95 MTPA (Peak) and area from 520.00 ha to 523 ha in the M/s Western Coalfield Ltd. (WCL), Dist., Betul, M.P. The per cent of expansion is to the tune of 58%.The proponent made a presentation and informed that:

- i. EC for the existing project was obtained in 2006. The mine is already in operation & is proposed to increase production capacity. There is no other change in the project parameters. Out of 523.75 ha total ML area, 400.029 ha is forestland and 123.721 ha of non-forest land. Out of which 509.252 ha land area is under mining right, 10.748 ha area under all right & 3.75 ha under Surface right. The entire land 520.00 ha acquired under mining right under CBA 1957. The land already acquired under all right is nil; under surface right is 12.708 ha. 3.75 ha of forest land is diverted for erecting 33 KV power line. 0.04 ha land is required under all right for ventilation purposes as new intake airshaft is proposed.
- ii. The mine is already in operation and is proposed to increase production capacity. In post mining stage of total ML area of 523.75 ha, 10.748 ha is for Mine Infrastructure including Bridge, & approach road etc. and 197.91 ha area remain undisturbed. Proposed TAWA-II UG mine can be approached, 3.75 ha is for 33KV Power line and 509.252 ha Undisturbed area.
- iii. Tawa River forms the western boundary of the project. It was clarified that mining would not be under the Satpura Reservoir and a 15m solid coal barrier would be left and an angle of 27° would be maintained away from Satpura Reservoir which flanks the mine. Mining would be restricted to 15 m from the eastern bank of Tawa River and during the extraction stage, a barrier of coal in the form of solid pillar of width based on angle of draw and depth of seam would be left in the area near Tawa River and HFL of Satpura reservoir. Asir Reserve Forest Cover is also present.
- iv. Total Geological reserve would be 26.507 MT. Mineable reserve 10.598 MT & extractable reserve -11.123 MT and the rest would be locked up in pillar. There are two workable seams namely lower workable, Beagдона Seam. Average thickness of seam varies from 1.75 m to 2.23 m. Seam gradient is 1 in 6 to 1 in 8.5m. Depth of mine varies 34.13-372 m.
- v. The coal grade is 'D' (non-coking). A CHP has been provided near incline no. II to handle entire production of coal from mine. The method of working is Bord & pillar and introducing continuous miner Technology Depillaring would start after 10 years.
- vi. The ground water level is in the range of 5-9m bgl (pre-monsoon) and 2.7- 5.5 m bgl in post monsoon season. Total water requirement is Total estimated water consumption is 550m³/d., 180 m³/day industrial and 370m³/day domestic.
- vii. The anticipated maximum value of 49.00 mm/m slope, i.e. a tilt of 2.8° is not likely to cause falling of trees in the forest. The estimated maximum possible slope and tensile strain likely to occur are 49.00 mm/m and 24.50 mm/m respectively.
- viii. The transportation of coal from underground to surface would be by belt conveyor and from coal bunkers to Satpura TPS, Sarni at a distance of about 10-11 km by trucks. Satpura Dam is located in the southern edge of the block is connected to Sarni (11 km) by all-weather road built by MPSEB.
- ix. There is no R&R involved.
- x. The life of the mine is 16 years. The mine Closure Cost Rs 1353576/Annum.
- xi. The environmental management cost (Capital) is Rs.45lakhs and Revenue at the rate of Rs. 6.00 per Tonne.
- xii. The CSR cost would be at the rate of Rs 5/T of coal. The capital cost of project is Rs. 89.19 Crores (Additional).
- xiii. The project was approved by WCL Board on 22.10. 2010.
- xiv. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found within the core zone and in the 10 km buffer Zone.
- xv. **Forest issues:** Out of total forest land 396.279 ha, the Forestry Clearance for 195.20 hectares of forest land under Mining Right and 12.708 ha of forest land for surface right has been obtained under FCA 1980 vide MOEF letter dated 22.01.1999 and remaining 201.080 hectares of forest land is applied for forestry clearance under FCA 1980.

- xvi. **Public hearing:** The PH was held on 16.12.2011. The issues raised were employment, workers are being assaulted by unsocial elements, requirement of blacktopped road for transportation, issue of transport by boat, which is the only mode of transport for Tawa-II, Pisciculture Deptt. has stopped boating on Satpura reservoir, more plantation be made, concern over depletion of water level, water conservation measures, overall development of the area.

2.2 The Committee after detailed deliberations recommended the project with the following specific conditions:

- i. Since the area is surrounded by forests, the transportation of coal is an important issue. It is understood that all the coal mined is meant for Thermal Power Plants of MPPGC at Sarni, dist: Betul, Madhya Pradesh. This Power station is roughly 6-7 km from proposed Tawa-II mines. Project Proponent must design an appropriate transportation system and should consider option like belt conveyor or aerial ropeway etc. Road transportation will not be accepted to the committee since it will be involved a fugitive dust having adverse impact on nearby forests. It will also be involved widening of forests road which in turn will lead to ribbon development on both side of road over period of time.
- ii. The presentation indicated that subsidence studies can lead to maximum subsidence of 2.7 mt. It needs to make all clear as to whether stowing is not being considered only on grounds of the extra cost involved. The cost –Benefit of stowing needs to be examined.
- iii. A system will need to be put up in place for continuous monitoring of subsidence.
- iv. It is understood that there are closed mines in the Patherkhhera area and that Tawa-II is being proposed in replacement of mine in same area which has stopped operation. It is necessary to undertake a study of the Ground Water balance in the closed mines. In addition, in the proposed mine at Tawa –II, more peizometers need to be installed at the level at which the mining will actually be taken place.
- v. The Committee was happy to note that joint project is being initiated with the Ground Water Survey & Development Agency (GWSDA) Maharashtra by WCL to show all data pertaining to ground balance in the district of Chandrapur, Yawatmal Nagpur. This joint Project needs to be worked out in diligent fashion clearly trying to correlates ground water data at the depth of 40-60 mt with mining activity at 100-500 mt will not lead to any correlation of useful inferences.
- vi. The Committee was keen to know whether besides an area directly impacted by subsidence. They will also be penumbra region surrounding the direct region which will also get impacted. The mitigative measures proposed to be taken to handle this impact needs to be clearly brought out.
- vii. The drill should be wet operated.
- viii. Garland drain should be provided.
- ix. The project proponent informed that they are mining seams of about 1.5 mt thick. The committee desired that the project proponent should explore method and technology below 1.5 mt thick seam as coal conservation measures. Such seams have been worked in other countries.

2.3 The Committee recommended the project for Environment Clearance subject to Forestry clearance.

3. Ukni Deep OCP (Expansion of prod. from 2.20 MTPA to 3.50 MTPA and expansion from ML area from 940 ha to 1285.12 ha) of M/s Western Coalfields Ltd., dist. Yawatmal, Maharashtra (EC based on TOR granted on 28.10.2010) - Further Consideration

3.1 The TOR was given for the proposal on 28.10.2010. The project was considered for EC in the EAC meeting held on 03-04.01.2012 wherein the Committee sought information/clarifications from the proponent. The proposal, based on the information received from the proponent, vide letter dated 24.02.2012. EAC Meeting held on 19-20.03.2012. The Committee further, inter alia, desired that a monitoring-cum-recharge plan for augmenting the aquifers (which are below 90m) should be taken up for life of the cluster of mines found in the area upto 3 km/area of influence whichever is more. The Committee further desired that data available with GSDSA on pre-project status of groundwater should be compared after implementation of Plan for Recharge of Groundwater Aquifers. The Public Hearing held on 10.08.2011. The Committee recommended the project for granting EC. However, during the processing the case for the EC the details of the compliance to the earlier EC was raised. Accordingly, the proponent was asked to submit the compliance report. The per cent of expansion proposed is to the tune of 63%.The The proponent made a presentation and informed that:

- i. The EC, inter alia, had stipulated condition for provision of retaining a wall all along the external OB dumps. The proponent submitted that this was infructuous as the retaining wall did not provide necessary safety against OB dump collapse/siltation for which provision of a garland drain all along the dumps is adequate.
- ii. It was informed that peizometers have been installed for monitoring groundwater in the buffer zone since Nov. 2010. One more peizometer has been installed near ML boundary where monitoring has begun since Nov. 2011.
- iii. Compliance of earlier EC was presented. The issue of providing retaining wall all along the external OB dump was deliberated in the EAC. The matter was referred to DGMS vide MOEF's letter dated 27th July, 2012 for comments with regard to regulation and from safety angle and for protection from siltation for taking a decision on the matter. DGMS had sent its comments vide e-mail dated 24th August, 2012 with regard to dimension of retaining wall at the toe of the dumps and OB benches within the mine to check run off and siltation. The DGMS is of the view that catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flow from soil, OB and material dumps. The drains should be regularly desilted and maintained properly. Garland drains of appropriate size should be constructed to collect the surface runoff from the OB dump and wastes dump site (s) and taken to settling pond before discharge.
- iv. The proponent has also informed that it has undertaken other measures as per the opinion of the DGMS with regard to safety as well as environmental pollution viz. external OB dumps are constructed in benches keeping the individual bench slopes at natural angle of repose conforming to the DGMS Permission; garland drains all along the periphery of external OB dumps are constructed before onset of every monsoon and all silt and sediments along with water are allowed to accumulate in the said garland drains which are cleaned again before onset of next monsoon; biological reclamation of external OB Dumps is taken up once the dumps get inactive i.e. there is no further dumping on it; as such there is no possibility of flow of any silt/sediments into the natural water courses. The nearest river bank is about 3.00 km from the mine edge; in case of OB benches above the coal seam, the bench faces are continuously on the moving front and as such construction of retaining wall will not serve any meaningful purpose. Therefore, for these OB benches cross drainage has been provided which guide the silt and sediments along with water into the main mine sumps constructed at the floor of the seam having sufficiently large sumpage capacity which is also regularly cleaned before onset of every monsoon.

3.2 The Committee, after deliberations, was of the view that the proponent has not complied with all the conditions that have been stipulated in the EC and therefore this is

viewed as violation of non-compliance of conditions. MoEF may take appropriate action in this regard as per the prescribed provisions under Law.

3.3 The Committee, however, recommended the proposal for granting environmental clearance with the following specific conditions, in addition to specific conditions made in the earlier meetings:

- i. All the conditions made by DGMS should be adhered to.
- ii. Toe wall as well as garland drain be constructed as per DGMS.
- iii. The external OB dumps are to be constructed in benches keeping the individual bench slopes at natural angle of repose conforming to the DGMS Permission.
- iv. Garland drains all along the periphery of external OB dumps be constructed before onset of every monsoon and all silt and sediments along with water may be allowed to accumulate in the said garland drains which be cleaned again before onset of next monsoon.
- v. The biological reclamation of external OB Dumps be taken up once the dumps get inactive.

4. Chhinda OCP Expn. (0.18 MTPA to 0.65 MTPA in an ML area of 106.68 ha) of M/s Western Coalfields Ltd., located in dist. Chhindwara, M.P. (EC based on TOR granted on 15.07.2011) - Further Consideration .

4.1 The proposal was considered in the 49th EAC meeting held on 14th - 15th May, 2012 and recommended for EC. The Committee suggested that mitigative measures for reducing fugitive dust emissions should be taken up as WCL colony is at the distance of 100m and Chhinda village is 300m away from Chhinda OCP mine site. The Committee noted that relocation of Chhinda village is not feasible. The Committee desired that a 200m wide green belt should be preferably developed depending on the availability of land in non-mineralised area as large number of structures, road, and settlement are existing between the mine and Chhinda village. The Committee desired that a plan for repairing/plugging the cracks found in houses should be drawn up and implemented. The Committee also desired that that a barrier consisting of 3-tier green belt and in particular, thickets of bamboo plantations should be developed between the mine and habitations. The Committee desired that in case the villagers are not in favour of planting bamboo near their agriculture fields, other native species could be planted. The Committee observed that the transportation of coal from the mine face to surface is by 10-T trucks, should be covered. The Committee desired that all the trucks used for coal transportation outside the mine should be mechanically covered. The Committee desired that the recommendation made in the MOEF Report for mines in the PENCH-KANHAN Coalfields should be implemented. However, the Committee recommended the project for environmental clearance.

4.2 Subsequently, the EAC again discussed the project on the issue of PM₁₀ & PM_{2.5} data. The copy of the work order to CMPDIL has been submitted to MOEF. The proponent made presentation on the PM₁₀ & PM_{2.5} data along with their impact prediction.

4.3 The Committee after detailed deliberations has observed that the data as presented indicate that the value of both PM₁₀ and PM_{2.5} are marginally less than the limits prescribed under the EP Rules, whereas the values of PM₁₀ and PM_{2.5} at Station A2 Chhinda (Core Zone) are still higher. It is clear that the people working in the Mining area are exposed to greater risk from both suspended particular matter and respirable particular matter. Keeping this in mind, it is necessary to take all possible measures for coal dust separation in the mining area.

4.4 The Committee recommended for environmental clearance for the project with the following specific conditions:

- i. Everybody in the core area should be provided with mask for protection against fugitive dust emissions.
- ii. Dust mask to be provided to everyone working in the mining area
- iii. The supervisory staff should be held personally responsible for ensuring compulsory regarding wearing of dust mask in the core area.
- iv. People working in the core area should periodically be tested for the lung burden cost on account of working in the coal mine area.
- v. The mining area should be grounded by green belt having thick closed thick canopy of the tree cover.

5. Wanoja OCP (0.50 MTPA Normative And 0.575 MTPA Peak in an ML area of 485.46 Ha) of M/S Western Coalfields Ltd., Located In Tehsil Warora, Dist. Chandrapur, Maharashtra (Further Consideration of ToR)

5.1 The proposal was earlier considered in the EAC meeting held on 19-20 March, 2012 and 27th-28th-August 2012. The Committee sought following details:

Based on the presentation and deliberations, the Committee was of the view that most of the project area (455.46 ha) is on agriculture land with a single crop. Cotton is the main crop being cultivated in the area. The life of the mine is only about 10 years. The Committee was of the opinion that there would be about 300 inhabitants who are depending on this land for agriculture and their livelihood, will loose their land. The Committee desired that a Social Cost Benefit analysis should be carried out to see the viability of the mining activities. The Committee also desired that opinion of NEERI, Nagpur should be obtained in this regard.

5.2 The proponent made a presentation and informed that:

- i. The land for the proposed Wanoja opencast mine will be acquired under relevant acts as per the following:

Sl.no	Land Particulars	CBA Act,1957 (ha)	Forest Act, 1980 (ha)	Total Land (ha)
1.	Agricultural land	455.46	Nil	455.46
2.	Govt.Land	30.00	Nil	30.00
3.	Forest Land	Nil	Nil	Nil
Total		485.46	Nil	485.46

Out of this, total land within the Mine lease area is 455.46 ha and balance 30.00 ha will be acquired outside ML area for Mine Township is 15.00 ha and for resettlement colony is 15 ha.

- ii. The proposed land use for the mine lease area, of the total 485.46 ha, 115.50 is for Quarry Area, 113ha is for External OB Dump Area, 20 ha is for Infrastructure, 20 ha is for Roads & Nala Diversion, 186.96 ha is for Blasting Zone & Rationalization of Mine Boundary.
- iii. It was informed that now considering the issue of land damage due to proposed opencast mine it is submitted that only other option left to avoid land degradation is to mine the above coal reserve through underground mining. But in case of underground mining the mineable

- reserve as shown above will get significantly reduced because of losses due to (a) Coal pillars to be left intact for protection of surface structures; (b) Coal pillars to be left intact for panel barriers; (c) Coal pillars to be left intact against geological disturbances as the property is geologically disturbed; (d) Losses during depillaring while retreating.
- iv. Considering all the above, the effective coal that can be extracted by underground mining in this property comes to about 1.50 Mt. underground mining is not feasible. Thus, from the conservation point of view, this is not an acceptable option and hence opencast mining is preferred over the underground mining.
 - v. The Cost-Benefit Analysis was carried out by the proponent and informed that total land involved in the ML area is 455.46 ha. It is agricultural land. As per data collected from Panchayat Samity, Warora, the distribution of Kharif crops in proposed project land is Cotton – 227.73 ha (50% of the area), Soya bean – 182.18 ha (40% of the area) Tur - 45.55 ha (10% of the Area). Total earning per ha from agriculture is 1.57 lakhs (1.02 +0.55) per year. The rate for land is Rs. 24.70 Lakhs/ ha(double crop). By considering the interest of 10%, the amount to be earned every year is Rs. 2.47 lakhs per annum that means that the land Owner's loss in earning from agriculture more than compensated and the farmer gets about Rs. 1.00 lakhs per annum more only from interest and Rs. 24.70 lakhs capital remains intact (depends on the choice of the land Owner). As per the policy of the Company, the CSR budget is Rs. 5.00 per tonne which means during the entire mine life Rs. 302.50 lakhs will be spent in the locality. From the above, the proponent concluded that the land owners will get benefited both in terms of manifold increase in their annual earning with guarantee as well as overall improvement in their standard of living leading to a better quality of life. Thus, the proponent is of the view that the proposed Wanoja Opencast project of WCL will be beneficial for the people of the area.
 - vi. The proponent has examined the option for storing OB on mineralised area and rehandling of OB to reduce the land requirement for external OB dumps and informed that as a policy, in general, dumping of OB and/or construction of any infrastructure on mineralized area/coal bearing area is avoided as it leads to rehandling involving unjustified cost of the project. Further in the present case, the two sub- quarries have been planned by taking advantage of naturally occurring fault f-3 for the purpose of coal and creation of void. The coal production has been programmed accordingly so that there is a continuity of production. Therefore, if OB is dumped on the Surface of Sub – Quarry No. 2 during working of Sub – Quarry No. 1, the continuity of production can be maintained only if rehandling is completed strictly as per programme. Further, the two quarries have been planned for getting voids ready for accommodating excavated OB. It may be pertinent to mention here that total surface area of Sub- Quarry No. 2 is only 61.00 ha, as such it cannot accommodate the entire external OB of 113.00 ha. Moreover, during excavation, the top few OB bench of Sub- Quarry No. 1 will get into the land of sub- Quarry No. 2. Further, adequate safe distance has also to be kept from the toe of the OB Dump to the edge of top OB bench of Sub-Quarry No1 to avoid any danger to men and machines in the event of any sliding of OB dump. In addition area for Box- Cut, Access Trench and initial cuts of Sub- Quarry No. 2 have to be kept free from any external dump so as to avoid any delay in opening of Sub- Quarry No. 2. Therefore, practically a very small land will be available for accommodating external OB.

5.3 The Committee, after detailed deliberations, observed that:

- i. About 455 ha of agricultural land is to be destroyed for extraction of 6.00 MT of coal reserves. In the earlier meeting held on 27th August, 2012, the Committee had observed that acquiring 455 ha of agricultural land for (a lot of which is double crop) for extraction of a mere 6 million tonnes of coal reservoir, raises a number of issues. The committee had

- desired that a social cost benefit analysis in terms of gains from coal production vis-à-vis gains from leaving the 455 ha for perpetual agricultural needs to be evaluated.
- ii. The project proponent presented a rather simplistic cost benefit analysis done by them as per the directions of the Committee. They had obtained the cropping pattern in this area from the Panchyat Samiti Warora both during the Kharif season and Rabi season. From this by using the present value of the agriculture produce, they had estimated roughly an annual income of Rs. 1.57 lakhs per ha/year from agriculture. As against that taking the compensation package of Rs. 24.70 lakhs per ha for double crop area and the other benefits that will accrue to the land loser under the current R&R Policy of the Govt. Of Maharashtra, the project proponents have arrived at a figure of net earning of Rs. 7.64 lakhs per year per ha. The Committee is not satisfied with the above backup envelop calculation done by the project proponent. The Committee is also concerned with the following issues which needs to be factored in any such studies.
 - a. During the last 5-7 years, they have been large scale farmers suicides in these areas of Vidharbha region.
 - b. Compensation money (which comes in like a lottery win) combines with idleness stroke insufficient productive work on day to day basis is often a potent combination which sows the seeds of self destruction in the lives of human beings.
 - c. In the draft land acquisition bill, there is a suggestion that double crop agricultural should not be acquired for industrial /mining activity (of course the Bill has not yet been the formally placed in the Parliament) and still at the stage of under consideration.
 - iii. Considering the above factors the Committee is view of the fact that the social cost-benefits analysis, calculating the social benefits and the social cause for each of the following scenarios needs to be carried out by team of multi disciplinary experts / academicians from the Vidharba region. The options such as acquiring 455 ha of land and using it for OC mining; acquiring a small part of that land and extracting the mineable resources through underground mining; leaving the land completely for agriculture or any other option which the expert group may consider.
 - iv. Accordingly, the project proponent has been requested to constitute such an Expert Group, prescribed appropriate terms of reference on above lines and get a detailed study done by them. The Committee besides looking into the data provided by WCL should be free to access data from various sources for the study. If an addition the committee wishes to undertake any specific collection of primary data, WCL must facilitate the same.

5.4 After the report of the Expert Group is available, the matter may be referred back to the EAC for further consideration.

6. New Sethia Opencast Coal Mine proposed for enhancement in production capacity from 0.20 MTPA to 0.50 MTPA within the lease area of 91.503 ha) of M/s Western Coalfields Ltd., Distt. Chindwara, Maharashtra (TOR)

6.1 New Sethia Opencast Coal Mine has proposed for enhancement in production capacity from 0.20 MTPA to 0.50 MTPA within the lease area of 91.503 ha) of M/s Western Coalfields Ltd., Distt. Chindwara, Maharashtra sought environment clearance under 7.2 of EIA Notification Dated 14.09.2006 and subsequent amendments. The per cent of expansion is 250%.The Proponent made presentation and informed that:

- i. The project is for expansion in production of coal in the existing New Sethia Opencast Coalmine Project to 0.2 Million Tonnes Per Annum (MTPA) to 0.50 MTPA (Peak) within same lease area of 91.503. The per cent of expansion is 250%.

- ii. The total lease area is 91.503 ha of which 50.579 ha is agricultural land and 40.924 ha is wasteland.
- iii. Of the total lease area, 67.077 ha area for excavation, 0.5 ha is area for storage of topsoil, 8.50 ha is for OB dumps, 0.5 ha is mineral storage area, 0.431 ha is area for roads, 1.95 ha is danger zone, 0.65 ha is area for embankment, and 2.295 ha is area for rationalisation. Total area of the township is 15.30 ha with 1000 dwelling units. Part of the township to an extent of 9.30 ha falls within the lease area. Post-mining land use of 91.503 is area under plantation is 61.727 ha, 15ha is Void/Water, Body, 9.531 ha is for public use, 5.245 ha is undisturbed.
- iv. River Pench flows adjacent to the mine lease at the distance of 50m. The earlier project involved modification of the natural drainage by construction of an embankment which has been constructed.
- v. Mining will be opencast by semi-mechanized method.
- vi. Total Mineable reserve is 2.068 MT, Balance mineable reserve is 1.88 Mt (balance) Grade of coal is G7/G8. No. of seams are 3. (I, II, III). Presently the seam – I is being worked. Seam – IV & IVA – 0.72 m – 2.93. Generally this seam occurs in two sections. The Upper section of Seam – IV A developed in major part of the area, the lower section Seam – IV is impersistent in thickness and quality. Seam – V splits into three section namely VA, VB & V B2. Section VB2 is the most important. Seam is VB2 – 0.52 m – 2.46 m with Maximum thickness .Rated capacity of the mine is 0.50 MTPA of coal production. Ultimate working depth of the mine is 45m below ground level (bgl).
- vii. Water table is in the range of 5.90 m - 14.0 m bgl during pre-monsoon season and near surface 2m-10m bgl during post-monsoon. Peak water requirement is 435 m³/d, which will be met from mine pit water. The backfilling started in first Year of Quarry Operation. An estimated 20.95 Mm³ of OB will be generated over the life of mine of which 2.15 Mm³ would be generated in the balance life of mine. Almost the entire OB would be backfilled leaving a void of 15 ha which would be converted into a water body with 97.00 m depth.
- viii. There will be two Internal Dumps 3 in 31ha area with 9.88 Mm³ with OB. NOC has been obtained on 10.02.2006. At the end of mining, 61.727 ha under plantation with 1, 54,000 nos of plant.
- ix. Transportation of coal is by road to railway siding covering a distance of 11 km By Tippers and sliding to loading by Pay Loaders. Coal goes to MPEB & miscellaneous users.
- x. Earlier Project does involve R&R.
- xi. Balance life of the mine at the rated capacity is 5 years.
- xii. Environmental Pollution control expenses will be met from a fixed cost provision of Rs. 6.00 per tonne.
- xiii. The capital cost of the project is Rs. 2.2193 Crores (Additional Capital).
- xiv. The Proposal/ Scheme for New-Sethia OC mine for extraction of 1.88 Mt of coal and for obtaining EC for enhancement of capacity from 0.20 MTPA to 0.50 MTPA was approved by Competent Authority within delegated powers. The earlier project has been approved by M/s WCL on 16.12.2005
- xv. The Public Hearing was held on 24.11.2005.
- xvi. No forestland is involved. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone.

6.2 The Committee desired that application should be submitted in New FORM –I for further consideration of the Committee.

7. Expansion of Coal Beneficiation Plant (2 MTPA to 4 MTPA) of M/s Global Coal & Mining Pvt. Ltd., in village Tentulei, South Balanad, Tehsil Talcher, dist. Angul, Orissa. (EC based on TOR granted on 31.12.2008) - Further Consideration

7.1 The project was earlier considered in EAC meeting held on 19th -20th November 2012. The Committee sought the information with regard to the project vis-à-vis the CEPI area which is critically polluted area, and one full season Ambient Air Quality (AAQ) for appraisal. The proponent should explain the reasons for not submitting the AAQ data till December 2011. Copy of letter/report should be submitted.

7.2 The proponent made presentation including information on initiation of activities as per SPCB action plan to reduce pollution.. The proponent also provided one full season AAQ data, which was accepted.

7.3 In view of the above, the Committee while recommended the project for granting Environmental Clearance with the following specific conditions:

- i. The proponent shall explore methods for recovery of Mercury in fly ash,
- ii. As washery rejects goes to FBC Boiler of 35 MW Power Plant, till then M/s Navbharat has FBC who will take the rejects. A letter on this should be submitted to the Ministry.
- iii. Coal transport from mines by belt conveyor to be expedited and till its start to be done by mechanically covered trucks. The washed coal transport to the siding and loading into rly. Wagons will be by silo system and to be completed within 2yrs. Matching expansion proposed.

Tuesday, 5th February 2013

8. Choritand-Talaiya Coal Block (Production Capacity 0.8 MTPA over 299.73 ha) M/s C.T. Mining Pvt. Ltd. West Bokaro coalfields in District Bokaro, Jharkhand (EC based on TOR granted on 28.05.2010) - Further Consideration.

8.1 The project was earlier considered in EAC meeting held on 23-24 April 2012 and the Committee sought information that a railway line passes very near the mine, and the proponent should examine the feasibility of establishing a railway siding and related infrastructure within or adjoining the coal mine, since the mine has a life of about 17 years. The Committee also desired that the forestland should not be disturbed and the proposed sites for external OB dumps of 80m height beyond the railway line should also not be used for establishing the railway siding. The Committee agreed that transportation by road could be permitted for an initial period of 2 years, however, thereafter, it should be by rail. The Committee after discussions, desired that the proponent re-examine the matter of storing OB on the mineralized area within the ML and re-handling of OB for backfilling as the mine advances and examine sites suitable for the establishment of the railway siding and associated infrastructure (conveyor, etc). The Committee desired that the R&R Plan should provide for annuities which should be raised from Rs.1500/-month to Rs.2500 /month. The Committee desired that Third-Party social audit and regular monitoring on the implementation CSR and R&R should be carried out annually. The Committee noted that the issues raised in the Public Hearing have not been properly addressed. The Committee desired that the table should with details of persons raising the issues, the commitments made during the Public Hearing and status thereof in another column along with budgetary provisions should be furnished in a tabular form.

8.2 The proponent made presentation and informed that;

- i. There are three possibilities which was explored and a study was carried out by M/s MBB Consultancy Services (P) Ltd, Kolkata, an empanelled consultant of East Central Railway. The consultant, explored following four different alternatives for locating the railway siding.

OPTION - 1 : JAGESWAR BIHAR RS AT CHAINPUR/ BARKAKANA END: This is proposed to extend existing loop by 50 m to have a revised CSR of 736 m and In plant siding will start from 500 m approx. Grade 1 in 400 with Minimum filling. The cost would be Rs. 7.08 Cr .It was also informed that Conveyor arrangement from block to siding will minimise land acquisition but need Forest Clearance.

OPTION - 2: JAGESWAR BIHAR RS AT DANEA END: It was informed that Lead line will run parallel to existing railway track and Grade 1 in 100 up to entry point and In plant yard @ 3 km approx, Grade 1 in 400 for siding. Cost is Rs.12.07 Crores. This option has advantage of minimum lead and higher land acquisition & earthwork and Forest clearance is required.

OPTION - 3 :MID SECTION TAKE OFF: It was informed that in this option, the existing railway track in this portion is in a grade of 1 in 100, location of a new station, which is essential for a mid-section take off is just not possible Min. grade required is 1 in 400 so this Option has not been considered.

OPTION-4 : DANEA STATION: The existing railway track in this portion is in a grade of 1 in 100, location of a new station, which is essential for a mid-section take off is just not possible and Min. grade required is 1 in 400 so this Option has not been considered.

- ii. The Proponent suggested for Option-1 which is ideally suited and followed by Option-2.
- iii. The proponent has reexamined the issue of OB dumping, in detail, with particular aim of accommodating the maximum OB over the coal bearing area within the ML area so that requirement of land over and above the lease area is minimized. It was informed that as 3 nos. of dumps (D1, D2 and D3) are within the ML area over the coal bearing area with a capacity of 18.25 M. cum (L), 6.06 M.cum (L) and 0.11 M.cum (L), respectively. The above is equivalent to 21.30 M.cum (Bank) of OB. Whole of this OB in these three internal dumps will be rehandled and filled in the excavated area-except a part of dump - 1 over a small area in the northern end. The topsoil disposal management has been done by providing a relevant stack within ML area. The OB generated upto 3rd year will be fully accommodated within ML area. In 4th year 0.94 Mm³ (bank) OB will be surplus after filling the total capacity of dumps D1, D2 & D3 within ML area which will be required to be dumped outside the ML area. Further, upto 5th and 10th year, the surplus OB will be 7.98 Mm³(B) and 21.85 Mm³(B) respectively which has to be dumped outside the ML area after accounting for the respective backfilling volumes. This would require, a minimum of 52.73 ha area for the dump outside the ML area, if the height is restricted to 80 m.
- iv. The Proponent has agreed that in the R&R Plan, annuities will be raised from Rs.1500/-month to Rs.2500/ month, carry out a third party social audit and regular monitoring of the implementation of CSR and R&R. The aim of study will be to assess the overall impact due to the project. The details of issues raised in the public hearing along with commitments and budgetary provisions in tabular form were presented before the Committee.
- v. The Proponent presented the issues raised in the Public Hearing in tabular form before the committee.
- vi. The proponent requested the Committee to increase the time period for road transport to 5 years.

8.3 The Committee has recommended the project for granting Environmental clearance subject to the Forest Clearance. The Committee also suggested that the Proponent shall submit a copy of the application of the Forestry Clearance to the Ministry for record. The Committee agreed that transportation by road could be permitted for an initial period of 2 years. However, thereafter,

the transportation should be by rail. The external dump no1 will be refilled in the mine void after 17th year reducing the mine void to the minimum.

9. Manuguru Opencast IV Extension Project of (Normative 3 MTPA with a Peak production of 3.5 MTPA in ML area of 734.60 ha) M/s The Singareni Collieries Company Ltd. District Khammam, Andhra Pradesh (EC based on TOR granted on 28.10.2010)

9.1 The present proposal is to increase the production capacity from 1.25 MTPA to 3.00 MTPA with peak production capacity of 3.50 MTPA and the mining lease area from 440.00 Ha to 734.60 ha under the name of Manuguru Opencast –IV Extension Project (MNG OC-IV Extension). Manuguru Opencast – IV (MNG OC-IV) project was started by converting Prakasham Khani-3 incline (PK-3) underground mine into opencast for extraction of remnant reserves. The proponent was accorded environmental clearance vide Lr. No. J-11015/9/92-IA.II(M), dated 06.12.1996 for production capacity of 3585 T/day (1.25 MTPA) in the mining lease area 440.00 Ha. The expansion project has requested for increase in normative - 27.76% and peak - 37.28%.

9.2 The proponent made the presentation and informed that:

- i. The reserves envisaged in the MNG OC-IV were exhausted and now it is proposed to expand the Manuguru Opencast –IV Project towards dip side of the existing boundary to a maximum depth of 270 m from 170 m and also extend towards in-crop side to extract the top seams where existence of the seams were proved after detailed drilling.
- ii. The rated capacity of the project is 3 MTPA with a peak production of 3.5 MTPA to be achieved by year 21 of start of mining operations.
- iii. The mining will be by mechanized method with controlled blasting. The geological reserve is 65.90 MT. The mineable reserves are 58.90 MT. The grade of coal is “C, D, E & F”. Max. Depth of the quarry is 270 m. The seams are highly susceptible for spontaneous heating and Degree-II Gassiness. The remaining life of the existing equipment and infrastructure is proposed to use in expansion project.
- iv. The land requirement, activity wise, will be as below:

Particulars	Land under possession of SCCL			Additional requirement land			Total land required		
	Non-FL	Forest	Total	Non-FL	Forest	Total	Non-FL	Fores t	Total
Quarry area with safe barrier, drains& roads	.61	236.29	242.90	0.89	184.95	185.84	7.50	421.24	428.74
OB Dumps; External dump with safe barrier, drains & roads	46.35	65.23	111.58	0.00	0.00	0.00	46.35	65.23	*111.58
Service buildings, CHP etc	14.51	1.25	15.76	0.00	0.00	0.00	14.51	1.25	15.76
SUB-TOTAL	67.47	302.77	370.24	0.89	184.95	185.84	68.36	487.72	556.08
Internal dump area(Voids of OC-I & COC)	11.29	167.23	178.52	0.00	0.00	0.00	11.29	167.23	178.52

Total land requirement	78.76	470.00	548.76	0.89	184.95	185.84	79.65	654.95	734.60
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- *255.04 Ha of land earmarked for MNG OC-II Extension (EC granted) dump yard will be used for external dump in addition to the above initially and OB of MNG OC-II to be accommodated in this area will be dumped in the void of the MNG OC-IV Expansion.*
 - v. Additional Land required over earlier EC is 294.60 ha. Out of 294.60 Ha, 185.84 Ha is fresh land to be acquired and 108.76 ha belongs to COC and OC-I (voids area) sought for EC. Of the total 734.60 ha, 654.95 ha is Forest land, 33.26 ha is single crop land, 30 ha is dry land, 16.25 waste land, 0.14 is water bodies
 - vi. The main drainage of the lease is Gorripetu Vagu, a tributary of River Goidavari. Only 1st and 2nd order streams exist in the proposed area. A small portion of surface water body (Polibothula Kunta) falling in the north side boundary of quarry area. General Manager office falling in the dump area is shifted to outside the boundary. Water table in the core zone is in the range of Ground Water level (depth to water) in this area vary from 0.8 m. to 13.0 m during pre - monsoon and 0.1 m to 8.55 m during post - monsoon period.
 - vii. Out of 367 Mm³ of OB generated in the project, 212.41 Mm³ will be dumped internally and remaining 155.55Mm³ will be accommodated in the external OB dumps. 255.04 ha of land earmarked for MNG OC-II and extension dump yard will be used for external dump in addition to the land requisition in the expansion project and OB of mining OC-IV expansion. The height of external OB dump has been reduced from 120m to 90m.
 - viii. The depth of water body is proposed to reduce to 35 m from the surface by revising the dumping strategy of the MNG OC-II Extension project by dumping of 211.43 Mm³ of OB into the final void. Top soil 1.08Mm³ will be stacked separately and used in stage –wise reclamation of external OB dumps. Post –mining land use of total land, of 724 Mm³, 402.76 ha covered under plantation, 314.98 ha water body, and 16.86 ha water body.
 - ix. The Conservation Plan for buffer area was prepared by Chief Wildlife Warden vide RC no 32664/2010/WL-1/.The Eco Class-III Forest is Tropical Dry Deciduous Open Forests of density varied from 0.1 to 0.4. There are no endangered or endemic species present in the study area.
 - x. Transportation of coal is involving in-pit crushing and 1300m long belt conveyor for transport of the coal to the surface.
 - xi. Life of the mine at a peak production of 3.5 MTPA is 20 years. Mining Plan has been approved by Ministry of Coal on 18.03.2008.
 - xii. Mine Closure cost Rs 11725.EMP cost (Capital) Rs 3965.17 Laks and recurring cost Rs 788.58Lakhs /year. Capital cost of the project is Rs. 181.61 Crores.
 - xiii. **Forestry issues:** Application for forest land involved was submitted to PCCF, Hyderabad on 13.09.2010 and application was processed by DFO and CF, Khammam and revised CA Scheme submitted to PCCF on 28.11.2012.
 - xiv. **Public hearing:** PH held on 25.08.2012. Most of the people demanded for provision of basic amenities like roads, education, health and drinking water facilities in surrounding

villages. The drinking water supplied to surrounding habitations/ villages are not sufficient, R&R of adjacent Manuguru OCP. The mine discharge water shall be diverted to nearby tanks for irrigation of surrounding fields and water pollution shall be controlled, Providing employment to PDFs and local people either in SCCL or in out sourcing works, Making provision in tenders in this regard. Most of the speakers were demanded for establishment of Thermal Power Plant by SCCL, Establishment of ancillary industries by SCCL to generate employment, Retaining of 60 coal fillers transferred from Manuguru to Bhoopal palli area.

- xv. Gram Sabha Hearing was conducted on 27.8.2012 at Tirlapur Village under the chairmanship of Special officer, Ramanujavaram GP and Tahasildar, Manuguru. The major issues were: Catchment area of the Polibothula Kunta (Porapotra kunta) and Burudavai Kunta (Irrigation tanks) will be reduced due to expansion of Manugru OC-IV Project. Hence, alternative water source to be provided for the above mentioned tanks for agriculture purpose, 1500 Acres of Agriculture land will become barren land due to diversion of Gorrepetavagu. Hence, alternative water source to be provided for the above Agriculture land.
- xvi. **The project was approved by** The project was approved by SCCL Board, Mining plan was submitted to MoC and meeting of Standing Committee was held on 1st June 2012, Ground water clearance was granted from APGWD on 17.09.2012

9.3 The Committee after deliberations was of the view that the proponent has proposed of placing the overburden generated from MNG OC in the available de-coaled area and also in the space available for external OB dumped to about 90 metre above. They have also proposed OB from future mines near the filled in the de-coaled area to bring the ultimate void to 35 meter. The Project Proponent informed that they have taken up a project for crushing of OB and use them in place of sand and also for underground storing purposes. The Committee desired that;

- i. the Project Proponent may have a relook so that the external OB height be kept with the minimum. The proponent is to give a OB dumping plan.
- ii. It was also suggested that sequencing mining could reduce the height of the external dump.
- iii. The proponent has proposed for transport of coal by road to the railway siding which is situated about 3kms away. The Committee suggested that it should be taken by belt conveyor system as the quantity of coal involved is large. This will reduce the dust generation appreciably so also the fuel from the vehicle movement as apprx.1600 dippers trips will be required to transport the coal.
- iv. The proposed expansion of project involves further acquisition of about 185 ha of forest land. The PP stated that they have initiative steps to obtain forest clearance. A copy of the application should be submitted to this Committee.
- v. The people whose livelihood are dependent on the forest either directly or indirectly and the dependence on minor forest produce should be identified and enumerate the list of people that would be provided alternative livelihoods. The plan of action for doing the same should also be submitted to the Committee.
- vi. The committee noted that mining plan and mine closure plan is still awaited which is necessary for EC.

9.4 The Committee will reconsider the proposal after the receipt of the information.

10. Kakatiya Long Wall underground coal mine expansion project (2.747 MTPA normative and 3.13 MTPA peak in ML area of 601.20 Ha) of M/S The Singareni Collieries Company Ltd., Village Basvarajupalli, Distt. Warangal, Andhra Pradesh. (TOR)

10.1 Kakatiya Longwall underground Coal Mine Project was started during 2007-08 for supply of coal to 1 x 500 MW Thermal Power Plant of APGENCO located at Chelpur which is 5.5 Km away from the project. It is proposed to obtain environment clearance for the proposed production capacity of 2.747 MTPA with peak production of 3.13 MTPA. In the Phase-I area of 601.20 ha is under the provision 7(ii) of EIA Notification.

10.2 The Proponent made presentation and informed that:

- i. Environmental Clearance was granted to the project vide MoEF Letter. No. J-11015/357/2006-IA.II(M), dated 6.8.2007 for annual rated capacity of 2.15 MTPA with peak production of 2.28 MTPA in the Mining Lease area of 601.20 Ha. Presently, the project is under development stage and producing 0.1 to 0.2 MTPA and Longwall equipment is yet to be introduced.
- ii. APGENCO is expanding the existing power plant by establishing another 1 X 600 MW TPP at the same location. In view of demand of coal and availability of latest longwall equipment, it is proposed to increase the production capacity from 2.15 MTPA to 2.747 MTPA (normative) with peak production from 2.28 MTPA to 3.13 MTPA in the same mine take area of 601.20 Ha by optimizing of equipment being deployed. KTK8 & 8A inclines were started in the year 2003 with semi-mechanisation. After development tunnels, during the year 2007. it was proposed to introduce the long wall technology under the name of Kakatiya long wall project.
- iii. The entire Block area of Peddapur- Gollapalli block is 970.90 ha. Out of total block 601.20 ha is carved for Phase-I Project and remaining is for Phase-I I Project based on geological faults in the south-east of the property.
- iv. It is proposed to obtain environment clearance for the proposed production capacity of 2.747 MTPA with peak production of 3.13 MTPA. In the Phase-I area of 601.20 ha is under the provision 7(ii) of EIA Notification.
- v. Total ML area 970.90 Ha (Phase-I & II). The present proposal is for 601.20 Ha (Phase-I). Of the total, 535.179 ha is Agriculture land, 24.30 ha is grazing land, 19.235 ha is others, 22.416 ha is Surface water bodies, Land required outside the ML 40.53 Ha (25 ha for Township, 10 ha for auxiliary services and 5.53 ha for R&R). Land use of 601.20 ha area, of which 35.10 ha is for Mine Entries, service buildings, 2.25 ha is for at incline entries, 4.43 is for diversion of road, power line & nallah, 559.42 ha area is affected by subsidence. No Area not proposed for surface rights (beyond 150 m depth).
- vi. No additional land is required to be cleared off vegetation for expansion project as the there is no increase in ML area and no additional infrastructure required.
- vii. Most of the land is being cultivated with various crops viz: Paddy, Chillies, Cotton, Ground nut, maize, green dal, red dal and other pears and all vegetables etc.
- viii. No Forest land is involved in the project.
- ix. No wildlife sanctuary or national park is present in core and buffer zone.
- x. Total Geological Reserves is 67.453 MT, Mineable Reserves is 40.03 MT, Reserves already extracted 0.734 MT. No of seams 10 thickness of seams IA Section-2.02 m, Seam-I -2.66 m, Seam-II-2.72 m, Seam-III -3 m, .
- xi. The coal grade is E and F. Gaseousness degree is Degree-I.
- xii. Average gradient 1 in 2.8 to 1 in 3.3. excess mine maximum subsidence 5247mm, Maximum Slope is 37.5mm/m, 12.48 mm/m is maximum tensile strain. Regular monitoring of the subsidence movement on the surface over and around the working area and impact on the natural drainage pattern, water bodies, vegetation, structures, roads, etc will be continued till the movement ceases completely as per the DGMS stipulations and the record will be maintained.

- xiii. The water requirement of project is 1002 KLD for Dust suppression, 70 KLD Workshop requirement, 70 KLD Domestic purpose at the project, 110 KLD for greenbelt development.
- xiv. The coal transportation outside the ML area is proposed through a belt conveyor from the CHP to recipient APGENCO. The project has a CHP, wastes generated from the coal washery shall be used for filling subsided areas and for road construction.
- xv. Gundalavagu passing in the southwest side of the block is proposed to be diverted. Parsurampalli to Peddapur road passes through the project is proposed to be diverted. The power line of 2.5 Km length has to be diverted as envisaged in the earlier proposal.
- xvi. No additional R&R involved than the earlier project in which R&R of Madavaraopalli Village. No. of are PAF's are 275.
- xvii. Balance Life of the Mine is 17 Years. EMP expenditure (Capital) Rs 103.66 lakhs. CSR cost Rs 27.47 Lakhs in 2011-12. The cost of project is Rs 453.63 Crs.
- xviii. Earlier Public Hearing: Public hearing was conducted on 14.03.2007.
- xix. The proponent has obtained approval for Mining Plan from MoC was granted for 2.15 MTPA with 2.28 MTPA – Revised Mining Plan for 2.747 MTPA with 3.13 MTPA is submitted to MoC; Mining Lease from I&C (already granted); Ground water clearance from APSGW Dept; Environmental Clearance (EC) from MoEF for earlier capacity; Consent for Establishment from APPCB; Consent for operation from APPCB; NoC for diversion of GundlaVagu from I & CAD; Certificate of compliance of earlier EC from MoEF Regional Office, Bangalore

10.3 The Committee after detailed deliberations, recommended the project for granting TOR. The Committee observed that the application has been made by SECL under the provisions of 7(ii) of the MoEF Notification dated 14.9.2006 and subsequent amendment dated 1.12.2009. Prima facie, the application fulfills all conditions mentioned in the said notification and accepted the conditions regarding a cap of 25% additional production. The present proposal involves increasing the production by 27% (normative) and 37% (peak). Under the circumstances, the Committee recommends the issue of the following additional TORs for the expansion project:

- i. The additional production will be due to high capacity longwall with Shearer Initiated Roof Support Advance. The impact on air quality, water quality and noise quality needs to be studied.
- ii. A mitigative measures proposed to be taken up to mitigate the additional EI should be brought out clearly.
- iii. All other conditions prescribed in the MoEF notification dated 14.9.2006 read with amendment with 1.12.2009 should be fulfilled in Toto and the PP should be able to satisfy the Committee about the same when the further considers the proposal.
- iv. The Coal transport from mine to TPP will be by conveyor belt.
- v. Since PH for the project has been done earlier, the proposal is exempted for further PH for this expansion project as no additional area is involved.

11. Amendment to the EC granted on 10.12.2008 for expansion of 0.9 MTPA to 5.00 MTPA coal washery of M/s Monnet Daniels Coal Washeries Pvt. Ltd. at Karanpur, Ranchi, Jharkhand vide proponent letter no. MDCL/HO/JPL/72 dated 27.11.2012

11.1 M/S Monnet Daniels Coal Washeries Pvt. Ltd. was accorded Environmental Clearance for setting up 5 MTPA Coal Washery at KDH OCP of Central Coalfields Ltd. in Village Karanpura, Distt. Ranchi (Jharkhand) vide MoEF letter No. J-11015/260/2008-IA.II(M) dated 10.12.2008.

11.2 The Proponent made presentation and informed that:

- i. The Coal is being washed for Punjab State Electricity Board under contractual agreement. As per the EC, the rejects generated will be used by Monnet Ispat & Energy Ltd.(MIEL) at it's power plant at Raigarh. M/S Monnet Ispat& Energy Ltd. has 170 MW (240 TPH AFBC & 336 TPH CFBC Boilers) Power Plant situated at Raigarh in Chhattisgarh, which is using rejects from the washery. The reason for amendment to the EC, as mentioned by Monnet Ispat & Energy Ltd. (MIEL), Raigarh, is having an installed capacity of 5 Lakh Tonne Sponge Iron. Further, expansion of 2 Lakh Tonne is under progress and thereafter, the total capacity of Sponge Iron manufacturing will be 7 Lakh Tonne. Presently, MIEL is generating 32.5 MW power from WHRB and after expansion MIEL will be in a position to generate approx. 50 MW power from WHRB itself. MIEL can meet it's power demand from WHRB. Generation of power from WHRB is more eco-friendly as well as economical. Zero fly ash generation from waste heat recovery boiler (WHRB). Eliminates fly ash disposal. Presently, low demand of power in the market. Parties interested to purchase rejects for use in their TPPS are Gupta Energy Pvt. Ltd. Hindalco Industries Ltd., Disergarh Power, Jaypee Cement, Shree Bhageshwari Papers Ltd., Silverton Pulp & Papers Pvt. Ltd., NS Papers Ltd., Sidheshwari Papers Udyog Ltd.India Glycols Ltd.,Nector Life & Science Ltd., Jubilant Organosys Science Active, Sumit Agro Products Ltd. and Other Users. Based on the various reasons as mentioned above, the August Committee is requested to allow us disposal/sale of washery rejects to other users also so that the entire rejects could be disposed of smoothly.

11.3 The Committee after a detailed deliberations, was of the view that after, fulfilling the requirements of Monnet Ispat & Energy Ltd.'s 170 MW (240 TPH AFBC & 336 TPH CFBC Boilers) Power Plant situated at Raigarh in Chhattisgarh, any surplus rejects shall go to FBC based thermal power plants by rail with whom they have long term MOU. Copy of each such MOU shall be submitted to MoEF and CEA. The Committee has approved the modifications and also the typographic error in the EC (at page 2 be rectified from 3 MTPA to 1 MTPA) as requested by the proponent. The Committee recommended for the modification in the EC conditions.

12. Cluster XI (8 mines of a prod. capacity of 4.18 MTPA with a peak prodn. of 5.004 MTPA in a combined ML area 3527.58 ha) and Moonidih Coal Washery (1.6 peak capacity) of M/s BCCL located in Jharia Coalfields, dist. Dhanbad, Jharkhand.Modification ofTOR granted on 15.06.2011)

12.1 The proponent made a presentation and informed that the **Cluster XI** consists of 8 mines and one coal washery, Moonidih Coal Washery. The proposal was granted TOR on 15.06.2011 for a production capacity of 4.18 MTPA with a peak prodn. of 5.004 MTPA in a combined ML area 3527.58 ha. and modification of TOR issued on 23.5.2012 to increase the normative production capacity to 5.08 MTPA with a peak production capacity of 6.604 MTPA of the cluster within the combined ML area of 3527.58 ha as given below:

S.N	Name of mines	Production Capacity (MTPA)		Leasehold area (ha)
		Normative	Peak	
1.	Gopalichak UG Mine (life-12 years)	0.11	0.143	241.94
2.	Kachi Baliyani 10/12 pit UG Mine (life -22 years)	0.09	0.117	60.00
3.	PB Project UG Mine (life->30 years)	0.80	1.040	89.00
4.	Bhagabandh UG Mine (life-9 years)	0.08	0.104	581.17

5.	Moonidih UG Mine (life-50 years)	4.0	5.2	2063.45
6.	Kendwadih UG (closed)	Nil	Nil	217.54
7.	Pootkee UG Mines (closed)	Nil	Nil	153.77
8	Kachi Balihani 5/6 pit UG Mine UG (closed)	Nil	Nil	120.71
	Total	5.08	6.604	3527.58
9.	Moonidih Coal Washery	1.6	1.6	0.27
	Grand total	6.68	8.204	3527.85

This is proposed to be done by increasing the production capacity of the existing Moonidih UG Mine (life-50 years from 1.50 MTPA to 4.0 MTPA (normative) and from 2.00 MTPA to 5.2 MTPA (peak) to increase the total production from 2.58 MTPA to 5.08 MTPA (normative) and from 3.404 MTPA to 6.604 MTPA (peak). UG mining would be by long wall technology with coal extraction up to 65%. It is also proposed to wash the coal in the existing Moonidih Coal Washery of a capacity of 1.6 MTPA locate in an area of 0.27 ha within the Moonidih UG mine. A new Moonidih Coal washery is proposed within 2 years in Moonidih UG mine in an area which would be two-product coal washery of a production capacity of 4 MTPA normative and 5.2 MTPA (peak) yielding steel grade and power grade clean coal using HM Cyclone. Source of water for the washery operation is Moonidih UG mine. The washery is designed as a zero-discharge unit. A separate application would be submitted within a year. The modified TOR issued on 23.05.2012. The Proponent informed that there are underground fires in Kendwadih UG (closed) Pootkee UG Mines (closed) and KachiBalihani 5/6 pit UG Mine UG (closed) mine. The Public Hearing was held on 26.11.2012.

12.2 The Committee observed a discrepancy in the ToR and the documents being presented by the proponent. Therefore, it advised the proponent to clarify the discrepancy in the documents and decided to reconsider the proposal in the next EAC meeting.

13. ANY OTHER ITEMS

13.1 Amendment in the minutes of 59th Expert Appraisal Committee (EAC) (Thermal & Coal Mining) meeting held on 6th -7th November, 2012 in respect of Mahuagarhi opencast Coal Mining Project (10 MTPA in 1150 ha area) of M/s Mahuagarhi Coal Company Private Ltd located in Mahuagarhi Coal field, Tehsil Kathikund, Dist. Dumka Jharkhand for extension of TOR validity by one year issued by MoEF on 28.10.2010 vide letter MCCPL/Coal/EC/12-2013/86 dated 01.09.2012. The Proponent, vide letter no. MCCPL/WO/Coal./EC/12-2013/87 dated 26.12.2012, informed that the extension of the validity of TOR period by one year i.e. till “28thOctober 2011” should be replaced with “28th October 2013”. This was a typographical error. The Committee has approved the corrections.

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

ANNEXURE-1

PARTICIPANTS IN 67th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 04th -05th FEBRUARY, 2013 ON COAL SECTOR PROJECTS.

1.	Shri V.P. Raja	...	...	...	...	...	Chairman
2.	Prof. C.R. Babu	...	...	...	...	...	Member
3.	Shri J.L. Mehta	...	...	...	...	...	Member
4.	Prof. G. S. Roonwal	...	...	...	...	...	Member
5.	Dr. Shiv Attri	...	...	...	...	...	Member
6.	Dr M. S. Puri	...	...	...	...	...	Member
7.	Dr. Manoranjan Hota	...	...	...	...	...	Director, MOEF & Member Secretary
8.	Dr. Rubab Jaffer	...	...	...	...	...	Scientist B, MOEF

Special Invitee:

9. Dr R. K. Garg, Advisor, Coal India Limited

PARTICIPANTS IN 67th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 04th - 05th FEBRUARY, 2013 ON COAL SECTOR PROJECTS.

1. M/s Western Coalfields Ltd.,

1. Shri S.K Jagnamia,
2. Shri R. M. Wanare,
3. Shri Anand Azmi
4. Shri Kaushik Chakraborty,
5. Mohd. Noor Uddein

2. M/s Global Coal & Mining Pvt. Ltd.

1. Shri V.K. Sehgal
2. Dr. B.K. Pal
3. Shri S. Sharma

3. M/s C.T. Mining

1. Shri D. K. Jain
2. Shri G. P. Sharma
3. Shri B. D. Sharma
4. Dr. Manisha Sharma
5. Shri Dayal Chand

4. M/s The Singareni Collieries Company Ltd.

1. Shri A. Manohar Rao
2. Shri P. S. Kumar
3. Shri M. Vasanth Kumar
4. Shri N. Srinivasa Rao

5. M/s Monnet Daniels Coal Washeries Pvt. Ltd.

1. Shri J. P. Lath
2. Shri Rajesh Rana
3. Shri H. L. Sapru

6. M/s Bharat Coking Coal Limited

1. Shri D. C. Jha
2. Shri V. K. Sinha
3. Dr. E.V.R. Raju
4. Shri Amit Roy

GENERIC TOR FOR COAL WASHERY

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

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

load of mineral [and rejects] transportation, their impacts. Details of workshop, if any, and treatment of workshop effluents.

- (ix) Impacts of CHP, if any on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.
- (x) Details of green belt development.
- (xi) Including cost of EMP (capital and recurring) in the project cost.
- (xiv) Public Hearing details of the coal washery to include details of notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments made in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xv) Status of any litigations/ court cases filed/pending on the project.
- (xvi) Submission of sample test analysis of:
 - I Characteristics of coal to be washed- this includes grade of coal and other characteristics, ash, S and and heavy metals including levels of Hg, As, Pb, Cr etc.
 - II Characteristics and quantum of washed coal.
 - III Characteristics and quantum of coal waste rejects.
- (xvii) Management/disposal/Use of coal waste rejects
- (xviii) Copies of MOU/Agreement with linkages (for stand alonewashery) for the capacity for which EC has been sought.
- (xxxvi) Submission of sample test analysis of:
 - Characteristics of coal to be washed- this includes grade of coal and other characteristics ?ash, S
- (xxxviii) Corporate Environment Responsibility:
 - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
 - d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT

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

LANDUSE DETAILS FOR OPENCAST PROJECT

S.N.	LANDUSE	Within ML Area (ha)	Outside ML Area (ha)	TOTAL

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

- (xii) Break-up of lease/project area as per mining operations.
- (xiii) Impact of changes in the land use due to the start of the projects if much of the land being acquired is agricultural land/forestland/grazing land.
- (xiv) Collection of one-season (non-monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil along with one-season met data coinciding with the same season for AAQ collection period.
- (xv) Map of the study area (1: 50, 000 scale) (core and buffer zone clearly delineating the location of various stations superimposed with location of habitats, other industries/mines, polluting sources. The number and location of the stations in both core zone and buffer zone should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Values should be provided based on desirable limits.
- (xvi) Study on the existing flora and fauna in the study area (10km) carried out by an institution of relevant discipline and the list of flora and fauna duly authenticated separately for the core and buffer zone and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I fauna, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a comprehensive Conservation Plan should be prepared and submitted with EIA-EMP Report and comments from the CWLW of the State Govt. also obtained and furnished.
- (xvii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until end of mine life should be reflected on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures.

- (xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of that technology and equipment proposed to be used vis-à-vis the potential impacts.
- (xix) Impact of mining on hydrology, modification of natural drainage, diversion and channelling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xx) Detailed water balance should be provided. The break up of water requirement for the various mine operations should be given separately.
- (xxi) Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users.
- (xxii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term modelling studies on. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xxiii) Impact of blasting, noise and vibrations.
- (xxiv) Impacts of mining on the AAQ, predictive modelling using the ISCST-3 (Revised) or latest model.
- (xxv) Impacts of mineral transportation within and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop, management plan for maintenance of HEMM, machinery, equipment. Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities.
- (xxvi) Details of waste generation (OB, topsoil) as per the approved calendar programme, and their management shown in figures as well explanatory chapter with tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use. OB dump heights and terracing should 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/landuse.

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

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

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

* As a representative example

Table 2: Stage-wise Cumulative Plantation

S.N.	YEAR*	Green Belt		External Dump		Backfilled Area		Others (Undisturbed Area/etc)		TOTAL	
		Area (ha)	No. of trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees	Area (ha)	No. of Trees
1.	1 st year										
2.	3 rd year										
3.	5 th year										
4.	10 th year										
5.	15 th year										
6.	20 th year										
7.	25 th year										
8.	30 th year										

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

* As a representative example

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

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

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

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

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

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

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

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

- (xxxii) 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			

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, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, AS, etc), noise, water (surface and groundwater), soil along with one-season met data.
- (xi) Map of the study area (core and buffer zone) clearly delineating the location of various monitoring stations (air/water/soil and noise ? each shown separately) superimposed with location of habitats, wind roses, other industries/mines, polluting sources. The number and location of the stations should be selected on the basis of the proposed impacts in the downwind/downstream/groundwater regime. One station should be in the upwind/upstream/non-impact non-polluting area as a control station. Wind roses to determine air pollutant dispersion and impacts thereof shall be determined. Monitoring should be as per CPCB guidelines and standards for air, water, noise notified under Environment Protection Rules. Parameters for water testing for both ground and surface water should be as per ISI standards and CPCB classification of surface water wherever applicable.
- (xii) Impact of mining and water abstraction and mine water discharge in mine on the hydrogeology and groundwater regime within the core zone and 10km buffer zone including long?term modelling studies on the impact of mining on the groundwater regime. Details of

rainwater harvesting and measures for recharge of groundwater should be reflected wherever the areas are declared dark/grey from groundwater development.

- (xiii) Study on subsidence, measures for mitigation/prevention of subsidence, modelling subsidence prediction and its use during mine operation, safety issues.
- (xiv) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the competent authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
- (xv) Impact of choice of mining method, technology, selected use of machinery - and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations.
- (xvi) Impacts of mineral transportation ?within and outside the lease/project. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, and their impacts on air quality should be shown in a flow chart with the specific points where fugitive emissions can arise and the specific pollution control/mitigative measures proposed to be put in place. Examine the adequacy of roads existing in the area and if new roads are proposed, the impact of their construction and use particularly if forestland is used.
- (xvii) Details of various facilities to be provided in terms of parking, rest areas, canteen, and effluents/pollution load from these activities. Examine whether existing roads are adequate to take care of the additional load of mineral and their impacts.
- (xviii) Examine the number and efficiency of mobile/static water sprinkling system along the main mineral transportation road within the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality.
- (xix) Impacts of CHP, if any on air and water quality. A flow chart of water use and whether the unit can be made a zero-discharge unit.
- (xx) Conceptual Final Mine Closure Plan along with the fund requirement for the detailed activities proposed there under. Impacts of change in land use for mining operations and whether the land can be restored for agricultural use post mining.

Table 1 Stage-wise Cumulative Plantation

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

5.	15 th year										
6.	20 th year										
7.	25 th year										
8.	30 th year										
9.	34 th year (end of mine life)										
10.	34-37 th Year (Post- mining)								85*	2,12,500	

*As a representative example

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

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

(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 OPENCASST 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.
- (xxxi) Risk Assessment and Disaster Preparedness and Management Plan.
- (xxxii) Integrating in the Env. Management Plan with measures for minimising use of natural resources - water, land, energy, etc.
- (xxxiii) Progressive Green belt and afforestation plan (both in text, figures as well as in tables prepared by MOEF given below) and selection of species (local) for the afforestation/plantation programme based on original survey/landuse.

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

S.N.	Land use Category	Present (1 st Year)	5 th Year	10 th Year	20 th year	24 th Year (end of Mine life)*
1.	Backfilled Area (Reclaimed with plantation)					

2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL	110	110	110	110	110

* Representative case as an example

Table 2: Stage-wise Cumulative Plantation

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

3.	5 th year										
4.	10 th year										
5.	15 th year										
6.	20 th year										
7.	25 th year										
8.	30 th year										
9.	34 th year (end of mine life)										
10.	34-37 th Year (Post- mining)									85	

* Representative case as an example

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

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

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

6.	Undisturbed Area					
	TOTAL	85				110

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

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

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

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

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

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

(xxxxii) Submission of sample test analysis of:

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

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

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

(A) FORESTRY CLEARANCE

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

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

(B) MINING PLAN APPROVAL

(B) MINING PLAN/PROJECT APPROVAL

Date of Approval of Mining Plan/Project Approval:

Copy of Letter of Approval of Mining Plan/Project Approval

(xxxxiv) Corporate Environment Responsibility:

- 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