MINUTES OF THE 12th EAC (THERMAL & COAL MINING PROJECTS) MEETING HELD ON 27th – 28th FEBRUARY, 2014 IN NEW DELHI

The 12th EAC (Thermal & Coal mining projects) Meeting held on **27th – 28th February** in New Delhi to consider the proposals in coal mining sector. The list of participants of EAC and the proponents are given at Annexure-1 and 2 respectively.

B. Confirmation of Minutes: The Committee confirmed the minutes of the 7th EAC meeting held on 20-21 January, 2014.

C. The following proposals were considered:

12.1 Piparwar Mangardaha UGP (1.38 MTPA Normative and 1.587 MTPA Peak in an ML area 662.90 ha) of M/s Central Coalfields Ltd., located in district Chatra, Jharkhand - EC based on TOR granted on 08.04.2010.

12.1.1 The proposal is of environmental clearance for Piparwar Mangardaha UGP (1.38 MTPA Normative and 1.587 MTPA Peak in an ML area 662.90 ha) of M/s Central Coalfields Ltd., located in dist. Chatra, Jharkhand. The proponent made the presentation and informed that:

i. It is an underground coal mining project of M/s Central Coalfields Ltd, to which Ministry accorded TOR vide letter no. J-11015/12/2010-IA.II (M) dated 08.04.2010.
ii. The latitude and longitude of the project are 23° 42' 38'' to 23° 44' 45'' N and 85° 01' 34'' to 85° 03' 15''E respectively.
iii. Presently, Piparwar OCP is in operation in Piparwar block in the overlying seams (upto Lower Dakra seam). Lower Bachra seam is proposed to be extracted in Piparwar-Mangardaha UGP by deployment of continuous miner & LHDs.
iv. Major Mining Area falls below existing Piparwar Opencast Project. Total land requirement is 662.90 Ha, out of which 485.50 Ha falls within quarry boundary of Piparwar OCP.
v. The land usage of the project will be as follows:

Pre mining land use (in Ha.):

Sl No.	Class	Area/Hectares
1	Open Forest	2.29
2	Scrubs	80.02
3	Water Body	8.64
4	Quarry	67.68
5	OB Dump	136.74
4	Plantation on OB Dump	126.09
5	Agricultural land	15.82
5	Plantation	120.53
6	Others like sand body, open land, waste land etc	105.09
	Total	662.90

Post Mining land use (in Ha.):

Sl No.	Details of land use	Area in Ha
1	Reclaimed back filled area	419.10
2	Forest land	43.08

3	Water body	15.00
4	Public utility buildings/infrastructures	49.40
5	Green belt	29.40
6	Agricultural land	106.92
	Total	**662.90**

Core Area Land Use (in Ha)

S.no	Particulars	Area in Ha	
		Piparwar Block	**Mangardaha Block**
1.	Total area	485.50	177.40
2.	Void	153.10	
3.	Internal dump	85.00	
4.	Reclaimed dump	196.00	
5.	Water body	2.00	
6.	Industrial area of UGP	38.90	
7.	Industrial area of OCP	8.50	
8.	Road	2.00	
9.	Forest		43.08
10.	Waste Land		27.40
11.	Agricultural Land		106.92
	TOTAL	662.90	
12.	Underground Mining Area	624.00	
13.	Infrastructure like incline and others	38.90	
	TOTAL	662.90	

vi. The total geological reserve is 38.78 MT. The mineable reserve 25.267 MT, extractable reserve is 13.97 MT. The per cent of extraction would be 36.02%.

vii. The coal grades are Grade B&C.

viii. There will be only Seam with thickness range between 0.74-8.42 m. Maximum thickness of Seam 8.42 m.

ix. The average Gradient would be 1/40 to 1/20.

x. The total estimated water requirement is 1550 m3 /d. The level of ground water level in Pre-monsoon 5.94 m and in Post-monsoon to 4.77 m.

xi. There will be no external & internal OB dump. No Mine void and no quarry.

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

xiii. The **life of mine** is 16 Years.

xiv. Method of Mining would be by Bord and Pillar method with low height LHDs.

xv. **Transportation**: Coal transportation in pit: By Gate belt and Trunk Belt Conveyor, Surface to Siding by trucks, siding to loading by rail. Construction of Piparwar Railway Siding is expected to be completed in 2014-15.

xvi. It is proposed to dispatch coal of Piparwar Mangardaha UGP through Piparwar Railway Siding located 1.5 km away

xvii. There is no R & R involved. There are no PAFs for these productions.

xviii. **Cost**: Total capital cost of the project is Rs. 330 Crore. CSR Cost Rs 5.00/tonne of production. R&R Cost: Nil. Environmental Management Cost is Rs. 824.43 lakh.

xix. **Water body**: Damodar River flows along southern boundary of leasehold area. Diverted Benti Nala flows along south-western leasehold boundary and diverted Mangardaha nala flows along north-eastern leasehold area.

xx. **Approvals**: Mining Plan was approved on 21.11.2010**.** Board's Approval obtained on 21.11.2010. Date of mine closure approval is 21.11.2010. PP has applied for ground water clearance.

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

xxii. **Forestry issues**: Total forest area involved (in ha) for mining: 485.50 Ha in Piparwar Block has already been diverted and 43.08 Ha falling in Mangardaha Block which is proposed to be diverted.

Area (in ha)	Stage-2 FC issued vide letter no. & date	Validity period of FC
43.3 Ha	NO 8-172/89-FC dated 03.01.1995	30 years
13.11 Ha	NO 8-172/89-FC dated 02/12/1992	30 years
28.22 Ha	NO 8-48/98-FC dated 21/09/2001	30 years
101.87 Ha	NO 8-54/2003-FC dated 13/01/2004	30 years

Balance forest land of 43.08 Ha for which Stage-1 FC is proposed to be diverted.

xxiii. Dust extractors have been provided in drills; Coal transportation to Piparwar Washery shall be by belt conveyors; Water sprinkling system at transfer points of conveyor system will be installed; total area brought under plantation is 582.5 Ha etc. ETP for treating workshop effluents has been installed. Clean water is recycled 100% mine water is re-cycled; Piparwar Pilot Mine Reservoir of 340 m x 140x20 m has been developed as an eco-friendly water body which provides water to local people, helps in ground water recharge and is a habitat for flora and fauna. Migratory birds can be seen during winter months.

xxiv. It is proposed to divide the Project area in Phase-I (comprising of diverted forest land) and Phase-II (comprising of forest land to be diverted).

xxv. Unreleased forest land is expected to be released in next 4 years.

xxvi. Total afforestation plan shall be implemented covering an area of 491.58 ha at the end of mining. Green Belt over an area of 29.40 ha and Reclaimed internal dump would be nil. Density of tree plantation 2500 trees/ha of plants.

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

xxviii. **Public Hearing**: Public Hearing was held on 06.12.2011 at the Piparwar project office, Piparwar, District Chatra, Jharkhand.

12.1.2 The issues raised during the Public Hearing were regarding proper arrangement of Health checkup; employment and compensation to the local villagers; Blasting has caused cracks mitigative measures for them; Rehabilitated colonies should be provided with water, electricity, road and schools facilities; management to follow pollution control rules w. r. t. Water, Air and Noise pollution; Management should open D.A.V school and Kendriya Vidyalaya so that children of rehabilitated people get good education; Separate road should be made for going Khalari and Ranchi & C.S.R money should be spent on rural areas etc. The proponent has given assurances to address the issues raised during the Public Hearing.

12.1.3 The Committee after detailed deliberations has sought following information for further consideration:

i. The Committee has noted with concern that the Director of the Subsidiary was not present in the meeting and that the presentation was lacking technical and substantive

information. A senior level representative of the Company responsible for decision making should appear before the Committee in future.

ii. Forest Clearance for the underground activities needs to be obtained.

iii. The Committee has noted that there is no rehabilitation made even after 20 years. A detailed report on this is presented. The management of the subsidiary has not verified the rehabilitation status. This be carried out and the report be submitted.

iv. The Committee noted that earlier commitments made during the Public Hearing have not been fulfilled. A detailed compliance and the future commitments in the form of an Action Plan along with the CSRbudgetary provisions be submitted.

v. The impact of subsidence on water body vis-à-vis its management be examined and the report be submitted.

vi. The revised air quality data and its comparison with the air quality of Piparwar mines be submitted.

vii. The mine water be treated at par the surface water before it is discharged into the surface water body.

viii. The desilted brine from the treatment plant be studied for heavy metals and report be submitted.

ix. There shall be no transportation of coal by road. Details of the coal transportation from mine to railway siding vis-à-vis mechanised loading be submitted.

x. Separate conveyor belt shall be provided for coal transportation.

xi. There shall be no transport of coal to Batchra siding.

xii. A CHP shall be constructed.

xiii. Dust extraction/suppression system at all transfer points shall be installed;

xiv. There shall be three tier plantation along coal transportation road.

xv. The proposed rail track shall be commissioned in 2014-15 for transportation of coal.

12.2 Gurah Lignite Mine Project (1 MTPA in ML area 1565.77 ha) of M/s Rajasthan State Mines & Minerals Ltd. District Bikaner, Rajasthan - EC based on TOR granted on 05.04.2010, amended on 13.08.2010.

12.2.1 The proposal is for environment clearance of Gurah Lignite Open Cast Mine Project (1 MTPA in ML area 1565.77 ha) of M/s Rajasthan State Mines & Minerals Ltd. District Bikaner, Rajasthan based on TOR granted on 05.04.2010 & amended on 13.08.2010. The proponent had submitted reports on (i) Report on Drainage area mapping Hydrological Study; (ii) Survey of Flora for Impact assessment of mining in Gurha and detailed conservation plan for threatened and endangered species. The proponent made the presentation and informed that:

i. It is an open cast coal mining project of M/s South Eastern Coalfields Ltd, to which Ministry accorded TOR on 23.10. 2008; extended the validity of ToR on 23.5.2012 a corrigendum was issued on 13.8.2010 about modification of ML area (i.e.1565.77 ha).

ii. The latitude and longitude of the project are 27^{o} 51' 05''- 27^{o} 54'47'' and 72^{o} 45'40''-72^{o} 49'40'' respectively.

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

Pre-mining: 1565.77ha

Post-mining: 1384.39ha.

Core Area : Mine excavation: 582.69 ha., Dump area: 187.18 ha., Top soil : 56.05ha.,Road and Infrastructure: 32.0 ha., Power plant: 50 ha. plantation: 70 ha. Pit safety barrier : 162.20 ha and Harvesting Structure: 30ha.

iv. The total geological reserve is 37.5 MT. The mineable reserve 25.5 MT, extractable reserve is 24.23 MT. The per cent of extraction would be 95%.
v. The coal grades are 2200-3000 Kcal/kg.
vi. There will be 5-6 (3 Horizons) Seams with thickness of Seams to be worked on 2.9 - 22.30 meters (Cumulative) with the stripping Ratio 1:17. Maximum thickness of Seams 22.30 m.
vii. The average Gradient would be 4o-5 o South West.
viii. The total estimated water requirement is 352 m3 /d. The level of ground water ranges from 90-110 meter BGL
ix. There is one external OB dump with Quantity of 490 Lac M3 in an area of 187.18 ha with height of 30 meter in 3 lifts. and one internal dump with Quantity of 3855 Lac M3 in an area of 552.0 ha Reclaimed area with height of 15 meter each lift..
x. The final mine void would be in 30.69 ha with depth of 10 m. and the Total quarry area is 582.69 Ha. Backfilled quarry area of 552 ha. shall be reclaimed with plantation. A void of 30.69 ha at a depth of 10 m which is proposed to be converted into a water body
xi. The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.
xii. The **life of mine** is 27 Years.
xiii. Method of Mining will be Mechanized Open Cast
xiv. **Transportation**: Coal transportation in pit to surface by dumper, Surface to Siding by dumper, siding to loading by dumper.
xv. There is R & R involved. There are 134 PAFs for these production.
xvi. **Cost**: Total capital cost of the project is Rs. 46.7 Crore. CSR Cost Rs 1.0 Crore per year for the entire life of the mine. R&R Cost Rs. 2.9038640 Crore paid to the PAF's. Environmental Management Cost is Rs. 6658 Lac.
xvii. **Water body**: There is no river/Nallha flowing near or adjacent to the proposed mine.
xviii. **Approvals**: Mine plan was Approved vide MoC letter no. 48024/4/2001- CA-I , Dated 26.6.2007 and mine plan closure is to be submitted after receiving communication from MoC regarding modification of ML area from 1950 ha to 1565.77 ha.
xix. **Board's Approval:** Board of the Company has approved mine closure plan in its 390th Board meeting held on 28.11.2013. But the approval of the Ministry of Coal is awaited.
xx. **Wildlife issues**: Some endangered species have been reported by Zoological Survey of India and a conservation plan for the said species has been prepared.
xxi. **Forestry issues**: There is no forest area involved in the project area.
xxii. Total **afforestation** plan shall be implemented covering an area of 60ha at the end of mining. Green Belt over an area of 60 ha and Reclaimed internal dump would be 187.18 ha. Density of tree plantation 60,000 of plants.
xxiii. There are no court cases/violation pending with the project proponent.
xxiv. **Public Hearing:** Public Hearing was held on 1.4.2013 at Govt. Secondary school Gurha, Tehsil Kolayat. The issues raised during the Public hearing were regarding publication of Public Hearing; in-built mechanism of self-monitoring of compliance of environmental regulations; Characteristics of coal; The proponent has given assurances to address the issues raised during the Public Hearing. An amount of Rs. 475.0 million including CSR Cost has been earmarked for compensation of land to be acquired. For affected family whose house, has been acquired or lost, will be compensated as per assessment by a committee of Public Works Department. An Award has been announced during on dated May, .2011 for Rs. 46,83, 03, 429 /-by State Govt. against the packages. As on 16.1.2014, Rs. 42, 76, 55,280/-has been given to the PAFs for loss of land, house, trees and agricultural production in the presence of Land Acquisition officer.

12.2.2 The Committee after detailed deliberations has sought the following information for further consideration:

i. The hydro-geological studies report along with the certified completion report be submitted.

ii. The impact on water quality from bore wells and on the intersecting aquifer be submitted. The report prepared by Roorkee University be sent to Dr. Arjit Dey of Ministry of Water Resources, Government of India for his expert comments.
iii. The MoC approved mine plan and mine closure plan be submitted. The mine plan be re-examined and the approved plan be submitted for further discussion. Details of Pre- & Post-Mining land use details be submitted.
iv. There shall be no external OBD after the mining is over.
v. All internal filling shall be upto the ground level.
vi. The air quality data be re-examined and the data submitted. Sources of the increase in the PM_{10} and $PM_{2.5}$ be studied and report submitted. alongwith mitigatory measures.
vii. Grasses or firewood plants be planted on the OBD which is to be rehandled into the mine void.
viii. A Conservation Plan be prepared and submitted to the Forest Department of the State Government and the approval be presented to the EAC alongwith the budgetary provisions provided in the plan
ix. The height of the OB dump shall not be more than 30 meters.
x. Haulage roads to be black topped.
xi. Roads from working face to waste dumps, lignite stack piles, etc. to be sprayed with water.
xii. One person from each affected family shall necessarily be offered training facilities for development of entrepreneurship, technical and professional skills for self-employment

12.3 Expansion of Mangrol Valia Opencast Lignite Mine Project (4.2 MTPA to 7.4 MTPA and expansion in ML area from 2080 ha to 3019 ha) of M/s Gujarat Industries Power Company Ltd., located in Tehsil Mangrol and Valia in districts Surat and Bharuch, Gujarat – TOR Validity

12.3.1 Project proponent submitted that, in compliance to the suggestions made by the EAC while recommending TOR, certain modifications in mining and management of solid waste, with an aim to reduce external dumping area, were required. Accordingly, the Mining plan and Mine Closure Plan had been revised and submitted to MOC for their approval vide letter no. GIPCL/SLPP/Mangrol-Valia/ Mining /1441/dated 25.02.2013, The MOC is under process of approval. In view of the above the PP requested for extension of the TOR validity by one more year i.e. upto 10.01.2015

12.3.2 The Committee after detailed deliberations has recommended to extend the validity of the ToR by one year i.e. upto 10.01.2015.

12.4 Coal Washery (expansion from 1 MTPA to 5 MTPA in an ML area 16.12 ha) of M/s Mahavir Beneficiation Private Ltd. in District Anuppur, Madhya Pradesh – TOR.

12.4.1 The proposal is for Terms of Reference (TOR) of Expansion of existing 1 MTPA Coal Washery [wet process] to 5 MTPA by adding two more modules of 2 MTPA each using dry process [Air Jig] in District Anuppur, Madhya Pradesh. The proponent made the presentation and informed that:

i. The coal washery was established with prior "Consent to Establish" granted by the MPSPCB in 2005 when there was no requirement of granting environmental clearance to coal beneficiation projects under the applicable Rules Laws.
ii. It is a three product Coal Washery.
iii. The latitude and longitude of the project are :
A : 23°07'53.91" N - 81°36'00.40" E
B : 23°07'52.16" N - 81°35'44.84" E
C : 23°07'39.35" N - 81°35'35.75" E

D : 23°07'37.21" N - 81°35'49.68" E

iv. Land requirement/details :

Sr. No.	Proposed Facilities	Existing (acres)	Proposed (acres)
1	Washery Plant & Machinery	3.25	13.25
2	Raw Coal Stockyard	1.00	5.00
3	Clean coal, middling & rejects	0.85	3.00
4	Other facilities internal roads WTP, Maintenance shed, office, stores, staff quarters etc	0.50	1.00
5	Green belt & Green Cover Plantation	2.4	9.56
	Total	8.00	31.81

v. The entire project area of 39.81 acres is private land under possession of the project proponent. Land use is industrial.

vi. **Source of availability of coal** :

Coal source	Type of Mine	Distance
Amlai	Opencast	3.5 km N
Bangwar	Underground	7.2 km, WNW
Dhanpuri	Opencast	5 km, NW
Sharad	Underground	7.7 km, N

vii. Process Details:

Pre-Treatment Section: Raw coal (-) 1000mm will be received by rear dump trucks in the ground hoppers. From there, coal will be fed to a Jaw crusher through grizzly feeder. Crushed coal and grizzly feeder underpass will sent to Rotary Breaker through slow moving flat picking belt conveyors. Stone & shale picking manually and discharged at the other end of the rotary breaker. Rotary breaker will size coal to (-) 50 mm. Sized coal will be transported to Screening House through belt conveyors to separate 15mm – 50mm and (-) 15mm fractions. (-) 15mm coal will be collected in 2 loading bunkers for dispatch to clients.

Dry Beneficiation: In the Air Jig, separation of coal from shale is accomplished in the form of a fluidized bed created by a pulsing column of air. (–) 50mm to (+) 15mm fraction is fed to Air Jig where cleans and middling are produced. Through a set of belt conveyors, these two products will be stored in the bunkers for dispatch to clients. In the process heavier shale & lighter stones are collected separately as rejects. Reject collected will be transported to a reject bunker

viii. **Water requirement**: Existing water requirement of 212 m^3/day is met from bore wells. Additional water requirement of 110m3/day for the proposed expansion based on dry process will also be met from ground water with prior approval of the Competent Authority.

ix. **Transportation** of coal: Transportation of coal from the nearby SECL mines located within 10km to the washery by road. Washed coal including middling will be transported by road to the

own railway siding at Amlai (less than 7 km) and thereafter by rail.

x. **Cost**: Total capital cost of the project is Rs. Rs 44.00 Crores excluding land cost. Rs 70 Lakhs is earmarked towards EMP.
xi. **Wildlife issues**: There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km Buffer Zone. However RFs falling within 10 km radius viz: Burhar RF (0.5 km, NW); Lakanpur RF (3.0 km, S); Maikal RF (8.1 km, S); Mauhari RF (9.9 km, ENE).
xii. **Forestry issues**: No forest area involved in coal washery.
xiii. There are **no court /violation** cases pending against the project proponent.

12.4.2 Compliance status conditions of consent to operate and consent to establish were presented along with its compliance status. The committee found the compliance to be satisfactory.

12.4.3 The Committee after detailed deliberations has **recommended** for granting the ToR with the following specific ToRs in addition to the generic ToRs for washeries:

i. Documents of proof of 100% linkage for utilisation of washed coal, middling and rejects to be submitted.
ii. Permission from Central Ground Water Board for using ground water to be obtained and submitted.
iii. Coal shall be transported by mechanically covered trucks.
iv. Details of clients to whom the washed coal, middling and rejects will be furnished alongwith documentary proof.
v. Despatch of coal shall be by rail.
vi. Treatment of mine water in place of ground water for its use be explored and examined and report submitted.
vii. The Notification of MoEF vide no. GSR 02(E) dated 2nd January, 2014 with regard to raw or blended or beneficiated coal is required to be followed while operating the washery.

12.5 Talabira-II & III Opencast Project [20 MTPA (Normative) and 23 MTPA (Peak) in an area 1926 ha] of M/s Mahanadi Coalfields Limited, District- Sambalpur, Orissa - EC based on TOR granted on 23.05.2007- Further consideration.

12.5.1 The proposal of Talabira-II & III Opencast Coal Project (production capacity 20 MTPA normative and 23 MTPA peak in ML area of 1926 ha (revised)) of M/s Mahanadi Coalfields Limited, District- Sambalpur, Orissa was considered in the 65th EAC meeting held on 8th - 9th January, 2013 and 2nd EAC meeting held on 3rd -4th October, 2013. The Committee after deliberation sought the following information:

i. The Committee has noticed certain inconsistency in air quality data including SO_2. The Proponent, subsequent to the presentation, has submitted to the EAC, vide its letter no. MCL/MNH/SBP/13 dated 3.10.2013 stated, inter alia, that "….The data is based on actual monitoring by CMPDIL, Bhubaneswar. We had also noticed that the figures in respect of SO_2 in one of the villages (i.e., Malda) were constant and upon rechecking it was revealed that the figures are factual and correct. This can be attributed to the fact that the mine was virgin and there was very little industrial activity during the relevant period.....". The Committee after deliberation has desired that the proponent need to generate air quality data for one month so as to revalidate the data and present to the Committee for consideration.
ii. The Project Proponent informed that they have engaged CMPDIL for undertaking a Cumulative Assessment study. The study is expected to be completed in about one and half years. The Committee has decided and recommended that the Cumulative Assessment shall not be limited to the proponent's mine but also shall be extended to all the units in the core and buffer zone of the

mine.

iii. Stone revetment (pitching) with grassing and plantation on the top of the embankment of the reservoir shall be done.

iv. There shall be no external OB dump. The internal dump should be brought to the ground level and the voids should be below 40 m of depth.

v. Transport of the coal shall be by rail. It was noted that dispatch from the railway siding has been planned with pay loader loading till silo is commissioned. It was desired that no pay loader loading shall be done and that all dispatches be done through silo.

vi. The CSR cost should be Rs 5 per Tonne of Coal produced which should be adjusted as per the annual inflation.

12.5.2 The proponent made the presentation and informed that :

i. The air quality data in respect of SO_2 ($\mu g/m^3$) has been generated for one month in the village – Malda and the data sheet is given below:

Date	04.11.13	05.11.13	11.11.13	12.11.13	18.11.13	19.11.13	25.11.13	26.11.13	02.12.13
SO_2	9.56	9.1	9.00	10.75	9.40	8.58	9.53	9.95	9.70

Total No. of observation = 9, Average SO_2 = 9.5, Max = 10.8, Min = 8.6, NAAQ Standard = 80 $\mu g/m^3$

ii. The Cumulative Assessment has included Talabira-II&III Lease area as well as extended to all the units in the core and buffer zone of the mine.

iii. They will carry out Stone revetment (pitching) with grassing and plantation on the top of the embankment of the reservoir.

iv. There will be no external dump after closure of the mine. Proposed mine is having life of 34 years and will generate 603.77 Mcum of overburden. Internal dumping(back-filling) will start from 3rd year of production and will continue upto end of mine life. All the External and Internal dumps above ground level will be brought to the ground level and the voids will be limited to 40 meter of depth.

v. Final coal dispatch arrangement will be by rail and silo loading, which has been incorporated in the Project Report, and required action for diversion of forest land and feasibility studies for laying of rail tracks has already been initiated. However, approval for the capital expenditure for the Project and tendering process can be initiated after Stage-II forest clearance and other statutory clearances. Also, the proposed railway line has to cross the State Highway(SH-10) passing from Sambalpur to Jharsuguda through road over-bridge and another rail over-bridge has to be constructed in order to connect to the East Coast railway line towards south. Considering all these aspects, interim road transport arrangement, till the construction of railway line and silo is requested..

vi. The CSR cost will be Rs. 5/- per tonne of coal produced or 2% of the profit earned whichever is lesser. We undertake to implement any other subsequent revisions in respect of CSR cost & activities as per CIL/Govt. of India policies.

12.5.3 The Committee received a representation from one NGO with regard to issues of EIA & TOR; change in land use; impact on forest and wild life; impact on Hirakud Reservoir and lb river basin; impact of transportation and OB disposal etc. The proponent has responded to these issues which are as follows:

i. Issue regarding EIA & TOR: TOR granted on 23/5/2007, Baseline Data Generated in Mar – May 2008, EIA/EMP submitted to MoEF on 31/3/2011 (Within 4 Years), Baseline data was

valid till submission of EIA. However, Cumulative Impact Assessment Study as per EAC directive is ongoing that will cover fresh base line data. (Two districts involved, EIA presentation was delayed due to No Go/Go).

ii. With regard to issues in change in land use, the proponent submitted that as per revised Mining Plan, Forest Land involved is 1038.187 ha and Total land involved is 1914.063 ha. Mining Plan was revised as per the direction of Forest Department to include total forest area within the lease.

iii. Impact assessment and mitigative plan on forest and wild life incorporated in the Diversion Proposal and the same has been recommended by DFO and RCCF. Out of diversion of 1038.187 ha forest land, total vegetation cover being generated after mine closure would be1562.75 ha and water body to the tune of 307.28 ha.

iv. Impact assessment has been made and mitigative measures as suggested in the EIA and EAC shall be undertaken.

v. Impact on transportation and OB disposal: Impact Assessment already covered the impact of transportation and OB disposal. Final transportation through Conveyor from Pit top to Silo, Silo loading and Rail Transport which will generate minimum impact.

12.5.4 The Committee noted that the air quality data are within prescribed standards. However, desired that the proponent may respond in detail to the issues raised in the letter of the NGO for **further deliberation by the Committee.**

12.6 Coal washery Project (2.5 MTPA in an ML area 16 Acres) of M/s Hind Energy and Coal Beneficiation (India) Ltd. in District Jharsuguda, Orissa – TOR.

12.6.1 The proposal is for Terms of Reference of Coal washery Project (2.5 MTPA in an ML area 16 Acres) of M/s Hind Energy and Coal Beneficiation (India) Ltd. in District Jharsuguda, Orissa. The proponent made the presentation and informed that:

i. The proposal is for Coal washery Project (2.5 MTPA in an ML area 16 Acres) of M/s Hind Energy and Coal Beneficiation (India) Ltd.

ii. The latitude and longitude of the project are 23°26'27.27" N, 82°05'07.03"E; 23°26'26.68" N, 82°05'36.28"E; 23°25'95.83" N, 82°05'32.03"E; 23°25'98.49" N, 82°05'04.03"E

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

	Description	Area (Acres)
1	Land for Washery	9.00
2	Raw Coal Storage Yard	1.00
3	Washed Coal Storage Yard	0.50
4	Water Storage, & Emergency Settling Pond	0.50
5	Green Belt (Approx. 35% of the Total land)	5.00
Total		16.0

iv. Washery Process and material: Unloading ROM coal, crushing and screening, wet washing in Heavy Media Cyclone using magnetite and water re-circulating circuit with thickener and filter press.

v. **Water requirement**: IB River - 4 km east of the site; Lilari nala –1 km N of site; Hirakund Reservoir Boundary - 8.5 km South

vi. **Cost**: Total capital cost of the project is Rs. 41.00 Crore.

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

viii. **Forestry issues**: Nearby Forests: Rampur RF-7.5 km E ; Khait RF- 8.5 km NE ; Rajpur RF-8.0 km N ; Biramkhol RF-7.5 km NW, NNW; Remendra RF-8.5 km SW ; Arhaparha RF-7.5 km S

ix. There are no **court/violation** cases pending against the project proponent.

12.6.2 The Committee after detailed deliberations has suggested the following:

i. Feasibility of dry method for coal washery may be examined.
ii. Proponent may explore possibility to use mine water in place of ground water .
iii. Certificate of authentication from the State/District Administration on the proposed location of the washery in forest area.
iv. The EAC recommends that a caution letter be issued to the Consultant for the project viz.M/s EMTRC Consultants Pvt. Ltd, for not giving proper advice/guidance to the proponent w.r.t the location/forest land etc. and not presenting proper information before the EAC.

12.6.3 The Committee noted that the washery has been planned in thick forest of Sal trees and is inclined to reject the project proposal. However, a final view would be taken after relevant information from the State Government is submitted by the proponent on the type and extent of forest.

12.7 Cluster XVII Kalyaneshwari OCP and Kalyaneshwari Washery Project (4 MTPA Normative and 5.20 MTPA Peak in an ML area 1459.10 ha to 1844.09 ha) of M/s Bharat Coking Coal Ltd., Asansol located at Dist. Burdwan, West Bengal – Revised TOR.

12.7.1 The proposal is for Terms of Reference of Cluster XVII Kalyaneshwari OCP and Kalyaneshwari Washery Project (4 MTPA Normative and 5.20 MTPA Peak in an ML area 1459.10 ha to 1844.09 ha) of M/s Bharat Coking Coal Ltd., located at Dist. Burdwan, West Bengal.

12.7.2 MoEF had approved Cluster concept for Raniganj Coalfield vide letter dated J-11015/09/2010-IA.II(M), dated 27.04.2010 and directed to apply for ToR for cluster XVI and XVII accordingly. The EC to Cluster XVI was granted on 6th Feb 2013. The Expert Appraisal Committee prescribed the 'Terms of Reference' for the cluster-XVII (vide letter datedJ-11015/184/2010-IA.II(M), dated 28.05.2010) for normative capacity of 0.035 MTPA, and Peak Capacity of 0.0455 MTPA for mining lease area of 833.13 Ha. The environmental baseline data was generated and draft EMP was submitted to WBPCB in November, 2011 for Conducting PH. Meanwhile, the Kalyaneshwari Block that was transferred earlier to West Bengal Power Development Corporation (vide Order no 38306/46/2006-CA-1 dated 27th Feb 2009) was de-allocated by Ministry of Coal and has been returned back to Coal India /BCCL. This Kalyaneshwari Block now falls under Cluster –XVII group of mines of BCCL.

12.7.3 Considering the above BCCL has applied for a fresh TOR for Peak production 5.2 MTPA and A washery of 3.65 MTPA capacity within the lease hold area of Cluster XVII. The earlier ToR was withdrawn by BCCL in Oct. 2013.

12.7.4 The proponent made the presentation and informed that:

i. Cluster consisting of mines taken over by M/s BCCL from private mine owners after nationalization through Coal Mines Nationalization Act, 1972-73. Cluster XVII of BCCL Mines consisting of 4 Mine lease holds and one proposed Coal Washery
ii. The latitude and longitude of the project are $23^0$43'8" to $23^0$46'26" North and $86^0$47'46 to $86^0$52'11" East respectively.

iii. Details of cluster XVII:

S. No.	Name of Colliery/Washery	Type	Existing			Proposed		
		OC/UG/ Mixed/ coal washery	Normative Prod. (Mty)	Peak Prod. (Mty)	Lease Hold (Ha)	Normative Prod. (Mty)	Peak Prod. (Mty)	Lease Hold (Ha)
1	**Begunia Colliery** (Closed for Production)	UG	0	0	306.00	0	0	306.00
2	**Victoria West Colliery** (Closed for Production)	UG	0	0	310.00	0	0	310.00
3	**Victoria Colliery** (Closed for Production)	UG	0	0	223.00 (157.57 Ha to be merged with KOCP)	0	0	65.43
4	**Damagoria Colliery** (Closed for Production)	OC	0	0	620.10 (324.93 Ha to be merged with KOCP)	0	0	295.17
5	**Proposed Kalyaneshwari OCP (KOCP)** 157.57 Ha in the LH of Victoria Colliery, 324.93 Ha in the LH of Damagoria Colliery & 369.33 Ha outside LH (for external OB Dumping)	OC	-	-	-	4.00	5.20	851.83
	TOTAL				**1459.10**	**4.00**	**5.20**	
1	**Proposed Kalyaneshwari Coal Washery with approach road**	Coal Washery	-	-	-	3.65	3.65	15.66
	TOTAL CLUSTER							**1844.09**

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

i. Pre-mining & Post- Mining

Sl.No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0	0
		Not Backfilled	0	0
2	Abandoned Quarry	Backfilled	45.96	0
		Not Backfilled	38.55	0
3	External OB dump		16.64	0
4	Service building/ Mine Infrastructure		4.31	0
5	Homestead land		16.59	0
6	Old Coal dump		2.31	0
7	Road and rail		16.1	0
8	Fallow Land		393.49	0
9	Forest Land		0	0
10	Plantation		4.66	831.89
11	Water Body		13.5	19.94
12	Barren Land		299.72	0
	Total		**851.83**	**851.83**

ii. Combined land use

Sl. No.	Combined land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0.00	0.00
		Not Backfilled	0.00	0.00
2	Abandoned Quarry	Backfilled	48.12	0.00
		Not Backfilled	42.14	0.00
3	External OB dump		16.64	0.00
4	Service building/ Mine Infrastructure		27.20	0.00
5	Homestead land		197.91	93.26
6	Old Coal dump		3.31	0.00
7	Road and rail		64.86	48.76
8	Agricultural Land		557.81	164.32
9	Forest Land		0.00	0.00
10	Plantation		24.78	871.87
11	Water Body		130.08	136.52
12	Barren Land		731.24	529.36
	Total		**1844.09**	**1844.09**

Iii **Land use details of Kalyaneshwari Coal Washery**

Sl. No.	Type of land use		Present mining land use (in Ha)	Post-mining land use (in Ha)
1	Running Quarry	Backfilled	0	0
		Not Backfilled	0	0
2	Abandoned Quarry	Backfilled	0	0
		Not Backfilled	0	0
3	External OB dump		0.00	0.00
4	Service building/ Mine Infrastructure		0	0
5	Homestead land		1.89	0
6	Old Coal dump		0.000	0.000
7	Road and rail		0	0
8	Fallow Land		0	0
9	Forest Land		0	0
10	Plantation		0.00	15.66
11	Water Body		0.00	0.00
12	Barren Land		13.77	0.00
	Total		**15.66**	**15.66**

v. The total geological reserve is 504 MT (113.24 MT of Kalyaneshwari up to Salanpur – A seam). The mineable reserve 101.92 MT, extractable reserve is 355.63 MT (101.92 MT for Kalyaneshawri). The per cent of extraction would be 90%.

vi. Method of mining: Open cast by Shovel Dumper Combination.

Proposed Kalyaneshwari OCP	Begunia Colliery	Victoria West Colliery	Victoria Colliery	Damagoria Colliery
Shovel-dumper Combination (OC)	UG (Closed for Production)	UG (Closed for Production)	UG (Closed for Production)	OC (Closed for Production)

vii. The water quality, its requirement, ground water level etc will be carried out and will be incorporated in the EIA/EMP report. Details will be presented during EC presentation.

viii. There are two external OB dumps covering an area of 369.33 Ha with an height of 120 m. The total quantity will be 257.25 M. cum. There is only internal OB dump covering an area of 130 m with a height of 80 m with the total quantity of 61.34 Mm3.

ix. The **life of mine** is 33 Years.

Proposed Kalyaneshwari OCP	Begunia Colliery	Victoria West Colliery	Victoria Colliery	Damagoria Colliery
33 years	-	-	-	-

x. **Transportation**: Transportation of Coal to washery by Conveyor belt. From washery to steel plant plant by railway siding.

		Proposed Kalyaneshwari OCP	Begunia Colliery	Victoria West Colliery	Victoria Colliery	Damagoria Colliery
i.	In pit (km)	1 Km	-	-	-	-
ii.	Surface to siding (km)	0 Km (To Washery)	-	-	-	-
iii.	Siding to loading (km)	0.2 Km	-	-	-	-

xi. There is R & R involved. There are 851 PAFs for this production.

xii. Studies have been carried out w.r.t. ambient air quality for the period of 19th March -18th June 2011, by PDIL Sindri.

xiii. **Cost**: Total capital cost of the project is Rs. 3080.72 Crore. CSR Cost Rs 5.00/tonne of production. R&R Cost: Rs. 5613 Lakhs. Environmental Management Cost will be earmarked as per norms.

xiv. **Water body**: Mine area is drained by 2 small seasonal nalas flow toward west and meet Barakar river. Barakar river also drains the mine area and flows south direction along the western boundary of the mining. Barakar river joins Damodar river in the south. Damodar river flows towards east direction and passes 2.8 km south from the proposed mine.

xv. **Approvals**: Mining Plan: All the collieries / mines of BCCL are taken over from the erstwhile private owners. So all mine are not having structured mining plans. Boards approval: All the collieries/mines of BCCL are taken over from the erstwhile private owners. Hence Board Approval not required. Mining closure approval is under process.

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

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

xviii. There are no **court/violation** cases pending against the project proponent.

12.7.5 The Committee after detailed deliberations has **recommended** for granting the ToR with the following specific ToRs in addition to the generic ToRs for washeries.

i. There shall be no external OB Dumps at the end of the mine
ii. Treated mine water be used in place of ground water.
iii. No extra land shall be utilized for OBD.
iv. There shall be zero discharge from washeries.
v. The Notification of MoEF vide no. GSR 02(E) dated 2nd January, 2014 with regard to raw or blended or beneficiated coal is required to be followed while operating the wasehery.

12.8 **Expansion (Under 7(ii) of EIA Notification, 2006) of Govindpur Ph-II OC Coal Mining Project of (from 1.5 MTPA to 2.0 MTPA in an ML area of 274.95 ha) of M/s Central Coalfields Ltd. dist. Hazaribag, Jharkhand Orissa - EC under 7(ii) of EIA Notification 2006 - Further Consideration**

12.8.1 The proposal is for Expansion (Under 7(ii) of EIA Notification, 2006) of Govindpur Ph-II OC Coal Mining Project of (from 1.5 MTPA to 2.0 MTPA in an ML area of 274.95 ha) of M/s Central Coalfields Ltd. dist. Hazaribag, Jharkhand Orissa.

12.8.2 The proposal was earlier considered in 7th EAC meeting held on 12-13 December, 2013 wherein Committee sought the following information for further consideration of the proposal:

i. The Committee noted that the EC was granted on 18.01.2011 and the Compliance report submitted by the RO of MOEF that there are many conditions which has not been complied so far. While the Committee expressed its dis-satisfaction over the level of compliance of the stipulation has urged the proponent to prepare the presentation professionally with facts and figures.
ii. As per the Compliance Report of Regional Office many conditions stipulated in earlier EC have not been complied with. The Project Proponent shall submit the detailed action plan along with the budgetary provision duly certified by Regional Office of the MOEF.
iii. Independent environment officers be appointed/engaged for monitoring environmental activities.
iv. The details of the environmental laboratory be submitted along with its NABL accreditation status.

12.8.3 Proponent has submitted the certified compliance to EC conditions vetted by RO, Bhubaneshwar, MOEF vide letter no. 103-392/08/EPE dated 21.02.2014. Detailed action plan along with the budgetary provision has been submitted which are as following:

i. Sumps are created to take care of entire catchments area. The sump capacity is 12.75 lakh cub mtr. Adequate time is given for settlement of silt. Every year sump is being shifted as quarry progresses. Sump dimension: 500m x 60m and 600m x 75m.
ii. The collected water is being utilized for watering the mine area, roads, green belt development. Regular drain cleaning is being done approximate expenditure = 2.50 lakh before break of monsoon
iii. Garland drains in appropriate dimensions are being maintained. Sump capacity (mentioned above) is adequate for proper settling of silt materials.
iv. Length of garland drains = 300 mtrs. Total expenditure = Rs.2 lakh; Toe wall (Expenditure: Rs. 17.90 lakhs) has been constructed and 200m Toe wall (Expenditure: Rs.8.49 lakhs) is under construction.
v. Stone pitching (Expenditure: Rs.3.18 lakhs) has already been done to check run-off and siltation based on the rainfall data.

vi. Mineral (Coal) is transported from mine to Jarangdih Railway Siding by black topped road (9.10 Km). Green belt, 30m wide all along the transportation road is maintained by afforestation.
vii. Proposal for Pipradih Railway Siding is under process.
viii. One water sprinkler each of 28 kl & 10 kl already deployed in the Project. Fund provision made / committed: Rs. 17.00 lakh.
ix. Wet drilling is undertaken.
x. Control blasting is under taken under supervision of the blasting officer, proper blast design is prepared to control ground vibration and arrest fly rocks and boulders. Blasting is done with the use of shock tubes.
xi. The density of plantations under taken is 2500 plants per ha. So far 314.53 ha. of area has already been planted in the nearby areas. Plantations, as stipulated, will be under taken time to time. Total plantation = 314.53 ha. (including area of Sawang Colliery) and 24 km along road. Species of plants are sisam, gambhar, bakain, mahua, bambu, karange, sal, kathal, mango etc. However after post mining stage afforestation shall be done on backfilled areas, ext. OB dump etc.
xii. A provision for an amount of Rs. 31.12 Crore has been approved for Mine closure plan for Govindpur Ph-II OCP.
xiii. No ground water (bore well) is used for mining operations.
xiv. Rain water harvesting structures including check dams for recharge of ground water is under process. An estimate of Rs. 2.56 lakhs has been proposed for rainwater harvesting. There is no requirement of additional water for mining purpose.
xv. The details of seasonal variation of water level changes at individual wells have not been submitted. Project also has not constructed any new peizometers for monitoring ground water levels. No details regarding water quality parameters have been submitted.
xvi. A water treatment plant of 0.6 MGD caters to colony demand.
xvii. The capacity is proposed to be increased to 0.8 MGD.
xviii. Water is supplied to nearby villages by pipe line and hired water tanker by the project authority. In addition to this 02(two) nos. deep boring also has been done for the purpose of water supply.
xix. At colony sewage is treated by septic tank and soak-pit method. An adequate treatment is being done at workshop for which ETP has been functioning and clear water is recirculating for washing
xx. Efforts will be made to reschedule completion of STP to about 450 days to comply with the observation of EAC on 27.02.2014
xxi. established periodical medical examination system with occupational health check facilities initial medical examination for occupational diseases is done at the time of new recruitment and periodical medical examination of 1/5 total manpower is done every year.
xxii. Compensation paid to land losers as per approved CIL R&R policy.
xxiii. Rs. 5/te. of coal is earmarked for CSR for life of project. The total proposed expenditure of CSR is 1.50 crore during year 2013-14.
xxiv. CMPDI environmental laboratory is monitoring the environmental parameters of all CCL projects. The lab. is pursuing for its accreditation through NABL and final audit which was due in Feb'14 was conducted by NABL on 22nd & 23rd February, 2014. Accreditation is awaited. Final Audit has been done.
xxv. Independent environment officers be appointed/ engaged for monitoring environmental activities.
xxvi. Details of the environmental laboratory submitted along with its NABL accreditation.

12.8.4 The Committee, after detailed deliberations, has observed that the proponent has submitted the action plan alongwith commitment to comply with earlier EC conditions which were not completely

complied with. The Committee while accepting the commitments and action plan of the proponent **recommended for granting the EC** with the following specific conditions:

i. All the conditions stipulated in earlier EC shall be reiterated.
ii. The commitment and action plan be complied within one year from the date of the issue of the EC and submit the report to the MoEF. The EAC shall review the compliance report.
iii. Fixed sprinkler system will become operational from June 2014.
iv. It should be ensured that colony people are supplied with treated drinking water.
v. Piezometers should be installed and made functional by June, 2014.
vi. The Sewage Treatment Plant shall be operational in 300 days.
vii. The baseline survey and evaluation of projects for CSR be completed within one year.
viii. Monitoring of land use pattern shall be carried out and report submitted within one year.
ix. Monitoring of AAQ shall be done every month and report be submitted to the SPCB and the RO, MoEF concerned.
x. $PM_{2.5}$ shall be monitored from April 2014.
xi. Environment Officers exclusively for environment related works be posted.

12.9 Rajhara North (Central & Eastern) Opencast Coal Mining Project (0.75 MTPA over 130.85 ha) of M/s Mukund Vini Minerals Pvt. Ltd. Dist. Palamau, Jharkhand - EC based on TOR granted on 30.11.2011 - Further Consideration.

12.9.1 The EAC has noted the information submitted by the Member Secretary that Ministry of Coal (MOC)vide letter no. 13016/53/2008-CA-I dated 17th February, 2014 has recommended for de-allocation of this coal block. The Committee accordingly **deferred the project** for further consideration.

12.10 Ghogha-Surka Lignite Mine (2.25 MTPA in 1355 ha) and Khadsaliya-I (1 MTPA in 711.42.47 ha) and Khadsaliya-II Lignite Mine (0.75 MTPA in 914.14.92 ha) of M/s Gujarat Power Corp. Ltd., Dist. Bhavnagar, Gujarat - EC based on TOR granted on 23.3.2011 and amended on 30.5.2011.

12.10.1 The proposal is for environment clearance of Ghogha-Surka Open cast Lignite Mine (2.25 MTPA in 1355 ha) and Khadsaliya-I (1 MTPA in 711.42.47 ha) and Khadsaliya-II Lignite Mine (0.75 MTPA in 914.14.92 ha) of M/s Gujarat Power Corp. Ltd., Dist. Bhavnagar, Gujarat based on TOR granted on 30.11.2011 and amended on 03.09.2013. Proponent submitted an Integrated EIA/EMP report of proposed OCP mining at Ghogha-Surka Open cast Lignite Mine, Khadsaliya-I and Khadsaliya-II Lignite Mine. MOC approved Mining plan on 22.12.2009. Public Hearing was held on 19.07.2013. The proponent made the presentation and informed that:

i. It is an open cast lignite mine of M/s Gujarat Power Corp. Ltd, to which Ministry accorded TOR vide Letter No.: J-11015/202/2010-IA.II(M) dated 23.3.2011 and modification of ToR was on 30.5.2011.The extension of ToR validity upto 30.03.2014 was accorded on14.5.2013.

ii. The latitude and longitude of the project :
Ghogha-Surka: $21^0$36’00”- $21^0$38’45”N, $72^0$11’55” - $72^0$15’00”E
Khadsaliya-II : $21^0$33’15” - $21^0$36’30”N, $72^0$13’40”- $72^0$15’25”E
Khadsaliya-I : $21^0$31’25” - $21^0$33’15”N, $72^0$13’30”- $72^0$14’55”E

iii. The land usage of the project will be as follows:
Pre-mining (Satellite image analysis supports by ground truth)

Classes	Ghogha-Surka	Khadsaliya-II	Khadsaliya - I	TOTAL (Core Zone)
	Area (km^2)			
Wasteland	8.78	6.26	4.44	19.48
Sea-Water	-	-	-	-
Settlement	0.54	0.14	0.26	0.94
Salt Land	-	-	-	-
Salt Farms	-	-	-	-
Mangroves	-	-	-	-
Water bodies	0.04	0.07	0.03	0.14
Agriculture	1.98	2.78	1.60	6.36
Fallow Land	3.72	1.90	1.59	7.21
Mud Land	-	-	-	-
Mining Area	0.17	0.67	0.01	0.85
Total	15.23	11.82	7.93	34.98

Post- Mining

Land use	Ghogha-Surka	Khadsaliya-II	Khadsaliya -I	TOTAL
	Area (Ha)			
Plantation	423	339	265	1027
Proposed Pond	50	35	41	126
Pasture / Agriculture, river, canal, roads, external OB dump etc.	882	540	405	1827

iv. Total geological reserve: 110.18 million tonne (MT) [Ghogha-Surka : 60.68 MT; Khadsaliya-I : 27.00 MT; Khadsaliya-II : 22.50 MT]. Per cent (%) of extraction : 100 %.

v. Total Mineable reserve 90.57 MT [Ghogha-Surka : 54.68 MT; Khadsaliya-I : 21.60 MT; Khadsaliya-II : 14.29 MT]

vi. Total Extractable reserve 90.57 MT [Ghogha-Surka: 54.68 MT; Khadsaliya-I : 21.60 MT; Khadsaliya-II : 14.29 MT].

vii. **Range of ground water level**: Ground water level varies from 2 to 5 m in western part of mining blocks and 2 to 10 m in the buffer zone. Total estimated water requirement about 1.524 MLD. [Ghogha-Surka : 0.702 million litre per day (MLD) (Potable water: 0.062 MLD and for Other mining activities: 0.64 MLD); Khadsaliya-I : 0.352 MLD (Potable water: 0.042 MLD and for Other mining activities: 0.31 MLD); Khadsaliya-II : 0.47 MLD (Potable water: 0.03 MLD and for Other mining activities: 0.44 MLD)].

viii. Total No. of Seams is 8. [Ghogha-Surka: One; Khadsaliya-I: Four Khadsaliya-II : Three].

ix. Thickness of seams to be worked on [Ghogha-Surka : Seam thickness varies from 11.95 m to 0.08 m; Khadsaliya-I : Seam thickness varies from 12.96 m to 0.03 m ; Khadsaliya-II : Seam thickness varies from 8.40 m to 0.4 m].

x. **Grade of coal**: Proposed Project is to Mine Lignite - Equivalent to 'F'.

xi. **Stripping ratio** : [Ghogha-Surka :1:9.32 (Tonnes: M^3); Khadsaliya-I : 1:8.81(Tonnes : M^3); Khadsaliya-II : 1:23.26 (Tonnes : M^3)].

xii. **Average gradient**: [Ghogha-Surka : The strata inclination varies between 2^0 to 5^0 towards east; Khadsaliya-I : The gradient varies from 4^0 to 8^0 towards sea (east); Khadsaliya-II: The gradient varies from 4^0 to 8^0 towards sea (east).].

xiii. Maximum **thickness of seams**: [Ghogha-Surka : 11.95 m; Khadsaliya-I : 12.96 m ; Khadsaliya-II :

8.4 m].

xiv. **Method of mining**: Mechanized Open Cast mining using conventional mining and ancillary equipment.

xv. **Life of mine** : [Ghogha-Surka : 25 Years; Khadsaliya-I : 22 Years; Khadsaliya-II : 20 Years]

xvi. There is one **external OB** dumps; [Ghogha-Surka : One external OB dump in an area of 159.85 ha with height of 60m and of 511.36 MCm: Year of backfilling from 4 Year onwards.; Khadsaliya-I : Nil; Khadsaliya-II : Nil].

xvii. There are three **internal OB** dumps; [Ghogha-Surka : One internal OB dump in an area of 16.10 ha with height of 5m and of 1.15 MCm; Khadsaliya-I : One internal OB dump in an area of 83.72 ha with height of 50m and of 190.47 MCm; Khadsaliya-II : One internal OB dump in an area of 96.78 ha with height of 60m and of 332.32 MCm].

xviii. **Final Mine Voids** with depth; [Ghogha-Surka : 16.10 ha with 110 m depth; Khadsaliya-I : 83.72 ha with 72 m depth; Khadsaliya-II : 96.78 ha with 109 m depth].

xix. Total **quarry area**: 1962.8 Ha; [Ghogha-Surka : 962.3 Ha; Khadsaliya-I : 447.8 Ha; Khadsaliya-II : 552.7 Ha].

xx. **Backfilled quarry** area of 1837 ha shall be reclaimed with plantation: Ghogha-Surka: 912.3 Ha; Khadsaliya-I : 517.9 ha; Khadsaliya-II : 406.8 ha.

xxi. A void of 125.8 ha at a depth of upto 110 m (approx) which is proposed to be converted into a water body. [Ghogha-Surka : 50.0 Ha; Khadsaliya-I : 41.0 Ha; Khadsaliya-II : 34.8 Ha].

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

xxiii. **Transportation**: Lignite transportation from mine pits to lignite stack yard from where lignite after necessary blending shall be transported to adjacent pithead TPP by closed conveyor system has been envisaged.

xxiv. There is **R & R** involved. There are 666 PAFs.

xxv. Total **capital Cost** of Rs. 618.71 Crore: [Ghogha-Surka: Rs. 263.28 Crore; Khadsaliya-I : Rs. 157.97 Crore; Khadsaliya-II : Rs. 197.46 Crore.}

xxvi. **Cost of Production**: [Ghogha-Surka : Rs. 970 / T; Khadsaliya-I : Rs. 860 / T; Khadsaliya-II : about Rs. 2050 / T].

xxvii. **Sale Price**: [Ghogha-Surka : about Rs. 1155/ T; Khadsaliya-I : Rs. 1025/ T; Khadsaliya-II : Rs. 2440 / T]

xxviii. **CSR cost**: Rs. 5 per Ton of lignite mined.

xxix. Total R&R Cost is Rs. 35.92 Crore. : [Ghogha-Surka : Rs.26.69 Crore; Khadsaliya-I : Rs. 8.22 Crore; Khadsaliya-II : Rs. 1.01 Crore]

xxx. Environmental Management cost shall be 2% of the capital cost.

xxxi. **Approvals**: Date of approval of mine plan, mine closure plan, status & date; [**Ghogha-Surka** : The Mining Plan for 2.25 MTPA has been approved by Ministry of Coal vide letter no.13016/3/2009-CA-1 dated 22.12.2009. Mine closure plan will be as per approved mine plan and guideline provided by MoEF; **Khadsaliya-I** : The Mining Plan for 1.00 MTPA was approved by Ministry of Coal, vide letter no. 48024/2/94-CML/CA-I dated 18.12.2009. Mine closure plan will be as per approved mine plan and guideline provided by MoEF; **Khadsaliya-II** : The Mining Plan for 0.75 MTPA was approved by the Ministry of Coal, vide letter no. 48024/8/2003-Lig/CA-I dated 14.01.2010. Mine closure plan will be as per approved mine plan and guideline provided by MoEF.]

xxxii. **Board's approval**: [**Ghogha-Surka**:88 Meeting of the Board of Directors of GPCL held on 01.03.2007; **Khadsaliya-I**:88thMeeting of the Board of Directors of GPCL held on 01.03.2007; **Khadsaliya-II**:88thMeeting of the Board of Directors of GPCL held on 01.03.2007.]

xxxiii. **Mine closure** approval : [**Ghogha-Surka**: The mining plan including closure plan was approved vide MoC's letter no. 13016/3/2009-CA-1 dated 22.12.2009; **Khadsaliya-I** : The mining plan including closure plan was approved vide MoC's letter no. 48024/2/94/CML/CA-1 dated 18.12.2009; **Khadsaliya-II**: The mining plan including closure plan was approved vide MoC's

letter no. 48024/8/2003-Lig/CA-1 dated 14.01.2010]

xxxiv. **River/Nallha** flowing near or adjacent to the proposed mine. [**Ghogha-Surka** : The Malesari river (seasonal) flows in the southern part of the ML area. A branch canal is passing in the eastern part of the lease area; **Khadsaliya-I**: The Ramdasia river (seasonal) flow from west to east side within lease area in northern part. A branch canal is passing from north to south direction within lease area ; **Khadsaliya-II**: The Ramdasia river (seasonal) passes through south east corner of mining lease area. A branch canal is passing from north to south direction.]

xxxv. The ground water studies have been conducted by Gujarat Water Resources Development Corporation Limited as well as by National Institute of Hydrology, Roorkee. It has been reported that the effect will be to a lesser extent.

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

xxxvii. Total **afforestation** plan shall be implemented covering an area of 1383.45 ha as follows:

a. Reclaimed external OB dump in 159.85 ha : [Ghogha-Surka : 159.85 Ha; Khadsaliya-I : Nil; Khadsaliya-II : nil;].
b. Internal dump in 196.6 ha: [Ghogha Surka16.1 Ha; Khadsaliya-I : 83.72 Ha ; Khadsaliya-II : 96.78 Ha]
c. Green belt in 1027 ha: [Ghogha-Surka : 423 Ha; Khadsaliya-I : 265 Ha; Khadsaliya-II : 339 Ha;]
d. Void in 126 ha with a depth of in 10 m which is proposed to be converted into water body: [Ghogha-Surka: 50 Ha; Khadsaliya-I: 41 Ha; Khadsaliya-II: 35 Ha.]

xxxviii. There are no **court cases/violation** pending.

xxxix. **Public Hearing**: Public hearing was held on 19.07.2013 at the near Jain Derasar, Ghogha Bunder,Ghogha, Dist: Bhavnagar, Gujarat.

12.10.2 The issues raised during the Public Hearing were regarding initiatives taken for the construction of wall by using stone, greenbelt and tree sapling, mitigation measures for dust separation, Shetrunji canal, employment to locals, electricity to the farmers etc. The proponent has given assurances to address the issues raised during the Public Hearing.

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

i. Necessary affidavit bearing testimony to the fact that the coal from this mine will be exclusively used for Padwa Power Plant would be submitted.
ii. The Clearances from CRZ angle should be submitted.
iii. The details of approved mine plan and mine closure plan be submitted.
iv. Flu gas De-Sulfurization (FGD) Plant be installed in the Power Plant for sulphur removal.
v. The feasibility of conveyor system for transport of lignite from mine CHP to Common delivery point of Ghogha be studied and details submitted.
vi. Details of issues raised in the Public Hearing along with the Commitment, Action Plan and Budgetary Provisions.
vii. A detailed CSR Action Plan along with budgetary provision be submitted.
viii. A detailed explanation on ingression of sea water to the mine be submitted along with the expert opinion from Roorkee University.
ix. The accreditation of BISAG be submitted along with the proof of evidence.
x. The details of disposal of brine after the treatment of saline water be submitted.
xi. The feasibility of providing housing to contractual labourers at mine site be examined and report submitted.
xii. The details on impact of mine on mangroves be submitted.
xiii. A sub EIA on the impact of mine activity on river /canal be prepared.
xiv. The details of internal dumping along with commitment from the top management for corrective action be submitted.

xv. The details of OB handling be given including refilling into the mine void and details of final state of internal dumps and mine voids..
xvi. The reason and source of increase in PM10 be examined & information submitted alontwith mitigatory measures.
xvii. A sturdy stonewall should be built around the toe wall.
xviii. Proper terracing of the dump slope, with maximum bench height of 30 meters
xix. Planting vegetation grass / creepers as early as possible on the overburden dump slopes.
xx. The vehicles must be maintained and checked thoroughly at least once a week by the competent / skilled technical personnel authorized for the purpose.
xxi. Road signals/signage should be provided at each and every turning point (haul roads) especially for the guidance of the drivers at the night.
xxii. Overburden and lignite should be placed in specifically designated dumps or stockpile sites.

12.11 Rampia and Dip Side of Rampia Coal Blocks Open cast Mine of (6 MTPA in Phase 1, total ML area 1270 ha) of M/s Rampia Coal Mine and Energy Private Ltd, dist. Sundargarh, Orissa –TOR.

12.11.1 The EAC has noted the information submitted by the Member Secretary that Ministry of Coal (MOC) vide letter no 38011/1/2011-CA-I dated 17th February, 2014 has recommended for de-allocation of this coal block. The Committee accordingly **deferred the project** for further consideration.

12.12 Ichhapur Underground Coalmine Project (2 MTPA in an ML area of 1186.33 ha) of M/s West Bengal Mineral Development & Trading Corp. Ltd., Tehsil Asansol., dist. Bardhman, West Bengal - EC based on TOR granted on 30.11.2011, amended on 03.09.2013.

12.12.1 The proposal is for environmental clearance of Ichhapur Underground Coalmine Project (2 MTPA in an ML area of 1186.33 ha) of M/s West Bengal Mineral Development & Trading Corp. Ltd., Tehsil Asansol., dist. Bardhman, West Bengal. The proponent made the presentation and informed that:

i. It is an underground coal mining project of M/s West Bengal Mineral Development & Trading Corp. Ltd to which Ministry accorded TOR vide letter no. J-11015/235/2011-IA.II(M), dated 30.11.2011, additional TOR on dated 10.02.2012 , amended TOR on dated 03.09. 2013.
ii. The latitude and longitude of the project are 23°36'15.04" N- 23°38'18.29" N and 87°14'22.48" E-87°17'55.93" E respectively.
iii. The land usage of the project will be as follows:

Pre mining land use (in Ha.):

Sl. No.	Type of land	Area in Ha.
1.0	Agricultural Land	803.43
2.0	Forest land	37.42
3.0	Barren Land	56.57
4.0	Grazing Land	0.0
5.0	Surface Water Bodies (61.54 ha)	
5.1	Pond	53.82
5.2	Nala	7.72
Others (227.87 ha)		
6.0	Habitation (80.98 ha)	
6.1	Village Area	75.02

Sl. No.	Type of land	Area in Ha.
6.2	Kaccha House	0.03
6.3	Pucca House	0.08
6.4	Residential Area	0.51
6.5	Semi Pucca House	0.29
6.6	Shed	0.01
6.7	Under Construction	3.06
6.8	Play Ground	1.98
7	Industrial & Public-Semi Public (124.45 ha)	
7.1	Airport Area	19.72
7.2	Factory	61.19
7.3	Brick Kiln	0.18
7.4	Quarry	42.80
7.5	Burning Ghat	0.38
7.6	Graveyard	0.18
8.	Green area (14.70 ha)	
8.1	Plantation	12.60
8.2	Bamboo Thicket	2.10
9.	Roads (7.74 ha)	
9.1	Kaccha Road	1.47
9.2	Pucca Road	4.69
9.3	Morrum Road	1.53
9.4	Concrete Road	0.05
	Total	**1186.83**

Sl. No	Name of the Mouza	JL. No.	Police Station	Land Ownership			
				Area in Ha			
				Private	Govt.		Total
					Vested	Forest	
1	Bhadrapur	35	Faridpur	23.25	17.03	0	40.29
2	Ukhra	18	Andal	69.23	12.23	0	81.46
3	Sarpi	36	Faridpur	120.85	39.80	0	160.65
4	Kendua	43	Faridpur	51.35	13.98	0	65.33
5	Amlauka	37	Faridpur	65.01	32.56	0	97.56
6	Banguri	38	Faridpur	94.47	0.51	0	94.99
7	Ichhapur	42	Faridpur	215.31	21.46	17.81	254.58
8	Bansgara	46	Faridpur	109.47	14.41	19.53	143.41
9	Bansol	09	Durgapur	46.69	2.16	0	48.85
10	Chapabandi	44	Faridpur	123.00	12.31	0	135.31
11	Hetadoba	45	Faridpur	2.85	11.98	0.08	14.91
12	Patsaora	53	Faridpur	43.04	6.45	0	49.49
Total area				**964.53**	**184.88**	**37.42**	**1186.83**

Post Mining land use (in Ha.):

Sl. No.	Name	Planted Area During Mining	Planted Area in Post Mine Closure	For Public Use	Undisturbed	Total
1.	Shaft, Inclines & related facilities					
2.	Green belt	4	0	0	0	4
3.	Essential Quarters	0	0	2	0	2
4.	CHP	0	0.21	0	0	0.21
5.	Ground bunker for coal (3 days)	0.0	1.2	0	0	1.2
6.	Settling Pond	0	0	0.5	0	0.5
7.	Shaft No.-1, and Incline no. 2 & 3	0	0.48	0	0	0.48
8.	Road	0	0.6	0.6	0	1.2
9.	Waste dump	3	0	0	0	3
10.	Treatment Plant	0	0	0.04	0	0.04
11.	Workshop	0	0.03	0	0	0.03
12.	Store	0	0	0.01	0	0.01
13.	Lawn Area	1.2	0	0	0	1.2
14.	Administrative Office	0	0	0.01	0	0.01
15.	Main Office	0	0	0.12	0	0.12
16.	Canteen	0	0	0.01	0	0.01
17.	VTC	0	0	0.01	0	0.01
18.	Dispensary & Rest Room	0	0	0.03	0	0.03
19.	Driver Rest Room	0	0.03	0	0	0.03
20.	Truck/Vehicles Parking	0	0.09	0	0	0.09
21.	Diesel Filling Station	0	0.01	0	0	0.01
22.	Sub-Station	0	0.01	0	0	0.01
23.	DG Set	0	0.01	0	0	0.01
24.	Pit Office	0	0.02	0	0	0.02
25.	Attendance Room	0	0.01	0	0	0.01
26.	Lamp Room	0	0.01	0	0	0.01
27.	Check Post	0	0.01	0	0	0.01
28.	Weigh Bridge	0	0.01	0	0	0.01
29.	Indirectly affected	0	0	0	9.94	9.94
	Sub Total-I	**8.2**	**2.73**	**3.33**	**9.94**	**24.2**
II	Road connecting facility to Ichhapur Vil. Road	0.1	0	0.1	0	0.2
III	Magazine and Road from facility area to Magazine (0.16 ha Magazine+0.29 ha road +0.29 ha GB)	0.29	0.16	0.29	0	0.74

IV	Undisturbed within ML	0	0	0	1161.69	1161.69
	Grand Total of ML	**8.59**	**2.89**	**3.72**	**1171.63**	**1186.83**

* The land area 9.94 ha+2.89 ha in PMC + 1.2 ha lawn) = 14.03 ha can be used for agriculture in post mine closure stage.

iv. The total geological reserve is 817.52 MT/735.77 MT. The mineable reserve 614.12 MT, extractable reserve is 362.14 MT. The percent of extraction would be 49.20 (u/g)%.

v. The coal grades are Grade A- 16.19%, B-21.09%, C-29.71%, D-21.98%, E-8.7%, F- 2.22% and G-0.11% (Total =100%).

vi. There will be 28 Seam with thickness ranges 0.1716.45 m. Maximum thickness of Seam 16.45 m.

vii. The average Gradient: The strata in the southern limb dip towards south-east and amount varies from 2°-3° in the west to 15°-16° in the central and eastern part. The strata in the northern limb dip, towards north in the west and north-east in the eastern part. The amount varies from 8° in the west to 10°-12° in the east. The maximum dip has been found in a small patch around borehole RAD-13 & MAIJW-17 is 21°-23°.

viii. The total estimated water requirement is 1316 cum/day (257 cum/day for drinking and 1059 cum / day industrial water). The range of Ground water will be 1 to 6 m bgl, (Monsoon) 2 to 10 m bgl, (Pre Monsoon)

ix. There will be one external for temporary storage of the waste rock generated during shaft, inclines and drifts drivage, as it is an underground mine. These waste rocks will be used for filling up the voids or low lying areas within the block, as per requirement in future. The external dump area will be 3 Ha with a depth of 10m and quantity 0.21 MCum (waste rock). The seasonal data for ambient air quality has been documented and all results at all stations are within prescribed limits.

x. The **life of mine**: 185 years (excluding one year construction period)

xi. Method of Mining: Mainly Powered Support Long wall and Board & Pillar underground mining by Continuous Miner with shuttle cars wherever longwall panel layout is not feasible.

xii. **Transportation**: Coal transportation in pit : Gate and trunk belt conveyors to main conveyor for transportation of coal through incline from all seams to the surface, Surface to Siding by Pipe conveyor wagon loading at railway siding through silo/CHP.

xiii. There is no R & R involved. There are no PAFs for these production.

xiv. **Cost**: Total capital cost of the project is Rs. 1500 Crore. CSR Cost Rs 1.334 Crore. R&R Cost: Nil. Environmental Management Cost (Capital cost – Rs. 246.10 lakh; Recurring – Rs. 124.70 lakh per year.

xv. **Water body**: The coal block falls in two watersheds - Damodar and Ajay river basins. There are three nallas within the lease hold area as well as ponds of various sizes. Natural drainage network originates in North West part of the study area and drain off the entire storm water to river Damodar flowing west along the south western border of the study area at a distance of 7.6 Km. The drainage pattern of the study area is dendrite type and at places sub parallel in nature.

xvi. **Approvals**: Mining plan and Mine Closure Plan were submitted on 26.7.2012, presentation was held on 26.4.2013 and final Mining Plan and Mine Closure Plan have been submitted to Ministry of Coal for approval vide letter no. MDTC/PM-5/92E(ii) 1035 dated 16.07.2013 incorporatining the suggestions of MoC. Approval of **Mining Plan is at final stage.** Board's Approval obtained vide Resolution No- MDTC/B.1954/ 2013 dated 28.2.2013 Approval of Mining Plan is at final stage.

xvii. **Ground water permission** : Application for grant of permission to abstract ground water has been submitted to the Secretary, Water Recourses Investigation and Development Department, Government of West Bengal vide letter no. MDTC/PM-5/92E(ii)/461 dated 08.04.2013 as well as to the Director, State Water Investigation Directorate, Government of West Bengal, vide letter no. MDTC/PM-5/92E(ii)/301 dated 06.03.2013 as advised by Central Ground Water Authority, Ministry of Water Resources, Government of India vide letter no. 21-4/CGWA/ ER/ 2010-40 dated

08.01.2013. Approval is awaited.

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

xix. **Forestry issues**: **Total forest area involved (in ha) for mining:** 37.42 ha. Application for diversion of forest land for underground mine workings below 37.42 Ha forest land has been submitted vide letter number MDTC/PM-5/92E(ii)2117 date- 14.12.2012, as it is an underground mine. Also, the subsidence, prediction report envisages that the subsidence due to mining, in the forest area will be within the permissible limit. The forest area has been inspected by Divisional Forest officer as well as Chief Conservator of Forest. NOC is awaited.

xx. Total **afforestation** plan shall be implemented covering an area of 11.48 ha at the end of mining. Green Belt over an area of 8.48 ha and Reclaimed internal dump would be 3 ha. Density of tree plantation 2500 trees/ha of plants.

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

xxii. **Public Hearing:** Public Hearing was held on 03.09-2013, at Durgapur- Faridpur Panchyet Samity Office, Laudoha, district Burdwan, W.B.

12.12.2 The issues raised during the Public Hearing include employment to local unemployed youths, development of the local villages, subsidence and emission of greenhouse gas, development of the local schools and colleges, development of the local village roads, poor people and unemployed villagers, environmental pollution etc. The proponent has given assurances to address the issues raised during the Public Hearing.

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

i. Approval of CGWB for using underground water.
ii. Approved Mine plan and mine closure plan be submitted..
iii. Documentary proof from the WB SPCB with regard to the mine in Durgapur not being in the Critically Polluted area.
iv. wagon loading and mechanized loading of coal at railway siding.
v. The transportation of coal through pipe conveyor from mine to the railway siding.
vi. To continuously monitor the subsidence and mitigation measures taken.
vii. The recommendations of CIMFR be for mitigation.
viii. To extract all coal seams as proposed by CIMFR that except below Amlouka village. It is recommended to go for partial extraction over 7A, 7B & 7C panels in X(T2) seam and 7I and 7J panels in IX(T) seam to maintain the allowable strain limit below the village.
ix. The surface cracks formed during extraction should immediately be filled in with mitti to prevent breathing of air and inflow of water to the underground workings.
x. Suitable drainage should be made to avoid any water logging in the centre of subsidence trough.
xi. Dumping of coal and building materials should be avoided on forest land otherwise it may affect forest cover.
xii. During extraction of panels, the ground subsidence should be monitored over forest land and villages to know the actual impact by an external agency.
xiii. Mine water discharged should be comparable to the surface water standards.
xiv. Due care shall be taken for heat and humidity during drivages and extraction in underground activities. Continuous monitoring of humidity and temperature shall be carried out along with the subsidence study.
xv. All land losers shall be given employment.
xvi. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation.
xvii. During the stage upto coal production, the capital CSR Budget shall be 0.4% of Capital Cost of

the Project.

12.13 Fatehpur Opencast Coalmine Project (3 MTPA in an ML area of 719.761 ha) of M/s Fatehpur Coal Mining Company Pvt. Ltd., Dist. Korba & Raigarh, Chhattisgarh – TOR - Further Consideration.

12.13.1 The EAC has noted the information submitted by the Member Secretary that Ministry of Coal (MOC) vide letter no. 13016/31/2011-CA-I dated 17th February, 2014 has recommended for de-allocation of this coal block. The Committee accordingly **deferred the project** for further consideration.

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

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

12.14.2 The proposal was considered in the 63rd EAC meeting held on 17th -18th December, 2012, 5th EAC held on 25-26 November, 2013 & 9th EAC meeting held on 20-21st January, 2014. The Committee decided that since it is an expansion project, a sub-Committee of the EAC shall visit the project. The sub-committee visited the project on 23 February, 2014 and submitted the report (Annexure- 8).

12.14.3 The Sub-committee has presented the report to the Committee which deliberated on the recommendations.

12.14.4 The Committee, after detailed deliberations, has observed that the proponent has submitted the action plan along with commitment to comply with earlier EC conditions. The Committee while accepting the commitments and action plan of the proponent **recommended for granting the EC** with the following specific conditions:

i. All the conditions stipulated in earlier EC shall be reiterated.
ii. The commitment and action plan be complied within one year from the date of the issue of the EC and submit the report to the MoEF.
iii. The Committee has noted that the proponent has exceeded the production in 2007-2008 by 0.332 MTPA. This construes a violation and need to be dealt by the Ministry as per the existing OMs. The proponent was advised to stick to the capacity of production as stipulated in the EC.
iv. The EAC shall review the compliance report after one year.
v. 162 ha will be suitably planted after extraction of bottom coal seam.
vi. Piezometers shall be constructed and monitoring of ground water shall start latest by Nov-2014. Recycling & Reuse shall be operational.
vii. The Conveyor system shall be installed in 2 years for transporting coal from mine to siding.
viii. Regular monitoring of water from the clear water tank shall be carried out.
ix. Silo system shall be designed for 20 MTPA, which will cater to full mine production capacity. Silo loading arrangement shall commence in 3 years' time.
x. The incremental coal production shall be transported through MGR/New Siding.
xi. Top soil as well as the sub soil shall be utilized concurrently over the backfilled area and when backfilled area is not available top soil and sub soil be stacked separately and scientifically preserved. Scheme for Plantation of grass seeds and leguminous species

during the next monsoon season to retain the nutrient value of the top soil including microorganism be prepared.

xii. The impact on nallah, originates from upstream catchment area which traverse through the mining area and terminate in Lilari Nallah, to the downstream users viz. irrigation, bathing, fishing, etc be examined and mitigation measures be taken to protect the environment

xiii. Regular cleaning strategy should be adopted for both the Secondary Settling tanks.

xiv. The integrated mine PR and corresponding Mine Closure Plan has to include planning for removal of the internal dumps, extraction of the bottom seams and finally re-filling and reclamation of the entire area.

xv. Due care should be taken up to protect local encroachment in the safety zone and there has been no encroachment.

xvi. New piezometers shall be constructed by Nov 2014

xvii. Regular monitoring of fugitive dust at all the critical locations should be carried out and in case of generation of dust is found to be high, regular water sprinkling including fixed water sprinklers should be provided as a part of dust control measured. It should be ensured that the labor force engaged in all the critical areas should use PPEs so that no occupational diseases are found among them.

xviii. All the 12 parameters of AAQ should also be monitored and report submitted to the Regional Office.

xix. It should be ensured that the labor force engaged in all the critical areas should use PPEs so that no occupational diseases are found among them.

xx. The CSR cost should be Rs 5 per Tonnes of Coal produced which should be adjusted as per the annual inflation or as per CSR guidelines of Government of India whichever is more.

12.15 Kapurdi Lignite Open Cast Mine project for capacity enhancement from 3.75 MTPA to 7 MTPA in ML area of 3223.5110 ha for 4 years as per calendar program of M/s Barmer Lignite Mining Company Ltd., Dist. Barmer, Rajasthan- EC based on TOR granted on 18.02.2014.

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

i. M/s Barmer Lignite Mining Co Ltd (BLMCL) is a Joint Venture between Rajasthan State Mines & Minerals Ltd (a Govt. of Rajasthan Company, 51%) and Raj West Power Ltd (49%) stakeholder.

ii. Barmer Lignite Mining Company Limited (BLMCL) was incorporated for meeting the Lignite requirement of 1080 MW (8 x 135MW) Thermal Power Plant of Raj West Power Ltd (RWPL), from the Kapurdi and Jalipa Lignite Blocks

iii. All 8 units of RWPL have been commissioned in March, 2013.

iv. RWPL supplying 100% power through Long Term PPA to Rajasthan Discom, at the tariff determined by Rajasthan Electricity Regulatory Commission.

v. The entire lignite produced by BLMCL from these mines is for the exclusive use as fuel for this power project.

vi. Lignite requirement at 7 MTPA to meet annual normative requirement at current GCV levels

vii. Kapurdi mine operational with capacity of 3.75 MTPA .

viii. Jalipa mine could not be started in time due to land acquisition problem.

ix. To mitigate the issue, BLMCL has already applied to MoC for revision of Mining Plan of

Kapurdi Lignite Mine (KLM) with a revised calendar program

x. The proposed revised calendar program calls for capacity enhancement of KLM to 7 MTPA for first four years
xi. After four years the capacity to be tapered down to commensurate with increase in Jalipa production.
xii. Combined production level shall never breach the already approved 9 MTPA.
xiii. The Standing Committee of MoC on 20th May 2013 has approved the revised Mining Plan of Kapurdi for a capacity of 7.0 MTPA, temporarily for a period of 4 years.
xiv. It is an Open cast coal mining project of M/s Barmer Lignite Mining Company Ltd, to which Ministry accorded TOR vide letter no. J-11015/17/2014-IA.II(M) dated 18.02.2014.
xv. The latitude and longitude of the project are 25°56'00" N to 25°28'00' N and 71°21'22" E to 71°22'20"E respectively.
xvi. The land usage of the project will be as follows:

Pre mining land use (in Ha.):

Sl No	Description	Area Hectare as on 31/03/2012 (as per7MTPA Mining Plan)
1	Mining/Excavation	180.99
2	Surface Dump in ML Area	380.70
3	Top Soil Dump	12.00
4	Facilities including Lignite Stack	25.00
5	LHP & Conveyor	13.15
6	Road	32.60
7	Settling Pond/Reservoir	9.50
8	Green Belt	16.11
9	Void	180.99
10	Undisturbed/Indirectly Affected	2553.46
	Total	3223.51

Post Mining land use (in Ha.):

Sl. No.	Description of Area	Plantation	Water Body	Public Use	Undisturbed	Total
1	Excavation	1640.08	541.27	0.00	0.00	2181.35
2	External Dump	703.01	0.00	0.00	0.00	703.01
3	Top soil Dump	0.00	0.00	0.00	0.00	0.00
4	Facilities including lignite stack	0.00	0.00	5.00	0.00	5.00
5	Road	2.00	0.00	3.00	0.00	5.00
6	LHP and conveyor	10.00	0.00	0.00	0.00	10.00
7	Settling pond / reservoir	10.00	0.00	0.00	0.00	10.00
8	Green belt	96.66	0.00	0.00	0.00	96.66
9	Undisturbed	0.00	0.00	0.00	212.49	212.49
	Total	2461.75	541.27	8.00	212.49	3223.51

Core Area Land Use (in Ha)

Sl. No.	Village	Forest land Gramya Jungle	Non-forest Govt. land	Private land	Total
1.	Sutharon Ki Dhani	0.00	0	16.2606	16.2606

2.	Isherpura	0.00	14.4476	214.2533	228.7009
3.	Prajapaton Ki Dhani	0.00	0	148.8304	148.8304
4.	Kapurdi	0.00	1.1331	1010.1659	1011.2990
5.	Rohilee	0.00	0.0405	202.8426	202.8831
6.	BothiaPurohitan	0.00	153.1202	670.5301	823.6503
7.	BothiaJagir	0.00	230.8863	541.3679	772.2542
8.	Inter Village Overlap Area	0.00	-	-	19.6325
	Total	0.00	399.6277	2804.2508	3223.5110

xvii. The total geological reserve is 150.40 MT. The mineable reserve 134.61 MT, extractable reserve is 129.79 MT. The per cent of extraction would be 96.4%.

xviii. The coal grades are Grade : Lignite with average CV of 2692 Kcal/kg.

xix. There are Three Lignite horizons. Top Horizon contains 5 lignite seams, Middle horizon consists of 4 lignite seams and Bottom horizon consists of 3 lignite seams. None of the seam exhibits spatial distribution through the entire area. . Maximum thickness of Seam 6m.

xx. The average Gradient: Almost flat, occasionally undulating

xxi. The total estimated water requirement is 2738 m3/day. Range of ground water ~80m bgl.

xxii. There will be total 7 external dumps out of which 2 Nos will be re handled covering an area of 703.01 ha having an height of 60 m, with a total quantity of 319.061 Mm3. There will be one internal dump having an area of 1640.08 Ha with an height of 40m with a total quantity of 1289.822Mm^3

xxiii. The final mine void would be in 541.27 ha with depth of 90 m. and the Total quarry area is 2181.35 Ha. Backfilled quarry area of 1640.08 Ha shall be reclaimed with plantation. A void of 541.27 ha at a depth of 90 m which is proposed to be converted into a water body.

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

xxv. The **life of mine** is 31 Years.

xxvi. Method of Mining: Open Cast Mining with Shovel Dumper Combination

xxvii. **Transportation**: Coal transportation in pit: Dumpers, Surface to Siding by Conveyor to pit head power plant.

xxviii. There is R & R involved. There are 774 PAFs.

xxix. **Cost**: Total capital cost of the project is Rs. 527 Crores. CSR Cost Rs 110 Lacs till date in FY 2013-14. R&R Cost: As per Govt. of Rajasthan order, land compensation paid to the Khatedars was inclusive of R&R, at an agreed amount of Rs.1.5 lakhs per bigha. Environmental Management Cost is Rs. 432.00 Lacs.

xxx. **Water body**: No River/ Nallha flowing near or adjacent to the proposed mine.

xxxi. **Approvals**: Revised Mining Plan for 7 MTPA has been approved by MoC vide letter no. 13016/12/2012-CA-I dated 29th January 2014. Board's Approval obtained on 24.07.2012. Revised Mine Closure Plan for 7 MTPA has been approved by MoC vide letter no. 13016/12/2012-CA-I dated 29th January 2014.

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

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

xxxiv. Total **afforestation** plan shall be implemented covering an area of 2461.75 ha at the end of mining. Green Belt over an area of 96.66 ha and Reclaimed internal dump would be 703.01 ha. Density of tree plantation 1500 trees/ha of plants.

xxxv. There is no court cases/violation pending with the project proponent.

xxxvi. **Public hearing** exempted vide TOR issued vide letter no. J-11015/17/2014-IA.II(M) dated 18.02.2014.

xxxvii. Compliance to the earlier EC conditions vetted by RO, MOEF submitted on 24.02.2014.

12.15.2 The members of the Committee expressed their displeasure that the project documents were not circulated to them. The Committee was informed that the proponent is supplying lignite to M/s JSW for generation of power. The Committee noted the submission of the proponent that the project be considered either as a standalone project or under 7(ii) of EIA Notification, 2006. The Committee felt that the proponent was very unsure about their objective. The Committee informed the proponent that the proposal under consideration is a standalone project for which a TOR was granted and it cannot consider under 7(ii) of EIA Notification, 2006 for which **prescribed procedure has to be followed**.

12.15.3 The Committee had observed that the enhancement in lignite production is more than the double the current quantity. The Committee has therefore strongly recommended that the local public has a right to know the extent of enhancement of production within very short span of four years vis-à-vis it's likely impact on the environment. Therefore, the Committee recommended that the TOR issued to the proponent with waiving of Public Hearing be withdrawn. The proponent should carry out Public Hearing for the enhanced production. The proponent should advertise for Public Hearing in local and national newspapers, posters in villages and other such methods informing in change in production vis-à-vis likely environmental impact. The State Pollution Control Board would co-ordinate this activity as prescribed in the EIA Notification, 2006. The proponent is required to **come back to the EAC with the Public Hearing** details and **compliance report vetted by the RO MOEF** to the earlier EC conditions for further consideration of the project. The Committee has noted that the proponent has ECs for Kapurdi and Jalipa mines. The Committee was not convinced for recommending excess production from Kapurdi mine and not producing lignite from Jalipa Mine due to procedural delays.

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

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Annexure 1

PARTICIPANTS IN 12th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 27th - 28th FEBRUARY, 2014 IN NEW DELHI.

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

Annexure 2

PARTICIPANTS IN 12th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 27th -28th FEBRUARY 2014 ON COAL SECTOR PROJECTS.

12.1 Piparwar Mangardaha UGP of **M/s Central Coalfields Ltd.**

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

12.2 Gurah Lignite Mine Project of **M/s Rajasthan State Mines & Minerals Ltd.**

1. Prof. K. P. Sharma
2. Shri K. C. Sharma
3. Shri P. R. Prajapati
4. Dr. Aman Sharma
5. Shri K. Acharya
6. Shri P. R. Gehlot

12.3 Mangrol Valia Opencast Lignite **M/s Gujarat IndustriesPower Company Ltd.**

1. Shri Ajay Gupta
2. Shri N. K. Purohit
3. Shri Ravi Joshi

12.4 Coal Washery (from 1 MTPA to 5 MTPA) **M/s Mahavir Benefication Private Ltd.**

1. Shri Y. P. Ohri
2. Shri Ankur Jain
3. Shri Ramesh
4. Shri Janardhan

12.5 Talabira-II & III Opencast Project **M/s Mahanadi Coalfields Ltd.**

1. Shri Ashok Machher
2. Shri B Mishra
3. Shri K. S. Ganpathy
4. Dr. A. K. Samantaray
5. Shri Jitendra Singh
6. Shri S. K. Bhar
7. Shri S. K. Tripathy
8. Shri J. P. Singh
9. Dr. Shambhu Jha

12.6 Coal washery (2.5 MTPA) **M/s Hind Energy and Coal Beneficiation (India) Ltd.**

1. Shri Pawan Agrawal
2. Shri Amit Kumar Singh
3. Shri D. K. Moitra

12.7 Cluster XVII Kalyaneshwari OCP and Washery **M/s Bharat Coking Coal Ltd.**

1. Dr. E. V. R. Raju
2. Shri V. K. Sinha
3. Shri Kumar Rajiv

12.8 Govindpur Ph-II OC Coal Mining Project of **M/s Central Coalfields Ltd.**

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

12.9 Rajhara North OC Coal Mining Project **M/s Mukund Vini Minerals Pvt. Ltd.**

1. Shri V. K. Mital
2. Dr. A. K. Sinha
3. Shri B. D. Sharma
4. Shri Navneet Kumar
5. Dr. Marisha Sharma

12.10 Ghogha-Surka Lignite Mine **M/s Gujarat Power Corp. Ltd.,**

1. Shri S. Pentu Saheb
2. Shri A. B. Panchal
3. Shri B. P. Pati
4. Shri A. L. Thakur
5. Shri S. A. Kadam
6. Shri M. Karta
7. Shri M. K. Jadhav
8. Shri Rahman
9. Shri B. K. Nayar
10. Shri Rajkumar
11. Shri B. S. Rawat

12.11 Rampia and Dip Side of Rampia Coal Blocks **M/s Rampia Coal Mine and Energy Private Ltd,**

1. Shri B. D. Sharma
2. Shri A. P. Mishra
3. Shri Behera
4. Shri J. P. Panda

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

1. Shri Shantanu
2. Shri Navneet Kumar
3. Shri B. D. Sharma
4. Shri R. K. Saha
5. Shri Umesh Gupta
6. Dr. Marisha Sharma

12.13 Fatehpur OC Coalmine Project **M/s Fatehpur Coal Mining Company Pvt. Ltd.,**

Absent

12.14 Expansion of Lakhanpur OCP **M/s Mahanadi Coalfields Ltd.**

1. Shri J. P. Singh
2. Shri D. Bhattacharya
3. Shri S. K. Bhar
4. Shri J. Singh
5. Shri K. S. Ganpathy
6. Dr. A. K. Samantaray

12.15 Kapurdi Lignite Open Cast Mine project **M/s Barmer Lignite Mining Company Ltd.**

1. Shri Umesh Gupta
2. Shri B. D. Sharma
3. Shri Amrendra Kumar
4. Shri G. Koley
5. Shri Navneet Kumar
6. Shri Marisha Sharma

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ANNEXURE-3

GENERIC TOR FOR COAL WASHERY

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

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

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

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

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

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

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

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

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

(x) Details of green belt development.

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

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

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

(xvi) Submission of sample test analysis of:

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

II Characteristics and quantum of washed coal.

III Characteristics and quantum of coal waste rejects.

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

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

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

(xxxvii) Corporate Environment Responsibility:

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

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

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

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

ANNEXURE -4

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT

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

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

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

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

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

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

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

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

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

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

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

LANDUSE DETAILS FOR OPENCAST PROJECT

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

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

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

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

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

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

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

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

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

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

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

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

(xxii) Impact of mining and water abstraction use in mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long?termmodelling studies on. Details of

rainwater harvesting and measures for recharge of groundwater should be reflected in case there us a declining trend of groundwater availability and/or if the area falls within dark/grey zone.

(xxiii) Impact of blasting, noise and vibrations.

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

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

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

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

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

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

* 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.	1st year										
2.	3rd year										
3.	5th year										

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

* As a representative example

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

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

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

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

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

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

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

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

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

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

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

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

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

(xxxxi) Submission of sample test analysis of:

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

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

(A) FORESTRY CLEARANCE

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

ANNEXURE -5

GENERIC TOR FOR AN UNDERGROUND COALMINE PROJECT

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

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

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

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

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

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

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

Area Under Surface Rights

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

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

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

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

(x) Collection of one-season (non-monsoon) primary baseline data on environmental quality ? air (PM10, PM2.5, SOx, NOx and heavy metals such as Hg, Pb, Cr, AS, etc), noise, water (surface and groundwater), soil along with one-season met data.

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

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

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

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

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

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

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

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

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

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

Table 1 Stage-wise Cumulative Plantation

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

*As a representative example

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

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

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

(xxiv)R&R: Detailed project specific R&R Plan with data on the existing socio-economic status (including tribals, SC/ST) of the population in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for

the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan.

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

(xxvi)Public Hearing should cover the details as specified in the EIA Notification 2006, and include notices issued in the newspaper, proceedings/minutes of public hearing, the points raised by the general public and commitments by the proponent made should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

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

(xxviii) Submission of sample test analysis of:

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

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

(A) FORESTRY CLEARANCE

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

ANNEXURE-6

GENERIC TOR FOR AN OPENCAST-CUM-UNDERGROUND COALMINE PROJECT

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

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

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

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

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

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

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

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

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

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

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

LANDUSE DETAILS FOR OPENCAST PROJECT

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

LANDUSE DETAILS FOR UNDERGROUND PROJECT

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

Area under Surface Rights

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

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

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

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

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

water as per ISI standards and CPCB classification wherever applicable. Values should be presented in comparison to desirable limits.

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

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

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

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

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

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

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

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

(xxiv) Impact of blasting, noise and vibrations.

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

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

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

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

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

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

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

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

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

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

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

* Representative case as an example

Table 2: Stage-wise Cumulative Plantation

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

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

* Representative case as an example

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

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

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

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

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

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

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

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

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

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

(xxxxii) Submission of sample test analysis of:

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

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

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

(A) FORESTRY CLEARANCE

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

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

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

Date of Approval of Mining Plan/Project Approval:

Copy of Letter of Approval of Mining Plan/Project Approval

(xxxxiv) Corporate Environment Responsibility:

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.

ANNEXURE-7

GENERAL CONDITIONS AND ADDITIONAL POINTS OF TOR

The following general points should be noted:

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

The following additional points are also to be noted:

(i) Grant of TOR does not necessarily mean grant of EC.
(ii) Grant of TOR/EC to the present project does not necessarily mean grant of TOR/EC to the captive/linked project.
(iii) Grant of TOR/EC to the present project does not necessarily mean grant of approvals in other regulations such as the Forest (Conservation) Act 1980 or the Wildlife (Protection) Act, 1972.

(iv) Grant of EC is also subject to Circulars issued under the EIA Notification 2006, which are available on the MOEF website: www.envfor.nic.in

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Annexure-8

Site Visit Report of the sub-Committee of the EAC (Thermal & Coal Mining Projects) to Lakhanpur Area of Mahanadi Coalfields Limited

Date of Visit: 23rd February, 2014

Lakhanpur OCP (15 Mty) is a working mine producing coal since 1992 onwards. This project is situated in Ib Valley Coalfield in Jharuguda District of Odisha State. 100% coal from this project is produced through Surface Miner. Coal from this project is being supplied to power plants of Odisha namely OPGC, as well as to Maharashtra, Tamil Nadu, Andhra Pradesh and West Bengal.

2. The Project is under consideration of the EAC for one time capacity expansion of 25% in the existing mining operation, within the existing mine lease area, under clause 7(ii) of the EIA Notification, 2006. The EAC has asked the proponent to submit the compliance report on its the observations for further consideration.

3. The proponent presented the Compliance Report in the EAC Meeting held on 20/01/2014 and the compliance report on the further observations of EAC on 23/01/2014. As required, the proponent submitted the compliance report certified by RO, MoEF, Bhubaneswar on 5/02/2014. The EAC (T&C) decided that it's a sub-Committee would make a field visit. The Sub Committee (Annexure 1) visited Lakhanpur area of Mahanadi Coalfields Limited on 23rd February 2014.

4. The proponent made a presentation to the sub-Committee on 23/02/2014 on the compliance status of the Minutes of the Meeting of EAC(T&C) held on 20/01/2014 and on the Report of RO, MoEF, Bhubaneswar dated. 5.2. 2014.

5. The Committee discussed about installation of Peizometers on the upstream and downstream of the Pullijor Nala and at other sites for hydrogeological impact assessment study. The proponent has committed to adhere to the earlier schedule of completion of installation of Peizometers by November, 2014. The proponent has also submitted an internal action plan.

6. The proponent had committed that monitoring of all 12 parameters, as per CPCB guidelines, at two stations are to be completed by March 2014. Strengthening of Environmental Discipline was discussed. The CMD, MCL informed that Environmental Cadre already exist in the CIL. However, the MCL Board has recommended for creation of ED post and strengthening of environment discipline by sanctioning of 80 executive posts along with sanction of posts of technical grade and other staffing pattern with requisite infrastructure. This matter has already been taken up with CIL along with the suggestion for inducting social scientist and ecologist under the recruitment scheme as advised by the EAC. The CIL Board has also approved for personnel for CSR Discipline, wherein social scientists will be inducted.

7. Sub- Committee inspected the following and observed that:

i. **Plantation on the overburden dump**- Road connecting the top soil dump was passing through the plantation site on the overburden dump.

ii. **There was a demonstration of Atomizer Machine which** throws mist upto 50 m with a pressure of 16 to 20 Bar. The water tank has a capacity of 5,500 litres, the machine was mounted on a small truck along with a DG Set and Water Tank. The manufacturer of the Atomizer Machine was Make-Hycointernational.

iii. **Top soil dump**: The Sub-Committee advised the proponent to prepare a proper and well thought-out long term action plan for the management of top soil (maintenance of live condition) in the Project. The plan should have the area from where top soil shall be extracted, along with volume of the top soil and the site in the backfilled area where these top soil shall be utilized concurrently and remaining to be maintained/managed along with scientific measures to retain the nutrient and micro-organism, should be prepared by the project for proper and effective management of top soil. Safety zone vegetation aswell as the air quality monitoring station in Khaikuni were also seen from the site.

iv. **Surface Miner Face**: Cutting operation of the machine was explained on site by the proponent. It was informed that there is no requirement of drilling, blasting and crushing by use of this machine compared to the conventional mining. Selective mining up to one meter stone band can also be possible resulting in improvement of quality of coal and reduction of ash. As the cutting drum is located below the body of the machine and there is water jet interlocked with the drum rotation, there is very control over generation of dust during cutting operation. Produced coal is of -100 mm size and is directly dispatchable and hence sent directly to Railway siding. It was enquired regarding water requirement by the machine vis-a-vis conventional face operation. It was informed that as the unit operations in the conventional coal extraction like drilling, blasting, crushing of coal at CHP and water sprinkling at the coal face is not required for Surface Miner Coal extraction, water requirement per unit of coal production is much less. However, the sub-Committee advised the proponent to prepare a detail analytical report and submit the same.

v. **Mechanical Road Sweeping Machine**: Vacuum operated, truck mounted mechanical road sweeper (6 m^3 capacity) were seen being used for collection of dust from the black topped/pucca roads.

vi. **New ETP** in the workshop was seen. The sub-Committee suggested that more measures be taken for spilled oil during the machine repairing at the workshop and proper method for its collection and disposal.

vii. **Mine Discharge Treatment Plant**: Desilting of sludge and breach of the bund as observed by the RO, MoEF, BBSR was inspected. Clear water tank water analysis discussed and it was advised to further treat the water if the TSS level is more than the level of TSS at discharge point.

viii. **Construction site of the New Siding** :- It was explained that this will reduce the coal transportation from present lead of 14km to 3km.The transportation route being through internal mine area which will also substantially reduce dust pollution w.r.t. the present transportation route passing through residential areas. The GM informed that CMPDIL has been entrusted the feasibility study for the transportation through conveyer system. The report is expected soon from the CMPDIL. The proponent was advised that the feasibility study be got expedited and completed within two months.

8. The proponent informed that presently moratorium has been lifted from Ib Valley Coalfields vide notification Dated 5/07/2011 and Notification Dated 17/09/2013 has re-imposed the moratorium in Jharsuguda only but not in the Ib Valley Coalfield.

9. Discussions were held regarding Occupational Health Surveillance with the Doctor of MCL at Lakhanpur Area. . The ub-Committee advised the proponent to get a Third Party Health Status Survey through the Govt. Medical College and Hospital, Burla for Samaleswari OCP located in Ib Valley Coalfield, and submit the report.

10. Recommendations:

i. All the conditions stipulated in earlier EC shall be reiterated, and MCL will put in position a Comprehensive Compliance Monitoring System (comprising compliance in respect of EC and other statutory clearances) in place within a year.
ii. The commitment and action plan be complied within one year from the date of the issue of the EC and submit the report to the MoEF.
iii. The EAC shall review the compliance report.
iv. 162 ha. will be suitably planted with indigenous spp. after extraction of bottom coal seam.
v. All Piezometers shall be constructed and monitoring of ground water shall start latest by Nov-2014. Recycling & Reuse shall be operational.
vi. The Conveyor system shall be installed in 2 years.
vii. Regular monitoring of water from the clear water tank shall be carried out.
viii. Silo system shall be designed for 20 MTPA, which will cater to full mine production capacity. Silo loading arrangement shall commence in 3 years' time
ix. The incremental coal production shall be transported through MGR/New Siding.
x. Top soil as well as the sub soil shall be utilized concurrently for reclamation over the backfilled, area and when backfilled area is not available top soil and sub soil be kept separately and managed scientifically in live condition. Scheme for Plantation of grass seeds and leguminous species during the next monsoon season to retain the nutrient value of the top soil including microorganism be prepared and executed immediately.
xi. The impact on nallah, originating from upstream catchment area which traverse through the mining area and terminate in Lilari Nallah, to the downstream users viz. irrigation, bathing, fishing, etc. be examined and mitigation measures be taken to protect the environment.
xii. Regular cleaning strategy should be adopted for both the Secondary Settling tanks.
xiii. The integrated mine PR and corresponding Mine Closure Plan has to include planning for removal of the internal dumps, extraction of the bottom seams and finally re-filling and reclamation of the entire area.
xiv. Due care should be taken up to protect local encroachment in the safety zone and there has been no encroachment.
xv. [B1] Regular monitoring of fugitive dust at all the critical locations should be carried out and in case of generation of dust is found to be high, regular water sprinkling including fixed water sprinklers should be provided as a part of dust control measured. It should be ensured that the labor force engaged in all the critical areas should use PPEs so that no occupational diseases are found among them.
xvi. All the 12 parameters of AAQ should also be monitored and report submitted to the Regional Office regularly.

11. The Sub-Committee thanked the CMD and his team for extending facilities for undertaking the site visit.

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Members of sub- Committee of EAC (T&C), MoEF and MCL Officials during Visit

A. Members of the sub-Committee of the EAC –

1. Shri Jawahar Lal Mehta - Expert Member,
2. Shri A. K. Bansal - Expert Member,
3. Dr. Manoranjan Hota - Director & Member Secretary, EAC, MoEF

B. Mahanadi Coalfields Officers

1. Shri A. N. Sahay — CMD, MCL
2. Dr. R.K.Garg — Advisor (E&F), CIL, New Delhi
3. Shri A.K.Tiwari — Director (Tech./Operation), MCL
4. Shri J.P.Singh — Director (Tech./P&P), MCL
5. Shri Diwakar Shrivastava — Chief Manager/Protocol Officer CIL
4. Shri Jitendra Singh — CGM (Envt.), MCL
5. Shri B.N.Jha — CGM, Lakhanpur Area, MCL
6. And other Officers of MCL

(Jawahar Lal Mehta) (A. K. Bansal) (Manoranjan Hota)

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