MINUTES OF THE 15th EAC (THERMAL & COAL MINING PROJECTS) MEETING HELD ON 27th – 28th JUNE, 2014 IN NEW DELHI

The 15th EAC (Thermal & Coal mining projects) Meeting was held on 27th – 28th June, 2014 in New Delhi to consider the proposals in coal mining sector. The list of participants of EAC and the proponents are given at Annexure-1 and 2 respectively.

B. Confirmation of Minutes: The Committee confirmed the minutes of the 14th EAC meeting held on 27th -28th March, 2014.

C. The following proposals were considered:

15.1 Moher & Moher Amlori Extension coal blocks project (expansion from 12 MTPA (normative) and 15 MTPA (peak) to 16 MTPA (Normative) and 20 MTPA (Peak), in area of 2037 ha; Latitude 24^0 07' 18" to 24^0 09' 27" N and Longitude 82^0 33' 15" to 82^0 36' 15" E [15.39 Km^2 (Moher Block – 10.70 Km^2 & Moher Amlohri Extension Block – 4.69 Km^2)] of M/s Sasan Power Ltd., located at dist. Singrauli, Madhya Pradesh - Expansion (under 7(ii) of EIA Notification 2006).

15.1.1 The proposal is for **expansion (under 7(ii) of EIA Notification 2006)** for Moher & Moher Amlori Extension coal blocks project (expansion from 12 MTPA to 15 MTPA Normative and 16 MTPA to 20 MTPA Peak, in area -15.39 Km^2 (Moher Block – 10.70 Km^2 & Moher Amlohri Extension Block – 4.69 Km^2) of **M/s Sasan Power Ltd.**, Dist. Singrouli, Madhya Pradesh.

15.1.2 The proponent made the presentation and informed that:

i. It is the Open Cast coal mine to which Ministry had granted EC vide letter no. J-11015/60/2008-IA.II (M) dated 10th December, 2008. Further, **TOR granted for expansion of production capacity vide Letter No. J-11015/03/2013.IA.II (M) dated, 27thAugust 2013. However, Project proponent applied for expansion under 7(ii) of EIA Notification, 2006.**

ii. The latitude and longitude of the project are 24^0 07' 18" to 24^0 09' 27" N and 82^0 33' 15" to 82^0 36' 15" E respectively.

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

Pre-Mining & Post Mining:

Pre-Mining Land use	
Forest Land	1198 ha
Settlements	148 ha
Agricultural land	374 ha
Wasteland	317 ha
Total	**2037 ha**

Post Mining Land Use

Sl. No.	Description	Land Use (Ha)			
		Plantation	Water Body	Public Use	Total
1	Top Soil Dump	320			320
2	External Waste Dump				
3	Excavation (Backfill)	1411	29		1440
4	Road & Drain	15		25	40
5	Built-up Area			92	92
6	Green Belt	62			62
7	Undisturbed Area (Safety Zone)	83			83
Total		1,891	29	117	2,037

Total Project Area Requirement (ha)

Type	**Area** in **ha.**
Forest Land	1198.00
Govt. Land	160.64
Private Land	678.36
Total	**2037.00**

iv. The total geological reserve is 575.0 MT. The mineable reserve 470.43 MT, extractable reserve is 470.43 MT. The per cent of extraction would be 81.80%.

v. The coal grade is D, E & F. The stripping ratio is 4.03 m^3/T. The average Gradient is 3 degree. There will be two seams with thickness ranging from 15.91m to 22.72m.

vi. The total estimated water requirement is 4000 m^3/day which of 605 m^3/day water is Recycled & Net Water Requirement is 3395 m^3/day. The initial water requirement being met from the bore wells. Later on 2770 m^3/day of total water requirement will be met from the aquifer discharges of the mine excavation area. The level of ground water ranges from 2 m to 18 m. In the core zone, water level varies from 5.252 to 16.09 mbgl.

vii. The Method of mining would be opencast using Shovels and Dumpers; Dragline for inter parting.

viii. There is one external OB dump with Quantity of 204 Mm^3 in an area of 3.2 km^2 with height of 90 m max above the surface level and two internal dumps with Quantity of 1689.38 Mm^3 in an area of 1411 ha.

ix. The final mine void would be in 29 Ha with depth of Less than 40 m and the Total quarry area is 1440 Ha. Backfilled quarry area of 1411 Ha shall be reclaimed with plantation. A void of 29 ha at a depth of 290 m (max.) which is proposed to be converted into a water body

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

xi. The **life of mine** is 29 Years for peak capacity of 20 MTPA and 35 years for normative capacity of 15 MTPA.

xii. **Transportation**: Coal transportation from face by dump trucks up to Receiving Pits and from there to Transfer Point through Belt Conveyors and from there on by OLC to Power Plant.

xiii. **R & R** is involved. There are 988 PAFs.

xiv. **Cost**: Total capital cost of the project is Rs. 432,700 lakhs. CSR Cost Rs. 250 lakhs per year. R&R Cost Rs. 11,238 lakhs. Environmental Management Cost is Rs. 3796.7 lakhs.

xv. **Water body**: One nala is originating from eastern part of the plateau & flows towards west. Two small streams are originating from the central portion of the block & are flowing towards south-east. These streams discharge into Kachannala which flows in NW-SE direction & ultimately drains into Govind Ballabh Panth Sagar Reservoir (Rihand Reservoir) built over Rihand River which is a tributary of Son River. Chingitola Nala- Flowing S-W, meets to Kachan River; Forest Nala- flowing Southward, meets to Kachan River; Hawwraha Nala- flowing Southward, meets to Kachan River; Kachan River meets to Govind Ballabh Pant Sagar

xvi. **Flora and Fauna**: No prominent grassland ecosystem has been found in the Core and Buffer zone areas.

xvii. **Approvals**: Ground water approval obtained on 27.07.2011, Board's approval obtained on 11.02.2011. Mining plan has been approved on 02.03.2009 for an ML area of 1539 ha Mine Closure Plan approval on 06.09.2011.

xviii. **Wildlife issues**: Wildlife Management Plan (WLMP) has been prepared and enclosed along with the environmental impact assessment report. WLMP has also been submitted to the state Govt. for preparation of a Regional wildlife management plan by MP State Wild Life board, Bhopal. 7 species of mammals are found within the Mining Lease Area & 13 animals species observed from Buffer Zone.

xix. **Forestry issues**: Total forest area involved (in ha) for mining 1067.02 ha (991.81 ha forest land & 72.21 ha revenue forest). FC issued vide letter no. F. No. 8-92/2008-FC dated 13th November, 2009 for 1067.02 Ha and F. No. 8-91/2008-FC Dated 13th November, 2009 dated 133.19 Ha. **Moher Reserve Forest, Chokra Protected Forest, Parari Protected Forest.**

xx. The forest is characterized by Tropical Mixed Deciduous Forest. The terrestrial floral species consist of Tropical deciduous tree species, shrubs and dry deciduous grasses. The main tree species out of 42 large trees, 12 small trees, 20 shrubs, 14 vines in the area.

xxi. There are no National Parks, Biosphere Reserves found in the 10 km Buffer Zone.

xxii. Total **afforestation** plan shall be implemented covering an area of 1891 ha at the end of mining. Green Belt over an area of 62 ha. Density of tree plantation 1600 trees/ ha of plants.

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

xxiv. **EC Compliance report:** The Compliance Monitoring Report for Moher and Moher-Amlohri Extension coal mine has been submitted by the MoEF, Regional Office, Bhopal vide letter no. 3-11/2009(ENV)/084 dated 20th June 2014. The Committee has noted

that several conditions of earlier EC no. J-J-11015/60/2008-IA-II(M) dated 10th December, 2008 have been partially complied. The proponent had submitted an action plan so as to comply with these partly complied conditions and are under progress. These include the following:

i. Main drain has been de-silted by 15th May 2014. The 8.44 KM of Garland drains around the working area and OB dump have been completed by 10th June 2014.
ii. Top soil removal, storage & use are successive and periodic activities. Existing topsoil shall be used for green belt, dump slope and other available place for stabilization in monsoon of FY 2014-15
iii. Reclamation & vegetation over OB dump shall start after 6th year i.e. 2017-18 & report shall be submitted to the concerned authorities on an yearly basis. Vegetation of around 600 meter of available final dump slope will be done in the monsoon of 2014-15. The work order for slope stability study has been awarded to CIMFR, Dhanbad and the report is expected by November, 2014.
iv. Existing drains have been de-silted & Garland drains around the working area and OB dump have been completed by 10th June 2014.
v. The western (permanent) side of dump slope is provided with a 600m long retaining wall for checking run-off and siltation from OB dumps/benches. Other sides of dump are progressive in nature and retaining wall will be completed as per the OB dump progression.
vi. Steel cladding and steel roofing of whole structure at transfer points have been completed by 28thMay 2014 to arrest wind-blown fine coal dust near transfer points. Dust extraction system has already been completed. Dust Suppression System fitted earlier shall be rectified by mist cannon by August 2014.
vii. The mode of coal transportation changed from MGR to covered overland conveyor (OLC). Request to amend the said condition in EC of coal mines as per the amended condition in the EC of the power plant
viii. Ground water level, quality and quantity is being monitored as per the stipulated condition and the report has been submitted to the CGWA.
ix. Ground water recharge structures have been constructed in and around the mine area and soil conservation measures have been taken. Additional artificial ground water recharge structures and surface water ponds have been identified for Amlohri and Naugarh villages. These shall be constructed to recharge ground water, water channels and augment surface water by FY 2015-16. Soil conservation areas are being identified to take up soil conservation measures.
x. Standards of treated effluent are well within the prescribed limits for discharge. Copies of analytical reports have been submitted to Madhya Pradesh Pollution Control Board (MPPCB). The same shall be submitted to the Regional Office, Bhopal along with water balance. The outlet sample from ETP had also been tested by MPPCB and the result was found well within standard.
xi. The report covering first 3 years i.e., 2011-2014 shall be submitted to MOEF and its regional office at Bhopal by December 2014.
xii. The R & R of remaining PAFs (308 nos) of Moher Village is planned to be completed as per requirement, in phases.

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

i. The Action Plan for non-complied and partly-complied EC conditions, with due concurrence by the RO, MOEF to be submitted.
ii. Detailed coal linkages to the end users to be submitted.
iii. The response to the show cause notice issued by the SPCB and any legal action therefrom to be furnished.
iv. The proponent has submitted and agreed that coal transportation to Chintrangana shall be by conveyor belt of about of 32 Km length.
v. The present proposal is for expansion under 7(ii) of EIA Notification, 2006. Proponent to clarify whether their application, in response to the TOR granted to enhance production will be pursued.
vi. Revised mine closure plan to be submitted.
vii. The mode of Coal transportation has been changed from MGR to Over land conveyor with due permission from MOEF vide letter no. J-13011/15/2006-IA-II(T) dated 05.02.2013.
viii. The proponent to submit a comparative chart of pollution control measures taken.
ix. Detailed OB handling programme including grassing to be submitted.
x. A status of the garland cannel to be submitted.
xi. Project proponent needs to submit details land use pattern covering total project area; total mining lease area; total forest land; total forest clearance obtained and balance forest clearance awaited in a tabulated form.
xii. The proponent to submit an affidavit that no investigation or their matters are under consideration of the IMG.
xiii. A sub-committee of EAC to make a visit to the coal mining site.

15.2 Baranj OC project (expansion from 2.5 MTPA normative and 3.75 MTPA peak in an ML area of 1457.20 ha; Latitude N 79°05'47" to N 79°08'28" & Longitude E 20°06'43" to E20°08'59") M/s Karnataka EMTA Coal Mines Ltd., located in dist. Chandrapur, Maharashtra - Expansion under 7(ii) of EIA Notification, 2006.

15.2.1 The proposal is for e**xpansion (under 7(ii) of EIA Notification 2006)** of Baranj OC project (expansion from 2.5 MTPA normative and 3.75 MTPA peak in an ML area of 1457.20 ha) **M/s Karnataka EMTA Coal Mines Ltd.,** Dist. Chandrapur, Maharashtra. The proponent made the presentation and informed that:

i. The project was accorded EC vide letter no. J-11015/400/2005-IA.II (M) dated 18th May, 2006 for 2.5 MTPA. Now, project proponent has applied for 50% expansion under 7(ii) of EIA Notification 2006 in line with the MOEF O.M. No. J-11015/30/2004-IA.II (M) dated 07.01.2014.
ii. Karnataka Power Corporation Ltd (KPCL) formed a joint venture company, **Karnataka EMTA Coal Mines Limited (KECML),** with Emta Coal Limited for mining of the allotted coal blocks.
iii. **Coal Linkage:** KPCL proposes to use coal from the Baranj captive coal blocks for BTPS II in addition to the supply of coal to BTPS I
iv. The latitude and longitude of the project are N 79°05'47" to N 79°08'28"and E 20°06'43" to E20°08'59" respectively.
v. The land usage of the project will be as follows:

Pre-Mining:

Sl. No.	Class of Land	Area (Ha)
1	Tenancy (Agriculture) Land	1276.21
2	Forest Land	84.40 (Ph-I)
3	Govt. Land	96.59
	Total	**1457.2 (Ph-I)**

Post- Mining & Core Area:

Sl. No.	Particulars	Area (Ha)
1	Mine Excavation Area	
	a) Pit void at end of mine operations	190.0
	b) Internal Backfilled dump area including dump slopes	911 (Ph-I)
2	Mine Infrastructure	6.0
3	Embankment across Konda Nallah	15.0
4	External Dump	240.0
6	Others (including safety zone)	95.2
	Total	**1457.2 (Ph-I)**

LAND USE PATTERN - MINING LEASE AREA

Sl. No.	Type of Land	Existing 2.5 MTY (Ha)	50% Incremental i.e., 3.75 MTY (Ha)
1.	Agricultural	1276.21	1276.21
2.	Forest	84.40	84.40
3.	Waste land	8.72	8.72
4.	Grazing	3.07	3.07
5.	Surface water bodies	24.21	24.21
6.	Others	60.59	60.59
Total		**1457.20**	**1457.20**

vi. The total geological reserve is 156.91 MT. The mineable reserve 103.06 MT, extractable reserve is 103.06 MT. The per cent of extraction would be 80.6 %.

vii. The coal grade is C to D. The stripping ratio is 7.17 Cum/t. The average Gradient is 1 in 4 to 1 in 11. There will be one (Composite Seam with Top Section & Bottom Section)) seams with thickness ranging from 1.25m to 13.24m.

viii. The total estimated water requirement is 948m3/day m3/day. The level of ground water ranges from 1.86 m to 8.250 m bgl.

ix. The Method of mining would be opencast using Shovel Dumper Mining Technology; Coal Mining by Surface Miner Technology.

x. There is 2 (Dump – A & Dump – B) external OB dump with Quantity of 101.68 Mm3(26.80 Mm3(A)+ 74.88 Mm3 (B)) in an area of 70Ha and 170 Ha respectively with height of 60 meter and 6 internal dump with Quantity of 101.68 Mm^3(26.80 Mm^3(A)+ 74.88 Mm^3 (B) in an area of 1101 Ha(Phase-I).

xi. The final mine void would be in 190 Ha. The void will be filled up with re-handled OB from Dump – A. ha. and the Total quarry area is 1101.00 Ha (Phase-I). Backfilled

quarry area of 1101.00 Ha (Phase-I) shall be reclaimed with plantation.

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 29 Years.

xiv. **Transportation**: Coal transportation in pit by 100T Rear Dumpers, Surface to Siding by Through Contractual Trucks and loading to siding by Pay Loaders.

xv. There is **R & R** involved. There are 1519 PAFs.

xvi. **Cost**: Total capital cost of the project is Rs. 977.02 crores. CSR Cost Rs. 11.51 crores/year. R&R Cost 128.80 crore. Environmental Management Cost Rs. 48.58 crores.

xvii. **Water body**: There are three seasonal Nallas within the block. Nala -1 and Nala-2 have already been diverted. Diversion of Nala-3 to be taken up in due course. The main drainage is through Konda Nala, flowing from North-East to South-West. These constitute a part of the Wardha River System, which flows in the far South-West of the Coalfield.

xviii. **Approvals**: Ground water clearance obtained on No. GSDA/ Sr.Geo/ Chn/ Tech/ KECML/Consent dated 14.12.2005, Board's approval obtained on 1st July 2011. **Mining plan**: Revised Mine Plan (5 MTPA) along with Mine Closure Plan Approved vide letter no. 13013/18/2004-CA-I(Part) dated 24th August 2011.

xix. **Wildlife issues**: There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone.

xx. **Forestry issues**: Total forest area involved 84.41 Ha (Phase-I) for mining. Stage – I Clearance Obtained. Compliance Report has been sent by Addl. PCCF, Maharashtra to Inspector General of Forests, Govt. of India vide letter dated 29.3.2014 for Stage-II Forest Clearance which is pending with Ministry of Environment & Forest..

xxi. Total **afforestation** plan shall be implemented at the end of mining. Green Belt over an area of 116.20 ha. Density of tree plantation 2500 trees/ ha of plants.

xxii. No excess production.

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

xxiv. Public hearing is not applicable as the proposal is under 7(ii) of EIA Notification, 2006.

15.2.2 **EC Compliance report:** The compliance report to the earlier EC as sent by the Regional Office of the MoEF, Bhopal vide letter No. 3-30/2006(ENV)10036 dated 10.1.2014 was deliberated by the EAC. The Committee has noted that the conditions were generally complied with.

15.2.3 The Committee, after detailed deliberations, **recommended the project** for granting Environment Clearance subject to following specific condition also.

i. **These specific conditions shall be in addition to the conditions stipulated in earlier EC no.** J-11015/400/2005-IA.II (M) dated 18th May, 2006 for 2.5 MTPA.

ii. No work will be done within the 3 KM as restricted area from the boundary wall of ordnance factory.

iii. Coal from the Baranj captive coal blocks shall be used for BTPS II in addition to the supply of coal to BTPS I. KPCL has confirmed it.

iv. The transportation of the coal from the mine to the siding shall be by 25 Tonne trucks. The silo be used instead of the pay loader so as to minimize the coal dust emission.

v. OB handling programme be continued as per earlier EC.

15.3 Tara (East & West) Coal Block (Expansion from 2 MTPA to 2.5 MTPA in an ML area of 520.54 ha; Latitude 23°45'30" to 23°47'45" N and Longitude 87°04'00" to 87°07'15" E) of M/s Bengal EMTA Coal Mine Ltd., located at District, Burdwan, West Bengal – TOR.

The project proponent did not attend the meeting. The proposal was accordingly deferred.

15.4 Durgapur II/Sariya Coal Block (2 MTPA in ML Area of 540.750 ha) opencast mining of M/s DB Power Limited, located in Villages Taraimar, Bayasi, Medarmar, Dharam Colony, & Bayasi Colony in District Raigarh, Chhattisgarh – Correction in EC.

15.4.1 The proposal is of Durgapur II/Sariya Coal Block (2 MTPA in ML Area of 540.750 ha) open cast mining of M/s DB Power Limited**,** located in Villages Taraimar, Bayasi, Medarmar, Dharam Colony, & Bayasi Colony in District Raigarh, Chhattisgarh for correction in EC.

15.4.2 The Environment Clearance was granted to the project vide letter no. J-11015/324/2008-IA-II (M) dated 05.07.2013. Project proponent requested for slight discrepancies and typographical corrections. The Committee noted and recommended for factual corrections at the following places.

Sl. No. in the EC	EC- Information as per Proponent, General & Specific Conditions.	shall be read as
Para no. 2 Point no.(ii)	The total land requirement is 540.75 ha of which 290.399 ha is forest land, 238.38 ha is agricultural land, 3.642 ha is waste land, 0.542 ha is surface water bodies, and 9.813 ha is others (which totals 542.776 ha) Mining Plan has been app- roved by MOC on25.06. 2009.	The total land requirement is 540.75 ha of which 290.399 ha is forest land, 236.354 ha is agricultural land, 3.642 ha is waste land, 0.542 ha is surface water bodies, and 9.813 ha is others (which totals 540.75 ha) Mining Plan has been approved by MOC on 25.06.2009.
Para no. 2 point no. (v.)	Of the total ML area of 540.75 ha, quarry area would be 517.46 ha and an estimated 409.10 Mm3 of waste (including 1.55 Mm3 of topsoil) would be generated.	Of the total ML area of 540.75 ha, quarry area would be 517.48 ha and an estimated 409.10 Mm3 of waste (including 1.55 Mm3 of topsoil) would be generated.
Para no. 2 point no. (xxxiii.)	Of the total Rs 63.56 crores earmarked for R&R Policy, Rs 7.70 crores is for Tribal Development Plan (TDP) and Rs 10 crores for CSR. It was informed that a Committee has been constituted for implementation and monitoring of CSR. There are only 21 Tribal PAFs belonging to Taraimar village, who require relocation.	Of the total Rs 63.56 crores earmarked for R&R Policy, Rs 7.70 crores is for Tribal Development Plan (TDP) and Rs 1.0 crore for CSR. It was informed that a Committee has been constituted for implementation and monitoring of CSR. There are only 21 Tribal PAFs belonging to Taraimar village, who require relocation.

Para no. 2 point no. (xlii.)	The CSR cost would be at Rs. 5/T of coal with a provision of Rs. 170 lakhs (capital) and Rs. 100 lakhs (recurring) would be implemented.	The CSR cost would be at Rs. 5/T of coal with a provision of Rs 100 lakhs (capital) and Rs. 100 lakhs (recurring) would be implemented.
Para no. 2 point no. (xliii.)	Coal is proposed to be transported by 50-T trucks to linked thermal power plant of M/s D.B. Power near Kharsia at a distance of 85km. Coal is to be transported by road to Robertson's Siding at a distance of 65km.	Coal is proposed to be transported by 30-T trucks to linked thermal power plant of M/s D.B. Power near Kharsia at a distance of 85km. Coal is to be transported by road to Robertson's Siding at a distance of 65km.
Para no. 4 A point no. (li.)	A project specific CSR Plan for the nearby villages of Taraimar, Byasi, Dharamjaigarh,/Dharam and other adjoining villages shall be implemented. Measures /activities under CSR shall includes strengthening the existing ITI institutions, establishment of more cooperatives and SHGs, effective role as an interface/ link between buyers-sellers of local produce/goods, implementing a wide range of skill development and alternate livelihood schemes particularly for the SC/ST including tribals and BPL families, strengthening and adding wherever necessary health care and educational facilities are lacking in and around the project area over the life of the project. A provision of Rs 170 lakhs made for CSR for the next 5 years which includes Rs 10 crore earmarked for annual expenditure on developmental activities for the surrounding villages or an annual recurring expenditure of Rs.5/tonne of coal, whichever is higher, which shall be adjusted according to value of the rupee until end of mine life, shall be implemented in a time bound manner. Provision of annuities of Rs 2500 /month to vulnerable persons found in and around the project area shall be made. Details of village-wise activities under CSR along with the activities and budgetary provision shall be uploaded on the company website and the status of its implementation along with	A project specific CSR Plan for the nearby villages of Taraimar, Byasi, Dharamjaigarh,/Dharam and other adjoining villages shall be implemented. Measures /activities under CSR shall include strengthening the existing ITI institutions, establishment of more cooperatives and SHGs, effective role as an interface/ link between buyers-sellers of local produce/goods, implementing a wide range of skill development and alternate livelihood schemes particularly for the SC/ST including tribals and BPL families, strengthening and adding wherever necessary health care and educational facilities are lacking in and around the project area over the life of the project. A provision of Rs 100 lakhs made for CSR for the next 5 years which includes Rs 1.0 crore earmarked for annual expenditure on developmental activities for the surrounding villages or an annual recurring expenditure of Rs.5/tonne of coal, whichever is higher, which shall be adjusted according to value of the rupee until end of mine life, shall be implemented in a time bound manner. Provision of annuities of Rs 2500 /month to vulnerable persons found in and around the project area shall be made. Details of village-wise activities under CSR along with the activities and budgetary provision shall be uploaded on the company website and the status of its implementation along with

	expenditure thereon and also desired that a Third party audit of implementation of CSR shall be done periodically.	expenditure thereon and also desired that a Third party audit of implementation of CSR shall be done periodically.

15.4.3 The Committee **recommended** the corrections as stated in 15.4.2 para above.

15.5 Fatehpur East Coal Block (10 MTPA (peak) in a total project area of 1913.208 ha; Latitude 22°26'42.19" to 22°29'17.25" N and Longitude 83°05'40.72" - 83°08'58.93" E) of M/s Fatehpur East Coal Private Ltd., located in Mand Raigarh Coalfields, Tehsil Dharamjaigarh, dist. Raigarh, Chhattisgarh - EC based on TOR granted on 09.02.2012 – Further Consideration.

15.5.1 The proposal of Fatehpur East Coal Block (10 MTPA (peak) in a total project area of 1913.208 ha includes an ML area of 1728.208 ha) of **M/s Fatehpur East Coal Private Ltd.,** Mand Raigarh Coalfields, Tehsil Dharamjaigarh, dist. Raigarh, Chhattisgarh.

15.5.2 The proposal was considered in the 14th EAC held on 27th -28th March, 2014. The Committee after deliberation sought additional information on an affidavit, that there are no issues pending with IMG of Ministry of Coal vis-à-vis any investigation in the matter; impact of proposed diversion of the Pawasi Nala; Forest Clearance, Man- elephant conflict; Social impact; embankment of Mand river; alignment for diversion of Pawasi Nala; possibility of adopting In Pit Crushing and Conveying system for coal; grazing land;Transportation services; reduce the void and minimizing the external OB dump; Action Plan in respect of the Capital CSR funds; discrepancies in water quality data; creation of an Environmental Cell; preservation of the places with religious sentiment; issues raised in PH and Action Plan along with budget etc. for further consideration:

15.5.3 The Committee deliberated on the reply submitted by the Proponent. The proponent has further informed that:

i. An Affidavit has been submitted by Project Proponent on 4th April 2014 comprising following statements:

   a) The five allottees where served with a Show-Cause Notice by the Ministry of Coal vide their Letter No. 13016/33/2008-CA-I, dated 01/01/2014, (for short "Show Cause Notice") stating that as to why allocation of Coal Block be cancelled, inter alia on unsatisfactory progress of implementation of specified end use plant(s), unsatisfactory progress in the development of coal mining project & for breach of any of the conditions of Allocation.
   b) Ministry of Coal thereafter issued Letter No. 13016/04/2014-CA-I dated 15th January, 2014 superseding all and any previous Notice issued on the recommendation of the Inter Ministerial Group (for short "IMG") or otherwise.
   c) Fatehpur East Coal Private Limited has submitted its detailed Reply bearing Letter No. FECPL/13-14/035 dated 03rd February, 2014 to the Show Cause Notice, confirming the fact that it has complied with the Conditions pertaining to Regionally Explored Block and as such, the Show Cause Notice may be withdrawn.

d) The response submitted by M/s Fatehpur East Coal Private Limited has been deliberated in the 24tdh meeting of the Inter-Ministrial Group (IMG) under the Chairmanship of Additional Secretary (Coal) held on 7th and 8th February 2014.

e) Minutes of the above meeting has been communicated by Ministry of Coal vide their meeting notice no. 13016/05/2014-CA-I on 21/02/2014.

f) As per the minutes of MOC, Fatehpur East Coal Private Limited is covered in Sl. No. 35 at Pages 18 & 19, which is reproduced as "Therefore, in terms of Para 2(i) (b) of the Notice, no action is recommended at present. However, continuation of further development of the Block shall be without any prejudice to the investigation consequent upon FIR against two of the five Allocatees."

ii. The five co-allottees are setting up projects with gross total capacity of 5580 MW, which are at various stages of implementation. Coal from Fatehpur East alone, would not be sufficient for such capacity. The details of total coal requirement for the EUPs are mentioned below:

S.No	Company	Power Plant Capacity	Total Requirement (MT)	Coal from Block (MT)	Balance requirement through linkage/ e-auction/import
1	Athena Infra projects Pvt. Ltd.	2X600MW	5.6	2.2	3.4
2	RKM Powergen Pvt. Ltd.	4X360MW	6.7	2.2	4.5
3	VISA Power Limited	2X600MW	5.6	2.2	3.4
4	JLD Yavatmal Energy Limited	2X600MW	5.6	2.2	3.4
5	Vandana Vidhyut Ltd.	540MW	2.5	1.2	1.3
	Total	**5580 MW**	**26.0**	**10**	**16.0**

iii. **Impact of proposed diversion of the Pawasi Nala:** At Present Water from the Pawasi Nala is not being used by any villages. The proposed diversion will be beneficial for the villagers of Ududa in respect of irrigation etc. With the diversion of Pawasi Nala there will not be any adverse impact. The design of Pawasi nala diversion has been examined and technically approved by WRD, Chhattisgarh Govt. WRD, Dharamjaigarh has reconfirmed the suitability of design of diversion of Pawasi Nala vide letter dated 19.04.2014.

iv. **Forest Clearance:** Forest Land will be acquired through Forest Diversion Proposal under the Forest Conservation Act, 1980. The Forest Clearance application is under process by DFO. There is no National Park or Wildlife Sanctuary within 10 Km. radius.

v. **Man- elephant conflict:** The State Forest Dept. vide Letter No. 433 dated 15.04.2014 have stated that presently no elephant corridor has been notified by the Govt. within 15 Km. area of the project. Only stray elephants visiting the Buffer Zone has been reported as mentioned in Page 93-95 of EIA Report. The Wildlife Conservation Plan as approved by Chief Wildlife Warden has been submitted to MoEF.

vi. **Social Impact:** Detailed description of social impact of proposed project and R&R Plan is discussed in EIA Report between Page 209-251. The R&R Plan has been submitted to Mineral Resource Dept., Chhattisgarh for approval which will be processed after grant of

Previous Approval of Mining Lease by MoC.

vii. The distance between the Mand River and edge of the Pit will be 160m. The Eastern Boundary of Fatehpur East block is 60m away from Mand River, having natural vegetation including Bade Jhar Ke Jungle. The total green belt between the River and the Mine Pit will be 94m. The embankment will be 36m wide and minimum height 3m. above HFL. The river facing side would be appropriately stone-pitched.

viii. The proponent has committed the following Action Plan for implementation:

a. Railway line from coal block to proposed Dharamjaigarh station on East Corridor.

b. Coal Transportation is proposed through railway line of East Corridor being developed by SPV formed by SECL, GoC and IRCON. MOU executed and DPR submitted to Indian Railways. Coal transportation to the power plants of Athena, RKM and Visa to be done by road for initial five years. Dumpers to be checked for exhaust emissions, and maintained properly (PUC) Minimize re-suspended road dust generation, roads to be cleaned daily along all the settlements. Noise barriers to be provided along settlement stretch; use of horns to be prohibited. Measures for safe driving habits to be employed by way of education, slogans and campaigns. People residing along the road to be educated on road safety. Ambulance, emergency medical management centre and blood bank shall be developed as part of CSR plan of FECPL.

c. The present CHP layout and railway alignment have been modified and the location of crusher (covered) has been further increased from 200m (present location) to 500m after modification of design. This is the maximum possible distance which cannot be increased further, on account of site geometry and CHP design parameters.

d. Transportation services be extended between Ududa & Narkalao villages as a part of CSR activities in lieu of the existing roads

e. Three kind of OB handling has been proposed viz. **In-Pit:** Permanent dump within mining pit and lease boundary; **On-Pit:** Temporary dump within lease boundary which is to be re-handled back into In-Pit; **Ex-Pit:** Permanent dump outside of lease boundary.

f. Scope of further reducing the void: FECPL initially propose to fill up this void with the OB of In-Pit dump. Total 134.188 MBCM would be filled up in the 28^{th} to 30^{th} year to reduce the depth of void from 284m to 30m from surface.

g. Further considering EAC's advice to explore the scope of reducing the void, FECPL now propose :

h. Further reducing the depth to 20m. from 30m. Thereby the depth of lake would be only 30-10=20m (reducing floor depth from 284m to 20m, i.e. 264m total reduction).

i. **Preventive measures proposed for reclamation as water reservoir will include:** Reservoir will be gently sloped along its entire periphery; upper benches above the reservoir will be terraced and stabilised with plantation of native species; Open edges will be fenced properly with Solar Fencing; Provision of sign boards will be there.

j. **Action Plan: Capital CSR Fund:** *Peak rated capacity 10 million tonnes expected to reach by Oct 2019. CSR spending as mentioned in the EAC meeting 12 crores budget would be:* Up to September 2015 : Rs 1 Crore; October 2015 to September

2016 : Rs 1.5 Crore; October 2016 to September 2017 : Rs 2 Crore; October 2017 to September 2018 : Rs 3 Crore; October 2018 to September 2019 : Rs 4.5 Crore

k. FECPL will create an Environmental Cell comprising of an Ecologist, an Environmentalist & a Social Scientist so as to monitor and implement the environmental and social issues.
l. The Wildlife Conservation Plan has been approved by Chief Wildlife Warden vide Letter dated 12.02.2014. FECPL is committed to follow all stipulations laid down in the approval.
m. Details of PH vis-à-vis Action Plan has been submitted.
n. Proponent should follow/ implement plan of temporary housing facility for contractual workers.

15.5.4 The Committee after detailed deliberations **recommended the proposal** for granting Environment Clearance subject to following specific conditions also:

i. Proponent should follow/ implement plan of temporary housing facility for contractual workers.
ii. An Environmental Cell be created comprising of an Ecologist, an Environmentalist & a Social Scientist so as to monitor and implement the environmental and social issues.
iii. Wildlife Conservation Plan be approved by Chief Wildlife Warden with commitment of funds as stipulated by Wild life Warden.
iv. The CSR spending shall be Rs. 12 crore as agreed to by the proponent.
v. Reservoir will be gently sloped along its entire periphery.
vi. The upper benches above the reservoir will be terraced and stabilised with plantation of native species.
vii. Open edges will be fenced properly with Solar Fencing and provision be made for sign boards.
viii. The depth of lake to be further reduced from 30m to 20m and the floor depth from 284m to 20m, i.e. 264m total reduction.
ix. Transportation services be extended between Ududa & Narkalao villages as a part of CSR activities in lieu of the existing roads
x. The proponent shall complete the railway siding by December, 2018. Until that time the coal transportation shall be by mechanically covered trucks for four years.
xi. The dumpers should be checked for exhaust emissions, and be maintained properly; Minimize re-suspended road dust generation, roads to be cleaned daily along all the settlements.
xii. Noise barriers to be provided along settlement stretch; use of horns to be prohibited. Measures for safe driving habits to be employed by way of education, slogans and campaigns. People residing along the road to be educated on road safety.
xiii. Ambulance, emergency medical management centre and blood bank shall be developed as part of CSR plan.
xiv. The proponent shall build temples in order to keep the religious sentiments of the local inhabitants.
xv. Proponent should follow/ implement plan of temporary housing facility for contractual workers.
xvi. All the commitments made during the Public Hearing be implemented.
xvii. A sub-Committee of the EAC to visit the site to assess the situation on ground.

15.6 Nawapara UG Expansion (0.18 MTPA to 0.36 MTPA Normative & 0.55 MTPA Peak in the total Project Area 442.14 ha; Latitude $23^0 12' 00''$ and $23^0 14' 53''$ N and Longitude $83^0 04' 23''$ and $83^0 07' 53''$ E) of M/s South Eastern Coalfields Ltd. Dist. Surguja, Chhattisgarh - EC based on TOR granted on 10.11.2009 – Further Consideration.

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

15.6.2 The proposal was considered in the 9th EAC meeting held on 20th -21st January, 2014. The Committee sought additional information w.r.t. monitoring of ground water using the piezometer; details of transportation of coal; feasibility study for having railway siding near the mine; appropriate action as per the existing OM on violation; Board's Resolution for not repeating the violation; detailed action plan on subsidence, transport of coal, CSR and public hearing; The compliance Report to the EC granted on 07.01.2002 duly vetted by the Regional Office of the MOEF.

15.6.3 The proponent made the presentation and informed that:

i. Monitoring of Ground water using the piezometer: At Nawapara UG mine, the ground water monitoring using Piezometer is in practice & is being regularly done & the result recorded in the bound paged register. The results are as under:

SL No.	Date	Water level from surface in Mtrs	
		Pizometer No.1-Near Sub-station	Pizometer No.2-Near Fan house
1	04.06.2011	31.20	60.40
2	11.11.2011	25.94	55.15
3	18.02.2012	26.91	57.10
4	09.06.2012	30.59	60.24
5	03.10.2012	26.20	54.55
6	24.03.2013	28.90	57.03
7	22.06.2013	29.62	59.76
8	08.10.2013	25.63	55.51
9	22.01.2014	27.56	56.43

ii. Details of transportation of coal: Coal transportation details are as under:
   a. From face to pit top: through belt conveyors.
   b. Pit top to Bhatgaon railway siding: By covered trucks.
   c. Railway siding to customers by rail(94%)
   d. To different customers by road (06%)

iii. **Feasibility of railway siding near the mine:** The issue of construction of new Railway siding nearby railway station Kamalpur situated at a distance of 8.1 km from the mine was discussed with IRCON International Limited who advised that minimum of 01 (one) rake per day coal i.e. minimum 4000 tons coal/day is required for feasibility of new railway siding; Further on this route i.e. Nawapara to Kamalpur, there are 03 villages namely Latori, Maheshpur & Silfilli & the population being 2400, 1600 & 1450 respectively. This requires

huge R & R; At present there are no other coal mine is situated nearby, which can feed the siding. Thus for such meager production of coal the construction of new siding is not feasible.

iv. **Violation**: The proponent has exceeded production in 2009-2013 which construes violation. The proponent submitted the Board's Resolution for not repeating the violation vide letter no. SECL/BSP/CAD/13-14/614 dated 20.01.2014.

v. Detailed Subsidence prediction report along with impact of subsidence & their management include the anticipated maximum possible subsidence likely to occur over the mining area due to extraction of Pasang Seam individually is 2.01mm. The estimated maximum possible subsidence likely to occur at the end of mine life (i.e. after 23 years of mining) is 2.01mm, which is likely to take place over the panels 19 of Pasang Seam. In the forest area, the maximum possible subsidence likely to occur is 2.01mm, which is likely to take place over the panel no 19 of Pasang Seam. From the estimated subsidence at each grid point, subsidence contours are drawn alongwith mitigative measures.

vi. The annual CSR fund for project will be Rs 5.00 per tonne of coal production or 5% of retained profit, whichever is more. CSR activities are as per policy of Coal India Ltd. CSR activities will be implemented in consultation with district officials. The CSR activities are proposed to be carried out in consultation with villagers in the study area which will include: Creation of social assets like educational institution, community hall, temple, market place playground etc.; Provision for water supply like bore well pumps, hand pumps, wells, ponds etc.; Provision for roads, culvert, drains etc.; Institution to impart vocational training for enhancing employability etc.

15.6.4 The compliance report from Regional Office, MOEF, Bhopal has been received vide letter no. 3-4/2002/(ENV)/633 dated 12.03.2014. The EAC has deliberated on the compliance report and has noted that the proponent has complied with all the conditions except that it has partially complied with monitoring of ground water monitoring and plantation programs. The Committee has asked the proponent to expedite compliance of these conditions. The proponent has submitted that it has already initiated action stating that two peizometers have been installed at different locations and regular monitoring is being done; in addition to the amount already committed for community development, community and eco-developmental work has been started and awarded total value of Rs. 1.3 crores for the purpose.

15.6.5 The proponent had committed during the Public Hearing, inter alia, provision of several amenities. It has already initiated action under CSR which include drinking water hand pumps; Bus stop sheds; Construction of Primary health centre; Rs. 8.342 Lakhs already paid as compensation to the 09 PAPs, against land acquisition as per R & R policy of State Govt. and CIL; Fixed water sprinklers (25nos.) have been provided in coal transportation road in mine premises; Tar road is available for coal transportation; Green belt (2000nos) along the road & mine premises; proposed for further plantation along the road during next three years; Employment is given and compensation is already paid as per company norms to the land owner who's land is acquired; Peizometer readings for ground water showing the increasing trend of ground water level; Different development work is taken up every year under CSR as per company guide line and provisions; In addition to underground settling tanks 08 number of settling tanks have been constructed at surface for treatment of mine water.

15.6.6 The Committee after detailed deliberations **recommended the proposal** for granting Environment Clearance subject to following specific conditions also:

i. Wagon loading shall be through CHP.
ii. Piezometers shall be installed at the same level of bore holes.
iii. MoEF to take appropriate action as per the existing procedures with regard to violation during FY 2009-10 to 2012-2013 for exceeding production against the stipulated capacity in the EC dated 7.1.2002.

15.7 Cluster 5 (2 mixed mines – Parbelia & Dubeswari) a total production capacity of 0.485 MTPA (Normative) and 0.63 MTPA (peak) in an ML area of 2970 ha; Latitude 23^0 38' N & 23^0 41' N and Longitude 86^0 46' E & 86^0 51' E) M/s Eastern Coalfields Ltd., located in Raniganj Coalfields district Purulia, West Bengal. EC based on TOR granted on 03.12.2010

15.7.1 The proposal is of Cluster 5 (2 mixed mines – Parbelia & Dubeswari) of a total production capacity of 0.485 MTPA normative and 0.63 MTPA peak in an ML area of 2970 ha of M/s Eastern Coalfields Ltd., located in Raniganj Coalfields district Purulia, West Bengal**.**

15.7.2 Project Proponent informed the Committee the correct capacity as per the application is 0.485 MTPA normative and 0.63 MTPA peak. This correction may be made in the agenda.

15.7.3 The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/288/2010-IA.II(M) dated 03.12.2010. Revised TOR letter no. J-11015/288/2010 -IA.II (M) dated 29.02.2012. Extension of TOR for one year obtained vide letter no. J-11015/288/2010-IA.II (M) dated 11.03.2014.
ii. The latitude and longitude of the project are 23^0 38' N & 23^0 41' N and 86^0 46' E & 86^0 51' E respectively.
iii. Total Leasehold Area: 2970.0 Ha. Leasehold area of each mine in ha is as follows:

Name of Mine	**Production Capacity (MTY)**		**Lease Hold Area (Ha)**	**Life of the mine**
	Normative	**Peak**		
Parbelia UG	0.15	0.19	2730	>25 years
Parbelia OC Patch	0.1	0.13		1.5 years
Dubeshwari UG	0.135	0.18	240	> 50 years
Dubeshwari OC Patch	0.1	0.13		2.5 years
Total	**0.485**	**0.63**	**2970**	

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

Sl. No.	**LAND USE**	**Present Land use (in Ha)**	**Post Mining Land use (in Ha)**
1	Infrastructure area	320	200
2	Water Bodies	117	117
3	OB Dump and Quarry	0	0
4	Agriculture	1550	1550
5	Plantation	0	455.54

6	Barren Land	814	478.46
7	Village/Basti	120	120
8	Road	49	49
	TOTAL	2970	2970

Post Mining Land use of Core Zone (Cluster Area)

S No.	Description	Land-use (Ha)				
		Plantation	**Water Body**	**Public use**	**Undisturbed**	**Total**
1.	Top-soil Dump	-				
2.	Excavation	20.2	-	-	-	20.2
3.	Rail /Road	-			49.0	49.0
4.	Mine Infrastructure/ Built-up	120.0		200.0		320.0
5.	Village/Basti				120.0	120.0
6.	Barren / Vacant land	315.34		-	478.46	793.8
7.	Water bodies				117.0	117.0
8.	Cultivable				1550.0	1550.0
	Total	455.54		249.0	2265.46	2970.0

iv. The total geological reserve is 35.93 MT. The mineable reserve 14.37 MT. The coal grade is B & Sc. Gr.-I.

v. The total estimated water requirement is 1660 m3/day. The level of ground water ranges from 1.20 m to 9.55 m.

vi. The Method of mining would be Dubeswari UG and proposed OC patch- At present Dubeswari colliery is working the Hijuli seam (R-VIII) through two inclines No. 1, 2 & 3. Two districts are running; one depillaring with caving in Panel-P2 and the other depillaring with stowing in Panel-A. One development section at bottom part of mine is proposed to be started after completion of the caving panel. After completion of stowing in Panel-A, depillaring with stowing in Panel-B in the upper part of Panel-A is proposed to be started. For OC patch, Shovel-Dumper combination has been proposed for both coal extraction and OB removal 2.Parabelia UG and proposed OC patch- Mine is running one depillaring panel by caving method with manual loading and one development section with 2 nos. of SDLs. The present production of the mine is being obtained from one Development district with SDLs and another manual depillaring panel with caving. For OC patch, Shovel-Dumper combination has been proposed for both coal extraction and OB removal.

vii. The OC voids are proposed to be completely backfilled after extraction of available coal reserves and there will be no residual external dump. Total amount of OB to be produced and subsequently backfilled for both the proposed OC patches is 5.9 Mm^3.

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

ix. The **life of mine** is Parbelia UG >25 years; Parbelia OC Patch 1.5 years; Dubeshwari UG > 50 years; Dubeshwari OC Patch 2.5 years.

x. **Transportation**: Coal transportation in pit: Underground mine - coal tubs at the faces are being hauled by Tugger Haulage & Opencast mine - coal is proposed to be transported from pit to surface depot by tippers, Surface to Siding: Parbelia UG – Coal produced is

transported by endless haulage to hoppers at Parbelia Railway Siding existing near the mine pits. There is no truck transportation & Parbelia OC Patch – Coal produced will be transported to Parbelia Railway siding located a 3 kms away. Dubeswari UG & OC – Coal produced will be transported by covered trucks to Parbelia Railway Siding and loading to siding: Coal is loaded by pay loaders into railway wagons.

xi. There is no **R & R** involved. There are no PAFs.

xii. **Cost**: Total capital cost of the project is Rs. 43.24 Crores (Parbelia colliery – Rs. 33.21 crore; Dubeswari colliery – Rs. 10.03 Crore. Environmental Management Cost (capital cost Rs. 3.75 crores, Revenue cost Rs 5.40 crores).

xiii. **Water body**: The drainage is controlled by Damodar River which is the main drainage channel. Although there is no prominent stream or nallah within the leasehold, the area is drained by a number of ephemeral streams ultimately discharging into the Damodar River.

xiv. **Approvals**: Application has been made to CGWA for Ground water clearance.

xv. **Mining plan approval:** All the existing mines within the cluster are taken over mines after nationalization. Mine Closure Plan approval obtained in December, 2013.

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 land within the cluster boundary.

xviii. Total **afforestation** plan shall be implemented covering an area of 455.54 ha at the end of mining. Density of tree plantation 1600 saplings/ha of plants.

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

xx. **Public Hearing** was held on 26th December, 2013, Parbelia Guest House, Purulia, West Benga. The issues raised in the PH includes dust emission; noise pollution; drinking facilities; drainage system; stopping illegal mining in the area etc.

15.7.4 The Committee has noted the correction in capacity as per the application as 0.485 MTPA normative and 0.63 MTPA peak. The agenda stands corrected. The Committee after detailed deliberations **recommended the proposal** for granting Environment Clearance subject to the following specific conditions also:

i. The open cast voids shall be completely backfilled after extraction of available coal reserves and there shall be no residual external dump.
ii. Total amount of OB to be produced and subsequently backfilled for both the proposed OC mines.
iii. Coal produced to be transported by covered trucks to Parbelia Railway Siding and loading to siding: Coal to be loaded by pay loaders into railway wagons.
iv. Total afforestation plan shall be implemented covering an area of 455.54 ha at the end of mining. Density of tree plantation shall be 1600 saplings/ha of plants.

15.8 Argada Sirka Group Mixed Mines (Argada UG, Sirka OC & Sirka UG) for (1.125 MTPA normative and 1.293 MTPA peak in a total ML area 907.04 ha; Latitude 23^0 30' 00". N to 23^0 45' 00"N and Longitude 85^0 25' 00" E. to 85^0 29' 00" E) of M/s Central Coalfields Ltd. Dist. Ramgarh Jharkhand - EC based on TOR granted on 11.12.2008 - Further Consideration

15.8.1 The proposal is for Argada Sirka Group Mixed Mines (Argada UG, Sirka OC &Sirka UG) for (1.125 MTPA normative and 1.293 MTPA peak in a total ML area 907.04 ha) of M/s Central Coalfields Ltd. Dist. Ramgarh Jharkhand.

15.8.2 The proposal was last considered in 7th EAC meeting held on 12th -13th December, 2013 wherein, the Committee after deliberation recommended the project for the EC for the expansion of the project with one of the specific conditions that details of mine closure plan are submitted.

15.8.3 The proponent had submitted a copy of approved mine closure plan and informed that:

a) Sirka OC, Sirka UG and Argada UG are very old mines.
b) The Mine Plan of Sirka OC was approved in the 10th Meeting of the Board of Directors of the then "Coal Mines Authority Limited" on 9th August, 1975.
c) Empowered Sub-Committee of CCL Board has approved the EIA/EMP of Argada Sirka Group of Mines (Argada UG, Sirka OC & Sirka UG) in its 37th meeting (no.2 of 2013) dated 22.03.2013 which includes the mine /calander plan of Sirka UG and Argada UG also.

15.8.4 The Committee had reiterated its **recommendations for granting EC** with the stipulated conditions made in the 7th EAC meeting held on 12th -13th December, 2013**.**

15.9 Discussion on suggestions of Ministry of Coal on "clusters approach" for Coal Mining:

15.9.1 Ministry of Coal (MoC) has requested the Ministry of Environment, Forest and Climate Change with a proposal that permission of Cluster of Coal India Limited Mines be considered for grant of EC.

15.9.2 The coalfields which may spread over hundreds of square kilometres are subdivided into a number of blocks depending upon each of operation, administrative control geo-mining condition, presence of habitat etc. and individual coal projects are opened & operated simultaneously. This this could be grouped into clusters of CIL mines for grant of Environmental clearance. The overall impact on air, water, weather, soil and bio-diversity of the region depends on the individual impact of all the units/projects of the region taken together. The cumulative impacts on ambient air quality, water quality, soil erosion, wild life, flora & fauna and socio-economic environment needs to be considered accordingly. Even while determining Comprehensive Environmental Pollution Index (CEPI), an individual unit/project mine is not considered rather the whole area zone is taken into account for the purpose.

15.9.3 Thus, the production of the mines may be enhanced with suitable pollution mitigation measures restricting any increase in pollution levels causing no adverse impact on the surrounding environment. It is further noted that now there are modern technologies available for mining which have less adverse impact on environment even for higher production level. Hence, such technology may be adopted for enhanced production in the cluster. It is also observed that in some cases, a mine is forced to suspend production once its approved EC capacity is achieved even though there are units in the same zone/area which are yet to contribute up to their approved EC capacity. The production of the said mine allowed to continue within the limits as envisaged in the EIA/EM of the zone. Since the environmental problems are being faced are of regional nature and not confined to individual mines along, cluster groups/coalfields of such mines may be identified for monitoring, addressing environmental concerns

comprehensively and ensuring effective co-ordination of environmental control measures within each cluster. Some of the advantages of grouping the mines in such clusters are as follow:-

i) In case production is hampered in any of the producing unit, the same should be permitted to be compensated by enhancing production from the other mine while keeping the overall production limit of the cluster /group within the EC granted for that particular cluster/group.

ii) Further, as EC is presently being granted for an individual mine, it becomes redundant after closure of the said mine. But in case of Cluster/Group EC, the company would be able to open new mines in place of closed ones within the group and modalities of permission of such replacement mines could be accordingly formulated.

iii) While granting EC of the cluster of mines, limit of pollution parameters in the area may be laid down instead of restricting production limit of the cluster mines. It would facilitate enhancement of production of the cluster/mines by taking additional pollution mitigating measures to offset the impact of additional production on environment or suitable environment friendly modern technology in order to keep the pollution parameters within the permissible limits as prescribed.

15.9.4 Ministry of Coal has, therefore, proposed that the existing mines with approved ECs may be re-arranged into suitable zones /areas as cluster and their ECs may be treated as Group EC. An exercise has been carried out in subsidiaries of CIL and subsidiary-wise no. of cluster is given below:-

S. No.	Subsidiary	No. of clusters
1	ECL	15
2	BCCL	17
3	CCL	19
4	NCL	02
5	WCL	19
6	SECL	18
7	MCL	04
	Total (CIL)	**94**

15.9.5 The Committee has deliberated in detail on the proposal of the MOC. The Committee mentioned that the EAC had only suggested in the past in case of mines of M/s BCCL, a subsidiary of CIL there were 17 numbers of clusters which were subsequently made and the BCCL had prepared EIA/EMP report for consideration of EAC. These were subsequently considered by the EAC with due diligence and recommended for granting EC. The EAC in this process had deliberated on the comprehensive impact of various pollutants, processes and other factors affecting the environment. Similarly, M/s Eastern Coalfield Limited had also adopted a cluster approach for consideration for EC.

15.9.6 It will be prudent to adopt cluster approach for the mines which are situated very close by so that the cumulative impact of mining on environment could be documented and that only one Public Hearing for this cluster is held.

15.9.7 The EAC is of the considered view that it is therefore necessary to examine the cluster of mines, on a case by case basis rather than taking a blanket decision for making cluster of mines without taking into several factors including the proximity of mines from one another. Further, taking the past experience of the cluster approach from BCCL and ECL, the EAC shall be appraised by individual subsidiaries with the proposition of total number of cluster of mines, including their present position so as to enable the EAC to take a pragmatic view on the matter.

15.10 Karo OCP 1.5 MTPA in ML area 226.33 for Quarry - I (applied for 3.5 MTPA in an ML area of 570.25 ha; latitude $23^0$47'02" N to $23^0$48'38" N and longitude $85^0$57'27" E to $85^0$58'38" E) of M/s Central Coalfields Ltd., located in Tehsil Bermo, East Bokaro Coalfields, in village Karo, Amlo, & Baidkaro, Block Bermo, District Bokaro, Jharkhand – EC based on TOR granted 10.12.2009 – Further Consideration.

15.10.1 The proposal is for Karo OCP (3 MTPA in an ML area of 570.25 ha) of M/s Central Coalfields Ltd., located in Tehsil Bermo, East Bokaro Coalfields, in village Karo, Amlo, & Baidkaro, Block Bermo, District Bokaro, Jharkhand. The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/319/2009 -IA.II (M) dated 10.12.2009.
ii. There are two blocks**:** Kaveri block 2 Sq km + Karo I block 3 Sq km**.** The total mining lease area 570.25 Ha as per approved mine plan.
iii. The latitude and longitude of the project are $23^0$47'02" N to $23^0$48'38" N and $85^0$57'27" E to $85^0$58'38" E respectively.
iv. The land usage of the project will be as follows:

Pre-Mining:

S No.	Present Land use	
1	Veg Cover, forest & scrub	321.70
2	Agricuture land	153.00
3	Mined out area	37.00
4	Water Body	7.50
5	Settlement and others	51.06
Total		**570.26**

Post- Mining:

S No.	Post-mining land use	
1	Reclaimed area	266.01
2	Colony & public utility	45.53
3	Green belt	81.58
4	Safety zone converted to green belt	45.32
5	Water body	131.82
Total		570.26

Core area:

S No.	**Land use during mining**	
1	Quarry	298.06
2	External Dump	94.77
3	Industrial Area	7.26
4	Haul Road	10.60
5	CHP	13.26
6	Colony	14.41
7	Green belt	81.58
8	Nala Diversion	5.00
9	Safety Zone	45.32
Total		**570.26 ha**

v. The total geological reserve is 184.11 MT. The mineable reserve 112.28 MT, extractable reserve is 112.28 MT.
vi. The coal grade is F & W-IV. The stripping ratio is 0.84. The average Gradient is Quarry 1 (6-10) deg & Quarry 2 (8-10) deg. There will be six seams with thickness ranging upto 2-29 m.
vii. The total estimated water requirement is 705m^3/day. The level of ground water ranges from 1.00 m to 5.40 m.
viii. The Method of mining would be by opencast method of mining with shovel-dumper combination.
ix. There are 2 external OB dump with Quantity of 33.70 Mbcm in an area of 94.55 ha with height of External A 30 m & External B 60 m (maximum) above ground level and 2

internal dump with Quantity of 60.83 Mbcm in an area of 115.22 ha.

x. The final mine void would be in 131.82 Ha with depth of 60-70 m. and the Total quarry area is 298.064 Ha. Backfilled quarry area of 298.064 Ha shall be reclaimed with plantation. A void of 131.82 ha at a depth of maximum 60-70 m is proposed to be converted into a water body after mine closure

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 **34** Years.

xiii. **Transportation**: Coal transportation in pit by Dumpers, Surface to Siding by trucks and loading to siding by rail to consumers**.**

xiv. There is **R & R** involved. There are 160 PAFs.

xv. **Cost**: Total capital cost of the project is Rs. 96.53 Crores. CSR Cost Rs. 5 per tonne of coal produced**.** R&R Cost: Rs. 84 + 429.65 = 513.65 lakhs**.** Environmental Management Cost Rs. 3847.33 lakh.

xvi. **Water body**: The drainage of the block is controlled by two nallas, Amlo and Karo which cross the area and flow towards south. These nallas ultimately flow into Damodar River near Bokaro Kargali Colliery.

xvii. **Approvals**: Ground water clearance to be obtained. Board's approval obtained on 12/08/2006**.** Mining plan has been approved on 12/08/2006. Mine Closure Plan approval on 24/02/2012.

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 321.70 ha for mining 77.43 ha forest land diverted by vide no. F.No.8-22/2003-FC Dated 31st March 2004, Proposal for diversion of 226.67 Ha of forest land has been submitted .stage -I clearance is pending.

xx. Total **afforestation** plan shall be implemented covering an area of 386.91 ha at the end of mining. Green Belt over an area of 81.58 ha. Density of tree plantation 2500 trees/ ha of plants.

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

xxii. **Public Hearing** was held on 24.05.2007 at officers' Club, Central Coalfields Limited, District Bokaro, Jharkhand. The issues raised in the PH includes employment, arrangement to check pollution, drinking & irrigation facility and proper compensation etc.

15.10.2 The proposal was earlier considered in 23rd EAC meeting held on 18th-19th April 2011; 31st EAC meeting held on 29th-30th August 2011. The Committee had recommended the project for EC subject to Stage –I FC.

15.10.3 However, the proponent had submitted that this is an ongoing mine and has two quarries (Quarry-I and Quarry-II). The mine plan for the entire project having two quarries has been approved by the Board. The details of the Quarry I and Quarry –II are as follows:

1. The mine has been planned as Quarry-I & Quarry-II.
2. FC for Quarry-I has been granted and Quarry-II FC for is under process.
3. **Total land of ML area**

Particular	Total	Forest	Non-forest
Total Land	**570.26**	**321.71**	**248.56**
Quarry - I	**226.33**	**77.43**	**148.90**
Quarry - II	**343.93**	**244.28**	**99.66**

Land use during mining of Quarry -I

S.No.	Particular	Land Requirement of Quarry-I (Ha)		
		Forest	Non-forest	Total
1	Quarry	46.69	98.70	145.39
2	External OB dump	21.63	15.44	37.07
3	Haul road	0.00	0.00	0.00
4	CHP	0.00	1.50	1.50
5	Infrastructure	3.93	0.13	4.06
6	Safety zone	5.18	15.72	20.90
7	Colony	0.00	14.41	14.41
8	Land for nala diversion & Road outside lease	0.00	3.00	3.00
	Total	**77.43**	**148.90**	**226.33**

15.10.4 Since, forest clearance for Quarry -I is available and Quarry –II is under progress, the proponent has requested to grant EC to Quarry –I.

15.10.5 The Committee **recommended the proposal** for granting EC with the following specific condition for Quarry –I only which has a life of 34 years and the production capacity of 1.50 MTPA in an ML area of 226.33 ha:

i. No mining shall be carried out in Quarry –II without the appropriate forest clearance. The proponent should revert back to the EAC for seeking clearance for Quarry-II.
ii. The OB shall be kept on non-forest area which may be used as a temporary measure only and later on completely re-handled.

15.11 Talabira-II & III Opencast Project (20 MTPA Normative and 23 MTPA Peak in an area of 1914.063 ha as per revised mine plan (applied for 1926 ha) of M/s Mahanadi Coalfields Limited, District- Sambalpur, Orissa - EC based on TOR granted on 23.05.2007 - Further consideration.

15.11.1 The proposal is of 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. The proposal was considered in the 65th EAC- meeting held on 8th -9th January, 2013; 2nd EAC meeting held on 3rd -4th October, 2013 and 12th EAC meeting held on 27th -28th February, 2014. 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 by the NGO.

15.11.2 The proponent has further replied on issues which are as follows:

a) **Poor Track Record of MCL:** MCL is the only Public Sector Company carrying out coal mining in Odisha and public desired that MCL should acquire land and provide R&R and start mining as early as possible.
b) **Cumulative Impact Assessment not done:** EAC had in its meeting dated 3rd Oct, 2013 was of the view that 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. However, Cumulative impact assessment study considering other coal mining and industrial project has already undertaken by CMPDI and the study is under progress.

c) **Forest rights not settled:** NOC was issued by the Collector, Jharsuguda and Collector, Sambalpur after taking all legal procedures under FRA 2006.

d) **EIA Provides wrong Information on Wildlife:** As per the requirement Flora and Fauna study has been conducted by the experts of recognized university and also Forest authorities have recommended the proposal for forest diversion after due inspection and verification and the project can commence only when FC is granted by MoEF. Further, there is no Elephant Corridor in the project area.

e) **Coal Block under Investigation**: The investigation of CBI is under progress. However, the outcome of the Committees recommendations is subject to the outcome of the investigation.

15.11.3 **The proponent has further informed that:**

i. The OM issued by MoEF dated 22nd March'10 emphasis on submission of EIA/EMP reports no later than four years from the date of the grant of the TORs, with primary data not older than three years. The TOR was granted on 23rd May 2007. Thus, as per said OM issued by MoEF vide dated 22nd March, 2010 the last date for submission of EIA/EMP report shall be 23 May'11. The primary data of March-May, 2008 which is not older than three years at the time of submission of EIA/EMP report. The delay for the consideration is due to delisting of the project by MoFF from the list of pending projects on 28th June, 2011 **due its categorization under NO-GO area.** The decision to wipe out the NO-GO concept was taken on 20 Sep'2011 and therefore, the delay in consideration is not a part of any deliberate attempt by the Project Proponent.

ii. Air quality data was generated for one month in November 2013 and was re-submitted to EAC meeting held on 27th February, 2014 which inferred that there is not much difference in the air quality of 2008 and 2014 and the values are much below the permissible limit.

iii. The proponent has applied for 1926 ha area. However as per the revised mine plan, the total area has become 1914.063 ha as per following :

Pre mining land use				
Sl. No	**Particulars**	**Forest (Ha.)**	**Non Forest (Ha.)**	**Total Area (Ha.)**
1	Mine Excavation	673.210	299.310	972.520
2	Inside Blasting danger zone			
a	Infrastructure (Road),Mine office, Conveyor etc.	12.870	17.860	30.730
b	External Dump	5.560	137.160	142.720
c	Embankment		6.280	6.280
d	Area to be developed as green belt	208.983	107.008	315.991
Total		227.413	268.308	495.721
3	**Out side Blasting Danger Zone**			

a	Infrastructure(road, Conveyor, Railway & SILO, Washery office, Workshop & Other utilities etc)	14.610	226.620	241.230
b	Embankment	1.020	27.890	28.910
c	Other area to be developed as green belt	117.883	37.958	155.841
d	7.5m safety zone inside lease boundary	4.051	15.790	19.841
	Total	137.564	308.258	445.822
	Total mine lease area	**1038.187**	**875.876**	**1914.063**

*Around 373Ha. of non- forest land will be required for colony & R&R site.

Post Mining land use							
Sl. No.	**Category**	**Land use in (Ha.)**					
		Plantation	**Water body**	**Dip side slope and haul road**	**Undist urbed**	**Built up area**	**Total**
1	Mine Excavation	728.98	96.39	147.15	0.000	0.000	972.520
2	Inside Blasting danger zone						
a	Infrastructure (road, mine office, conveyor etc.)	6.146	0.000	0.000	0.000	24.584	30.730
b	External Dump	142.720	0.000	0.000	0.000	0.000	142.720
c	Embankment	1.256	0.000	0.000	0.000	5.024	6.280
d	Area to be developed as green belt	315.991	0.000	0.000	0.000	0.000	315.991
	TOTAL	**466.113**	**0.000**	**0.000**	**0.000**	**29.608**	**495.721**
3.	**Outside Blasting Danger Zone**						
a.	Infrastructure (road, conveyor, railway & silo, washery , office, workshop & other utilities etc.	48.246	0.00	0.00	0.00	192.984	241.230
b.	Embankment	5.782	0.00	0.00	0.00	23.128	28.910
c.	Other area to be developed as green belt	155.841	0.00	0.00	0.00	0.00	155.841
d.	7.5m Safety zone inside lease boundary	3.968	0.00	0.00	15.873	0.00	19.841
	TOTAL	**213.837**	**0.00**	**0.00**	**15.873**	**216.112**	**445.822**
	Total Mine Lease Area	**1408.93**	**96.39**	**147.15**	**15.873**	**245.72**	**1914.063**

iv. The final Forest Clearance is under process and is yet to be received. However it may please be noted that Forest Diversion proposal is in advance stage and recently on 05.05.14 has been recommended by State Govt. to MoEF.

v. Govt. Odisha vide letter No. 11994, dated 25.07.2007 to MoEF had conveyed the decision of Govt. of Odisha about withdrawal of the proposal for notification related to expansion of Sambalpur Elephant Reserves. Thus, the project area does not form a part of the Sambalpur Elephant Reserves. Further in EIA EMP report mentioned that area does not belong the migratory corridor of any endangered Wild Lives.
vi. DFO, Jharsuguda (Nodal) while recommending Forest Diversion proposal clearly mentions that the area proposed for diversion does not fall within any eco-sensitive zone, national park or sanctuary in Jharsuguda and Sambalpur Forest Division.
vii. HFL line of the Bheden river at the Eastern boundary of Lease area is 200.9 meters and HFL of Ib river at the Western boundary of Lease area is 200.5 meters and HFL of Hirakud reservoir at South is 197 meter. The lowest and highest RL of the Lease area are 192 meter & 286 meter respectively.
viii. However, additionally Stone Peaching with grassing and plantation on the top of the embankment of the reservoir will also be undertaken to prevent seepage or erosion if any as suggested by EAC in its meeting of 3 October, 2013.
ix. Details of the control measures suggested to mitigate air pollution at various points viz. railway, while strengthening of existing road, over the colony road, over coal transportation road, over Magazine road etc. have been submitted.
x. Coal transportation within lease area will be done by Dumpers and Conveyors upto Silo and from Silo it will be transported vide railway to its destination. Thus the Dumper Movement will be restricted to core area only. However, interim transportation upto a distance of around 12-Km is proposed by road through tarpaulin covered tippers/dumpers.
xi. SPCB Odisha has taken up a comprehensive carrying capacity study through NEERI. NOC under Forest Right Act has been issued by Collector, Jharsuguda and Collector, Sambalpur after taking all legal procedures under FRA 2006.
xii. The Coal Block is under investigation and is a part of the investigation process for all the coal blocks of the country. The allocation of the Coal Block to one of the JV partner is under investigation as part of the investigation process currently undergoing. However, it is submitted that EAC may consider the project based on merit.

15.11.4 The Committee after detailed deliberation **recommended the project** for granting EC subject to specific conditions stipulated in earlier meetings and the following additional specific conditions and subject to the outcome of the investigation of CBI as also the Judgment of the Hon'ble Supreme Court of India.

i. Additionally Stone Pitching with grassing and plantation on the top of the embankment of the reservoir shall be undertaken to prevent seepage or erosion
ii. The proponent has to provide flood embankment based on a hydrological study and approval by the Flood and Irrigation Department.
iii. Approval of the State Govt. for the road transportation of coal from the mine area to the end users.
iv. Wildlife Management Plan be prepared and approval from the Wildlife Conservation Board be obtained. The recommendations of the Wildlife Board shall be implemented in toto.
v. Dumper Movement shall be restricted to core area only. However, interim transportation upto a distance of around 12-Km is permitted for three years by road by mechanically covered trucks.

vi. Stone Pitching with grassing and plantation on the top of the embankment of the reservoir will also be undertaken to prevent seepage or erosion

15.12 Topa Expansion OCP (which includes Pindra OCP), interlinked Coking Coal Washery project of (Normative 5.25 MTPA to peak 7 MTPA in an ML area of 927.82 ha; Latitude $23^0$44'08"N & $23^0$45'11"N and Longitude $85^0$27'49"E & $85^0$28'47"E) M/s Central Coalfields Ltd., located at District, Ramgarh, Jharkhand - TOR.

15.12.1 The proposal is of Topa Expansion OCP, Interlinked Coking Coal Washery project of (Normative 5.25 MTPA to peak 7 MTPA in an ML area of 927.82 ha M/s Central Coalfields Ltd., located at District, Ramgarh, Jharkhand. The proponent made the presentation and informed that:

i. The proponent has submitted that in the revised project report and mine plan for Topa Expansion OCP that contains both Topa OCP and Pindra OCP. Pindra OCP is an old existing pre-1994 coal mine.
ii. The project Topa OCP coal mine was accorded EC vide letter no. J-11015/632/2007-IA.II.(M) dated 31.07.2008.

Particulars	Capacity			Area (Ha)	
	Existing	Proposed		Existing	Proposed
		Normative	Peak		
Topa OCP	1.20 MTPA	5.25 MTPA	7.00 MTPA	577 Ha	
Pindra Colliery	0.30 MTPA			312 Ha	
Topa Washery	-	5.25 MTPA	7.00 MTPA	-	
Topa FBC Power Plant	-	100 MW	100 MW	-	927.83 Ha

iii. The latitude and longitude of the project are $23^0$44'08"N & $23^0$45'11"N and $85^0$27'49"E & $85^0$28'47"E respectively.
iv. The land usage of the project will be as follows:

Pre-Mining: Total 927.83 Ha. Out of which 309.49 Ha is forest land (0.99 ha will not be acquired)
Post- Mining: Will be finalized while preparing draft EIA/EMP report.

Particulars	PINDRA (Ha)			TOPA (Ha)			Grand Total (Ha)		
	Forest land	Non-Forest	Sub Total	Forest land	Non-Forest	Sub Total	Forest land	Non-Forest	Total
Quarry	60.29	95.25	155.54	136.91	179.69	316.60	197.2	274.94	472.14
Ext OB dump	-	107.81	107.81	8.03	80.85	88.88	8.03	188.66	196.69
Infrastructure	-	-	-	61.88	3.50	65.38	61.88	3.50	65.38
Road	-	-	-	5.46	1.80	7.26	5.46	1.8	7.26

Green Belt	10.7	43.5	54.2	15.26	27.53	42.79	25.96	71.03	96.99
Rehabilitation	-	-	-	-	3.09	3.09	-	3.09	3.09
Addl area	-	-	-	5.77	38.71	44.48	5.77	38.71	44.48
Safety zone	4.2	13.66	17.86	0.99	22.95	23.94	5.19	36.61	41.80
Total area Required (Ha)	75.19	260.22	335.41	234.30	358.12	592.42	309.49	618.34	927.83

SUMMARISED DATA

SN	Particulars	Topa Block (Quarry-I)	Pindra Block (Quarry-II)	Total
1	Quarry Area (Ha)	316.60	155.54	472.14
2	Method of mining	OC with Shovel Dumper		-
3	Mineable Reserve (MT)	75.53	18.17	93.70
4	Total OB (Mm^3)	244.89	88.98	333.87
5	Stripping ratio (m^3/T)	3.18	4.90	3.51
6	Nominal Capacity	4.00	1.25	5.25
7	Peak Capacity	5.40	1.60	7.00
8	External Dump Capacity (Mm^3)	42.56	42.23	84.79
9	Internal Dump Capacity (Mm^3)	202.33	46.75	249.08
10	Average Gradient of seam	1 in 4-12	1 in 3-4	-
11	Seams to be mined	XI to III	XIII to III	-
12	Grade of Coal	W-I to G	W-I to G	-
13	Life of mine (years)	20	17	-
14	Maximum Depth of Quarry (m)	190.00	150.00	-
15	Extent along Strike (at floor in km)	0.40-1.60	0.70-0.80 (East)	
16	Extent along Strike (at surface km)	0.70-1.90	0.85-1.05 (East)	
17	Extent along Dip (at floor in km)	1.40-1.60	0.70-0.80 (East)	
18	Extent along Dip (at surface in km)	1.60-1.90	0.85-0.95 (East)	
19	Manpower	1403		
20	Total Project Area	927.83		
	Forest Land Requirement	234.30	75.19	
	Tenancy Land Requirement	214.87	156.13	

	Government Land Requirement	143.25	104.09	
	Forest Land Acquired	94.60	54.79	
21	Point of dispatch	Siding at 1.5 km		
22	Number of PAFs Shifting	150 from Pindra and Rabodh	450 from Magardaha, Banwar and Ravidastola	

v. The total geological reserve is 119.92 MT in Quarry I + 77.86 MT in Quarry II = 197.78 MT.

vi. The mineable reserve 75.53 + 18.17 = 93.70 MT, extractable reserve is 93.70 MT. The per cent of extraction would be 47.37 %.

vii. The coal grade is WG-IV. The stripping ratio is 3.18 in Quarry I & 4.90 in Quarry II, total 3.51. The average Gradient is Quarry 1 (5-14) deg & Quarry 2 (15-20) deg deg. There will be ten seams in quarry I and eleven seams in quarry II with thickness ranging from Quarry 1 (0.42 to 13.45) M & Quarry 2 (15-20) m.

viii. The total estimated water requirement is 1800 m^3/day. The level of ground water ranges from 4.69 m to 7.59 m.

ix. The Method of mining would be by opencast method of mining by shovel-dumper combination with drilling and blasting.

x. There is 3 external OB dump (1 in quarry I & 2 in Quarry II) with Quantity of 42.23 million m3 in Pindra block and 42.56 million m3 in Topa block in an area of 88.88 Ha in Topa and 104.88 Ha in Pindra with height of 85 m in Quarry I & 55 m and 75 m in Quarry II above ground level and 2 internal dump (1 in quarry 1 & 1 in quarry II) with Quantity of 46.75 million m3 in Pindra block and 202.33 in million m3 in Topa block in an area of 262.96 Ha and 125.98 Ha in Pindra with height of 65 m in Quarry I and 10 m in Quarry II above ground level.

xi. The final mine void would be in 53.04 Ha in Topa and 29.67 Ha in Pindra with depth of 190 m in Topa and 150 m in Pindra and the Total quarry area is 155.54 Ha in Quarry 1 & 316.60 Ha in Quarry 2. Backfilled quarry area shall be reclaimed with plantation. A void of area 53.04 ha at a depth of maximum 190 m is proposed to be converted into a water body after mine closure.

xii. The **life of mine** is 20 Years.

xiii. **Transportation**: Coal transportation in pit by Dumpers, Surface to Siding by trucks and loading to siding by rail to consumers.

xiv. There is **R & R** involved. There are 450 in Topa and 150 in Pindra PAFs.

xv. **Cost**: Total capital cost of the project is Rs. 1194.88 Crores. CSR Cost Rs. 5 per tonne of coal produced. R&R Cost Rs 33.24 Crores. Environmental Management Cost: capital cost Rs 124 Crore.

xvi. **Water body:** The drainage of the block is controlled mainly by Bokaro River. There are several seasonal streams like Chowtha nala, Dhurwa Nala, Naniadana Nala draining the core zone.

xvii. **Approvals**: Applied for Ground water clearance. Board's approval obtained on 02/02/2013. Mining plan has been approved on 02/02/2013. Mine Closure Plan approval on 23/03//2013 for Topa OCP expansion. The proposal of Topa Expansion OCP (5.25/7.00

MTPA) with Washery (7.00 MTPA) & FBC Power Plant (100 MW) was approved by CCL Board on 02.02.2013

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 308.50 ha for mining. Stage-II clearance has been granted in Topa Block for 17.3 Ha forest land vide letter number F.No-8-82/90-FC dated 27.03.1997 & 77.3 Ha forest land vide letter number F.No-8-77/2003-FC dated 30.07.2008 (total 94.60 Ha). Stage-II clearance has been granted in Pindra Block for 54.79 Ha forest land vide letter number F.No-8-68/2003-FC dated 02.11.2004. Balance forest land for which Stage-1 FC is not available is 159.11 Ha. An application for stage-I clearance in Topa Block was submitted on 10.07.2008 for 71.58 Ha forest land. The NOC from DC, Ramgarh is awaited. An application for stage-I clearance in Pindra Block was submitted on 04.02.2012 for 5.52 Ha forest land. The clearance under ST&OTFD (Recognition of Forest Rights) Act 2006 is awaited.

xx. Total **afforestation** plan shall be implemented covering at the end of mining. Green Belt over an area of 2500 per ha. Density of tree plantation: 2500 nos. /ha.

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

xxii. **Particulars of Topa Washery:**

Particulars			
Annual Capacity (MTPA)	7.0		
Process Detail	Wet beneficiation method 3 product washery		
Proposed washing technology	HM cyclone with zero water discharge		
Land Requirement	15 Ha		
Project Life	30 Years		
Linkage	Basket linkage		
Mode of raw coal transport	By Tipping Trucks		
Mode of washed coal transport	By Belt Conveyor & Rail		
Balance of Products	**Product**	**Annual Prod. (MT)**	**Ash%**
	Clean coal	**3.15**	**18.5**
	Power coal	**1.70**	**34.0**
	Rejects	**2.15**	**60.0**
	Total	**7.00**	**35.0**
Washery Rejects Utilisation	Through FBC Power Plant (100 MW)		

15.12.2 The Committee after detailed deliberations has **recommended the project** for grant of TOR with standard TOR for Open Cast Mining and Washery alongwith the following specific conditions:

i. Justification for converting Underground to Open Cast mining be provided.
ii. Proponent shall submit the forest clearance.
iii. There shall be relocation of OB Dumps.
iv. Diversion of river to be made as per natural topography.
v. The washery shall be wet washery and shall be away from the river and shall adopt zero discharge concept.
vi. A settling tank for the storm water to be provided.
vii. Necessary clearance for FBC power plant to be obtained from EAC for Thermal Power Projects.

15.13 Gopal Prasad OCP (15 MTPA in a project area of 1289 ha) of M/s MJSJ Coal Ltd., located in Talcher Coalfields, dist. Angul, Orissa. (EC based on TOR granted on 31.12.2008) – Correction of Minutes.

15.13.1 The proposal is of Gopal Prasad OCP (15 MTPA in a project area of 1289 ha) of M/s MJSJ Coal Ltd., located in Talcher Coalfields, dist. Angul, Orissa. The proposal was considered 5th EAC meeting held on 25th -26th November, 2013. The Committee recommended the project for granting environment Clearance. However, project proponent vide letter CEO/MJSJ/ENV/418 dated 30.12.2013 requested for the following corrections in minutes of the meeting:

i. Para no. 5.8.4 (x), scheme for employment to may be corrected to 1157 instead of 1620.

15.13.2 The Committee approved the corrections as proposed.

15.14 Ghusick Expansion UGP (from 1.64 MTPA to 2.05 MTPA in an ML area of 898 ha; Latitude 23° 41' 07" to 23° 37' 37" and Longitude 87° 01' 40" to 86° 59' 09") of M/s Eastern Coalfields Ltd. located at Dist. Burdwan, West Bengal – TOR.

15.14.1 The proposal is of Ghusick Expansion UGP (from 1.64 MTPA to 2.05 MTPA in an ML area of 898 ha.) of M/s Eastern Coalfields Ltd. located at Dist. Burdwan, West Bengal. The proponent made the presentation and informed that:

i. The project is for expansion of Underground Mining from 1.64 MTPA to 2.05 MTPA in an ML area of 898 ha. underground Project within leasehold of existing mines with some additional area and separate infrastructure. The project has been planned in an area which encompasses part leasehold of Muslia UG unit of Ghusick (R) Colliery of ECL which is a working mine without EC since pre - nationalization. 792 Ha out of the existing leasehold of this mine of 948 Ha will be transferred to the expansion project. Additional mining lease of 84 Ha falling outside the ECL leasehold will be obtained. Existing capacity of Muslia UG is 0.04 MTY. The existing mine is part of Cluster No. 9 for which TOR was obtained in Dec, 2011 and application for EC was made in Feb, 2014 after conduct of PH. The expansion project was conceived at a later stage i.e. after TOR for Cluster No. 9 had been obtained and work on the EIA & EMP had begun.
ii. The latitude and longitude of the project are 23° 41' 07" to 23° 37' 37" and 87° 01' 40" to 86° 59' 09" respectively.

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

Pre-Mining:

Sl. No.	Type of land	Within Project Area (ha)	Outside Project Take
1	Road	15.0	-
2	Rail	3.4	-
3	Builtup Area / Villages	64.0	-
4	Tank	7.8	-
5	Nala	5.8	-
6	Danga / Wasteland / natural vegetation	130.0	-
7	Cultivable / Fallow land	650.0	22.0
	TOTAL	**876.0**	**22.0**

Post- Mining & Core Area:

Sl. No.	Type of land	Within Project Area (ha)	Outside Project Take
1	Road	3.5	
2	Rail	3.4	
3	Builtup Area / Villages	55.1	22.0 (Rehab site)
4	Tank	0.8	
5	Nala	3.2	
6	Danga / Wasteland / natural vegetation	24.0	
7	Cultivable / Fallow land	133.0	
8	Subsided and reclaimed	653.0	
	TOTAL	**876.0**	**22.0**

iv. The total geological reserve is 106.21 MT. The mineable reserve 58.41 MT, extractable reserve is 37.68 MT.

v. The coal grade is B-E. The average Gradient is 1 in 12 to 1 in 30. There will be 9 seams with thickness ranging upto 0.22 - 4.3 m.

vi. The total estimated water requirement is 1000 m3/day (Mine water). The level of ground water ranges from 1.45 m to 16.10 m.

vii. The Method of mining would be by Underground.

viii. There is neither external nor internal OB dump as it is an underground mine.

ix. The **life of mine** is > 25 Years.

x. **Transportation**: Coal transportation in pit by Belt Conveyer, Surface to Siding by trucks and loading to siding by rail wagons.

xi. There is **R & R** involved. There are 579 PAFs.

xii. **Cost**: Total capital cost of the project is Rs. 848.51 Crores. CSR Cost Rs. 5.00 per tonne during operation stage of mine. R&R Cost (R & R Rs. 68.77 Crore, Land: 101.25 Crore). Environmental Management Cost (Rs 19.81 per tonne including Mine Closure Cost of Rs 3.82 per tonne). Capital CSR Cost to be Rs.3.4 crores.

xiii. **Water body**: The Damodar River is the main drainage channel of the area which flows from west to east and forms the southern boundary of the proposed mine.

xiv. **Approvals**: Applied for ground water clearance. Board's approval awaited. Mining plan yet to be approved. Mine Closure Plan approval: Mine Closure Plan is part of the PR and

will be approved together with the PR. Mine closure plan for the existing Muslia Unit of Ghusick (R) Colliery has been approved in Dec, 2013.

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

xvi. **Forestry issues**: Not Applicable as there is no forest land within the project area

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

15.14.2 The Committee after detailed deliberations has **recommended the project** for grant of TOR.

15.15 Cluster –XII of Kapuria UG Mine (2.4 MTPA normative with a peak capacity of 3.12 MTPA in an ML area of 809.60 ha; Latitude 23°44'30" N to 23°46'25" N and Longitude 86°16'50" E to 86°19'55" E) of M/s Bharat Coking Coal Ltd. located in Jharia Coalfields, Dist. Dhanbad, Jharkhand – EC based on TOR granted on 26.12.2012.

15.15.1 The proposal is of Cluster –XII of Kapuria UG Mine (2.4 MTPA normative with a peak capacity of 3.12 MTPA in an ML area of 809.60 ha) of M/s Bharat Coking Coal Ltd located in Jharia Coalfields, Dist. Dhanbad, Jharkhand **.**

15.15.2 The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/184/2012 -IA.II (M) dated 26.12.2012.

ii. The latitude and longitude of the project are 23°44'30" N to 23°46'25" N and 86°16'50" E to 86°19'55" E respectively.

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

Pre-mining land use of core zone:

Sl. No.	Type of land use	Pre-mining land use (in Ha)
1.	Road/Rail	26.77
2.	Scrubs	218.64
3.	Fallow land	47.96
4.	Social Forestry	8.70
5.	Water Body	15.23
6.	Settlements	97.72
7.	Barren land	394.58
	Total	**809.60**

Post-mining land use of core zone:

Sl. No.	Description of area	Land use (ha.)				
		Plantation	Water body	Public use	Undisturbed	Total
1	Air Shaft	1				1
2	Project Office, Canteen, Parking etc.			1.18		1.18

3	Monorail			1.12		1.12
4	Longwall sheds & Open storage	5.71				5.71
5	Substation	0.48				0.48
6	Stores, Workshop, etc.	1.05				1.05
7	Filter Bed	0.25				0.25
8	Nitrogen Plant, etc.	1.2				1.2
9	CHP	1				1
10	Internal roads, etc.			1.51		1.51
11	Waste dump	1.5				1.5
12	Washery	4				4
13	Diversion / Laying of Roads			26.86		26.86
14	Plantation	91				91
	Total Disturbed	**107.19**	**0**	**30.67**	**0**	**137.86**
	Area indirectly affected	**579.7**				**579.7**
	Area untouched				**92.04**	**92.04**
	Total	**686.89**	**0**	**30.67**	**92.04**	**809.6**

iv. The total geological reserve is 146.175 MT. The mineable reserve 123.308 MT, extractable reserve is 37.49 MT. The per cent of extraction would be 30.40 %.

v. The coal grade is ST-I, ST-II, W-I to W-IV. The stripping ratio is not applicable. The average Gradient 1 in 4.5 and 1 in 5. The general dip of formation is 10° to 15° with the exception in southern region in the vicinity of the boundary fault where the seams are steeply dipping to the extent of even 70° at few places. There will be seven seams with thickness ranging upto 3.22 - 8.38 m.

vi. The total estimated water requirement is 931 m^3/day. The level of ground water ranges from 2-15 m.

vii. The Method of mining would be by Longwall retreat method with powered supports.

viii. There are neither external nor internal OB dump as it is underground mining.

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

x. The life of mine is 30 Years.

xi. **Transportation**: Coal produced from the mine will be directly loaded into a CHP at the incline top. From the CHP at incline top coal will be transported to the proposed Kapuria Coal Washery linked to the mine by covered by conveyor system of length of 250m. Washed coal from the washer will be transported by conveyor to the railway siding and loaded into the wagons by CHP.

xii. There is **R & R** involved. There are 5453 PAFs.

xiii. **Cost**: Total capital cost of the project is Rs. 792.83 Crores. CSR Cost: As per the CIL's Policy, the company will spend 5% of the retained earning of the previous year subject to a minimum of Rs. 5/- per tonne of coal production. (Rs. 1.2 crores). R&R Cost Rs. 24315.33 Lakhs. Environmental Management Cost : Initial capital investment - Rs. 2 Crores approximately while the recurring expenditure during the stage of production is envisaged as Rs. 83.53 Lakhs per year

xiv. **Water body**: The Katri Nala and Khudia Nala flow through the cluster and joins Damodar river in the south of the cluster. Jarian Nala flows along the eastern boundary of the cluster.

xv. **Approvals**: Ground water clearance applied is in process, Mining Plan approval is in process

xvi. **Board's approval:** Approved in BCCL Board in 279th Meeting on 03.07.2011 & finally

by Coal India Board in 272th Meeting on 12th August 2011. DPR is approved by BCCL after the scrutiny of CMPDIL.

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

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

xix. **Flora and Fauna:** The mixed flora consists of the following species: - Asan, Karam, Guri, Sidha, Mahua, Gamhar, Bid, Semal, Piar, Bel, Dhatura, Salai, Kusum, Sisam, Palash etc. Various kinds of ecosystems were observed from scrub patches, grass lands to man made agro-ecosystems of crop lands and plantations. Domesticated species like Goat (Capra aegagrus); Buffalo (Bubalus bubalis); Cow (Bos primigenius); and Dog (Canis lupus familaris) were found in farm lands and villages.

xx. Green Belt around facilities & roads (20 ha), Facilities (9.69 ha), waste dump (1.5 ha), washery (4.0 ha) indirectly affected areas (580.7 Ha) and other areas (71 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** was held on 20.12.2013 at Ruddi Ground, Kapuria, Post Bhela Tand, district Dhanbad. The issues raised in the PH includes plantation; Provision of water sprinkling; noise pollution; Employment; Compensation of land ;Free education etc.

xxiii. Cluster-XII consist of one mine named Kapuria UG (2.4 MTPA normative with a peak capacity of 3.12 MTPA in an ML of 809.60 Ha) only. The leasehold of BCCL is divided into 17 clusters with 15 clusters in Jharia coalfield and 02 in Raniganj Coalfields based on environmental rational. Approval of Cluster concept for mines of Jharia Coalfield (clusters 1 to 15) is granted vide File No. J-11015/24/2009-IA.II(M) dated 2-12-2009. Cluster-XII (Kapuria UG) is under this approval. Though the nomenclature of Cluster-XII didn't figure in subject of TOR issued, but has figured in various other pages of TOR. Hence project name has been Cluster-XII (Proposed Kapuria UG Coal Mine Project).

xxiv. The proponent has submitted that in the TOR condition number (i) it was mentioned that: "An EIA-EMP report for cluster VI consisting of Kapuria mines consisting 1 UG of production capacity of 3.12 MTPA with a peak capacity of 7.631 MTPA in a ML area of 809.60 Ha based on the generic structure specified in Appendix III of EIA Notification 2006". This may be rectified as: An EIA-EMP report for cluster XII consisting of 1 UG Kapuria mine of production capacity of 2.4 MTPA with a peak capacity of 3.12 MTPA in a ML area of 809.60 Ha based on the generic structure specified in Appendix III of EIA Notification 2006.

xxv. Thick green belt shall be developed around proposed washery within the Cluster-XII lease area and plantation shall be undertaken along NH-32.BCCL is also in process of instituting Source Apportionment Study which will clearly show sources of background pollution levels.

xxvi. To monitor effect on groundwater, piezometers shall be installed in bore wells.

xxvii. Further subsidence study shall be taken up with reputed scientific agency like Central Institute of Mining and Fuel Research (CIMFR) Dhanbad as per stipulation by DGMS.

xxviii. Plantation shall be taken up under environmental head.

xxix. It is clarified that the various CSR works includes education, healthcare water supply etc.

15.15.3 The Committee after detailed deliberations has **recommended the project** of granting EC with the following specific conditions:

i. The coal transportation from the mine to the siding shall be by conveyor belt and coal

transportation from to the washery shall be by rail.

ii. Piezometers be installed upto the depth of borehole well to facilitate monitoring ground water.

iii. Water sprinkler be used for coal dust suppression along the haul roads.

iv. Thick green belt shall be developed around proposed washery within the Cluster-XII lease area and plantation shall be undertaken along NH-32.BCCL is also in process of instituting Source Apportionment Study which will clearly show sources of background pollution levels. Plantation shall be taken up under environmental head.

v. To monitor effect on groundwater, piezometers shall be installed in bore wells.

vi. Further subsidence study shall be taken up with reputed scientific agency like Central Institute of Mining and Fuel Research (CIMFR) Dhanbad as per stipulation by DGMS.

vii. Various CSR works that will be carried out shall include education, healthcare water supply etc.

viii. Adequate mitigation measures shall be taken so as to address the subsidence issues.

ix. The project should have ecologist/social scientists to monitor the project.

x. Factual Correction in the ToR letter at condition number may be corrected as (i) An EIA-EMP report for cluster XII consisting of 1 UG Kapuria mine of production capacity of 2.4 MTPA with a peak capacity of 3.12 MTPA in a ML area of 809.60 Ha based on the generic structure specified in Appendix III of EIA Notification 2006.

15.16 Hingula-II OC Expn. Project (Phase-III) (12 MTPA TO 15 MTPA and expansion of ML area From 544.40 ha to 1870 ha (1741.95 ha of ML area + 128.05 ha ancillary activates; Latitude 20°56'00" to 20°58'22" N and Longitude 85°00'58" to 85°02'49" E) of M/s Mahanadi Coalfields Limited in Tehsil Jharsuguda, Dist. Jharsuguda, Odisha - EC based on TOR dated 11.07.2008 – Further Consideration.

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

15.16.2 The salient feature of the project is as follows:

i. The project was accorded TOR vide letter no. J-11015/240/2008-IA.II (M) dated 11.07.2008.

ii. The latitude and longitude of the project are 20°56'00" to 20°58'22" North and 85°00'58" to 85°02'49" East respectively.

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

Pre-Mining:

Sl. No	Item	For existing 12.0 Mty	Addl. land for increme production	Total for 15.0 Mty
1.	Quarry excavation	268.78	1140.76*	1409.54
2.	Safety zone for 12.0 Mty	173.75	--	Merged with excavation area of incremental production.
3.	Dump area (external)	17.34	--	Merged with excavation area of incremental production.

4.	Safety zone for expansion	--	184.25	184.25
5.	Infrastructure including CHP, magazing, etc.	77.10	47.29	124.39
6.	Rationalization of project boundary	7.43	12.34	19.77
7.	Diversion of the road	--	4.00	4.00
	Mining lease area	**544.40**	**1197.55**	**1741.95**
8.	Residential colony	22.00	28.00	50.00
9.	Rehabilitation site	43.60	34.45	78.05
	Total :	**610.00**	**1260.00**	**1870.00**

Post- Mining:

Post-mining land use							
S. N.	**Category**	**Land use (in ha)**					
		Plantation	**Water body**	**Dip side slope & haul road**	**Undisturbed**	**Built-up area**	**Total**
1	Quarry excavation	1217.74	64.16	127.64	0.00	0.00	1409.54
2	Safety zone for expansion	34.40	0.00	0.00	149.85	0.00	184.25
3	Infrastructure including CHP, magazing, etc.	24.98	0.00	0.00	0.00	99.41	124.39
4	Rationalisation of project boundary	19.77	0.00	0.00	0.00	0.00	19.77
5	Diversion of Road	0.80	0.00	0.00	0.00	3.20	4.00
	Mining Lease Area	**1297.69**	**64.16**	**127.64**	**149.85**	**102.61**	**1741.95**
6	Residential colony	10.00	0.00	0.00	0.00	40.00	50.00
7	Resettlement site	15.60	0.00	0.00	0.00	62.45	78.05
	Total	**1323.29**	**64.16**	**127.64**	**149.85**	**205.06**	**1870.00**

Core area :

Sl. No.	Type of Land	Existing Mty	Addl. land for incremental production	Total for 15.0 Mty
1.	Agricultural	138.98	194.64	333.62
2.	Forest	--	435.15	435.15
3.	Waste land	391.48	548.25	939.73
4.	Grazing	0.00	0.00	0.00
5.	Surface water bodies	5.99	8.38	14.37
6.	Others	7.95	11.13	19.08
Total for mining lease area :		**544.40**	**1197.55**	**1741.95**

LAND SHOWING FOREST & NON-FOREST

Sl. No.	**Item**	**For existing 12.0 Mty**	**Addl. land for incremental production**	**Total for 15.0 Mty**
1.	Forest	--	435.15	435.15
2.	Non-forest	544.40	762.40	1306.80
	Within mining lease area	**544.40**	**1197.55**	**1741.95**
3.	Forest	--	--	--
4.	Non-forest	65.60	62.45	128.05
	Total :	**610.00**	**1260.00**	**1870.00**

iv. The total mining lease area is 1741.95 ha out of which 1409.54 ha is excavation or quarry area.

v. The total geological reserve is 777.93 MT. The mineable reserve 553.98 MT, extractable reserve is 572.01 MT (493.90 Mt as on 01.04.2014) MT. The per cent of extraction would be 74%.

vi. The coal grade is D to G. The stripping ratio is 1.95. The average Gradient is 20- 40. There will be 11 seams (Seam-IID to Seam-IX) with thickness ranging upto 31.55 m.

vii. The total estimated water requirement is 4.03 MLD. (Potable: 1.51 MLD, Industrial: 2.52 MLD) m3/day. The level of ground water ranges from 2.56 m to 10.2 m.

viii. The Method of mining would be by Shovel – Dumper in OB surface miner, pay loader & tipper in coal.

ix. There are two external OB dumps with Quantity of 65.66 Mbcm in an area of 163.00 ha with height of 65 to 80 meter above the surface level and 1 internal dump with Quantity of 1024.42 Mbcm in an area of 1217.74 Ha.

x. The final mine void would be in 539.54 Ha with depth of 40 m below ground level and the Total quarry area is 1409.54 Ha. Backfilled quarry area of 870.00 Ha shall be reclaimed with plantation. A void of 539.54 Ha up-to depth of 40m 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 35 years as on 31.03.2014.

xiii. **Transportation**: Coal transportation in pit by Tippers, Surface to Siding by Pit head to

washery (7.0 Km), Washery to SILO (900 m) - By conveyor and loading to siding by rail wagon.

xiv. There is **R & R** involved. There are 1317 PAFs.

xv. **Cost**: Total capital cost of the project is Rs. 653.55 Crores. Capital CSR Cost Rs. 264 Lacs and Rs.5/M.T. as annual CSR during operation stage. R&R Cost Rs. 25.93 Crore. Environmental Management Cost Rs 58.53 crores.

xvi. **Water body**: Singada Jhor (Nala) is the water body near the project site.

xvii. **Approvals**: Ground water clearance: NA, as the area is not falling under critical area as per CGWA. Board's approval obtained on08.11.2008 by MCL. Mining plan has been approved by MoC vide Letter no. 43012/(1)/2008-CPAM Dt. 13.04.2009. Mine Closure Plan approval by MCL Board on 22.06.2011.

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 435.15 ha for mining. Forest diversion proposal (Total area 440.53Ha) submitted vide state serial no. 468 dtd 28.02.2011 Proposal recommended by DFO Angul on 10.02.2014 after completing all formalities like DGPS survey & authentication, CA scheme preparation and approval, pallisabha & grant of NOC by Collector, Angul under FRA 2006 etc. Addl. PCCF (Nodal Officer under FC Act) recommended the proposal on 22.04.2014.

xx. Total **afforestation** plan shall be implemented covering an area of 1049.36 ha at the end of mining. Green Belt over an area of 79.87 ha. Density of tree plantation 2500 trees/ ha of plants.

xxi. There are no court cases.

xxii. **Violation** due to excess production during 2003-2007.

xxiii. **Public Hearing** was held on 10/09/2009 at Gopal Prasad. The issues raised in the PH includes infrastructure activities; Pollution; Social activities etc.

15.16.3 The proposal was considered in the 43rd EAC-21st- 22nd Feb 2012 & 63rd EAC held on 17th -18th December, 2012. The Committee after deliberation sought additional information such as details of the calendar plan of production and OB generation and dumping external (both dumps shown separately), internal for existing and expansion incorporating the plan for re-handling; details of post-mining land use for use of the reclaimed land for productive use such as agriculture; OB management plan be re-looked to reduce the depth of the final water body to be 40m depth; list of flora/fauna authenticated by PCCF (WL) or by any recognised institution that there is no presence of Schedule-I fauna in the study area; west quarry area; to explore other mining solutions e.g. high wall mining etc. to reduce forest land and other land degradation.

15.16.4 The Committee deliberated on the reply submitted by the Proponent which is as follows. The proponent has further informed that:

i. Calendar Plan and post mining details have been submitted.

ii. A list of fauna under different schedules of The Wildlife (Protection) Act 1972, found in the core and buffer zone of the project authenticated by the recognized Department of Environmental Sciences and the School of Life Sciences, Sambalpur University, Orissa has been submitted.

iii. High Wall Mining has been done at the high wall side of an opencast mine when it has reached its economic limits. In opencast mine, the stripping ratio increases with increase in depth i.e. more overburden has to be removed for extracting one

tonne of coal. When the cost of OB removal crosses the price of coal, the mine becomes uneconomic. From this final high wall position where coal has become sterilized, this method of mining can be adopted. In this, in seam tunnels are driven from surface by remote control continuous miner.

iv. However, this method is not replaceable with opencast as lot of reserve is lost in pillars and can mine only upto 250 to 400 mts from coal face. Open coal face, crushed pillars, etc. may also invite danger of fire and subsidence. This method is not very suitable for multi seam operations with varying band thickness.

15.16.5 The Committee also took note of the compliance report of the RO, MoEF at Bhubaneswar. The proponent has presented the compliance report.

i. As mentioned against Conditions No. (ii), the internal OB, dumped earlier in certain portions, has not been properly reclaimed and planted. Some portions of slopes – in about 1.33 ha of OB dumps however, have not been planted. Project should also take up plantation on the inactive internal OB dumps which require to be reclaimed in the de-coaled area of the mine and should be properly terraced and planted.

ii. Mechanical sweepers have not been deployed for clearing dust.

iii. New Piezometers should be installed for monitoring of ground water. It has been stated that Ground water level as well as quality are regularly monitored. No data has been provided.

iv. No colony is set up in the project. An ETP of 270 m^3 per day capacity is functioning. Project should increase the capacity of the ETP to cater to the requirement of the increased capacity of production of the mine for the expansion project.

v. It was stated that at present about 7 million tons of coal reserve is existing in the mine which will be excavated by 2014-15. The final mine closure plan has not been submitted to the ministry for approval and the condition is not complied.

15.16.6 The Committee after detailed deliberations sought following additional information for **further consideration**.

i. This being a violation case, MoEF may take appropriate action accordingly. Details of credible action taken by the State Government on Violation as well as the Board's Resolution to be submitted.

ii. Proponent to take clearance from the Wild Life Board.

iii. The internal OB, dumped earlier in certain portions, should be properly reclaimed and planted.

iv. Project should also take up plantation on the inactive internal OB dumps which require to be reclaimed in the de-coaled area of the mine and should be properly terraced and planted.

v. Mechanical sweepers should be deployed for clearing dust.

vi. Piezometers should be installed for monitoring of ground water.

vii. Project should increase the capacity of the ETP to cater to the requirement of the increased capacity of production of the mine for the expansion project.

viii. The final mine closure plan should be submitted to the Ministry.

ix. Action Plan for Capital CSR t be submitted.

15.17 Chendipeda-Chendipeda-II OCP (Phase-I) (40 MTPA) in an ML area of 848.10 ha which includes an area of 106.10 ha for a pit head coal washery (40 MTPA), railway loop and corridor of M/s UCM Coal Company Ltd., Tehsil Chendipeda, dist. Angul, Orissa – TOR

15.17.1 The proposal is of Chendipeda - Chendipeda-II OCP (Phase-I) (40 MTPA) in an ML area of 848.10 ha which includes an area of 106.10 ha for a pit head coal washery (40 MTPA), railway loop and corridor of M/s UCM Coal Company Ltd., Tehsil Chendipeda, dist. Angul, Orissa. The proponent made the presentation and informed that:

i. It is Joint Venture Project of Uttar Pradesh Rajya Vidyut Utpadan Nigam Ltd.; Chattisgarh Mineral Development Corporation Ltd and Maharashtra Power Generation Company Ltd.

ii. MoEF granted TOR vide letter No J-11015/253/2010-IA.II (M) dated 31.05.2011 for Chendipeda-Chendipeda II OCP (Phase-I) and pit-head coal washery of 40 MTPA each. MoEF extended the validity of TOR vide letter No. J-11015/253/2010-IA.II (M) dated 26th August 2013 which lapsed on 31st May, 2014. The Project could not progress because of the delay in grant of administrative approval by Govt. of Odisha. The administrative approval is the first step for starting any development activity of the project. Therefore, applied for fresh TOR.

iii. The latitude and longitude of the project :

Coal Block:

A- $21^0$07’55’’ N and $84^0$52’46’’ E ; B- $21^0$07’59’’ N and $84^0$54’59’’ E; C- $21^0$05’55’’ N and $84^0$55’00’’E; D- $21^0$04’30” N and $84^0$53’14” E; E- $21^0$05’55” N and $84^0$52’00” E

Coal Washery:

A- $21^0$02’50’’E and $84^0$53’57’’ E; and $84^0$54’25’’ E; $21^0$03’02’’N and $84^0$54’30’’; $21^0$02’42’’N and $84^0$54’29’’ E; $21^0$02’42’’N and $84^0$53’57’’ E

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

Pre-Mining:

(Area in Ha.)

Sl. No.	Name of the Village	Govt. Land			Private Land	Total Area
		Forest	Non-Forest	Total		
A. Mine Area						
	TOTAL	437.7960	525.7785	963.5745	1778.4255	2742.0000
B. Infrastructure						
	Total	22.4742	12.6135	35.0877	71.0615	106.1492
Total Land (A+B)		460.2702	538.3920	998.6622	1,849.4870	2,848.1492

Post- Mining: (area in Ha.)

S.No.	**Particulars**	**Forest**	**Non-Forest**	**Total**
1	Mine Excavation	92.35	711.25	803.60
2	Land required for blasting danger zone	3.95	185.40	189.35
3	External dump (excluding dump area	166.05	1239.54	1405.59

	falling in the blasting danger zone).			
4	Infrastructure including workshop, project office, CHP, approach road, railway corridor, etc.	Initially facilities will be on Coal bearing area. The facility will be relocated once reclaimed land is available.		
5	Land Requirement around external Dump	77.95	237.51	315.46
	Sub Total	340.00	2373.70	2714.00
	Rationalization of the boundaries		28.00	28.00
	Total Mine Lease Area	**340.30**	**2401.70**	**2742.00**
B	**Outside Coal Block**			
1	Proposed Washery & Conveyor corridor	**17.67**	**60.55**	78.22
	Total outside Mine Lease Area	**17.67**	**60.55**	**78.22**
	Grand Total (A+B)	**357.97**	**2462.25**	**2820.22***

Core area : (Area in Ha.)

S.No.	**Particulars**	**Total**	**Remarks**
1	Mine Excavation	803.60	
A	Physically and biologically reclaimed land (Internal Dump)	303.46	
B	Void Area	500.14	
2	Land required for blasting danger zone	189.35	Will be used for mining of Chendipada II coal block.
3	External dump (excluding dump area falling in the blasting danger zone).	1405.59	Will be used for mining of Chendipada II coal block.
5	Land Requirement around external Dump	315.46	Will be used for mining of Chendipada II coal block.
6	Rationalization of the boundaries	28.00	Will be used for mining of Chendipada II coal block.
	Total Mine Lease Area	**2742.00**	
B	**Outside Coal Block**		
1	Proposed Washery &Conveyor corridor	78.22	Will be used for mining of Chendipada II coal block.
	Total outside Mine Lease Area	**78.22**	
	Grand Total (A+B)	**2820.22**	

v. The total geological reserve is 514.108 Mt (Proved) and 44.877 Mt (Indicated) – 558.985 Mt (For Chendipada I), Indicated -1253.00 Mt (For Chendipada-II). The mineable reserve Chendipada Block-474.34 MT Chendipada–II Block- 1000.00 Mt (approx.), The per cent of extraction would be 85 %.

vi. The coal grade is E to G, Average-F. The stripping ratio is 1:2.056. The average Gradient is 2.6 0. There will be 24 seams with thickness ranging from 1 m to 30 m.

vii. The total estimated water requirement is 9100 cum3/day. (2800cum3 for mine and 6300 cum3/day for Washery).

viii. The Method of mining would be by Shovel – Dumper combination.

ix. There is one external OB dump with Quantity of 296.87 Mbcm in an area of 1405.59 ha

with height of 30 meter and one internal dump with Quantity of 978.82 Mbcm in an area of 717.28 ha with height of 60 m above ground level (upto 210 m MSL).

x. The final mine void would be in 500.14 Ha with depth of 270 m. and the Total quarry area is 803.60 Ha. Backfilled quarry area of 303.46 Ha shall be reclaimed with plantation. A void of 500.14 ha at a depth of 270 m which is proposed to be converted into a water body

xi. The **life of mine** of Chendipada Block is 20 yrs (including 2 years of Construction period).

xii. **Transportation**: Coal transportation in pit by Rear Dumper to CHP complex, Surface to Siding by belt conveyors and loading to siding by railway wagons. IDCO has formed SPV - "Brahmani Railways Ltd." for development of common rail corridor in Angul-Talcher Area. Process of land acquisition has started.

xiii. There is **R & R** involved. There are 4216 PAFs.

xiv. **Cost**: Total capital cost of the project is Rs. 5196 Crores (including Coal Washery). CSR & R & R Cost is Rs. 942 Crores Approx. Environmental Management Cost: Will be finalized after preparation of EIA/EMP

xv. **Water body:** Allotted Block boundary being Northern bank of Gounduni Nala, there is no need of diverting this stream, embankment along the bank is proposed. But another small stream named Kumbhira flowing from South to North across the property needs to be diverted after Yr. 8.

xvi. **Approvals**: Ground water clearance Under Clearance Process, Board's approval obtained on 29.04.2011 (By UCM Board). Mining plan has been approved on 4th July 2011. Mine Closure Plan approval on 4th July 2011.

xvii. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone. However, Site specific Wildlife Conservation Plan is under process.

xviii. **Forestry issues**: Total forest area involved 483.84 ha (Diversion of 450 ha Applied, 33.74 ha falling in safety zone.) for mining. Application of Forest Diversion Proposal submitted to CCF (Forest Diversion & Nodal Officer) on 11.03.2013 for the diversion of 450 ha of Forest Land.

xix. Total **afforestation** plan shall be implemented at the end of mining. Green Belt over an area of 67 ha. Density of tree plantation 2500 trees/ ha of plants.

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

xxi. Salient Features Of Coal Washery:

Total Rated Capacity	40-MTPA (ROM Coal)
Washery Capacity	Four parallel identical modules of 10 MTPA capacity. Each Module consists of 2 identical circuits of 5 MTPA
Land Requirement	60.00 ha.
Coal Washing Technology	Wet Separation by gravity through deployment of Jig/HM Cyclone
Clean Coal	28.8 MTPA (Ash Content : 32 %)
Coal Rejects	11.2 MTPA (Ash Content : About 70 %)
Shifts per day	Three
Power Requirement &	20 MVA from Rengali sub-station, GRIDCO

Source	
Water Requirement	6300-m^3/day
Wastewater Generation	Closed loop water circuit and zero effluent discharge envisaged. Process water will be clarified & circulated back in process for re-use.
Mode of Transport	Raw coal transportation to washery complex by covered belt conveyors. During emergency by high capacity tipping trucks. Washed coal to silos by covered belt conveyors. Thereafter to end users by rail using Rapid Loading System.
Manpower Requirement (operation Phase)	200

xxii. **Disposal of Rejects:** Conveying of rejects to 2 nos. of hoppers of 300 Tonne capacity each for onward use in rejects based power plant.

15.17.2 The Committee after detailed deliberations has **recommended the project** of granting standard TOR for the OCP with Washery along with the following specific TORs.

i. The proponent shall submit air quality data which is not more than 3 years old.
ii. Site specific Wildlife Conservation Plan to be prepared and got approved by the State Government and submitted to the MOEF.

15.18 Bhojudih NLW Coal Washery project of (2 MTPA in an ML area of 15 ha; Latitude $23^0$37'3" and Longitude $86^0$28'56") M/s Bharat Coking Coal Ltd., located at Dist., Purulia, West Bengal - TOR

15.18.1 The proposal is of Bhojudih NLW Coal Washery project of (2 MTPA in an ML area of 15 ha) M/s Bharat Coking Coal Ltd., located at Dist., Purulia, West Bengal. The proponent made the presentation and informed that:

i. It is a new washery project. This will be constructed after dismantling the old washery.
ii. The latitude and longitude of the project are $23^0$37'3" and $86^0$28'56" respectively.
iii. The land usage of the project: At present 15 Ha land is barren land which will be used for plant facilities including office etc. and it will be converted to Plantation at the end of the life of washery.
iv. The total estimated water requirement is 1350 m3/day as make up water & air pollution control sprinkling,
v. There is no **R & R** involved. There are no PAFs.
vi. Project **life** is 18 Yrs.
vii. **Transportation**: The new railway siding arrangement for receipt of raw coal and dispatch of washery products i.e. metallurgical coal, washed coal (power) & rejects shall be developed by BCCL through suitable modification/extension of the existing railway siding. The fast loading system (3600tph) for loading of metallurgical coal, washed coal (power) and rejects have been considered. The rejects produced from the proposed

Bhojudih Coal washery will be dispatched to customer through railway by BCCL.

viii. **Cost**: Total capital cost of the project is Rs. 152.2 Crores. CSR Cost: As per CIL's policy, the company will spend 5% of the retained earning of the previous year subject to a minimum of Rs. 5/- per tonne of coal production. No R&R Cost. Environmental Management Cost: as per norms.

ix. **Water body**: The quantity of make-up water required for the proposed washery is about 0.30 MGD. Damodar River flows at a distance of 2.5 Km N.

x. **Water Management of Plant:** The Washery is based on zero discharge system. Total makeup water demand is 0.30 MGD which will be met from adjacent Damodar River water which 2.5 km away. The makeup water will compensate for the loss of moisture with product and meet the water demand for dust suppression and evaporation losses etc. The process water from jig & HM cyclone will be clarified in radial thickeners and clear water will be re-circulated in the plant. The tailings will be routed through slime ponds and overflow water will be re-circulated in the process.

xi. **Water body**: The quantity of make-up water required for the proposed washery is about 0.30 MGD. Damodar River flows at a distance of 2.5 Km N.

xii. **Water Sprinkling System**: Rain Jet Water Sprinkling system of adequate capacity and number shall be installed at various dust generating operations and loading/ transfer points.

xiii. **Approvals**: Board's approval obtained on 21.09.2013 by BCCL Board.

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

xv. **Forestry issues**: No forest area involved for washery.

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

15.18.2 The Committee after detailed deliberations has **recommended the project** of granting standard TOR for the washery with the following specific ToRs:

i. The Washery shall have no coal transportation by road and shall use water from alternate arrangements and not from underground water.

ii. The proponent shall submit air quality data which is not more than 3 years old.

15.19 Expansion of Surkha (North) Lignite Mine Project (from 3 MTPA to 5 MTPA in ML of 3672 ha) of M/s Gujarat Mineral Development Corp. Ltd., located in Tehsil Ghogha, dist. Bhavnagar, Gujarat – Extension of TOR.

15.19.1 The proposal is of Expansion of Surkha (North) Lignite Mine Project (from 3 MTPA to 5 MTPA in ML of 3672 ha) of M/s Gujarat Mineral Development Corp. Ltd., located in Tehsil Ghogha, dist. Bhavnagar, Gujarat requesting for extension of the validity of ToR**.**

15.19.2 The TOR was granted to the project 23.03.2012. The proponent informed that since the mine plan approval was pending with the Ministry of Coal, extension of validity of TOR is requested.

15.19.3 The **Committee has recommended** the extension of validity of TOR by one year i.e. upto 22.03.2015.

*****

Annexure 1

LIST OF PARTICIPANTS IN 15th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 27th -28th June, 2014 IN NEW DELHI.

Sl. No.	List of Members	
1.	Prof. C.R. Babu	Member
2.	Dr. T. K .Dhar	Member
3.	Shri Jawahar Lal Mehta	Member
4.	Shri N. K. Verma	Member
5.	Shri G. S. Dang	Member
6.	Shri P. D. Siwal	Member
7.	Dr. Shankar Bala	Member
8.	Dr. Manoranjan Hota	Director & Member Secretary
9.	Shri. P. R. Sakhare	Deputy Director

Annexure 2

LIST OF PROPONENTS PARTICIPATED IN THE 15th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 27th -28th June, 2014 ON COAL SECTOR PROJECTS.

15.1 Moher & Moher Amlori Extension coal blocks of M/s Sasan Power Ltd.,

1. Shri Bijan Mishra
2. Shri Bimal Bashu
3. Shri Jagat Paikara
4. Shri Mukund Dongre
5. Shri Shashank Yagrich
6. Shri J. S. Aggarwal
7. Shri Harender Kumar
8. Shri Unnikrishnan

15.2 Baranj OC project of M/s Karnataka EMTA Coal Mines Ltd.,

1. Shri M. R. Kamble
2. Shri T. Sannappa
3. Shri Bikash Mukherjee
4. Shri A. R. Sharma
5. Shri Nirmal Kumar Shah
6. Shri S. C. Chartrjee
7. Shri N. C. Mukharjee
8. Shri Partha Sarathi Roy

15.3 Tara (East & West) Coal Block of M/s Bengal EMTA Coal Mine Ltd.,

Absent

15.4 DurgapurII/Sariya Coal of M/s DB Power Limited,

1. Shri Pankaj Bharadwaj
2. Dr. Marish Sharma

15.5 Fatehpur East Coal Block of M/s Fatehpur East Coal Private Ltd.,

1. Dr. Arvind Kumar
2. Shri R. Srinivasan
3. Shri N. K. Prasad
4. Shri Vikas Aggarwal
5. Shri Amarnath
6. Shri Shiv Shanar Rai
7. Shri Deepak Kumar
8. Shri Swapnendu Maiti
9. Shri Ratnesh Kotiyal

10. Dr. J. K. Moitra

15.6 Nawapara UG Expansion of M/s South Eastern Coalfields Ltd.

1. Shri R. P. Thakur
2. Shri U. T. Kanzarkar
3. Shri Amit Saxena
4. Shri Manoj Kumar
5. Shri D. Srivastava

15.7 Cluster 5 of M/s Eastern Coalfields Ltd.,

1. Shri Ramesh Chandra
2. Shri J. N. Biswal
3. Shri G. Prasad
4. Shri Anand Shekhar

15.8 Argada Sirka Group Mixed Mines of M/s Central Coalfields Ltd.

1. Shri Pushkar
2. Dr. Anindya Sinha
3. Shri P. K. Swin
4. Shri Alok Kumar
5. Shri J. Chakrovarty
6. Shri Soumitra Singh
7. Dr. Manoj Kumar

15.9 Discussion on suggestions of Ministry of Coal on "clusters approach" for Coal Mining.

15.10 Karo OCP of M/s Central Coalfields Ltd.,

1. Shri P. K. Swin
2. Dr. A. Sinha
3. Shri Alok Kumar
4. Shri J. Chakrovarty
5. Dr. A. Sinha
6. Shri Pushkar
7. Shri Soumitra Singh
8. Dr. Manoj Kumar

15.11 Talabira-II & III Opencast Project of M/s Mahanadi Coalfields Limited,

1. Shri Vinod Kumar
2. Shri D. Srivastava
3. Shri Jitendra Singh
4. Dr. A. K. Samantaray
5. Shri D. Bhattacharya

6. Shri S. K. Bhar
7. Shri S. K. Patel
8. Shri B. P. Mishra
9. Shri P. R. S. Mani
10. Shri Soubhagya K. Tripathy
11. Shri A. T. Tiwary
12. Shri Shambhu Jha
13. Shri Darshan Mishra

15.12 Topa Expansion OCP, Interlinked Coking Coal Washeryproject of M/s Central Coalfields Ltd.,

1. Shri P. K. Guin
2. Dr. A. Sinha
3. Shri Alok Kumar
4. Shri J. Chakrovarty
5. Dr. A. Sinha
6. Shri Pushkar
7. Shri Soumitra Singh
8. Dr. Manoj Kumar

15.13 Gopal Prasad OCP of M/s MJSJ Coal Ltd.,

1. Shri S. K. Bhar
2. Dr. A. K. Samantaray
3. Shri R. K. Sinha
4. Shri Manish Yadav
5. Shri P. M. Prasad

15.14 Ghusick Expansion UGP of M/s Eastern Coalfields Ltd.

1. Shri Ramesh Chandra
2. Shri J. N. Biswal
3. Shri G. Prasad
4. Shri Anand Shekhar

15.15 Kapuria UG Mine of M/s Bharat Coking Coal Ltd.,

1. Shri D. C. Jha
2. Shri V. K. Sinha
3. Shri S. K. Datta
4. Shri Kumar Rajeev
5. Shri Armit Roy
6. Dr. EVR Raju

15.16 Hingula-II OC Expn. Project (Phase-III) of M/s Mahanadi Coalfields Limited

1. Dr. A. K. Samantaray

2. Shri Jitendra Singh
3. Shri P. M. Prasad
4. Shri A. K. Tiwary
5. Shri D. Bhatter
6. Shri S. K. Bhar
7. Dr. Shambhu Jha
8. Shri manish Yadav
9. Shri R. K. Sinha
10. Shir U. K. Mohanty

15.17 Chendipeda-Chendipeda-II OCP (Phase-I) of M/s UCM Coal Company Ltd.,

1. Shri Pramod Kumar
2. Shri K. K. Jain
3. Shri K. R. Singh
4. Shri N. K. Verma
5. Shri Atul Tiwari
6. Shri Mukesh Chandra
7. Shri Kamran Rizvi
8. Shri H. K. Agarwal
9. Shri Vikram Vyas
10. Shri Uma Shankar
11. Dr. B. Chandra
12. Shri B. S. Sodhi

15.18 Bhojudih NLW Coal Washery project of M/s Bharat Coking Coal Ltd.,

1. Shri D. C. Jha
2. Shri V. K. Sinha
3. Shri S. K. Datta
4. Shri. C. Krishnan
5. Shri Kumar Rajeev
6. Shri Armit Roy
7. Dr. EVR Raju

15.19 Surkha (North) Lignite Mine Project of M/s Gujarat Mineral Development Corp. Ltd.,

1. Shri B. P. Pati
2. Shri P. K. Samantray
3. Dr. D. A. Panchry
4. Shri. A. G. Pal

****

ANNEXURE-3

GENERIC TOR FOR COAL WASHERY

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

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

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

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

(iv) Collection of one-season (non-monsoon) primary base-line data on environmental quality ?air (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

(xxxviii) Corporate Environment Responsibility:

a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

*****

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 break up of water requirement for the various mine operations should be given separately.

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

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

(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.

(xxxvii)Submission of sample test analysis of:

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

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

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?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.

(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. 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.

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

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

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

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

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

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

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

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

* Representative case as an example

Table 2: Stage-wise Cumulative Plantation

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

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

c) 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.

d) 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