MINUTES OF THE 25th EAC (THERMAL & COAL MINING PROJECTS) MEETING SCHEDULED FOR 13th – 14thNOVEMBER, 2014

The 25th EAC (Thermal & Coal mining projects) Meeting was held on 13th – 14thNovember, 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 23rd EAC meeting held on 16th -17thOctober, 2014.

C. The following proposals were considered:

25.1 Lajkura Open Cast Expansion (from 3.0 MTPA to 4.5 MTPA in an ML area of 721.29 ha); latitude21°48'39" to 21°49'55" (N) and longitude 83°53'15" to 83°54'50" (E) of M/s Mahanadi Coalfields Limited, Dist. Jharsuguda, Odisha – Expansion under 7(ii) of EIA Notification, 2006

25.1.1 The proposal is for Expansion under 7(ii) of EIA Notification, 2006 of Lajkura OC Expansion (from 3.0 MTPA to 4.5 MTPA in an ML area of 721.29 ha) of M/s Mahanadi Coalfields Limited, Dist. Jharsuguda, Odisha. The proponent made the presentation and informed that:

i. EC for Expansion from 1.0 MTPA to 3.0 MTPA was granted by MoEF vide letter J-11015/423/2008-IA.II dated 12.03.2013.
ii. The latitude and longitude of the project are 21°48'39" to 21°49'55" (N) and 83°53'15" to 83°54'50" (E) respectively.
iii. There is no Joint Venture.
iv. The proposal has the coal linkage to Thermal power plants KPKD, KRPH, VZP, VSPC, Chandrapur CD, MIGK, KIG, Bhusawal, Parli, Paras, STDV etc. Captive power Plants: - Steel Plant Raurkela, Usha Martine Gamariha and Damanjodi.
v. The land usage of the project will be as follows:

Pre-Mining:

Sl.	Item	Total for 3.0 Mty	Addl. land for incremental production (1.5Mty)	Total for 4.5 Mty
1	Quarry excavation	398.34	--	398.3
2	Safety zone (existing)	38.38	--	38.38
	Safety zone (proposed expansion project) (excluding dump falling in this zone)	52.11	--	52.11
3	dump area (external) (existing)	37.50	--	37.5
	dump area (external) (expansion)	151.63	--	151.6
4	Infrastructure	33.61	--	33.61
5	Rationalisation of project boundary	9.72	--	9.72
6	Safety zone (proposed expansion project)	42.39*	--	42.39*
	Mining lease area (1 to 5)	**721.29**	--	**721.3**

6	Residential colony	24.95	--	24.95
7	Rehabilitation colony	32.00	--	32
	Outside Lease area (6 to 7)	**56.95**	--	**56.95**
	Total :	**778.24**	--	**778.2**

Post- Mining:

Post-mining land use							
S.N.	**Category**	**Land use (in ha)**					
		Plantation	**Water body**	**Dip side slope & haul road**	**Built-up area**	**Undis-turbed**	**Total**
1.	Quarry excavation	326.00	17.17	55.17	--	--	398.34
2.	Safety zone (existing)	7.68	--	--	--	30.70	38.38
	Safety zone (proposed expansion project) (excluding OB dump falling in this zone)	10.42	--	--	--	41.69	52.11
3.	OB dump area (external) (existing)	37.50	--	--	--	--	37.50
	OB dump area (external) (expansion)	151.63	--	--	--	--	151.63
4.	Infrastructure	6.72	--	--	26.89	--	33.61
5.	Rationalisation of project boundary	9.72	--	--	--	--	9.72
	Mining lease area (1 to 5)	549.67	17.17	55.17	26.89	72.39	721.29
6.	Residential colony	5.00	--	--	19.95	--	24.95
7.	Rehabilitation colony	6.40	--	--	25.60	--	32.00
	Outside Lease area (6 to 7)	11.40	--	--	45.55	--	56.95
	Total :	561.07	17.17	55.17	72.44	72.39	778.24

Core area :

Sl	**Particulars**	**Existing 3.0 Mty**	**Addl land for Incremental 1.5 Mty**	**Total 4.5 Mty**
a)	Agriculture	-	-	-
b)	Forest	156.67	-	156.67
c)	Waste land	-	-	-
d)	Grazing	3.11	-	3.11
e)	Surface water bodies	5.87	-	5.87
f)	Others(Specify)	555.64	-	555.64
	Total	721.29	-	721.3

vi. The total geological reserve is 88.22MT. The mineable reserve 59.44 MT, extractable reserve is 59.44 MT. The per cent of extraction would be 86.33 %.

vii. The coal grade is F & G. The stripping ratio is 3.40 m3/T. The average Gradient is 30- 50. There

will be 4 seams with thickness ranging upto 22.24 M.

viii. The total estimated water requirement is 1448 m3/day (Potable:588 KLD, Industrial: 860 KLD). The level of ground water ranges from 0.75 m bgl to 9.0 m bgl

ix. The Method of mining would be opencast using Shovel Dumper Mining Technology

x. There is three external OB dump with Quantity of 47.50 Mbcm in an area of 106.63 ha with height of 81.50 meter above the surface level and one internal dump with Quantity of 311.85 Mbcm in an area of 398.34 ha.

xi. No void will be left after the mining.

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 14 years as on 01.04.2014.

xiv. **Transportation:** Coal transportation in pit by Tippers, Surface to Siding by Tippers and loading at siding by Pay loader/ SILO.

xv. There is No additional R&R is required for the proposed project. There are 186 PAFs for the existing project.

xvi. **Cost**: Total capital cost of the project is Rs. 43.27 Cr (additional capital investment for 2.5 Mty-normative & 3.0 Mty Peak). CSR Cost Rs. 32.93 crores/year. No additional cost is required for R&R. Environmental Management Cost Rs. 27.26/ Te (as per EIA-EMP.) + Mine closure cost of Rs.86.75 Cr.

xvii. **Water body:** Baghmara nalah flowing adjacent to the proposed mine.

xviii. **Approvals:** Ground water clearance is not applicable as the area is not falling under critical area as per CGWA. Mining plan approval obtained on 13.10.2014. Mine Closure Plan Approved by MCL Board on 22.06.2011 for 3.0 Mty.

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 156.67 ha for mining. Forest Clearance (stage-I) for 159.18 ha. has been obtained vide letter No. 8-28/2014-FC DT: 29.07.2014.

xxi. Total **afforestation** plan shall be implemented covering an area of 561.07 ha at the end of mining. Green Belt over an area of 34.54 ha. Density of tree plantation 2500 trees/ ha of plants.

xxii. **Court cases/ violation:**

a. State Govt. has filed a case against the proponent under section 15 and 16 of the Environment (Protection) Act, 1986 in the court of Chief Judicial Magistrate vide case no. 288/2013 dated 23.02.2013 for exceeding production beyond EC capacity . Case is presently in High Court, Odisha.

b. Fifteen Land compensation related cases are under consideration by the court.

xxiii. **Public Hearing** was held on 22.01.2011.

25.1.2 **EC Compliance report: The compliance report of the**, Regional Office, MoEFCC at Bhubaneshwar vide letter no. 106-696/EPE dt: 30.10.2014 was deliberated in the EAC meeting. The Committee has noted the Action taken for compliance by the Project which, inter alia, are as follows:

a) Social audit has been carried out in 40 peripheral villages of MCL, by Tata Institute of Social Science (TISS) Mumbai. Major recommendation includes ensure the availability of safe drinking water to the villagers.; Company can work with panchayat and run the community toilets; Company can plan an intervention to increase the employability for

the women; Company with the collaboration of Gram Panchayat can provide solar lights or work on electricity.

b) A new pond has been created in Madhuban Nagar (R&R site) recently. Deepening & cleaning of existing village pond are taken up periodically. Drinking water supply has been made to peripheral villages (Balput, Katapalli, Bundia, Kudopali, Ainapali, Sanjob, Chuakani, Madhuban Nagar, Lamtibahal, Ramgarh, Brajrajnagar).

c) De-silting of Settling tank of ETP completed at a cost of 2.20 lakhs. Proposal for additional ETP of 40 cum/hr has been processed. STP(0.5 MLD) is under construction Recycling arrangement has been envisaged in all the above treatment facilities. Work of recycling arrangement in the existing ETP has started and will be completed by January 2015.

d) CSR works are identified with the involvement of the local Panchayat in fulfilment of the CSR policy of MCL & budgetary allocations have been made. Need assessment of all the major CSR works is being carried out by RPDAC (Rehabilitation & Periphery Development Advisory Committee). This is a designated and unique body created Govt. of Odisha. The occupational health surveillance report of the employees has been submitted in the half yearly compliance report up to March 2014 ending

e) The plantation programme for the year 2015-16 will be taken up in the mentioned area. The soil and water conservation programme have been planned and are under implementation including cleaning of garland drains.

25.1.3 The Committee, after detailed deliberations, sought the following information for further consideration:

i. The progress of construction of silo is not satisfactory and requires to be speeded up. Firm commitment along with approved plan for setting up of silo plant by March, 2016 be submitted.
ii. Installation of in-pit crushing system may be explored and report submitted.
iii. No extra OBD shall be created for the expansion.
iv. All the action plans under the CEPI need to be adhered to.
v. Details of rail and Road transport of Coal from the mine to the end user be submitted.
vi. There are five mines of MCL in the Ib Valley. The Proponent is advised to prepare detailed status of voids, OBDs and total cost including timeframe for re-handling.
vii. A comparative table of the baseline information of Air and Water quality of the pre-project, present situation and the expansion stage be presented.
viii. Piezometers upto the depth of mine level be installed for ground water monitoring.

25.2 Belpahar Opencast Coalmine Expansion Project (6 MTPA to 9 MTPA in an ML area of 1444.053 ha + 59.63 Ha outside ML area)total area 1503.683 Ha; latitude $21^0$42'20" to 21^0 47' 00" N and longitude 83^0 49' 35" to $83^0$53'00" E of M/s Mahanadi Coalfields Ltd located in Ib Valley Coalfields, in villages Darlipali, Chharla, Jurabaga (South) and Kirarama, Tehsil Banaharpali, District Jharsuguda, Orissa. Expansion under 7(ii) of EIA Notification, 2006.

25.2.1 The proposal is for Expansion under 7(ii) of EIA Notification, 2006 of Belpahar Opencast Coalmine Expansion Project (6 MTPA to 9 MTPA in an ML area of 1444.053 ha + 59.63 Ha outside ML

area) total area 1503.683 Haof M/s Mahanadi Coalfields Ltd located in Ib Valley Coalfields, in villages Darlipali, Chharla, Jurabaga (South) and Kirarama, Tehsil Banaharpali, District Jharsuguda, Orissa. The proponent made the presentation and informed that:

i. The project was accorded EC vide letter no. J-11015/189/2008 –IA.II(M) dt.25.02.2013.
ii. The latitude and longitude of the project are $21^0$42'20" to $21^0$47' 00" N and 83^0 49' 35" to $83^0$53'00" E respectively.
iii. The land usage of the project will be as follows:

Pre-Mining:

Sl.#	**Purpose**	**Land in ha (for 6.0 Mty)**			**Addl. land required (for 3.0 Mty incremental) (in ha)**			**Total Land (in ha) For 9.0 MTPA**		
		Forest	Non-forest	Total	Forest	Non-forest	Total	Forest	Non-forest	Total
1.	Quarry excavation	79.010	527.493	606.503	0.00	0.00	0.00	79.010	527.493	606.503
2.	Safety zone for blasting	0	259.910	259.910	0.00	0.00	0.00	0.000	259.910	259.910
3.	OB dump	0	55.330	55.330	0.00	0.00	0.00	0.000	55.330	55.330
4.	Infrastructure	44.210	338.300	382.510	0.00	0.00	0.00	44.210	338.300	382.510
5.	Rationalization of project boundary	0	139.800	139.800	0.00	0.00	0.00	0.000	139.800	139.800
	Mining lease area [Sub-total of (1 to 5)]	123.220	1320.833	1444.053	0.00	0.00	0.00	123.220	1320.833	1444.053
6.	Residential Colony	0	59.630	59.630	0.00	0.00	0.00	0.000	59.630	59.630
7.	Resettlement site	0	0	0	0.00	0.00	0.00	0.000	0	0
Grand Total :		**123.220**	**1380.463**	**1503.683**	**0.00**	**0.00**	**0.00**	**123.220**	**1380.463**	**1503.683**

Post- Mining:

Sl.No.	Land use during Mining	Land Use(ha)				
		Plantation/Agriculture	Water Body	Public Use	Undisturbed	TOTAL
1	External OB Dump	50.33	0	0	0	**50.33**
2	Excavation	448.94	157.563	0	0	**606.503**
3	Top soil Dump	5	0	0	0	**5**
4	Roads& Infrastructure	76.502				**76.502**
5	Built up area				355.638	**355.638**
6	Green Belt	10	0	0	0	**10**
7	Undisturbed Area	209.8			189.91	**399.71**
	TOTAL	800.572	157.563	0	545.548	**1503.683**

Core area :

Sl.#	Purpose	Land in ha (for 6.0 Mty)			Addl. land required (for 3.0 Mty incremental) (in ha)			Total Land (in ha)		
		Forest	Non-forest	Total	Forest	Non-forest	Total	Forest	Non-forest	Total
1.	Quarry excavation	79.010	527.493	606.503	0.00	0.00	0.00	79.010	527.493	606.503
2.	Safety zone for blasting	0	259.910	259.910	0.00	0.00	0.00	0.000	259.910	259.910
3.	OB dump	0	55.330	55.330	0.00	0.00	0.00	0.000	55.330	55.330
4.	Infrastructure	44.210	338.300	382.510	0.00	0.00	0.00	44.210	338.300	382.510
5.	Rationalisation of project boundary	0	139.800	139.800	0.00	0.00	0.00	0.000	139.800	139.800
	Mining lease area [Sub-total of (1 to 5)]	**123.220**	**1320.833**	**1444.053**	**0.00**	**0.00**	**0.00**	**123.220**	**1320.833**	**1444.053**

iv. The total geological reserve is 43.23 MT. The mineable reserve 39.34 MT, extractable reserve is 39.34 MT. The per cent of extraction would be 91%.

v. The coal grade is G-13. The stripping ratio is 1: 3.04 Cum/tonne. The average Gradient is 4 to 6 degree. There will be 2 seams with thickness ranging 22 mtr

vi. The total estimated water requirement is 3.285 MLD. The level of ground water ranges from 1.53m to 8.99 m bgl.

vii. The Method of mining would be by opencast with shovel-dumper combination

viii. There is five external OB dump with Quantity of 19 Mbcm in an area of 55.33 ha with height of 20 to 30 meter above the surface level and one internal dump with Quantity of 95.008 Mbcm in an area of 153.335 ha.

ix. The final mine void would be in 157.563 Ha with depth of 15 to 40 m. and the total quarry area is 606.503 Ha. Backfilled quarry area of 448.94 Ha shall be reclaimed with plantation. A void 157.563 Ha with depth of 15 to 40 m 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 6 Years.

xii. **Transportation**: for 6.0 MTPA Coal is transported from pit head to UTLS and BOCM -6 railway sidings by tippers. The distance of coal transportation is 3-4 km. 75 % of coal produced (4.5 Mt) was transported by rail. The remaining coal 1.5 Mty was transported by road. And for incremental production 3.0 MTPA Transportation of coal from the mine to consumers shall be 100% through Railway rakes.

xiii. There is **R & R** involved. There are 657 PAFs.

xiv. **Cost**: Total capital cost of the project is Rs. 181.19 Crores. CSR Cost Rs. 19 crores/year. R&R Cost Rs. 472.35 lakhs. Environmental Management Cost Rs. 21.16 crores.

xv. **Water body**: Lilari Nallah is flowing adjacent to mine.

xvi. **Approvals**: Ground water clearance is not applicable. Board's approval obtained on 04.02.2011. Mining plan has been approved on 11.12.2012. Mine Closure Plan approved by MCL, Board sent to MOC for approval.

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

xviii. **Forestry issues**: Total forest area involved 123.22 ha for mining. Stage II FC obtained for complete forest land.

Area (in ha)	Stage-I FC issued vide letter No.& date
103.52	8-104/91FC dt.02.06.2000
19.70	8-104/1991 FC dt.16.09.2014
123.22	Total

xix. Total **afforestation** plan shall be implemented covering an area of 756.77 ha at the end of mining. Green Belt over an area of 70 ha. Density of tree plantation 2500 trees/ ha of plants.

xx. **Court cases/ violation:** State Govt. has filed a case against the proponent under section 15 and 16 of the Environment (Protection) Act, 1986 in the court of Chief Judicial Magistrate vide case no. 288/2013 dated 23.02.2013 for exceeding production beyond EC capacity . Case is presently in High Court, Odisha.

xxi. **Public Hearing** was held on 07.03.2003. The issues raised in the PH includes Air pollution due to coal transportation roads; to ensure minimum pollution with regard to water, air and noise pollution; employment for the affected areas; Compensation for the persons in close proximity of the mines; Maintenance of the tree plantation etc.

xxii. The project is located in IB Valley Coalfield, in Jharsuguda District, categorized as Critically Polluted Area (CPA) but the moratorium has been lifted on 17 Sep 2013, due to implementation of Action Plan prepared by Odisha SPCB for the abatement of pollution resulting in decline in pollution Index below the CPA minimum criteria.

25.2.2 **EC Compliance report:** The Compliance Monitoring Report of the RO, MOEFCC at vide letter no. No.101-856/EPE dt.13.10.2014 was deliberated in the EAC meeting. The Committee has noted the Action taken: which inter-alia as follows:

i. One additional AAQ monitoring station has been already set up and thus increasing the total number from 3 to 4 number of air monitoring station viz., Bandbahal township, near MDTP, near quarry No.5 and near quarry No.3 (Tiffin point) has already been made based on environmentally and ecologically sensitive location criteria in consultation with State Pollution Control Board, SPM, RPM, SO2 and NOx level in the ambient air is monitored. The monitoring of PM 2.5 has already started from February, 2014, PM10 and monitoring of the heavy metals begin in our nearby mine.

ii. All the drains including side weeds and vegetation are cleaned. Sedimentation tank cleaning etc. have been completed. The treated mine water and workshop water are recycled and reused for vehicle washing and water spraying for dust suppression.

iii. The renovation of MDTP has been completed. The treated effluent are fully recycled and reused for mine purpose and plantation. Artificial recharge of ground water in the ML area is being done by four mine sumps inside the mine as well as one Eco-pond nearby the mine. Further, four number of roof top rain water harvesting system at the mine offices are also

contributing towards the rain water harvesting for ground water recharge. Four more check dams are going to be constructed inside the mine for ground water recharge and to check soil erosion. Rain water harvesting system has been provided. Further, the total surface run-off water of the mine is being collected and stored in the various mined out sump.

iv. The drivers of the vehicles operating in the mine have been asked to carry the PUC certificate with them.

v. A study was carried out by the Department of Environmental Sciences and the Department of Life Sciences, Sambalpur University on flora and fauna (Biodiversity) in the Core and buffer zone of the mine. The report was included in the EMP of 4.50 Mty.-VI. No. endangered or endemic species were found in the area. Further, this area is not the migratory route for any wild animal.

vi. The renovation of MDTP almost complete. The treated effluent are fully recycled and reused for mine purpose and plantation.

25.2.3 The Committee, after detailed deliberations, sought the following information for further consideration:

i. To furnish details why Forest Clearance was obtained in two stages?

ii. Remote sensing data from NRSA should be obtained and presented with regard to forest cover.

iii. A comparative table of the baseline information of Air and Water quality of the pre-project, present situation and the expansion stage be presented.

iv. Piezometers upto the depth of mine level be installed for ground water monitoring.

v. During expansion MCL should look into integrated mining in Ib Valley.

vi. A sub-Committee of the EAC to visit the project to look into the integrated mining and environment management after the EC is issued.

vii. Mine closure plan be submitted.

viii. PP may submit in tabular form on the EC conditions, Comments of RO, Compliance status and Action Plan thereof.

ix. To explore the possibility for an exclusive coal transport corridor and details furnished. All out should be made to reduce the pollution load after expansion.

25.3 **Cluster 8 (Group of 7 mines of (1.53 MTPA normative to 2.75 MTPA peak in an ML area of 8281 ha; latitude 23^0 39' N to 23^0 45' N and longitude 87^0 0' E to 87^0 6' E) M/s Eastern Coalfields Limited, Dist. Burdwan, West Bengal.**

25.3.1 The proposal is for Cluster 8 (Group of 7 mines of (1.53 MTPA normative to 2.75 MTPA peak in an ML area of 8281 ha) M/s Eastern Coalfields Limited, Dist. Burdwan, West Bengal. The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/106/2011-IA.II(M) dated 27.06.2011 & Revised TOR received vide letter no. J-11015/106/2011-IA.II(M) dated 20.07.2012.

ii. The latitude and longitude of the project are 23^0 39' N to 23^0 45' N and 87^0 0' E to 87^0 6' E respectively.

iii. There are no Joint Venture.

iv. Coal Linkage: Kahalgaon Super Thermal Power Station (KhSTPP), Kahalgaon, Bhagalpur, Bihar; National Capital Power Station (NCPS) or NTPC Dadri, Gautam Budh Nagar, Uttar

Pradesh; Vindhyachal Thermal Power Station, Singrauli, Madhya Pradesh; The West Bengal Power Development Corporation Limited (WBPCDCL); Sipat Super Thermal Power Station or Rajiv Gandhi Super Thermal Power Station at Sipat Bilaspur district Chhattisgarh.; Farakka Super Thermal Power Plant Nabarun Murshidabad West Bengal; Simhadri Super Thermal Power Plant, Visakhapatnam, Andhra Pradesh; Mauda Super Thermal Power Station or NTPC Mauda, Nagpur, Maharashtra;

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

Sl No.	Type Land Use	Present Mining Land Use (ha)	Land Use during Mining (ha)	Post- mining Land Use (ha)
1	Running Quarry	-	29.20	
	Backfilled	-	-	(29.20 Ha Completely backfilled & Planted)
2	Colliery infrastructure	162.0	162.00	62.00 (100 Ha under plantation)
3	Tanks/Water bodies	544.81	544.81	544.81
4	Agriculture / Cultivable	4885.70	4885.70	4885.70
5	Danga/Wasteland	1186.20	1157.00	757.00 (400 Ha under plantation)
6	Settlement /Village/Basti	382.00	382.00	382.00
7	Road & Railways	65.33	65.33	45.33 (20 Ha under plantation)
8	Plantation/vegetation	456.00	456.00	1181.20
9	Built up area	500.96	500.96	400.96 (100 Ha under plantation)
10	Others	98.00	98.00	22.00 (76 Ha under plantation)
Total		**8281.00**	**8281.00**	**8281.00**

vi. The total estimated water requirement is 5160 m^3/day. The level of ground water ranges from 0.80 m to 5.35 m.

vii. There is no external OB dump and 1 internal dump with Quantity of 5.90 Mm^3 in an area of 29.20 ha.

viii. No final mine void. OC quarry will be completely backfilled. The total quarry area is 29.20 Ha. Backfilled quarry area of 29.20 Ha shall be reclaimed with plantation.

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

x. Mine wise life of mine is as follows:

Name of Mine	Production capacity (MTPA)		ML (ha)	Life of Mine (years)
	Normative	Peak		
Bhanora UG Mine	0.20	0.30	1330	>20
Girmint/KDI UG Mine	0.04	0.65	1981	>50
Sirpur UG Mine	0.014	0.024	2338	>20
Sirpur Seam Incline UG Mine	0.105	0.136	279	>25
Ningah UG Mine	0.04	0.10	1072	>50
Mithapur West UG &	0.03	0.04	527	>50
Mithapur OC Patch (29.2 Ha)	0.25	0.30		2
Satgram UG Mine*	0.85	1.20	754	>30
Total	**1.53**	**2.75**	**8281.0**	-

xi. **Transportation:In Pit:** Underground mine- coal tubs at the faces are being hauled by series of rope haulages to surface; Opencast mine- coal is loaded by shovels at face and transported to the

surface coal depot by colliery dumpers.

Surface to siding: Bhanora UG - Coal at surface is transported to the nearby railway siding by rope haulage and then tippled to the ground.

Girmint UG/KDI Colliery – Conveyor from mine to the railway-siding situated close to the mine.

Sripur UG - Coal from Jamuria A& B pits No. 3 incline is being transported to the railway siding by means of dumpers.

S S Incline UG - Coal tubs are being tippled directly into trippers through tippler and transported to Satgram siding, 2 kms from the mine.

Ningha UG - Road transportation of coal is to Satgram Railway Siding, 5 kms from the mine.

Mithapur UG - Coal is being transported to Modern Satgram Rly. siding by trucks. Modern Satgram siding is about 7 to 9 km from the colliery.

Satgram UG – Conveyor transport to Railway Siding.

Loading at siding: Coal is loaded by pay loaders into railway wagons.

xii. There is no **R & R** involved.

xiii. **Cost**: Total capital cost of the project is 315.11 Crores. CSR Cost Provisions for CSR under Community Development have been made @ Rs. 5.00 per tonne of coal produced. This works out to about Rs. 1.35 Cr per annum at 2.75 MTY of coal production (present production from the cluster is only 0.24 MTY). Environmental Management Cost (capital cost Rs. 18.90 crores, annual recurring cost Rs.5.76 crores).

xiv. **Water body**: Damodar River forms the main drainage channel of the area. The drainage is controlled by the perennial Nunia nullah and associated streams. Nunia Nallah flows through the cluster from the north-west to south-east and continues onwards to meet Damodar river.

xv. **Approvals:** Application has been made to CGWA Board for Ground water clearance. Mining plan approval will be submitted later. Mine Closure Plan approval on December, 2013.

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

xvii. **Forestry issues:** No forest area in the cluster.

xviii. Total **afforestation** plan shall be implemented covering an area of 1181.20 ha at the end of mining. Density of tree plantation 1600 trees/ha of plants.

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

xx. **Public Hearing** was held on 15.07.2014, Sripur Area Office under Jamuria Municipal Corporation, Dist - Burdwan, West Bengal. The issues raised in the PH includes reopening of Girmit colliery and proper functioning of KDI incline; regular environmental monitoring; reduce emission during transportation of heavy vehicles; to improve quality of domestic water and drainage system; minimization of environmental pollution; regular water sprinkling etc.

25.3.2 The Committee, after detailed deliberations, sought the following information for further consideration:

i. Approved mine Plan & mine closer plan along with date of Board's Approval be submitted.
ii. Details about the land subsidence be submitted.

25.4 **Cluster No.4 (3 Mines of a combined prod. capacity of 6.35 MTPA and a peak prod. of 7.71 MTPA in a combined ML area of 3352 ha; latitude $23^0$46'30'' N & $23^0$49'30'' N and longitude 86^o52'25" E & 87^o03'46" E) of M/s Eastern Coalfields Limited, located in Raniganj Coalfields, dist. Burdwan, West Bengal.**

25.4.1 The proposal is for Cluster No.4 (3 Mines of a combined prod. capacity of 6.35 MTPA and a peak production. of 7.71 MTPA in a combined ML area of 3352 ha) of M/s Eastern Coalfields Limited, located in Raniganj Coalfields, dist. Burdwan, West Bengal. The proponent made the presentation and informed that:

i. The project was accorded TOR vide letter no. J-11015/106/2011-IA.II(M) dated 27.06.2011 & Revised TOR received vide letter no. J-11015/106/2011-IA.II(M) dated 19.03.2013.

ii. The latitude and longitude of the project are $23^0$46'30'' N & $23^0$49'30'' N and 86^o52'25" E & 87^o03'46" E respectively.

iii. Joint Venture: No Joint Venture.

iv. Coal Linkage : Wardha Power Company Limited ((WPCL),Maharashtra; Kahalgaon Super Thermal Power Station (KhSTPP), Kahalgaon ,Bhagalpur, Bihar; Aravali Power Company Private Limited, Haryana; National Capital Power Station (NCPS) Or NTPC Dadri, Gautam Budh Nagar, Uttar Pradesh; Kanti Thermal Power Station in Kanti, Muzaffarpur, Bihar.

v. Cluster mine details: 1 Underground Mine; 1 Mixed (UG & OC) mine; 1 Proposed OCP.

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

S.No	Type Land Use	Present Mining Land Use (ha)	Land Use during Mining (ha)	Post- mining Land Use (ha)
1	Running quarry		485.00	
	Backfilled		18.00 ha (included in sl. No - 10) area to be backfilled & brought under Plantation[1]	365.00 + 18.00 ha area to be backfilled & brought under Plantation
	Not Backfilled	36.00		
2	External OB dump	27.00	440.0 ha (7.00 ha included in sl. No - 10) existing external OB dump brought under plantation)[2]	440.00 + 7.00 ha To be brought under Plantation
3	Service building/ mine infrastructure	657.75	658.75[3]	600.0 (undisturbed) + 58.75 ha under plantation
4	Rail & Road	45.00	35.0 (10.00 Ha for Itapara OCP)	35.0 (10.00 Ha under plantation)
5	Habitation (total)	371.09	346.09[4]	346.09
	Unstable habitations	11.91	11.91 Ha (included in sl. No - 10)Rehabilitated outside cluster & area to be brought under Plantation	11.91 Ha under Plantation
6	Other built-up areas	27.00	27.00	27.00
7	Agriculture land	1401.00	720.00	720.00
9	Forest land	3.00	Converted to Quarry	Water body
10	Plantation / Natural Vegetation	53.00	89.91	1102.66
		159.00	149.00	
11	River/nallah/pond	92.00	82.00	202.00[5]
12	Barren land	469.25	320.25	320.25
Total		**3353.00**	**3353.00**	**3353.00**

vii. The total estimated water requirement is 4223 m^3/day.

vii. The Method of mining would be Bord & Pillar method for UG mines and Shovel-Dumper combination for OC mines.

viii. There are three external OB dump with Quantity of 378 MCM in an area of 440.00 ha with height of 120.00 M above GL and three internal dump with Quantity of 138.4 Mm^3 (Itapara OCP) + 44.07 Mm^3 (OC Patches) in an area of 408 Ha (Itapara OCP) + 77.00 Ha (OC ha.

ix. The final mine void would be in 120.00 Ha with depth of 30m. and the Total quarry area is 485.00 Ha. Backfilled quarry area of 365.00Ha shall be reclaimed with plantation. A void 120.00 Ha with depth of 30 m 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 will be as follows:

Sl No.	Name of Mine	Lease Area (Ha)	Normative Production (MTY)	Peak Production (MTY)	Mine Life (Years)
1	Khoirabad UG	380.0	No UG potential left as major portion of remaining leasehold area after transfer of 317 Ha is non coal-bearing. Coal at the in-crop is left which can be extracted by opencast only.		-
	Khoirabad OC (new proposal for extracting available reserves in about 10 Ha)		0.10	0.13	4 years
2	Gaurandih UG	1865.0	0.05	0.08	> 50 years
	Gaurandih Block – D Phase – I OC Patch (Quarry area – 17 Ha)		0.40	0.50	5 years
	Gaurandih Begunia Phase – I (Quarry area – 50 Ha)		1.8	2.0	7 years
3	Itapara OCP (New OC proposed, Quarry area – 408 Ha)	1108.0	4.0	5.0	26 years
	Total	**3353.00**	**6.35**	**7.71**	

xii. Transportation: **Coal transportation for underground Mine**: In Pit -coal tubs at the faces by series of rope haulages to surface; Surface to siding: coal from the UG is transported by road to Bonjemehari railway Siding present at a distance of 30 Km. The present transport system will continue till the construction of proposed Itapara Railway Siding. Siding at loading: Coal is loaded by pay loaders into railway wagons. **Coal transportation for Open Cast Mine: In pit:** coal is loaded by shovels at face and transported to the surface coal depot by colliery dumpers; Surface to siding: by road to Bonjemehari railway siding till the construction of Itapara Railway Siding (distance 20 – 30 kms) and siding at loading: Coal is loaded by pay loaders into railway wagons.

xiii. There is no R & R involved. New OC proposal involves shifting of 11 villages/bustees with total population of 6679 (1255 households) R & R Plan prepared for Rs. 224 Cr.

xiv. **Cost**: Total capital cost of the project Rs. 599.88 Crores. CSR Cost Provisions for CSR under

Community Development have been made @ Rs. 5.00 per tonne of coal produced. This works out to about Rs. 2.54 Cr per annum at 5.08 MTY of coal production (present production from the cluster is only 0.0125 MTY). The amount to be spent annually will be significant as the life of most of the mines is more than 25 years. R&R Cost Nil. Environmental Management Cost (capital cost Rs. 20.84 crores, annual recurring cost Rs.12.06 crores).

xv. **Water body**: Nuniajore, a seasonal nallah controls the main drainage system of the cluster-4. After flowing through cluster Nuniajore flows to the south and finally drains into the Damodar River. However, the eastern part of the cluster falls in the watershed of Adjoy River which flows 3 kms from the cluster boundary.

xvi. **Approvals**: Ground water clearance application made to CGWA Board's approval obtained on Itapara OCP approved by Board in August, 2014. Mining plan and mine closer plan approval is not available for the U/G mines, both the existing UG mines are taken over mines after nationalization. The new opencast project proposal has been approved by ECL board. Mine Closure Plan approved on August, 2013.

xvii. **Wildlife issues**: There are no national Parks, wildlife sanctuary, biosphere reserves found in the10 km buffer zone.

xviii. **Forestry issues:** Total forest area involved 3.00 ha falling in proposed quarry area of Itapara OCP. Applied for forest clearance.

xix. Total **afforestation** plan shall be implemented covering an area of 900.66 ha at the end of mining. Density of tree plantation 1600 trees/ ha of plants.

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

xxi. Public Hearing was held on 21/08/2014, Jamgram Community Hall of Baraboni Panchayat Samity, Dist- Burdwan, West Bengal. The issues raised in the PH includes Provision of Water Supply to Villages; Dust suppression; Improvement of road condition; Land reclamation and afforestation; Intensive Plantation programme – plantation of fruit bearing trees; Proper utilization of CSR fund for development; Holding medical camps; Employment to local youth; Compensation to land losers; Adoption of modern technology for preventing fire and subsidence hazards etc.

5.4.2 **The Committee, after detailed deliberations, sought the following information for further consideration:**

i. Approved mine Plan &Mine Closer Plan along with date of Board's approval be submitted.

ii. The TOR was granted vide letter no. J-11015/106/2011.IA.II(M) dated 27.6.2011 for 1.32 MTPA in an ML area of 3339.91 Ha. The PP has requested for deletion of Mohanpur OCP out of the cluster 4, which was to be submitted separately. Ministry issued revised TOR vide letter no. J-11015/106/2011-IA-II (M) dated 19th March, 2013 by removing Mohanpur OCP was deleted from cluster 4. The PP submitted a revised application vide letter no. CIL/DLI/ENV/2012/01 dated 03rd February, 2012 for modification of TOR (Removing Mohanpur OCP and including Itapara OCP) for 6.83 MTPA in an ML area of 3563 Ha. However, the PP again vide letter ECL/GM/ENV./20121/-13/225 dated 18.06.2012 submitted a request for 9.21 MTPA capacity in an area of 3563 Ha. The EIA-EMP report submitted by PP has requested for EC for 7.71 MTPA in an ML area of 3563 Ha. These information submitted by the PP indicated greater inconsistency. The PP may give proper clarification.

iii. Details about the land subsidence be submitted.

iv. EC will be issued after the receipt of the FC for all the mine in the cluster.

25.5 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 Limited, located in Raniganj Coalfields district Purulia, West Bengal - Amendment in EC conditions.

25.5.1 The proposal is for amendment in EC granted to 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; M/s Eastern Coalfields Limited, located in Raniganj Coalfields district Purulia, West Bengal on 22.09.2014.

25.5.2 Proponent made the presentation and informed the following:

Category	No	Condition	Amendments Proposed
OB Management	vii	There shall be no void	There shall be no void in OC patches
Coal Transportation	v	Coal transportation in pit: Underground, mine coal tubs at the phases are being hauled by tugger Haulage & Opencast mine – coal shall be proposed to be transported from pit to surface depot by tippers, surface to siding; coal produced from Parbelia UG shall be transported by **endless haulage** to hoppers at Parbelia Railway Siding existing near the mine pits. **There shall be no truck transportation.** Coal produced from Parbelia OC Patch will be transported to Parbelia Railway Siding located at 3Kms away. Coal produced from Dubeswari UG & OC will be transported by covered trucks to Parbelia Railway Siding and loading to siding. Coal shall be loaded by pay loaders into railway wagons. Transportation of coal from the mine to railway siding should be by **mechanically covered trucks.**	To be substituted with "covered trucks" Sentence to be deleted To be substituted with "**Covered trucks"**
Plantation and Reclamation	xiv	The land after mining shall be brought back for agricultural purpose.	If any agricultural land is degraded due to mining, equivalent area shall be brought back for agricultural purpose after mining is over
Acid Water Treatment Plant	xxix	Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided	This condition is not applicable as the mine water is not acidic.

25.5.3 The Committee after detailed deliberation did not agree to amend the condition nos. v; vii; & xiv as suggested. The committee further directed that they should comeback with the detailed note on implementing the conditions, supporting documents showing the reason why mechanically covered trucks were not feasible, the proponent to put conditions in tender documents for mechanically covered trucks. The land after mining should be brought back to ground level for agriculture purpose to the extent possible.

25.6 Cluster No. 3 (3 Mixed mines of a combined production capacity of 3.33MTPA normative 3.97 MTPA peak capacity in a combined ML area of 1628 ha; Latitude 23^0 44' 30'' N & 23^0 48' 00" N and Longitude 86^0 52' 15" E & 86^0 56' 30" E) of M/s Eastern Coalfield Limited, located in Raniganj Coalfields, dist. Burdwan, West Bengal - Amendment in EC conditions.

25.6.1 The proposal is for amendment in EC granted to Cluster No. 3 (3 Mixed mines of a combined production capacity of 3.33MTPA normative 3.97 MTPA peak capacity in a combined ML area of 1628 ha **of M/s Eastern Coalfield Limited,** located in Raniganj Coalfields, dist. Burdwan, West Bengal on 20.10.2014.

25.6.2 Proponent made the presentation and informed the following:

Category	No	Condition	Amendments Proposed
Coal Transportation	v	The proponent shall make efforts for revival of existing railway line or new railway line within a period of 3 years during which coal can be transported by **mechanically covered trucks.** The proponent shall also explore the possibility of constructing railway siding at the active railway line.	To be substituted with "**Covered trucks"**
Acid Water Treatment Plant	xxix	Acid Water Treatment Plant, volume of water to be treated and disposal of brine should be provided	This condition is not applicable as the mine water is not acidic.

25.6.3 The Committee after detailed deliberation did not agree to amend the condition nos. v & xxix as suggested. The committee further directed that they should comeback with the detailed note on implementing the conditions, supporting documents showing the reason why mechanically covered trucks were not feasible, the proponent to put conditions in tender documents for mechanically covered trucks. The land after mining should be brought back to ground level for agriculture purpose to the extent possible.

25.7 Adriyala Shaft Underground Coal Mining Expansion project (from 2.144 MTPA to 3.14 MTPA in an existing ML area of 340 Ha + 23.90 Ha outside ML area) ; latitude 18^0 39' 03" to 18^0 40' 34" N and longitude 79^0 34' 28" to 79^0 35' 55" E of M/s The Singareni Collieries Company Limited, located in Tehsil Manuguru, dist. Khammam, Andhra Pradesh.- Expansion under 7(ii) of EIA Notification, 2006.

25.6.1 The proposal is for **expansion under 7(ii) of EIA Notification, 2006 of** Adriyala Shaft underground coal mining Expansion project (from 2.144 MTPA to 3.14 MTPA in an existing ML area of 340 Ha + 23.90 Ha outside ML area) of **M/s The Singareni Collieries Company Limited**, located in Tehsil Manuguru, dist. Khammam, Andhra Pradesh. The proponent made the presentation and informed that:

i. The project was accorded EC vide letter no. J-11016/258/2004-IA. II(M) dated 11.10.2004.
ii. The latitude and longitude of the project are 18^0 39' 03" to 18^0 40' 34" N and 79^0 34' 28" to 79^0 35' 55" E respectively.
iii. Joint Venture: No joint venture.
iv. Coal Linkage : NTPC and TSGENCO.
v. The land usage of the project will be as follows:

Pre-Mining:

Land Use Pattern	Area in Ha.
Land diverted from Forest	39.40
SCCL Acquired land	300.60
Mine Take Area	**340.00**
Area outside the mine boundary	**23.90**
Total area required for project	**363.90**

Post- Mining:

Land Use Pattern	Area in Ha.
Plantation area	345.33 Ha
Water Body (Nalla Diversion area)	4.67 Ha
Total	340.00 Ha

Core area :

Description	Within mine boundary	Outside Mine boundary	Total
Pit head infrastructure	1.48	7.47	8.95
Approach Roads	0.23	5.01	5.24
Plantation Existing	-	-	-
For conveyor	-	0.88	0.88
For diversion of bokkalavagu	4.67	10.54	15.21
Total	6.38	23.90	30.28

vi. The total geological reserve is 109.594MT. The mineable reserve 41.84MT, extractable reserve is 41.84 MT. The per cent of extraction would be 100 %.

vii. The coal grade is G-5, G-7 & G-9.The stripping ratio is not applicable. The average Gradient is 1 in 6 to 1 in 7.8. There will be 7 seams with thickness ranging from 1.20 m to 11.27 m.

viii. The total estimated water requirement is 1500 m3/day. The level of ground water ranges between 2.09 m to 4.66 m.

ix. The method of mining would be underground.

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 22 Years.

xii. **Transportation:** Coal transportation in pit by Belt Conveyor, Surface to Siding by Belt Conveyor and loading to the wagon by silo.

xiii. There is R & R involved. There are 750 PAFs.

xiv. **Cost:** Total capital cost of the project is Rs. 1228.39 Crores. CSR Cost Rs. 5 per Tonne. R&R Cost 136.25. Environmental Management Cost (capital cost Rs. 12.07 crores, and revenue cost Rs 8.39/Ton).

xv. **Water body**: SRSP canal and Bokkalavagu are flowing over the mine take area which are proposed for diversion.

xvi. **Approvals:** Ground water clearance applied on 29.03.2005, Board's approval obtained on 27.08.2014. Mining plan has been approved on 08.08.1989. Mine closure plan is an integral part of mining plan.

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

xviii. **Forestry issues:** Total forest area involved 39.40 ha for mining. Total forest land involved in the project was diverted vide 8-109/2005-FC, dated: 2.5.2008.

xix. Total **afforestation** plan shall be implemented covering an area of not applicable as it is underground mine. Green Belt over an area of 335.33 ha. Density of tree plantation 2500 trees/ ha of plants.

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

xxi. **Public Hearing** was held on 20.11.2003.

25.7.2 EC Compliance report: The Compliance Monitoring Report of the MoEF, Regional Office, Bangalore vide letter no. EP/12.1/53,56 & 287/AP, dated: 07.08.2013was deliberated in the EAC meeting. The Committee noted the Action taken for compliance, which inter-alia are as follows:

i. The annual rated capacity of production of coal shall remain 2.144 MTPA;
ii. The surface structures shall cover only 30.28 Ha not fall in forest land; Forestland (surface) shall not be disturbed by the mining operations.;
iii. Diversion of BokkalaVagu will be done only after obtaining the clearance;
iv. Measures for continuous supply of fresh air into the mine;
v. Catch drains and siltation ponds be constructed to arrest silt;
vi. Garland drains should be constructed around the mine;
vii. Pumps of adequate power and capacity shall be used for dewatering;
viii. Regular monitoring of ground water level and quality to be carried out& should meet water requirement of nearby villages(s);
ix. A green belt should be raised for suppression of dust; Subsidence prediction model to be monitored and validated;
x. STP shall be installed in colony. ETP be provided for workshop & CHP;
xi. Digital processing of the entire lease area should be done;
xii. A final mine closure plan should be submitted to MoEFCC.

25.7.3 The Committee, after detailed deliberations, recommended for granting EC with the following specific conditions:

i. Adequate mechanism be put in place for proper subsidence management.
ii. The Committee further desired that a sub-committee may visit the mine to see the technology being adopted for higher capacity underground mining, safety and coal conservation measures, subsidence and u/g environment management measures etc.

25.8 **Mahan-II Opencast Coal Mine expansion Project (from 1 MTPA to 2 MTPA in an ML area of 275 Ha; latitude 23^0 21' 00" to 23^0 22' 51" North and longitude 83^0 12' 33" to 83^0 14' 37" East) of M/s South Eastern Coalfields Limited, located in villages Chaura and Paraswarkala, Tehsil Bisrampur, District Surguja, Chhattisgarh- Expansion under 7(ii) of EIA Notification, 2006.**

25.8.1 The proposal is for **Expansion under 7(ii) of EIA Notification, 2006 of** Mahan-II Opencast Coal Mine expansion Project (from 1 MTPA to 2 MTPA in an ML area of 275 Ha) of **M/s South**

Eastern Coalfields Limited, located in villages Chaura and Paraswarkala, Tehsil Bisrampur, District Surguja, Chhattisgarh. The proponent made the presentation and informed that:

i. The project was accorded EC vide letter no. **J-11015/209/2006 IA.II(M) dated 22.10.2007** for 1.00 MTY over a project area of 275.00 Ha. Out of this, 222.231 Ha. land has already been acquired. Mining shall not be carried out in the 52.769 Ha. of forest land inside the project area before obtaining forest land clearances
ii. The latitude and longitude of the project are **23^0 21' 00" to 23^0 22' 51" North** and **83^0 12' 33" to 83^0 14' 37" East** respectively.
iii. Joint Venture: No Joint Venture
iv. It has basket coal linkage to thermal power plants
v. The land usage of the project will be as follows:

Pre-Mining Land Use (in Ha.)

For expansion it is proposed to be operated in two phases. In first phase total land will be 222.231Ha i.e. project **without use of Forest land**. In second phase after obtaining the forestry clearance for 52.769Ha of Forest land, total land will be 275.000Ha.

First Phase: (Without Forest Land)

S.No.	Land use	Area in Ha
1.	Forest	Nil
2.	Tenancy Land	208.836Ha.
3.	Govt. Land	13.395Ha
	Total land	**222.231Ha.**

Second Phase: (With Forest Land)

S. No.	Land use	Area in Ha
1.	Forest	52.769
2.	Tenancy Land	208.836Ha.
3.	Govt. Land	13.395Ha
	Total land	**275.000Ha. (including First Phase)**

Post mining:

S.No.	Land use	Area in Ha
1.	Total quarry area : i. Void / Water body : ii. Reclaimed Internal Dump/ Backfilled Area	 56.000 Ha 150.105 Ha
2.	Reclaimed External OB dump:	12.500Ha
3.	Infrastructure, Colony & roads etc	20.000Ha
4.	Safety zone :	36.395Ha
	Total Land	**275.000Ha**

Core area:

First Phase:

S.No.	Land use	Area in Ha
1.	Total quarry area : iii. Void / Water body : iv. Reclaimed Internal Dump/ Backfilled Area	 56.000Ha 97.336Ha
2.	Reclaimed External OB dump:	12.5000Ha
3.	Infrastructure, Colony & roads etc	20.000Ha.
4.	Safety zone :	36.395Ha
	Total Land	**222.231Ha**

Second Phase:

S.No.	Land use	Area in Ha
1.	Total quarry area : i. Void / Water body : ii. Reclaimed Internal Dump/ Backfilled Area	 56.000Ha 150.105Ha
2.	Reclaimed External OB dump:	12.500Ha
3.	Infrastructure, Colony & roads etc	20.000Ha
4.	Safety zone :	36.395Ha
	Total Land	**275.000Ha**

vi. The total geological reserve is 17.56 MT. The mineable reserve 15.20 MT, extractable reserve is 10.89 MT. The per cent of extraction would be 100%.

vii. The coal grade is C to F grade. The stripping ratio is 2.77 cum/Te of coal. The average Gradient is 1-2 Degree. There will be six seams with thickness ranging 0.53 m to 5.10 m.

viii. The total estimated water requirement is 1490 m3/day. The level of ground water ranges from 1.90m to 10.25m.

ix. The Method of mining would be Open Cast mining with shovel- dumper.

x. There is one external OB dump with Quantity of 2.0 million cum in an area of 12.5 ha with height of 30 meter above the surface level and two internal dump with Quantity of 40.16 million cum in an area of 150.105 ha.

xi. The final mine void would be in 56.00 Ha with depth of 70.0 m. and the total quarry area is 206.105 Ha. Backfilled quarry area of 150.105 Ha shall be reclaimed with plantation. A void of 56.0 ha with depth of 70.0 m which is proposed to be converted into a water body.

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 11 Years.

xiv. **Transportation**: Coal transportation in pit by Tippers, Surface to Siding by Tipper and loading at siding by pay loaders into rail wagons..

xv. There is **R & R** involved. There are 375 PAFs.

xvi. **Cost**: Total capital cost of the project is Rs. 37.45 Crores. CSR Cost Rs. 1.0 crores. R&R Cost Rs 4.96 Crores. Environmental Management Cost Rs. 603.63 Lakhs.

xvii. **Water body**: Mahan River flows at a distance of 1.5-2.00 Kms, Harpur Nallah at a distance of 1 km &Gohangar Nallah adjacent to the project boundary.

xviii. **Approvals**: Ground water clearance is not applicable as it is in Safe category, Board's approval obtained on 19.01.2006. Mining plan has been approved on 19.1.2006. Mine Closure Plan

approval obtained on 27.01.2014.

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 in the mining area is 52.769 ha. Registration for diversion of. 75.055 Ha forest land has been done, Registration No. NSR/MJM/2006/016 dated 07.03.2006. Pending at Collector Balrampur for issuance of NOC.

xxi. Total **afforestation** plan shall be implemented covering an area of 162.605 ha at the end of mining. Green Belt over an area of 6.0 ha. Density of tree plantation 2500 trees/ ha of plants.

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

xxiii. **Public Hearing** was held on 06.11.2005.

25.8.2 The Compliance Monitoring Report as submitted by the Regional Office, MoEFCC Bhopal vide letter no. 3-1/2014(Env)/632 dated 12.03.2014 was deliberated in the EAC meeting.(The Committee has noted the Action taken for compliance by the project proponent.) The Committee has noted the Action taken for compliance by the project which inter-alia as follows:

i. Top soil is excavated and stacked separately initially & then it was spread on top of OB dump for development of green belt. Presently topsoil is excavated & simultaneously spread on dump tops. There is a separate site earmarked for top soil.

ii. 2.0 million m^3 OB had been dumped in external OB dump sites up to maximum 30 mt height with benches of about 15 mt each and it is biologically reclaimed. The RL of top of external OB dump is 569.35 m whereas the RL of ground level is 540m. After second year OB is being dumped internally in decoaled area. Chattisgarh Rajya Van Vikas Nigam Limited is entrusted with the job of plantation at OB dump.

iii. Garland drain of size 1.5m x1.5m cross-section and 3.0 km length has been constructed around the periphery of the mine to arrest silt and sediment flows from soil. One no of Sedimentation tanks of size 15mx5mx1.5m have already been commissioned. One more sedimentation pond also exist inside the mine. The sump and drains have been designed to cater to 200 mm of rain in a day .The mine sump capacity is approximately size 15 million Gallon. Total expenditure on construction & maintenance of garland drains in 2012-13 isRs. 7.00 lakh.

iv. A retaining wall of 270 meter of 1.2 to 1.5 meter height have been constructed at the toe of the dumps to check runoff & siltation due to rainfall. The expenditure is around Rs. 15.00 lakhs**.** The wall will be further expanded as the dumping progresses.

v. The mine is in the 4th year of operation & 12.5 Ha external OB dumps had been planted with 25000 plants during 2010 – 2011, in 2011-12 10000 plants had been planted as avenue plantation at the mine. In 2013-14 another 25000 plants have been planted in the backfilled area. Plants of all varieties like-Fruit bearing/Medicinal/Timber value / Ornamental had been planted. The density of the trees is 2500 plants per Ha.

vi. The rehabilitation & resettlement is done in consultation with state government officials Balance employment will be provided after production of requisite certificate by the tenant. Balance resettlement will be done after vacation of the house by the tenant. The resettlement site has not been provided as tenants are interested to take cash grant in lieu of land.

The Committee while deliberating the Compliance of the EC conditions has noted with concern that "Conservation Plan for endangered species including Sloth Bear and Monitor Lizard found in and around the project area shall be formulated in consultation with the State Forest and Wildlife Departments" as a part of EC condition dated 22.10.2007 has not been complied . In this connection the PP has informed that a letter has been written to DFO, State Government but the matter is still pending. As the plan is related to endangered species in and around project area. It is directed that immediate action should be taken for preparation of Conservation plan. The proponent has informed further that Flora Fauna conservation plan prepared by PDIL, Sindri in the year 2006, which needs modification for EC conditions. DFO, Ambikapur has been requested and it is hereby stated that the same will be completed within six month. The Committee was of the view that even after 7 years the PP has not yet got the Conservation Plan for endangered species. This must be done immediately.

25.8.3 The EAC received a representation from one of the NGOs requesting Ministry to address issues viz; several clearance conditions are not being met satisfactorily; conservation plan for the endangered Species& garland drain. The proponent has responded to the issues and submitted the following:

1. Flora & Fauna study for the core and buffer zone and conservation with habitat restoration plan of Mahan –II OC project of Bhatgaon area has been prepared & submitted.
2. Garland drain of size 1.5m x1.5m cross-section and 3.0 km length has been constructed around the periphery of the mine to arrest silt and sediment flows from soil. One no of Sedimentation tanks of size 15mx5mx1.5m have already been commissioned. One more sedimentation pond also exist inside the mine. The sump and drains have been designed to cater to 200 mm of rain in a day. The mine sump capacity is approximately size 15 million Gallon. Total expenditure on construction & maintenance of garland drains in 2012-13 isRs. 7.00 lakh.

25.8.4 The Committee, after detailed deliberations, recommended for granting EC with the following specific conditions:

i. The Committee was of the view that even after 7 years the PP has not yet got the Conservation Plan for endangered species approved. This plan with the approval of the Competent Authority must be submitted to the MoEFCC before the EC is granted. Further this matter may be taken up with the Ministry of Coal so that compliance are made by the proponents.
ii. Top soil shall be protected for its fertility. Soil management plan be prepared for implementation.
iii. Action plan proposed by the PP should be incorporated as one of the conditions in the EC.
iv. Conservation plan for endangered species be prepared for implementation.
v. Garland drain be provided.
vi. Pizometers should be installed upto the depth of the mine
vii. CSR should be focused through Swatch Bharat Programs. Water supply should be maintained by proponent under the CSR Number of toilets in schools must be increased.
viii. PP has committed that additional Rs50 Lakhs would be incurred towards CSR activities.
ix. Higher capacity equipment 30 T tippers should be used for coal transportation from mine to Rly. Siding 41 km away.
x. There shall be no extra OB dumps whatsoever.
xi. Five additional air quality monitoring stations be provided.
xii. Ground water clearance shall be taken as applicable.

25.9 Amanand Opencast Coal Mine expansion Project (from 1.15 MTPA to 2.15 MTPA in a total project area of 884.71 Ha; latitude $23^0$07'39''N to $23^0$09'48'' North and longitude $82^0$01'58''E to $82^0$04'51''East) of M/s South Eastern Coalfields Limited, located in Tehsil Kotma, District Anuppur, Madhya Pradesh- Expansion under 7(ii) of EIA Notification, 2006.

25.9.1 The proposal is for **Expansion under 7(ii) of EIA Notification, 2006 of** Amanand Opencast Coal Mine expansion Project (from 1.15 MTPA to 2.15 MTPA in a total project area of 884.71 Ha) of **M/s South Eastern Coalfields Limited**, located in Tehsil Kotma, District Anuppur, Madhya Pradesh. The proponent made the presentation and informed that:

i. The project was accorded EC vide letter no. No. J-11015/46/2002- IA. II (M) dated 05.10.2004 for 1.15 MTY.

ii. The latitude and longitude of the project are $23^0$07'39"N to $23^0$09'48" North and $82^0$01'58"E to $82^0$04'51"East respectively.

iii. Joint Venture: There is no joint venture.

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

Pre-Mining:

Types of land			**Total**
Forest	**Tenancy**	**Govt.**	
Nil	**832.70***	**52.01***	**884.71**

*includes Water Body-10.933 Ha (8.546 Ha in tenancy land+ 2.387 Ha in Govt. land)

Post- Mining:

1. Reclaimed internal dump within decoaled pit.	644.17
2. Water body within decoaled pit.	71.50
3. Reclaimed external OB dump.	20.00
4. Infrastructure, service buildg., workshop & approach road.	12.67
5. Rehabilitation site	52.19
6. Colony	6.85
7. Safety Zone	77.33
Total	**884.71**

Core area :

	Forest	**Tenancy**	**Govt.**	**Total**
1.Quarry	Nil	675.954	39.716	715.67
2.External O.B. Dump	Nil	20.00	-	20.00
3.Infrastructure, service buildings, workshop& approach road.	Nil	11.327	1.343	12.67
4.Rehabilitation site	Nil	52.19	-	52.19
5.Colony	Nil	6.85	-	6.85
6.Safety Zone	Nil	66.379	10.951	77.33
Total	**Nil**	**832.70**	**52.01**	**884.71**

v. The total geological reserve is 87.79MT. The mineable reserve 36.04 MT, extractable reserve is 36.04 MT. The per cent of extraction would be 100 %.

vi. The coal grade is D. The stripping ratio is (Av)- 4.58. The average Gradient is 2 degree (1 in 28). There will be one seam with thickness ranging 1.54 m to 6.87m.

vii. The total estimated water requirement is (Average demand: 1073 m3 /day and Peak demand 1238 m3 /day). The level of ground water ranges Pre-monsoon water level vary from 6.05m to 12.53m

(Average:8.64 m) Post-monsoon water level varies from 2.05 m to 6.60 m(Average: 4.09m).

viii. The Method of mining would be opencast.

ix. There is one external OB dump with Quantity of 3.60 Mbcm in an area of 20 Ha with height of 30 m above the surface level and two internal dump with Quantity of 161.40 Mbcm in an area of 644.17ha.

x. The final mine void would be in 71.5 Ha with depth of 37 m. and the Total quarry area is 715.67 Ha. Backfilled quarry area of 644.17 Ha shall be reclaimed with plantation. A void of 71.50 Ha with depth of 37 m which is proposed to be converted into a water body

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

xii. The **life of mine** is 34 Years.

xiii. **Transportation**: Coal transportation in pit by dumpers, Surface to Siding by tippers and loading at siding by pay loaders into rail wagons /road. Railway Siding has been proposed just along the mine boundary joining SE railway- Bishrampur Chirimiri section.

xiv. There is **R & R** involved. There are 575 PAFs. R & R colony & package already covered in existing EC involving 52.19 Ha of land and is being implemented. Land compensation and jobs has already been awarded. Provision of Total Corpus amount of Rs 52.57 crores has been done in approved Mine Closure Plan.

xv. **Cost**: Total capital cost of the project is Rs. 83.39 Crores. CSR Cost Rs 5.00/tonne of production (minimum) or 5 % of net profit. R&R Cost 6.927. Environmental Management Cost (capital cost Rs. 14.2146 crores; annual recurring cost Rs. 1.0047 crores).

xvi. **Water body**: Banki seasonal nallah is located to the east of the block and flows from north to south.

xvii. **Approvals**: Ground water clearance applied on 11.10.2001, Board's approval obtained on 25.09.2003. Mining plan has been approved by CIL Board on 25.09.2003. Mine Closure Plan approval on 28.10.2013.

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

xix. **Forestry issues**: No forest land involved in mining lease area.

xx. Total **afforestation** plan shall be implemented covering an area of 741.50 ha at the end of mining. Green Belt over an area of 77.33 ha. Density of tree plantation 2500 trees/ ha of plants.

xxi. A **court cases** vide SLP No. 2915/2009, SECL vs Naresh Singh & 29 others, is pending for process of land acquisition.

xxii. **Public Hearing** was held on 23.08.1999 at Tehsil office Kotma.

25.9.2 EC Compliance report: The Compliance Monitoring Report sent by the Regional Office, MoEFCC Bhopal vide letter no. 3-12/2004(ENV)/1071 dated 26.05.2014 was deliberated in the EAC meeting. The Committee has noted the Action taken for compliance by the project which inter-alia as follows:

1. The quantity of useful top soil excavated & preserved till 31.03.2014 is 130750 Cubic Meter.
2. O.B. Dumps being stacked at earmarked dump site. Back filling has been started as per schedule from December 2012 but due to typing mistake it was reported as Dec'2013.
3. Garland drain of size 2.0 M x 3.0 M cross section and 2.5 km length has been constructed around the periphery of the mine ton arrest silt and sediment flows from soil. Two settling

ponds have been constructed and surface run of from OB and waste dump were guided into ponds before discharge.

4. The work of retaining wall has been completed
5. The copy of the approved progressive Mine Closure Plan has been submitted to RO MOEF Bhopal on 10.06.2014.
6. Total 2500 saplings have been planted around infrastructure area during 2014-15 as submitted. Green Belt will be developed by planting the native species around the ML area after getting physical possession of the land.
7. Regular monitoring of ground water level in the well located in periphery of Amadand OCP is being done. Data of water level has been submitted vide ref no. SECL/NO(E&F)/J&K/2013/1348 dated 04.08.2013.
8. Installation of Piezo-meters has been completed.
9. Mine sump of 2.4 mill. gallon capacity & surface sedimentation pond of 10.00 MG capacity (04 nos.) have been created which acts as water recharge basin.
10. Mobile water sprinkler of capacity of 5KL with avg. 10-12 trips /day have been deployed to arrest the dust at siding. In addition plantation (5000 samplings) has been raised at CHP area.
11. P A has obtained consent to operate from SPCB which was valid till 31.01.14 & further on-line application has already been made on dated 21.01.2013 for renewal of the same as submitted.
12. PUC for all heavy and light commercial vehicles has been ensured. Vehicles emissions are periodically (six month) monitored and a certificate to this effect is being issued to each vehicle by an authorized agency of MP/CECB. Reports of the same were submitted.
13. Base line survey has been started since May 2014. Government land of Darsagar village has been earmarked & proposal has been recommended by Collector Anuppur. It is pending at R&R Ministry of State Govt., since August 2013.
14. Conservation plan for flora & fauna has been prepared by Chattisgarh Rajya van Vikas Nigam Limited.
15. Land restoration / Reclamation monitoring through remote sensing technique has been started in Nov. 2012. Copy of report has already been submitted to MOEF, RO Bhopal along with the compliance report ending June 2013.
16. The copy of the approved progressive Mine Closure Plan has been submitted to RO MOEF Bhopal on 10.06.2014.

25.9.3 The Committee, after detailed deliberations, sought the following information for further consideration:

i. Details as to why CHP has not been constructed along with action plan be submitted.
ii. Status of the railway corridor be submitted
iii. Compliance report to the EC conditions be submitted in tabular form along with the action plan and time frame.
iv. What would be social impact by reducing the life of mine?.
v. The modeling for present level and for expansion in mine area and transportation area be submitted.
vi. A comparative table of the baseline information of Air and Water quality of the pre-project, present situation and the expansion stage be presented.

25.10 **Moher & Moher Amlori Extension coal blocks project (expansion from 16 MTPA to 20 MTPA, in area of 2037 ha; Latitude24^0 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}&MoherAmlohri 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).**

25.10.1 The proposal is for Moher & Moher Amlori Extension coal blocks project [**expansion from 16 MTPA to 20 MTPA, in area of 2037 ha**; (15.39 Km^2 Moher Block – 10.70 Km^2 & Moher Amlohri Extension Block – 4.69 Km^2)] of M/s Sasan Power Limited, Dist. Singrouli, Madhya Pradesh. The proposal was last considered in 15th EAC meeting held on 27th -28th June, 2014. The Committee 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 there from to be furnished.
iv. The proponent has submitted and agreed that coal transportation to Chintrangi 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.

25.10.2 The proponent made the presentation and informed that:

i Action plan based on the Compliance Monitoring Report obtained from Regional Office, MoEF, Bhopal submitted to MoEF, Delhi on 2nd July 2014. A copy of the above has also been submitted to Regional Office, MoEF, Bhopal at the same time. SPL further submitted an updated status of the Action Plan on 9th September 2014 to Regional Office, MoEF, Bhopal with a copy to MoEF, Delhi. Concurrence on the Action Plan from Regional Office, MoEF, Bhopal has been submitted to MoEF, Delhi on 1st October 2014

ii At 100% PLF, Sasan UMPP will require around 18 – 19 MTPA of coal, depending on the quality of coal and heat rate of Sasan UMPP. Ministry of Coal (MoC) vide Gazette Notification dated 17th February 2010 has specified that surplus quantity of coal up to a maximum quantity of 9 MTPA from the coal mines of Moher, Moher-Amlohri Extension and Chhatrasal shall be used in the thermal power plant of M/s Chitrangi Power Private Limited for generation of power. A copy of MoC's Gazette notification dated 17th February 2010 has already been submitted to MoEF,

Delhi on 2nd July 2014 along with a note on utilization of coal from captive coal blocks allocated to Sasan UMPP.

iii A point-wise compliance status in response to the show cause notice issued by Madhya Pradesh Pollution Control Board (MPPCB) has been submitted vide letter dated 9th January 2013. A copy of the show cause notice issued by SPCB (MPPCB) and Sasan Power Ltd's response to the show cause notice has already been submitted to MoEF, Delhi on 2nd July 2014 . There has not been any legal action from MPPCB in this regard.

iv Transportation of coal from coal mine to Chitrangi Power Plant has been proposed to be carried out by means of an overland conveyor (OLC). The route survey for transportation of coal has been completed and detailed study is under progress.

v This will be applicable based on consideration of the present proposal under MoEF's Office Memorandum dated 19th December 2012.

vi The revised mine closure plan has been submitted to MoEF, New Delhi on 19th April 2014. A copy of the revised mine closure plan was again submitted on 4th August 2014. The approval letter for the mine closure plan by Ministry of Coal (MoC) dated 6th September 2011 has been submitted to MoEF, New Delhi on 2nd July 2014. A note on utilization of coal from captive coal blocks allocated to Sasan UMPP has also been submitted to MoEF, New Delhi on 2nd July 2014. Escrow Agreement has been signed and a sum of Rs. 958.41 Lakhs has been deposited as Mining Closure Expenditure for the period 2011-12 to 2013-14.

vii The mode of coal transportation from Moher and Moher-Amlohri Extension coal mine to Sasan UMPP was amended from MGR to covered overland conveyor (OLC) vide MoEF letter no. J-13011/15/2006-IA.II (T) dated 5th February, 2013by Thermal Coal Committee. The Ministry, vide the above mentioned letter, informed that it has 'No Objection' on adoption of mechanized Closed Conveyor System in lieu of MGR system of coal transportation based on environmental benefits established. A copy of MoEF's letter no. J-13011/15/2006-IA.II (T) dated 5th February, 2013 for amendment of transportation condition from MGR to OLC has been submitted to MoEF, New Delhi on 2nd July 2014. Request letter has been sent to EAC (coal mining) to consider and accord approval for change of mode of coal transportation from MGR to OLC on 11th November 2014

viii The documents in relation to expansion of capacity of Moher and Moher-Amlohri Extension coal mine have already been submitted to MoEF, Delhi on 2nd July 2014 which includes Analysis of Ambient Air Quality with enhanced peak production capacity from 16 MTPA to 20 MTPA. Environment & Social Management Plan (ESMP) with enhanced peak production capacity from 16 MTPA to 20 MTPA.

ix Detailed OB handling programme has been described under Chapter-II of the Environment Impact Assessment (EIA) report submitted to MoEF, Delhi on 24th February 2014. Stage wise reclamation plan and land use planning for grassing & plantation are given under Chapter 9 & 10 of the submitted EIA report.

x Before onset of monsoon every year, surface drainage design of the mine area is planned and implemented as per the monsoon preparation plan and mine drainage plan prepared on the basis of peak rainfall data and surface runoffs. A brief status of the activities undertaken: i. Main drain of size 8m at top x 6m at bottom x 2 to 3.5 m has been de-silted by 15th May 2014. ii. 8.44 km of Garland drains around the working area and OB dump have been completed by 10th June 2014. c) The details with respect to the Project drainage system has been submitted to MoEF, New Delhi on 2nd July 2014. Along with photographs of garland drains constructed.

xi Details of project land use is given below:

S.No.	Particulars	Area (Ha)
A	Total Project Area	2,037
1	Break-up of Project Area	
	- Mine lease Area	1,539
	- Land for external OB dump & infra facilities	498
	Total	2,037
2	Type of Land	
	- Forest Land (Forest Clearance (FC) has been obtained vide letters no. F. No. 8-92/2008-FC dt. 25.05.2010 and F. No. 8-91/2008-FC dt. 28.05.2010 respectively.)	1,198
	- Tenancy Land	839
	Total	**2,037**

xii A copy of the affidavit has been submitted stating that no investigation or their matters are under consideration of the IMG.

xiii A sub-committee of EAC comprising Shri. J. L. Mehta, Member EAC; Shri. T. K. Dhar, Member EAC along with the officials of Ministry Shri Sakhare, Scientist C, visited coal mines between during 07th - 9th November, 2014. Report on site visit enclosed as **Annexure - 8**

25.10.3 The EAC has received a representation from one of the NGOs requesting Ministry to address issues viz; Rehabilitation **& Resettlement & Overburden dump**. The proponent has responded to the issues and submitted the following:

1. Rehabilitation & Resettlement:

i. SPL in consultation with the senior district officials, expert organizations like Energy and Resources Institute (TERI) and local population has formulated a comprehensive and development oriented rehabilitation package for the displaced families/persons. R & R plan of the Company provide benefits to project affected persons as per Government of Madhya Pradesh's (GoMP) Model Rehabilitation & Resettlement Policy 2002 and the National R&R Policy 2007 but it also offers several benefits which are distinctly superior to those under the State and Central policies.

ii. To minimize the impact, the PP is undertaking several initiatives to ameliorate the socio-economic impact. Some of these initiative include construction of a housing colony for the affected families, provision of free transport facilities, disbursement of monetary incentives such as rehabilitation grant and pension, formation of local institutions or strengthening the existing ones, capacity building for better livelihood opportunities, providing free education and health care facilities by qualified persons and experts, etc.

iii. The Project Company has also undertaken several sustainable livelihood initiatives keeping

in view the indigenous knowledge, capabilities and traditional values of the local communities.

iv. SPL has constructed a model R&R colony "Krishna Vihar" in Amlohri & Naugarh village for resettlement of coal mine affected families.

v. The PP has informed that they have made adequate measures for providing better roads, Water and sanitation; School; Community/Panchayat Hall; Cooperative store / Daily market; Religious Places; Health Centre; Other infrastructure in the R&R Colony etc.

2. **Overburdened dump:**

a. Moher and Moher-Amlohri Extension opencast coal mine of Sasan UMPP is being operated using a combination of Draglines (2 nos.) of 61 m^3 bucket capacity & 100 m boom length and Shovel – Dumper system consisting of 42 m^3bucket capacity shovels (6 nos.) and 240 Ton Dump Trucks (55 nos.). This mining technology was found to be most suitable for mining operations considering the present geo-mining conditions. The (higher) UPPER benches in the mine are planned to be worked upon by Shovel – Dumper system and Draglines are planned to be deployed for mining of parting between Turra and Purewa Seams.

ii. The total volume of OB to be handled is about 1,893.73 Mm^3, out of which 1,689.38 Mm^3 (about 89.21%) will be dumped internally within the coal block area and balance about 204.35 Mm^3 (around 10.79%) will be dumped in the external dump located on the southern side of South Pit in the non-coal bearing area.

iii. Overburden (OB) dump formation at Moher and Moher-Amlohri extension coal mine is in accordance with the recommendation of Slope Study Analysis.

iv. To ensure the stability of OB dump environmental control measures have been integrated into the mining operation to mitigate the effects of mining operations and allied activities and to maintain sound ecological balance. As per the year wise excavation plan, the mine benches will remain active till the end of

v. Trees shall be planted on the Overburden dump as per Environment Management Plan (EMP) approved by Ministry of Environment and Forests (MoEF) in a phased manner. A green belt shall be made along all the service buildings and Coal Handling Plant. The species to be planted in the area are Mango, Mahul, Sal etc. Local species as available will also be planted. In addition to compensatory afforestation, a green belt will also be developed in vacant areas, around office buildings, garages, stores etc. along the road sides and on the external dump. Only local species will be planted under the guidance of the state forest department.

vi. Bio-reclamation of the overburden dumps refers to creation of vegetation cover over the barren overburden dumps.

25.10.4 As amendment has been done in Thermal EAC meeting w.r.t transportation of coal by *Over Land Conveyor*. The proponent has also requested EAC Coal to consider the same with regard EC to the coal mining.

25.10.5 **The Committee, after detailed deliberations, recommended for granting EC with the following specific conditions:**

i. There shall be no diversion of coal to any other end user other than for which it has been intended thermal power plant(s).
ii. There shall be no increase in Mine Lease Area.
iii. Transportation of Coal shall be through Over Land Conveyor.
iv. During expansion there will be no additional external Dumps.
v. Garland drain should be provided.
vi. OB slope stability needs to be expedited.
vii. Grassing to be done on top soil to protect its fertility.
viii. Extra toilets in the school be provided under CSR program.
ix. Gabion wall / retaining wall / pitching of boundary wall be provided.
x. Other conditions as recommended by the Site Visit need to be incorporated.

25.11 Expansion of Talcher Coal Washery Project (from 2.34 MTPA to 5 MTPA capacity in a total project area of 10 Acers; latitude 85^0 -10'-10.11" East and longitude 20^0 -55'-25.22" North) of M/s Aryan Energy private. Limited, located at Village-Diajharan, District-Angul, Odisha.

25.11.1 The proposal is for seeking TOR for Expansion of Talcher Coal Washery Project (from 2.34 MTPA to 5 MTPA capacity in a total project area of 10 Acers) of M/s Aryan Energy private. Limited, located at Village-Diajharan, District-Angul, Odisha. The proponent made the presentation and informed that:

i. The plant is in operation well before EIA Notification, 2006 wherein, EC was not applicable .The existing project is under operation after getting NOC and Consent to Operate from State Pollution Control Board. No EC was obtained for the existing plant as it was exempted from the EC.
ii. The latitude and longitude of the project are 85^0 -10'-10.11" East and 20^0 -55'-25.22" North respectively.
iii. Joint Venture: No Joint Venture
iv. Coal Linkage: Getting raw coal from Bhubaneswari OCP for consumer having FSA whose coal will be washed.
v. Total land utilization :

Sl. No.	Description	Area in Acres
1.	Plant Area	1.25
2.	Coal Storage Yard	1.00
3.	Office Area	0.25
4.	Internal Road	2.00
5.	Pond & Open area	1.50
6.	Green Belt	3.50
7.	Expansion	0.50
	Total	**10.00 acres**

vi. Total water requirement:

Process units	Source	Water Consumption (KL / Day)		
		Existing Plant	Proposed Plant	Total after Expansion
Plant Process	Rain water harvesting pond (after treatment)	60	80	140
Dust Suppression system / Plantation		20	20	40
Domestic Consumption	Ground Water / Supply Water	10	10	20
Total		**90**	**110**	**200**

vii. **Solid Waste generation**: 1.30 MTPA of washery rejects shall be generated. These rejects shall be supplied to the nearby power generation companies for use in FBC / AFBC Boilers to generate the power.

viii. **Waste water management**: There will be no waste water discharged outside the plant premises from the process unit except loss due to the increase in moisture content of the coal. The waste water generated will be treated in the Effluent Treatment Plant (ETP) and sent to the Rain Water Harvesting Pond from where it will be pumped again into the system. The water loss in the process is met from the rain water storage pond and IDCO water supply. The domestic effluent generated to the tune of 14 KL /day shall be sent to the soak pit through septic tank.

ix. **Transportation**: Raw Coal shall be transported by road through covered trucks /railway from the nearby coal mines of M/s Mahanadi Coalfield Limited. whereas the transport of Clean Coal/ Rejects shall be by Rail. The railway siding, situated at a distance of 200 m from the plant boundary is being utilized with due permissions for transport of both clean coal & coal rejects.

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

xi. **Cost**: Total capital cost of the project is Rs. 20 Crores. CSR Cost Rs. 0.20 Crores Per Annum. No R&R Cost involved. Environmental Management Cost Rs. 1.60 Per Annum.

xii. **Water body:** River Brahmani flows at distance of approx. 04 Km East of the project and a perennial Nala Nandi Jher is at a distance of approx 3.5 Km South of the Project.

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

xiv. **Forestry issues:** No forest area involved in the project area.

xv. **Public hearing**: The plant is located in Industrial Estate, Talcher thus public hearing not applicable as per EIA notification 2006

25.11.2 The Committee deliberated Compliances to the Consent to operate. The committee noted the Compliances which inter- alia are as follows:

i. The coal rejects are sold out regularly to power plants having FBC /AFBC boiler for power production.

ii. Regular water sprinkling is being carried out within the plant area to control dust suppression.

iii. The approach road and all internal roads are made concrete.

iv. Leveled all the area in & around the washery.

v. Settling pit is cleaned every year before the rainy season.

vi. Agreed to provide polymer sheet of 25mm thickness at sides of the chutes, in all transfer point

to control noise pollution. The noise level standard shall be 85 dB (A) Leq for 8 hr exposure in operation /working zone.

vii. Agreed to cover the primary impact zone by rubber sheet of 40 mm thickness in order to prevent noise pollution or concreted in & around coal washeries.

viii. Complied with the ambient air quality standards in respect of noise as notified under (EP) rule, 1986 at the coal washing shall confirm to the noise limit 75 dB(A) Leq& 70 dB(A) Leq during day and night respectively

25.11.3 The Committee, after detailed deliberations, recommended for granting TOR with the following specific TORs:

i. The PP may be exempted for PH if it is confirmed that it is located within the Industrial estate and as per the EIA Notification, 2006.

ii. The washery shall be zero discharge.

iii. Rain water harvesting shall be adopted. Storm water should not be stored in Rain Water Harvesting Pond

iv. Being an expansion project a sub-Committee shall visit to plant to ensure that the earlier conditions stipulated by SPCB are compiled within totality and that expansion of doubling the capacity of washery would not create any pollution load.

25.12 Basundhara Global Coal Washery project (5 MTPA capacity in an ML area of 10.11 ha; Latitude 22^{o} 01' 9.22" N and Longitude 83^{o} 48' 44.19" E) of M/s Global Coal & Mining Pvt. Limited, Dist. Sundargarh, Orissa.-TOR- further consideration.

25.12.1 Basundhara Global Coal Washery project (5 MTPA capacity in an ML area of 10.11 ha) of **M/s Global Coal & Mining Pvt. Limited**, Dist. Sundargarh, Orissa. The proposal was last considered in 14th EAC meeting held on 27th -28th March, 2014. The Committee sought following information for further consideration of the project:

i. Detailed plan of action for meeting the water requirement

ii. Details of hydrology of the area along with the details of rainfall in the area.

iii. Details of linkage for coal as well as rejects be provided along with MOU with the end users.

iv. Details of de-coaled area vis-à-vis back-filled area for mine water.

25.12.2 The proponent made the presentation and informed that:

i. Action Plan for meeting the water requirement : Annual water requirement of plant 66315 m^3 ; Total Runoff from the Plant area 71442 m^3 Considering evaporation loss as 5% & seepage loss as 1%, total water available within the plant area from rainfall per annum after considering all losses 67155.48 m^3 . It can be observed that water available within the plant area from rainfall is much higher than the plant's requirement per annum. By harvesting the rainwater, the plant can run without drawing water from surface or ground water sources. However, if required, the water will be drawn from the Basundhara River during the rainy season with permission from Water Resources Department, Govt. of Odisha.

ii. Detail hydrology report has been prepared by considering the annual rainfall of the area i.e.

1547.5 mm. The study area is underlain by Gondwana formations, which comprises mainly of sandstones, siltstones, shales, conglomerates and coal beds deposited in a rhythmic manner. The project site Duduka is in the catchment of Basundhara river (it drains into IB river and finally into the River Mahanadi) lying within IB watershed which is a part of Middle Mahanadi Sub-Basin of Mahanadi basin; the nearest gauging station in this Sub-basin is Hemgiri. Duduka village is at a distance of 500 m from Basundhara river and at a distance of around 20 Km from River Ib at its confluence with Basundhara river. The perennial surface flow in Basundhara river during lean season (May-2012) is with a velocity of 0.8 m/s. The average width of the channel is 14.8 m and in lean period is 4.6 m. As it has been analyzed from GIS based detailed mapping and stream ordering of Basundhara catchment, the catchment area of Basundhara is 596.33 Sq. Km. and the total Drainage Length is 1,742.42 Km. So the Drainage Density can be calculated as 2.92 Km. per Sq. Km., which is indicative of a good quantity of surface runoff. The average annual runoff generated in Basundhara catchment can be calculated by considering the runoff coefficient to be 0.2 (considering vegetation, open area and limited settlements) and the average annual rainfall to be 1,547.5 mm. The Basundhara river generates average annual surface runoff of 18,462 HaM per year, which can be a good source of water if tapped in a proper and effective manner. A barrage has been proposed by the Dept. of Water Resources, Govt. of Odisha at just upstream of the confluence of Basundhara and IB river near the village Charbhati in order to cater the industrial requirements.

iii. Basundhara Coalfield is a part of IB Valley coalfield having a reserve of 23.04 BT and this area is an upcoming coalfield having mines belonging to MCL (Mahanadi Coalfields Limited) naming Basundhara East, Basundhara West, Kulda, Siaramala and Gopalpur. MCL is planning to produce around 100 MT by 2020 from Basundhara Field itself.

iv. As the coal of this area is having higher ash content, consumers who are having FSA with MCL have to get the coal washed before dispatch. We have been approached by many power companies to get their coal washed, one of customer is Hinduja National Power Corporation Limited at Vishakhapatnam. A letter received from HNPCL is enclosed. We have already anMoU with IMFA, Choudwar having AFBC Boiler for use of coal rejects. Since we are only coal washing plant which is not engaged in any mining activities and therefore do not create any de-coaled area, therefore this item is not applicable to our proposal for setting up of a independent washery.

25.12.3 **The Committee, after detailed deliberations, recommended for granting TOR with the following specific TORs:**

i. Permission for extraction of water be taken from the Competent authority.
ii. The washery shall be zero discharge.
iii. Rain water harvesting shall be adopted. Storm water should not be stored in Rain Water Harvesting Pond.

25.7 Any other matters with the permission of the Chair.

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Annexure 1

LIST OF PARTICIPANTS IN 25th EAC (THERMAL & COAL MINING PROJECTS) MEETING HELD ON 13th – 14th November, 2014 ON COAL SECTOR PROJECTS.

Sl. No.	**LIST OF PARTICIPANTS Expert Appraisal Committee (Coal Mining)**	
1.	Prof. C.R. Babu	Member
2.	Shri JawaharLal Mehta	Member
3.	Shri T. K .Dhar	Member
4.	Shri A. K. Bansal	Member
5.	Shri N. K. Verma	Member
6.	Shri G. S. Dang	Member
7.	Dr. Miss Asha Rajvanshi	Member
8.	Shri S. Bala	Member
9.	Dr. S. D. Attri	Member
10.	Dr. Manoranjan Hota	Director & Member Secretary
11.	Shri. P. R. Sakhare	Scientist -C

Annexure 2

LIST OF PROPONENTS PARTICIPATED IN 25th EAC (THERMAL & COAL MINING PROJECTS) MEETING HELD ON 13th – 14th November, 2014 ON COAL SECTOR PROJECTS.

25.1 Lajkura OC Expansion of **M/s Mahanadi Coalfields Limited.**

1. Shri Debashish Roy
2. Shri K. S. Ganapathy
3. Dr. Shambhu Jha
4. Dr. A. K. Samantaray
5. Shri J. P. Singh
6. Shri D. Bhattacharya
7. Shri B. N. Jha
8. Shri Jitendra Singh
9. Shri Satyajeet Ojha
10. Shri C. Jayadav

25.2 Belpahar OC Expansion Project of **M/s Mahanadi Coalfields Limited.**

1. Shri Debashish Roy
2. Shri K. S. Ganapathy
3. Dr. Shambhu Jha
4. Dr. A. K. Samantaray
5. Shri J. P. Singh
6. Shri D. Bhattacharya
7. Shri B. N. Jha
8. Shri Jitendra Singh
9. Shri Satyajeet Ojha
10. Shri C. Jayadav

25.3 Cluster 8 of **M/s Eastern Coalfields Limited.**

1. Shri B. R. Reddy
2. Shri J. N. Biswal
3. Shri G. Prasad
4. Shri AnandSekhar
5. Shri S. Chakraborty
6. Shri S. C. Kundu.
7. Shri S. K. Sinha
8. Shri Sandeep Sharma

25.4 Cluster No.4 of **M/s Eastern Coalfields Limited.**

1. Shri B. R. Reddy
2. Shri J. N. Biswal
3. Shri G. Prasad
4. Shri Anand Sekhar
5. Shri S. Chakraborty
6. Shri S. C. Kundu.

7. Shri S. K. Sinha
8. Shri Sandeep Sharma

25.5 Cluster 5 of **M/s Eastern Coalfields Limited.**

1. Shri B. R. Reddy
2. Shri J. N. Biswal
3. Shri G. Prasad
4. Shri Anand Sekhar
5. Shri S. Chakraborty
6. Shri S. C. Kundu.
7. Shri S. K. Sinha
8. Shri Sandeep Sharma

25.6 Cluster No. 3 of **M/s Eastern Coalfields Limited.**

1. Shri B. R. Reddy
2. Shri J. N. Biswal
3. Shri G. Prasad
4. Shri Anand Sekhar
5. Shri S. Chakraborty
6. Shri S. C. Kundu.
7. Shri S. K. Sinha
8. Shri Sandeep Sharma

25.7 Adriyala Shaft Project Coal Mining Expansion project of **M/s The Singareni Collieries Company Limited.**

1. Shri Surendra Pandey
2. Shri Manohar Rao
3. Shri Basant Kumar
4. Shri Sharat Kumar

25.8 Mahan-II Opencast Coal Mine expansion Project of **M/s South Eastern Coalfields Limited.**

1. Shri R. P. Thakur
2. Shri U. T. Kanzaokar
3. Shri Monaj Kumar
4. Shri Amit Saxena
5. Shri S. Nagachari
6. Shri S. K. Dixit
7. Shri S. R. Tripathi
8. Shri Ankur Kumar
9. Shri Rambabu Singh
10. Shri Manoj Kumar
11. Shri N. P. Sahu
12. Shri Ramesh Kumar Singh
13. Shri A. S. Bapat
14. Shri KushagraVashishth

25.9 Amanand Opencast Coal Mine expansion Project of **M/s South Eastern Coalfields Limited.**

1. Shri R. P. Thakur
2. Shri U. T. Kanzaokar
3. Shri Monaj Kumar
4. Shri Amit Saxena
5. Shri S. Nagachari
6. Shri S. K. Dixit
7. Shri S. R. Tripathi
8. Shri Ankur Kumar
9. Shri Rambabu Singh
10. Shri Manoj Kumar
11. Shri N. P. Sahu
12. Shri Ramesh Kumar Singh
13. Shri A. S. Bapat
14. Shri Kushagra Vashishth

25.10 Moher & Moher Amlori Extension coal blocks project of **M/s Sasan Power Limited.**

1. Shri Mukund Dongre
2. Ms. Nandini
3. Shri NachiketaPatnaik
4. Shri J. S. Agarwal
5. Shri Ankur Suxena
6. Shri Avishek Choudhary
7. Shri Unni Krishnan
8. Shri Seshadvi Krishnamurty
9. Shri Bimal
10. Shri Bijan Mishra

25.11 Expansion of Talcher Coal Washery Project of **M/s Aryan Energy private. Limited.**

1. Shri ShriKipatra
2. Shri B. K. Patra
3. Shri D. Mishra

25.12 Basundhara Global Coal Washery project of **M/s Global Coal & Mining Pvt. Limited.**

1. Shri V. K. Sehgal
2. Shri Prakash Shrivastava
3. Shri B. K. Patra
4. Shri D. Mishra

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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.

(v) 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:

a. 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.

b. Characteristics and quantum of washed coal.
c. 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.

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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. ofTrees
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			

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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			

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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/land use.

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

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

* Representative case as an example

Table 2: Stage-wise Cumulative Plantation

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

* Representative case as an example

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

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

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

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

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

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

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

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

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

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

(xxxxii) Submission of sample test analysis of:

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

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

(A) FORESTRY CLEARANCE

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

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

(A) MINING PLAN APPROVAL
(B) MINING PLAN/PROJECT APPROVAL
Date of Approval of Mining Plan/Project Approval:
Copy of Letter of Approval of Mining Plan/Project Approval

(xxxxiv) Corporate Environment Responsibility:

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.

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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

Annexure -8

Report on the Site Visit to Moher&MoherAmlohri Extension coal blocks project [expansion from 16 MTPA to 20 MTPA, in an area of 2037 ha; (15.39 Km2 Moher Block – 10.70 Km2 &MoherAmlohri Extension Block – 4.69 Km2)] of M/s Sasan Power Limited, Dist. Singrauli, Madhya Pradesh by Subgroup of EAC (T&C) of MoEF, Government of India.

Date of Visit: 8th November, 2014

M/s Sasan Power Limited, had applied for one time capacity expansion in the existing mining operation, within the existing mine lease area, under clause 7(ii) of the EIA Notification, 2006. for Moher&MoherAmlohri Extension coal blocks project [expansion from 12 MTPA to 15 MTPA Normative and 16 MTPA to 20 MTPA Peak, in area of 2037 Ha; (15.39 Km2 Moher Block – 10.70 Km2 &MoherAmlohri Extension Block – 4.69 Km2)] of M/s Sasan Power Limited, Dist. Singrauli, Madhya Pradesh. Moher&MoherAmlohri Extension coal block of M/s Sasan Power Limited (16 MTPA) is a working mine producing coal since 2011 onwards supplying coal to 6 X 660 MW Sasan Ultra mega Power Project.

2. The proposal was considered in the 15th EAC meeting held on 27th-28th June 2014.The committee sought following additional information for further consideration:

iii. The Action Plan for non-complied and partly-complied EC conditions, with due concurrence by the RO, MOEF to be submitted.
iv. 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 there from to be furnished.
xiv. The proponent has submitted and agreed that coal transportation to Chintrangana shall be by conveyor belt of about of 32 Km length.
xv. 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.
xvi. Revised mine closure plan to be submitted.
xvii. 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.
xviii. The proponent to submit a comparative chart of pollution control measures taken.
xix. Detailed OB handling programme including grassing to be submitted.
xx. A status of the garland cannel to be submitted.
xxi. 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.
xxii. The proponent to submit an affidavit that no investigation or their matters are under consideration of the IMG.
xxiii. A sub-committee of EAC to make a visit to the coal mining site.

3. As decided in the EAC a sub-committee was to make a visit of coal mining site to know the existing status of the project/EC compliances before consideration/granting EC for expansion.

4. The sub group comprising Shri. J.L. Mehta , Member EAC, Shri. T.K Dhar, Member EAC, Shri. P.R. Sakhare, MoEF official visited Singrauli from 7th -9th November, 2014. A presentation covering Project Features; Project Status &schedule of the visit for next day was chalked out immediately on arrival at Guest House at Singrauli. List of the participants (Annexure -1A).

5. The sub-group along with Shri JagatPaikara, Director, Shri. Sheikh Didar (Project Director), Mr. Bijan Mishra (VP-Env) , Mr. NachiketaPatnaik (Manager-Env.) along with other project officers visited the site on 08.11.2014. The brief details of the visit are as under:

i. Moher&Moher –Amlohri Ext.(M&MA) mine is an open cast mine. The formation is in a hillock. The mine is divided into two quarries viz. South and North Quarries. It is a fully mechanized mine with possibly the largest equipments in the Opencast mine in India. OB is being extracted with Shovel-Dumper Combination in the top benches above Dragline sitting level and with dragline in the parting between Turra and Purewa seams.

ii. Mine Plan and Mine Closer Plans for this expansion (20 MTPA) has been approved by the MOC and submitted to the MOEF&CC. Mining operation started in Nov, 2011. Upto October, 2014 61.21 Mcum of OB and 7.01 MT of Coal has been extracted. External OB dumping can be continued upto 7th Year of operation and internal dumping to start from 4th year of operation- as per EC.

iii. Life of the mine would get reduced to 29 years from 40 years after this expansion to 20 MTPA peak.

iv. Coal is extracted by Front End loader – Dumper combination. Two numbers of Dragliners have been provided in the mine out of which one is assembled and ready to march to the bench and second one is under commissioning. The OB and Coal are winning is done by drilling and blasting.

v. Main mining equipments are:

Sl. No.	Item	Capacity	Make	Quantity in nos.	Status
1.	Dragline	61 cum, 100 m Boom length	Caterpiller	2	One assembled and other under assembly.
2.	Shovel	42 cum	-do-	6	All commissioned
3.	Dumper	240 Tonne	-do-	55	40 Nos. commissioned
4.	Front end Loader	42 cum	P&H	2	2 nos. commissioned

vi. These are supported by 18 large size Dozers; 9 Graders; 16 Drills; 4 Mist type water sprayers (75 KL capacity) etc.

6. Mine Visit: The sub-group visited in detail the operational points in mine for both OB and Coal in both the quarries.

i. OB bench in the Southern Quarry is getting ready for the first Dragline.
ii. OB is dumped in an external 60 m height dump in two benches of 30 m each. PP informed that as per the EC approval external dump height is up 90 m.
iii. Coal transport: Coal is transported by dumpers to the receiving pits at the Coal Handling Plant situated at the South Quarry base. After crushing the coal is conveyed to the Power plant through a covered Over Land Conveyors (OLC) around 14.2 km long.
iv. Coal from North Quarry is also programmed to be transported through Belt Conveyor to the existing arrangement for feed to the TPP.

7. The sub-group accompanied by the mine officials visited both the Quarries, OB dump area, Toe walls including providing stone Gabions for protecting slopes from sliding, OB and Coal mining points, conveyor transport system, top soil storage area, equipment erection yard, ETP, Training center, Canteen, rehabilitation area including DAV school and Primary Health Centre.

Observations:

i. The Sub-group feels that the working at the mine with latest and most modern HEMM equipments, possibly one amongst the best in the country, is indeed praise worthy. The large size equipment have made the mine safer in so far as the number of trips of dumper loads is concerned and supported by large 75 kl mist sprayers water tankiers resulting it an effective dust suppression.
ii. The operators and other technical staff in the Shovels, Dumpers and other equipments are well trained by the Simulators for Shovels and Dumpers available in Training Centre.
iii. The Committee observed that the existing slope and the benches in the external OB dumps needs proper sloping in order to ensure that no slides takes place during the rains and proper vegetation is provided in the slope as per EC.
iv. In the western side of the OB dump where the slopes has slided at some places, Gabions(Stone Pitching in wire crates) was seen being carried out. The PP were advised to further streanghten the Gabion walls by extending the width towards the slope and increasing the height as well. They were also advised for expediting further extension of the Gabion to cover the external OB dump area to cover such area where OB is already dumped.
v. It was also observed that a terracing for slope protection was also being carried out.
vi. The PP were advised to argument Green Belt plantation as the existing plantation observed was far from satisfactory. In fact sufficient area along the boundary wall was available to take-up plantation in a big way which was unfortunately not done.
vii. At the OB and coal faces the personnel was observed to be using protective gears as a safety measures.
viii. Grassing needs to be done on top soil to protect its fertility
ix. The ETP plant is in full operation to treat the waste water. The treated water is being used for water sprayers and washing of dumpers etc.

x. Departmental canteen is being run and the canteen was found with a good house-keeping. The members along with the project proponent tasted the food. The subgroup however advised to provide hot water for cleaning utensils etc. which need to be done by installing solar water heaters on the roof tops to which the proponent agreed to comply with same immediatly.

xi. The sub-group saw allotted site with some houses already constructed and habited by the families. Road, electric connection and othere facilities were available. The site has a DAV Public school which is at present catering upto 5^{th} Class having around 800 students. The PP informed that they are going to upgrade the school upto 12^{th} Standard in the near future.

xii. A route plan for water channel was shown to the Subgroup. The sub-group advised the PP to revise the same and submit the same to the Ministry for record.

8. The subgroup advised to augment the following facilities after interaction with the teachers, Doctors and PP:

a) To increase plantation in & around the school including the areas in the vicinity.
b) To augment teaching staff etc as the existing staff appeared much less in number.
c) To provideAdditional infrastructure facilities by way of increasing;
   - Number of PC's
   - Number of toilets for both the boys & girls with necessary washing facility to be provided.
   - To provide water coolers in the classes during summer.
   - Suitable nets to be provided in the windows to check/arrest mosquitoes
d) The subgroup also desired that the students should be trained in gardening etc& could possibly consider to include the same in the curriculum.
e) Adequate storage area be provided for stationary items by way of providing steel / wooden Almirahsetc which was seen in helter and skelter manner in the teachers staff room.
f) Primary Health Centre (PHC) located adjacent to DAV school. Although the Health Center has been performing well but it was felt that there is an immediate need of gynecologist along with a nurse. The other doctors could be added in future depending upon the need in a phased manner. The PP was also advised to provide plantation in & around the hospital premises. Few sample check of medicines with regard to their expiry dates was also carried out but they were found to be in order. In due course of time the PP may have to strengthen the premises with additional rooms/toilets etc.

9. After a brief working lunch, presentation was given by the PP on the various issues raised during the previous EAC meeting.

i. **COMPLIANCE OF EC CONDITIONS:** PP appraised that Action Plan with an updated status submitted to RO Bhopal on 09.09.2014 and the RO Bhopal has submitted his Report directly to the MOEF New Delhi on 01.10.2014, copy of which was, however not endorsed to the proponent.

Sl. No	Ref. EC condition no.	**Condition**	**Latest Status & ATR as on 08.11.2014**
1.	2(SC)	A Mine Drainage Plan with a surface drainage design of the mine resulting from surface runoffs and mine discharge water based on a peak rainfall data shall be prepared and implemented.	**Complied.** • Initial drainage system of the project and area drainage report along with year wise drainage plan submitted on 02.07.2014. • Present drainage plan superimposed on pre-mining drainage plan submitted on 09.09.2014. **Action Plan for Implementation:** • Such plans shall be submitted every year. • Regular inspection shall be made as and when required by the competent personnel.
2.	3(SC)	Topsoil shall be stacked properly with proper slope at earmarked site(s) and shall not be kept active and shall be used for reclamation and development of green belt.	**Complied.** • Topsoil removal is as per excavation plan and its storage/use is done as per requirement. • Topsoil removed: 3,63,008 m^3 • Topsoil utilized: 3,07, 008 m^3 • Topsoil stacked (3ha) : 56, 000 m^3 The following actions will be initiated as advised by the Sub-committee. • The topsoil will be covered with grass to prevent erosion The life of topsoil to be ascertained.
3.	4(SC)	OB generated shall be stored in a single external waste dump of 318 ha. Slope stability studies shall be undertaken before the height of the external OB dump is increased beyond 60m. to a max. Height of 90m, consisting of 3 benches of 30m each, which will be stabilized with plantation, and the ultimate slope of the dump shall not exceed 28°. Monitoring and management of reclaimed dumpsite shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to MoEF and	**Complied.** • OB is stored in a single external dump. • Present height of OB dump is 60m with two benches. • Final report (soft copy) on slope stability study submitted to RO-MOEF on 08.11.2014. • Hard copies of report submitted to EAC sub-committee. • Action Plan on the slope stability of OB dumps and pit slopes is given below as per the slope stability report submitted by CIMFR, Dhanbad: • Dragline dump: 81m height; Dumper dump: 30m each bench; Shovel bench: 20m height; Dragline high wall: 50m high; Dragline bench slope: 70 deg.

		its Regional office located at Bhopal on a yearly basis.	
4.	5(SC)	Catch drains shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de-silted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provided adequate retention period to allow proper settling of silt material.	**Complied.** • Construction of catch drains, garland drains and de-siltation of existing drains are regular and periodic activities before monsoon every year. • 8.44km of garland drains around the working area and OB dump have been completed by 10.06.2014.
5.	6(SC)	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	**Complied.** • The western (permanent) side of dump slope is provided with a long retaining wall (600m long with dimension 0.6m-1.5mX4.5m) 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. • Construction of retaining wall is being followed as per the progression of external OB dump. As soon as the bottom deck approaches near identified boundary, extension of boundary wall will be done to prevent any flow in the adjoining area. This year, a retaining wall is expected to be extended up to 500 m
6.	7(SC)	Crushers at CHP shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from	Complied. • Steel cladding and steel roofing of whole structure at transfer points have been completed by 28th May 2014 to arrest wind-blown fine coal dust near transfer points.

		crushing operations, conveyor system, haulage roads, transfer points, etc.	• Dust extraction system with two bag filters has already been completed. • Dust Suppression System is in place.
7.	8(SC)	Mineral transportation shall be only by MGR using Silo Loading system. Road transport shall involve only transport of machinery and equipment and only during night time. Major approach roads and haul roads shall be black topped.	Complied. • The mode of coal transportation changed from MGR to covered overland conveyor (OLC) vide MOEF letter no. J-13011/15/2006-IA.II (T) dated 5.2.2013. • Request letter submitted on 04.08.2014 to EAC (Coal) to amend the said condition in EC of coal mines as per the amended condition in the EC of the power plant.
8.	15(SC)	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thuscollected shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.	Complied. • Ground water level, quality and quantity is being monitored as per the stipulated condition and the report has been submitted to the MPPCB & to the Regional Office, MoEF, Bhopal.
9.	16(SC)	The Company shall put up artificial groundwater recharge measures such as check dams, water channels and bunds shall be taken up as part of CSR for augmenting/recharge of surface water and groundwater. The project authorities shall identity areas where conservation of soil is required and specific soil conservation schemes including plantation programme using mix of species representing the forest	Complied. • Ground water recharge structures viz., recharge wells, check dams, bunds etc. constructed to recharge ground water. • Plantation is being carried on areas requiring soil conservation. • M&MAE is an open cast mine and the lowest excavated ground level as on date (i.e., 332 MSL) is far above the level of adjoining areas and villages (i.e., 315 MSL). Regular monitoring of water level of wells of nearby villages is being done to monitor wells.

		ecosystem be taken up. The PA shall meet water requirement of nearby villages(s) in case the village wells go dry due to dewatering of mine	
10.	17(SC)	Sewage treatment plant shall be installed in the colony for treating waste water and the treated water recycled for green belt development. ETP shall also be provided to treat effluents from workshop and CHP. Wastewater discharged from the mine shall be treated to conform to prescribed standards for discharge.	Complied. • STP shall be setup during setting up of colony for coal mine. Setting up of colony is not yet planned. • ETP is operational. Standard of treated effluent are well within the prescribed limits for discharge. • Copies of analytical reports have been submitted to Pollution Control Board and to the Regional Office, Bhopal. **Action Plan:** As advised by EAC Sub-Committee during site visit ,adequate flower beds and hedges shall be developed along the boundary of ETP.
11.	19(SC)	For monitoring land use pattern and for post mining land use, a time series of Land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its Regional office at Bhopal.	**Action Plan:** The report covering first 3 years i.e., 2011-2014 shall be submitted to MOEF and its Regional Office at Bhopal by January 2015.
12.	20 (SC)	R&R for a cost of not less than Rs. 160.47 crores for the 3088 PAP's shall be completed within two years. The R&R shall be based on norms not less than that stipulated under the National R&R Policy/ State Govt policy whichever Is higher.	**Action Plan:** The R & R of remaining PAFs (Moher Village) is planned to be completed as per requirement, in phases.

(SC): Specific Condition

ii. With regards to the details of coal linkage, PP informed that it would be submitted during the presentation at Delhi...

iii. As regards submission of Affidavit, it was informed that the same was already submitted to the Ministry on 02.07.2014.

iv. The Sub-group saw the closed conveyor transport of coal from mine to the Power Plant. It is a well laid system. This is against the EC provision for MGR. The PP informed that they have applied to EAC (coal) for modification to the Conveyor system against what was earlier approved by the EAC (thermal).

10. The PP Informed:

a. that the coal of the North Quarry will also be transported through the close conveyor for which auction has started and which will be fed to this existing conveyor system.

b. that they have already requested the Ministry for giving necessary permission to use this system for coal transportation in lieu of the MGR system which was earlier proposed & provided in the EC for the mine as approved by the EAC (Thermal).

v. that on getting necessary approval by the Ministry for enhancement through 7(ii) the proposal put up in TOR would be dropped.

vi. that they have submitted revised Mine Closure Plan to the Ministry of Coal on 19th April, 2014 and which has been approved by the Ministry of Coal.

vii. that they have submitted analysis of AAQ with enhanced peak production capacity from 16 MTPA to 20 MTPA on 2nd July, 2014.

viii. that the comparative chart of pollution control measures and environment and social management plan for expansion stands submitted to the Ministry on 02.07.2014.

ix. that the detailed OB handling program has already been submitted to the Ministry . The disposal program for 20 MTPA peak was also submitted with their letter dated 04.08.2014

x. that with regard to details of garland channels, every year before the onset of monsoon, surface drainage design of the mine area is planned and implemented as per the monsoon preparation plan and mine drainage plan prepared on the basis of peak rainfall data and surface runoffs. The subgroup also inspected some of the channels so constructed which appeared to be adequate.

xi. that they have submitted to the Ministry on 02.07.2014 the details of land used pattern covering total project area; total mining lease area; total forest land; total forest Clearance obtained and balance FC awaitedThe said information for ready reference is reproduced below:

S.No.	Particulars	Area (Ha)
A	Total Project Area	2,037
1	Break-up of Project Area	

	- Mine lease Area	1,539
	- Land for external OB dump & infra facilities	498
	Total	2,037
2	Type of Land	
	- Forest Land	1,198
	- Tenancy Land	839
	Total	**2,037**

xii. that affidavit has been submitted to the Ministry stating that no investigations pertaining to their allotted mines were under consideration of the IMG.

xiii. that they have received the Report from CIMFER , Ranchi on slope stability which has sicne been submitted to the MOEF. The members directed the PP to submit a copy of such report to the EAC members as well as for their information and comments, if any.

11. Also the presentation was made to the Subgroup, the PP was advised as under:

a. To make separate booklets for tackling different possible hazards in local language beside English.
b. The Officer incharge of Environment should report to the Head of the project
c. To initiate a feasibility study through a reputed institute in the vicinity Study on use of sand stone and boulders found in OB for use after crushing and Screening as aggregate and sand for road, buildings etc. and details furnished to the Ministry. Besides providing good business proposition, it might also reduce load on stone and sand mining etc.
d. Thrust on the use of native species for green belt plantation.
e. Thrust to enhance plantation in and round haul road etc. and OB dumps.
f. On the western side, where OB has slided, laying of Gabions needs to be further strengthened and expedited.
g. Grassing on top soil to protect its fertility.
h. CIMFER recommendations on OB slope stability be followed in true line and spirit.
i. Class rooms/ staff room of the school be provided with coolers.
j. Concept of Kitchen garden must be developed by students of the school so that they develop sufficient interest about environment / plants / vegetables'.
k. Additional toilets both for girls and boys for the students of the school must be provided adequately.
l. Gynecologist and a nurse be provided in the PHC. Gardening around the Primary Health Centre need to be taken up.
m. To increase the width of the Gabion wall / retaining wall / pitching of boundary wall.
n. The amount of expenditure incurred towards CSR activities (Rs. 10.7 Crores) approximately during the last four years appeared to be inadequate. The PP therefore

was advised to spend another Rs. 3 to 4 Crores during next two years. They were further advised to get CSR activities audited through a nearby reputed institute.

12. Acknowledgement

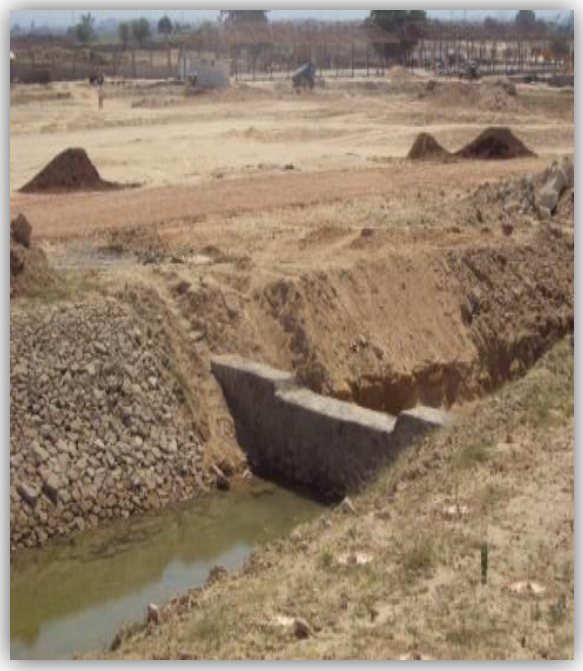
The local hospitality extended by the officials of Moher and Moher- Amlohri project to the members of subgroup of EAC (T&C) during site visit is duly acknowledged. Special thanks to the Shri BimalBaral, Mines Manager; Shri Venugopala Rao, CEO; Shri ShaikDidar, Project Director; Bijan Mishra, Vice President Environment & Mr. N. Patnaik, Manager Environment for their presence during the site visit.

13. List of officials of Sasan Power Limited present at the site and also at the presentation given to the subgroup. (Annexure 8A)

(J. L. Mehta)	(T.K. Dhar)	(P.R. Sakhare)
Member Subgroup	Member Subgroup	Scientist –C, MOEF

Some of the photographs of the Project Site:


RELIANCE




RAINWATER
RECHARGE
WELL


TUBESETTLER TANK
EFFLUENT TREATMENT PLANT
Cap - 50 m³/ hr.


PRE - SETTLING PIT - 1

Annexure- 8A

List of participants during the presentation on 7th November, 2014.

1. Shri. Shaikh Didar - Project Director
2. Shri. JagatPaikara - Director
3. Shri. BimalBrar - Mines Manager
4. Shri. Bijan Mishra - V.P (Environment)
5. Shri. NachiketaPatnaik - Manager (Environment)
6. Shri. Niranjan Mishra - G.M (HR)
7. Shri. Rajesh Choudhary - Sr. Manager(CSR)

List of participants during the presentation on 8th November, 2014

1. Shri. Venugapala Rao - CEO
2. Shri. Shaikh Didar - Project Director
3. Shri. JagatPaikar - Director
4. Shri. BimalBrar - Mines Manager
5. Shri. Bijan Mishra - VP (Environment)
6. Shri. ManoranjanNayak - G.M (Environment)
7. Shri. Rajesh Choudhary - Sr. Manager(CSR)
8. Shri. Amit Dubey - G.M (Safety)
9. Shri. NachiketaPatnaik - Manager (Env)
10. Shri. Nilanjan Das - Consultant (Green C)

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25th EAC (THERMAL & COAL MINING PROJECTS) MEETING
SCHEDULED FOR 13th – 14thNovember,2014

AGENDA

Venue: Conference Hall, Indus & Narmada Conference Hall, Ground floor, Jal Wing, Indira ParyavaranBhawan, Jorbagh Road, New Delhi-110003.

Pl. check the MoEF website: http://environmentclearance.nic.in/Report/Default3.aspx

Important Note:

i. **Please send the information as per "check list at Annexure-1" by e-mail, in wordformat and also a signed & scanned copy, to the Member-Secretary at hota@nic.inat least one week prior to the EAC meeting.**
ii. **Without this information, EAC has discretion to invite the proponent for the meeting.**
iii. **Please also provide a copy to the EAC Members during the meeting.**
iv. **No consultant is permitted into the meeting who has no accreditation with Quality Council of India (QCI) /National Accreditation Board of Education and Training (NABET) as per the MoEF OM dated 2nd December, 2009**

COAL MINING PROJECTS

Thursday, 13thNovember, 2014

10:00 AM -10:15 AM: Confirmation of Minutes

25.1 **10:15 AM – 11:30 AM:**Lajkura OC Expansion (from 3.0 MTPA to 4.5 MTPA in an ML area of 721.29 ha) of **M/s Mahanadi Coalfields Limited,** Dist. Jharsuguda, Odisha –**Expansion under 7(ii) of EIA Notification, 2006.**

25.2 **11:30 AM - 12:30 PM:**Belpahar OC Expansion Project (6.0 MTPA to 9.0 MTPA in an existing ML area of 1444.053 Ha) of **M/s Mahanadi Coalfields Limited,** Dist. Jharsuguda, Odisha - **Expansion under 7(ii) of EIA Notification, 2006.**

25.3 **12:30 PM – 1:00 PM:**Cluster 8 (Consisting of 7 mines of (1.53 MTPA normative to 2.75 MTPA peak in an ML 8281 ha) **M/s Eastern CoalfieldsLimited**, Dist. Burdwan, West Bengal - **EC based on TOR granted dated 27.06.2011.**

LUNCH

25.4 **2:00 PM - 3:00 PM:** Cluster No.4 (3 Mines of a combined prod. capacity of 6.35 MTPA and a peak prodn. of 7.71 MTPA in a combined ML area of 3352 ha) of **M/s Eastern CoalfieldsLimited**, located in Raniganj Coalfields, dist. Burdwan, West Bengal - **EC based on TOR granted dated 21.06.2011.**

25.5 **3:00PM – 3:30 PM:**Cluster 5 (2 mixed mines – Parbelia&Dubeswari) a total production capacityof 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 Limited**, located in Raniganj Coalfields district Purulia, West Bengal - **Amendment in EC conditions.**

25.6 **3:30 PM -4:00 PM:** Cluster No. 3 (3 Mixed mines of a combined production capacity of 3.33MTPA normative 3.97 MTPA peak capacity in a combined ML area of 1628 ha; Latitude 23^0 44' 30'' N & 23^0 48' 00" N and Longitude 86^0 52' 15" E & 86^0 56' 30" E) **of M/s EasternCoalfield Limited,**located in Raniganj Coalfields, dist. Burdwan, West Bengal - **Amendment in EC conditions.**

25.7 **4:00 PM -5:00 PM:** Adriyala Shaft Project Coal Mining Expansion project (from 2.144 MTPA to 3.14 MTPA in an existing ML area of 340 Ha of **M/s The Singareni Collieries Company Limited**, located in Tehsil Manuguru, dist. Khammam, Andhra Pradesh **- Expansion under 7(ii) of EIA Notification, 2006.**

Friday, 14th November, 2014

25.8 **10:00 AM – 11:15 AM:**Mahan-II Opencast Coal Mine expansion Project (from 1 MTPA to 2 MTPA in an ML area of 275 Ha) of **M/s South Eastern Coalfields Limited**, located in villages Chaura and Paraswarkala, Tehsil Bisrampur, District Surguja, Chhattisgarh. –**Expansionunder 7(ii) of EIA Notification, 2006.**

25.9 **11:15 AM – 12.30 PM:**Amanand Opencast Coal Mine expansion Project (from 1.15 MTPA to 2.15 MTPA in a total project area of 884.71 Ha) of **M/s South Eastern Coalfields Limited**, located in Tehsil Kotma, District Anuppur, Madhya Pradesh.-**Expansion under 7(ii) of EIA Notification, 2006.**

25.10 **12:30 PM – 1:30 PM:**.Moher&MoherAmlori Extension coal blocks project [expansion from 12 MTPA to 15 MTPA Normativeand 16 MTPA to 20 MTPA Peak, in area of 2037 Ha; (15.39 Km^2Moher Block – 10.70 Km^2&MoherAmlohri Extension Block – 4.69 Km^2)] of **M/s Sasan Power Limited**, Dist. Singrouli, Madhya Pradesh –**Expansion under 7(ii) of EIA Notification, 2006 – Further consideration.**

LUNCH

25.11 **2:30 PM – 3:30 PM:**Expansion of TalcherCoalWashery Project (from 2.34 MTPA to 5 MTPA capacity) of **M/s Aryan Energy private. Limited,** located at Village-Diajharan, District-Angul, Odisha. – **TOR.**

25.12 **3:30 PM - 4:30 PM:**Basundhara Global Coal Washery project (5 MTPA capacity in an ML area of 10.11 ha) of **M/s Global Coal & Mining Pvt. Limited**, Dist. Sundargarh, Orissa - **TOR** – **Further Consideration.**

25.13 **4:30 PMonwards** - Discussion & any other matters with the permission of the Chair.

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