

MINUTES OF 45th MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENT APPRAISAL OF COAL MINING PROJECTS HELD ON 31st May, 2023 THROUGH VIDEO CONFERENCE.

Confirmation of the Minutes of 44th Meeting of the EAC (Coal): The minutes of the 44th Meeting of the EAC (Coal) held on 9th May, 2023 has been confirmed by the Chairman.

Opening Remarks of the Chairman: At the outset, the Chairman welcomed the Expert members & other participants and requested to start the proceeding as per the agenda adopted for this meeting.

Consideration of Proposals: The 45th meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on 31st May, 2023 through Video Conferencing. The EAC considered proposals as per agenda adopted for the meeting. List of participant attended the meeting is annexed. The details of deliberations held & decisions taken in the meeting are as under.

Agenda No. 45.1

Dhirauli Coal Mining Project of Open cast cum Underground of 6.5 MTPA (5 MTPA Open Cast & 1.5 MTPA Underground) in Mine Lease Area of 2672 ha by M/s Stratatech Mineral Resources Private Limited (SMRPL) located at villages Dhirauli, Phatpani, Sirswah, Amdand, Jhalari, Amraikhoh, Bansibridha, and Belwar, Tehsil Sarai, District Singrauli, (Madhya Pradesh) – For Environmental Clearance reg.

[Online Proposal No. IA/MP/CMIN/427946/2023; File No. J-11015/49/2021-IA. II (M)]

45.1.1 The proposal is for Environmental Clearance for Dhirauli Coal Mining Project of Open cast cum Underground of 6.5 MTPA (5 MTPA Open Cast & 1.5 MTPA Underground) in Mine Lease Area of 2672 ha by M/s Stratatech Mineral Resources Private Limited (SMRPL) located at villages Dhirauli, Phatpani, Sirswah, Amdand, Jhalari, Amraikhoh, Bansibridha, and Belwar, Tehsil Sarai, District Singrauli, (Madhya Pradesh).

45.1.2 Details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meeting, are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No. 63 L/8 and is bounded by the geographical coordinates ranging from Latitude 23°56'07" N to 24°03'04" N Longitude 82°19'04" E to 82°24'21" E.
- (ii) Coal linkage of the project is not applicable as the mine is commercial coal mine.
- (iii) Joint venture cartel has been formed - Not Applicable

- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- (v) Employment generation- Project will generate employment for about 970 persons.
- (vi) The project is reported to be beneficial in terms of energy security for the development of country. Also following benefits will be there:
- Improvement in physical infrastructure like Road Transport facilities, Housing facilities, Water supply and sanitation, Power, Medical facilities, Community development etc. Improvement in social infrastructure like Trade and Commerce etc.
 - Other tangible benefits like indirect employment opportunities to local people in contractual works like housing construction, transportation, sanitation, for supply of goods and services to the project and other community services.
- (vii) Terms of References (ToR) granted vide letter J-11015/49/2021-IA.II (M) dated: 03.08.2021. Amendment to Terms of References (ToR) granted vide letter J-11015/49/2021-IA.II (M) dated 09.01.2023.
- (viii) Total mining lease area as per block allotment is 2672 ha. Mining plan & Mine Closure Plan was approved vide letter No. MPS-34011/4/2021-MPS dated 04th May 2021.
- (ix) The land usage pattern of the project is as follows:

Pre-mining land use details

(Area in Ha)

Ownership	Type of Land	Area, (Ha)
Tenancy Land	Agricultural	553.54
	Township	
Sub Total		553.54
Govt Non-Forest Land	Grazing	720.92
	Barren (Road)	
	Water bodies	
	Other	
Sub Total		720.92
Forest Land	Protected Forest land	1335.35
	Revenue Forest	62.19
Free hold		
Sub Total		1397.54
Grand Total		2672.00

Post Mining land use details (Area in ha)

Mining Activity	Land Use Area (End of Life)	Agriculture Land	Plantation	Water Body	Public Use	Forest land (Returned)	Undisturbed
Excavation Area	2,096.59	-	1,843.03		-	1843.03	-
Backfilled Area	1,796.23	-	1,843.03	-	-	1843.03	-
(in Excavation Area							
Excavated Void (in Excavation Area)	300.36	-	-	253.56	-	-	-
Topsoil Dump	35.34	-	-	-	-	-	-
	(Upto 5 th Year)						
External Dump	387.55	-	387.55	-	-	387	-
Safety Zone	19.73	-	19.73	-	-	19.73	-
Haul Road	-	-	-	-	-	-	-
Between quarries							
Road diversion	4.13	-	-	-	4.13	-	-
Settling pond	2.20	-	-	2.20	-	-	-
Road &	20.80	-	20.80	-	-	20.80	-
Infrastructure area							
CHP & Washery	8.10	-	8.10	-	-	8.10	-
Coal Evacuation	1.15	-	1.15	-	-	1.15	-
Route & Approach Road							
Garland drains	5.34	-	5.34	-	-	5.34	-

Embankment	7.50	-	7.50	-	-	7.50	-
Green Belt	46.80	-	46.80	-	-	46.80	-
Water Reservoir	-	-	-	-	-	-	-
Rationalization	72.11	-	72.11	-	-	72.11	-
area							
Total (exclude back filled void & Topsoil area)	2672.00	-	2412.11	255.76	4.13	2412.11	-

(x) Total Geological Reserve reported in the mine lease area is 558.011 MT (Opencast Mine – 260.263 MT, Underground Mine – 297.748 MT). Total Mineable Reserve are 313.79 MT of which 195.74 MT are by open cast method mining & 118.05 MT are by underground mining. Extractable Reserves are 298.12 MT (Opencast Mine – 186.06 MT Underground Mine – 112.07 MT) are available for extraction. Percent of extraction is 53.43% (Opencast Mine – 71.49 %, Underground Mine – 37.64 %).

(xi) Thickness of seams to be worked on:

Tabular Form for seam thickness is attached for reference:

Type	Seam	Thickness Range (m)
Open Cast	VIII- Top	0.55 - 3.16
	VIII-Comb	1.37 - 4.47
	VII- Top	0.83 - 8.48
	VII-Bottom	0.32-1.52
	VII-Comb	1.27 - 9.08
Under Ground	VI	0.58 - 2.47
	IV	0.55 - 3.9
	III- Top	1.6 - 7.6
	II	0.4 - 4.55

Grade of coal: G8 (Overall)

Stripping ratio: 10.55 m³/t

Category of gaseousness: Not Applicable

Average gradient: 2⁰- 4⁰

Maximum thickness of seams: Thickness of Seam VII-COMB varies from 1.27 to 9.08 and thickness of Seam VII-TOP varies from 0.83 to 8.48.

- (xii) Method of mining operations envisaged: Coal (OC) - Surface miner-FEL-Dumper, Overburden (OC) - Shovel Dumper, UG mine - Continuous Miner
- (xiii) Life of Mine is 87 years
- (xiv) The project has one external OB dump in an area of 387.55 ha with 90 m height and 259.01 M.cum of OB. One internal dump in an area of 1796.23 ha with 1704.54 M.cum of material is envisaged in the project.
- (xv) Total quarry area is 2,096.59 ha out of which backfilling will be done in 1843.03 ha. Remaining 253.56 ha mine void will be converted into water body at post closure stage. Backfilled quarry area of 1843.03 ha shall be reclaimed with plantation. Final mine void will be converted into water body.
- (xvi) Transportation of Coal:
 - **In pit:** Dumpers for initial five years & In-pit conveyor after five years
 - **Surface to siding:** Dumpers for initial five years & In-pit conveyor after five years
 - **Siding to loading:** Transportation of mineral for initially 5 years will be done by the trucks after that in-pit conveyor belt with silo loading will be installed for transportation of coal till railway siding.
- (xvii) Reclamation has been planned in an area of 387.55 Ha & 1843.03 Ha, comprising of OB Waste Dump and Backfilled Area respectively and 19.73 Ha & 46.80 Ha in the safety zone & green belt respectively.
- (xviii) Forest Diversion proposal has been applied vide Proposal No. FP/MP/MIN/142344/2021 dated 08.06.2021, the proposal is under process.
- (xix) **Please mention any National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones fall within 10 km boundary of the project.** - There are no National Park, Eco-Sensitive Zones, Wildlife Sanctuaries in 10km radius of the project for which NOC has been obtained by CCF, Sanjay Tiger Reserve, Sidhi vide letter no. kramank/machi/2022/5404 dated 17.08.2022.
- (xx) **Wildlife conservation plan for Schedule – I Species has been submitted** – Site Specific Wildlife Conservation Plan has been prepared and has been approved by the PCCF(WL) vide letter kramank/v.pra/machi/2022/MINE-140/8522 on 24.11.2022.
- (xxi) The ground water level has been reported to be varying between 5 to 13 m bgl, during pre-monsoon and between 3 to 8 m bgl during post-monsoon. Total water requirement for the project is 1936 m³/day.
- (xxii) NOC for ground water withdrawal has been approved by the Central Ground Water Authority (CGWA) vide NOC no. CGWA/NOC/MIN/ORIG/2022/15765 on 15/06/2022.
- (xxiii) Public Hearing for the project was conducted on 04.05.2022 Place: Senior Secondary School Village - Basi Bardah at 11:00 AM Dist: Singrauli, Madhya Pradesh under the Chairmanship of Shree D.P. Barman, ADM, Singrauli.
- (xxiv) Major issues raised in the public hearing & appropriate action to address the issues raised in the Public Hearing have already been taken/proposed to be taken are given in the action plan

prepared and mentioned in Chapter 7 in EIA/EMP report and enclosed as annexure A
(xxv)Hearing have already been taken/ proposed to be taken are as under: hearing done on 4th May 2022 at Senior Secondary School Village- Basi Bardah.

(xxvi) .Consent to operate for the proposed capacity to be submitted after environment clearance to State Pollution Control Board - Will be obtained after grant of EC.

(xxvii) Hurdul nallah is flowing through the mine lease. The Nallah will be diverted in consultation with Water Resources Department of the State Government.

(xxviii)In general, the results of ambient air quality monitoring data were found within prescribed limits except few aberrations which can be attributed to the specific local conditions during the day of sampling

(xxix) .No court cases, violation cases are pending against the project of the PP.

(xxx)The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The coal production from the mine was started from the year onwards. No excess production of coal from the sanctioned capacity has been realized since the commencement of mining operations. The coal production, realized from the project, from 1993-94 onwards, is as under: **Not Applicable since it is a Greenfield project.**

(xxxi) .The project involves 3037 PAF. R&R of the PAPs will be done as per prevailing laws.

(xxxii) Total cost of the project is Rs. 2800 Crore. Cost of production is Rs 1402 per tonne., CSR cost will be 2% profit of last three years. R&R cost 390 Crore. Environment Management Cost is: 1832 Lakh, Capital Rs 1550 Lakh; & Recurring Rs. 282 Lakh.

(xxxiii)Consent to operate (CTO) was obtained from the State Pollution Control Board: Not Applicable.

(xxxiv)Past Production details comparison with existing EC- Not Applicable.

(xxxv). Base line monitoring status:

- a) Mention the Period/ Season of baseline study carried out - March to May 2021 (Pre-Monsoon)
- b) Whether the Laboratory has been accredited by the NABL/ MoEF&CC certification involved in analysis of water, air, noise & soil quality data, also providing its respective lab reports – Yes
- c) Detail of Air quality and surface water quality

Air quality: Number of sampling location monitored: 10 Location (Pre-monsoon). Baseline ambient air monitoring result indicates that the maximum and minimum values of PM₁₀ are in the range of 26.50 µg/m³ to 61.30 µg/m³, whereas the PM_{2.5} is in the range of 15.8 to 40.2 µg/m³. The SO₂ concentrations within the study area are in the range of 12.5 to 25.1 and the NO_x are in the range of 16.4 to 34.2 µg/m³. The concentrations of CO were found between 0.3 to 0.4 mg/m³.

The incremental increase in the values were projected to be 23.68 µg/m³ for PM₁₀, 14.41 µg/m³ for PM_{2.5}, 0.00 µg/m³ for SO₂, 0.00 µg/m³ for NO_x, and for CO 0.00 mg/m³. The value of

Total GLC is 75.98 $\mu\text{g}/\text{m}^3$ for PM_{10} , 44.71 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$, 25.10 $\mu\text{g}/\text{m}^3$ for SO_2 , and 34.20 $\mu\text{g}/\text{m}^3$ for NO_x , and 0.49 mg/m^3 for CO are predicted during March to May 2021. The observed pollutant levels were compared with CPCB National Ambient Air Quality Standards and found to be within the permissible limit.

Surface water quality: Monitoring was done at 5 Location during March - May 2021. All the Parameters like pH varies from 7.34 to 7.67, total Hardness varies from 48.1 to 93.1 mg/L, Total Dissolved Solids varies from 97 to 152 mg/L, Dissolved Oxygen – 5.1 mg/l to 5.7 mg/l etc. which are found within the permissible limits.

Interpretation of Surface Water Quality

March - May 2021
pH ranges in between 7.34 to 7.67. Maximum pH of 7.67 was observed at Rampa River near Rampa (D/S) (SW4) and minimum pH of 7.34 was observed at pond near Hurdul Nala near Majholipath (U/S) (SW1).
Conductivity lies between 160 $\mu\text{S}/\text{cm}$ to 260 $\mu\text{S}/\text{cm}$. Maximum value 260 $\mu\text{S}/\text{cm}$ was observed at Biniao Nala near Kamai (U/S) (SW5) and minimum value 160 $\mu\text{S}/\text{cm}$ was found in Hurdul Nala near Digwah (D/S) (SW2).
Total Dissolved Solids (TDS) is between 97 to 152 mg/l, maximum concentration 152 mg/l was observed at Biniao Nala near Kamai (U/S) (SW5) and minimum concentration 97 mg/l of TDS was found in Hurdul Nala near Digwah (D/S) (SW2).
Total Hardness is ranging from 48.1 to 93.1 mg/l, the maximum concentration 93.1mg/l was observed at Biniao Nala near Kamai (U/S) (SW5) and minimum concentration 48.1 mg/l of was observed at Hurdul Nala near Digwah (D/S) (SW2).
Chlorides is in range of 7.8 to 23.1 mg/l, maximum concentration 23.1 mg/l was observed at Biniao Nala near Kamai (U/S) (SW5), and where as the minimum concentration 7.8 mg/l was observed at Rampa River near Rampa (D/S) (SW4).
Sulphates is in range of 3.4 mg/l to 9.8 mg/l, maximum concentration 9.8mg/l was observed at Confluence of Biniao Nala near Kamai (U/S) (SW5), and where as the minimum concentration 3.4 mg/l was observed at Hurdul Nala near Digwah (D/S) (SW2).
Dissolved Oxygen is in the range of 5.1 mg/l to 5.7 mg/l, maximum concentration 5.7 mg/l was observed at Rampa River near Badhaura (U/S) (SW3), and where as the minimum concentration 5.1 mg/l was observed at Biniao Nala near Kamai (U/S) (SW5).
Total Coliform count is measured from 1030 to 1340 MPN/100ml

(b) Ground water quality: 8 Location

All the Parameters like pH varies from 6.61 to 7.54, Total Hardness varies from 77.9 to 263.4 mg/L, Total Dissolved Solids varies from 162 to 389 mg/L, Chloride varies from – 27.4 mg/l to 66.4 mg/l etc. are found within the permissible limits.

Interpretation of Ground Water Quality

March - May 2021
pH ranges in between 6.61 to 7.54. Maximum pH of 7.54 was observed at ML Area near Suliyari (GW6) and minimum pH of 6.61 was observed at Bhalyatola village (GW2).
Total Dissolved Solids (TDS) concentrations is in between 162 to 389 mg/l, maximum concentration 389 mg/l of was observed at Near Khairahi village (GW3), minimum concentration 162 mg/l of was observed at Bhalyatola village (GW2).
Total Hardness is from 77.9 to 263.4 mg/l. Maximum hardness is 263.4 mg/l was recorded at Khairahi (GW3) and the minimum is 77.9 mg/l was recorded at Bhalyatola (GW2) respectively.
Alkalinity of the samples lies between 65 mg/l to 265 mg/l. The maximum value 265 mg/l was at Khairahi (GW3) and the minimum value 65 mg/l was found at Bhalyatola village (GW2).
Chlorides is in range of 27.4 to 66.4 mg/L, maximum concentration is 66.4 mg/l was observed at ML Area near Suliyari (GW6), and minimum concentration is 27.4 mg/l was observed at M.L. Area – Dhirauli South (GW1) respectively.
Sulphates is in range of 8.7 mg/l to 32.6 mg/l. The maximum value is 32.6 mg/l observed at ML Area near Suliyari (GW6), whereas the minimum value is 8.7 mg/l was observed at ML Area - Berdaha (GW4).
Bacteriological studies revealed the absence of Total coliform.
In study area, water quality has been observed to vary considerably between the sampling locations. Mostly the parameters of groundwater quality fall within the permissible limits of drinking water standards.

(c) Soil quality analysis was done at

(d) 10 Location. All the Parameters like pH varies from 4.89 to 7.06, Organic matter varies from 0.43% to 1.34%, Available Nitrogen varies from 53.9 to 155.3 kg/ha etc. are found within the permissible limits.

Interpretation of Soil Quality

March -May 2021

The pH of the soil samples ranged from 4.89 to 7.06 indicating the slightly acidic in nature.

The electrical conductance of the soil samples varied from 51 $\mu\text{S}/\text{cm}$ to 130 $\mu\text{S}/\text{cm}$ Bulk densities of the soil samples varied from 1.1 to 1.3 gm/cc.

Available nitrogen in the soil samples varied from 53.9 Kg/ha to 155.3 Kg/ha. Available phosphorus in the region varied from 63.7 kg/ha to 109.1 kg/ha.

Available potassium levels in the samples ranged from 120.3 Kg/ha to 378.1 Kg/ha.

Soluble chlorides in the region varied from 85.0 mg/l to 148.9 mg/kg. Organic matter concentrations ranged from 0.43% to 1.34%.

Based on the results obtained, it is evident that the soil samples are predominantly Silty clay type.

(e) Ambient Noise Monitoring was done at 8 Location. Leq value for day and night time was observed to be 64.6 and 69.1 dB (A).

Interpretation of Noise results

March - May 2021

Out of all 8 locations measured for noise levels, the noise level sample collected at Khairahi (N4) was found on slightly higher side.

The Leq values at this location for day and night time was observed to be 64.6 and 69.1 dB (A) respectively, which can be attributed to local prevailing environment (Mining, industrial, Railway siding and Highway). However, the recorded noise levels were found within the limits of Industrial Noise (75 dB (A)).

45.1.3 The Committee observed the following points based on PP submission:

- (i) Terms of References (ToR) obtained vide letter No. J-11015/49/2021-IA. II (M) dated 03.08.2021. Further, Amendment of ToR was granted vide letter J-11015/49/2021-IA. II (M) dated 09.01.2023.
- (ii) Mining plan & Mine Closure Plan was approved as per the letter No. MPS-34011/4/2021-MPS dated 04th May 2021. In mine lease area of 2672 Ha, total 1397.54 Ha of Forest land (1335.35 Ha Reserve Forest land + 62.19 Ha Revenue Forest Land) involved.
- (iii) Life of mine is 87 years.
- (iv) Public hearing conducted on 04.05.2022 under Chairmanship of ADM, Singrauli for Dhirauli Coal Mine project. PP submitted the activities- wise public hearing budget of Rs. 653 Lakh
- (v) PP has collected the Baseline data for period from March to May 2021 and October to

December 2021.

- (vi) NOC for 1936 m³/day (Fresh Water 50 m³/day & dewatering 1886 m³/day) obtained from CGWA which is valid up to 14.06.2024 vide NOC No. CGWA/NOC/MIN/ORIG/2022/15765.
- (vii) Hurdul Nala flowing within Mine Lease area. The Nala Diversion study has been carried out and also approved by Chief Engineer Ganga Basin Rewa.
- (viii) PP has submitted NOC from Principal Chief Conservator of Forest Madhya Pradesh vide letter no KRAMANK/MACHI. /2022/5404 dated 17.08.2022, stating that there is No Eco-sensitive zone within the 10 KM radius.
- (ix) The PP has submitted the total environmental management cost of Rs.1550 lakhs as a Capital Cost and Rs.282 lakhs as Recurring Expenditure.
- (x) The PP vide letter dated 02.06.2023 submitted the following:
 - a) Dhirauli Coal block at an aerial distance of about 30 km from the Severely Polluted area of Singrauli District. PP later submitted a letter from Member Secretary, MPPCB vide no 1335/TS/HQ/Mine 2063 dated 06.06.2023 wherein it is reported that said mine location is away from 114 sq km area of Singrauli, designated as CEPI.
 - b) PP later also confirmed that the grazing area in the R&R colony will be increased from 4 ha to 10 ha. An undertaking has been enclosed.
 - c) The public hearing budget has been increased from Rs. 6.53 crores to Rs. 10.73 crores. To improve education, an English medium school will be built with modern amenities like a library, laboratories, sports facilities etc., which will also ensure that free education, books, uniform, etc., would be provided for all children. Also, free drinking water will be supplied to nearby villages through pipelines, tankers, etc. Revised public hearing action plan mentioned below:

Activity-wise Phasing of Public Hearing Commitments Scheme:

S. No.	Proposed Activities under public hearing commitment scheme		Phasing of Allocated proposed PH commitment Budget, Rs. Lakh					Total
			FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	
1	Health Facility at village Dhirauli Jhalari, Amdand Belwar and rehabilitation colony	Providing infrastructure facilities such as beds, medical instruments in medical centers	25	50	50	75	75	275

		24x7 Ambulance to be made available to Basi bardah, Jhalari						
2	Educational Facilities (Dhirauli Village Basi bardah, Jhalari Amdand Belwar and rehabilitation colony and rehabilitation colony)	English medium school with modern amenities like library, laboratories, sports facilities, virtual learning, etc. Free education, books, uniform, etc.	200	200	20	-	-	420
		Construction of Toilets in the schools	0	0	10	0	10	20
		Construction of Laboratory in the schools	0	0	0	10	10	20
3	Rural infrastructure development	Construction of Pucca roads, Waiting Shed,	0	0	50	0	50	100
		Construction of Overhead tanks, piping,	15	15	15	15	20	80

		drainages & internal roads						
		Renovation of Temples (religious places)	0	0	2	3	3	8
4	Employment Generation	Skill Development Training for operators, fitters, electricians	10	10	10	10	10	50
		Training centers for Ladies (stitching, Embroidery, tailoring etc.)	10	10	10	10	10	50
5	Livelihood Development & farmers productivity	Farmer's training in recent crop specific training on cultivation, harvesting and marketing.	5	10	0	10	25	50
Total			265	295	167	133	213	1073

d) The budget for Hurdul Nala diversion has been separated from the EMP. The revised EMP budget has been mentioned below:

Sl. No.	Environmental Protection Measures	Capital Cost	Recurring Cost
		(Rs. In lakhs)	(Rs. In lakhs/year)

1.	Air Pollution Control Measures (Dry fog Dust Suppression Systems at CHP, and Loading Point)	100	60
2.	Water Pollution Control Measures (Construction of Garland drain, Construction of Garland drain around the OB dump, Toe wall around the dump)	118	50
3.	Noise Pollution Control Measures	15	10
4.	Greenbelt/ Nursery Development	37	50
5.	Rainwater Harvesting	80	10
6.	Fire Fighting and Safety measures	100	10
7	Installation of Online Ambient Air Quality Monitoring System & Online Monitoring ETP	200	10
8	Budget/ Scheme for the Public Hearing Commitments	1073	0
Total EMP Budget*		1723	200
* The EMP capex budget shall be utilized within 5 years from the date of operation.			

- e) Committee noted that approx 90% of the coal from Dhirauli Coal Mine will be utilized in the Thermal Power Plant of M/s Mahan Energen Ltd. A five-kilometer pipe conveyor system has been planned for transportation of coal from Mine to Power Plant, which is likely to be implemented in 3.5 years, from the start date of planned coal production as per allocation order/ CBDPA with MOC, Govt. of India.
The remaining coal will be supplied through rail/road in the open market since it is a commercial coal mine. However, road transportation may be allowed for an initial 3.5 years of coal production for supply to thermal power plant. A commitment and undertaking in this regard has been enclosed.
- f) The CO₂ emissions from mining activity and loss of CO₂ sequestration due to deforestation have been estimated with CO₂ sequestration due to compensatory afforestation. A report has been submitted in this regard, which mentions that total number of 16,80,000 trees will be planted in 1400 Ha of land area under compensatory Afforestation (maintaining tree density of 1200 trees/ha). The CO₂ sequestration starts right after the plantation is done. Total amount of CO₂ that will be sequestered in 2nd year and that in 10th year of plantation will be 377,081.4 and 5,706,152.90 tons of CO₂ annually.

45.1.4 *The EAC after deliberation noted that the instant proposal is green field opencast cum underground project. PP obtained the ToR on 03.082021 and later its amendment vide letter dated 09.01.2023 regarding diversion of stream which is flowing middle of mine. The Committee noted*

that PP has to obtain forest clearance for 1397.54 ha of forest land.

The Committee during discussions highlighted concerns on impact related to catchment of the Hurdul stream and advise the PP to take all possible precautions with proper design of channel to maintain the natural flow of water along the periphery of mine without loss within catchment area alongwith maintaining natural biodiversity at downstream. The same time, PP was advised not to divert north eastern stream (Bardiya/Jharia Stream) and leave safe distance on both sides with embankment alongwith dense plantation. The Committee opined that IRO shall monitor the implementation of Report on Hydrology prepared by Srushti Seva Private Limited for diversion of Hurdul Stream so that the natural flow of water will be maintained at the exit of the Mine lease area. The diverted route of nallah also needs to be protected with dense plantation. Water flow meter and Ground water piezometer should be installed at the various location for measuring surface as well as ground water level.

While discussing the coal evacuation plan, the Committee emphasized to put in place a dedicated mechanized coal transportation system by inpit belt conveyor with silo loading and railway siding for rail transportation for at least 90% of total coal capacity to thermal power plant within three and half year. Meanwhile PP could utilize the road for transportation.

Regarding public hearing issues, as noted from the proceeding of meeting held on the project, PP admitted to enhance the budget, subsequently, which has been increased from Rs. 6.53 crores to Rs. 10.73 crores to improve education. A dedicated modern facility school was advised to be built on the priority basis considering school capacity as per children's available within the 5 km of the project area. Later, PP proposed for English medium school to be equipped with modern amenities like library, laboratories, sports facilities, virtual learning, Free education, books, uniform, etc. and Rs. 420 lakh to be spent on the Educational Facilities wherein expenditure related to the salary of staff, education to be provided free and recurring cost of school to be met under CSR budget so that no burden to be imposed on fee structure. Besides, drinking water facility to nearby villages through pipelines, tankers, etc shall be ensured. Also the recurring cost related to the other public hearing activities was advised to be covered under CSR budget after completing the task.

As committed, the Capital EMP budget of Rs. 1723 lakh and annual recurring cost of Rs. 200 lakh was advised to be properly spent for pollution control measures only. The Committee also emphasized that 20% of the mine energy requirement should be met through clean fuel source alongwith shifting 80% vehicles to clean fuel within mine from commencement of the mining activity. As committed in report, PP shall start sequestration of CO₂ in 2nd year of operation and IRO will review the progress of CO₂ sequestration.

The Committee noted that there is no national Park/Wildlife Sanctuary, tiger and Biosphere within 10 km of mine lease area. However, Project area consists of Schedule I species

for which a comprehensive Wildlife Conservation Plan has been prepared and approved by PCCF on 24.11.2022. The committee also noted that as per CCF, Sidhi, MP vide letter no. KRAMANK/MACHI/2022/3494 dated 20.05.2022, the Elephant corridor is passing through the project as per work plan of the Forest Division. Therefore, EAC proposed while considering this project, it would be appropriate to take opinion of WL-division /Project Elephant of MoEF&CC in this regard.

Based on the above, EAC recommended the proposal for grant of Environmental Clearance for Dhirauli Coal Mining Project of Open cast cum Underground of 6.5 MTPA (5 MTPA Open Cast & 1.5 MTPA Underground) in Mine Lease Area of 2672 ha by M/s Stratatech Mineral Resources Private Limited (SMRPL) located at villages Dhirauli, Phatpani, Sirswah, Amdand, Jhalari, Amraikhoh, Bansibridha, and Belwar, Tehsil Sarai, District Singrauli, (Madhya Pradesh) under EIA Notification, 2006 and its amendments therein with following additional specific conditions to be followed:

- i. PP shall submit Stage-I Forest Clearance for forest land of 1397.54 ha required for non-forestry activity prior to grant of Environmental Clearance. PP shall not be allowed to use forest land for purpose of any type of infrastructural development except coal mine production.*
- ii. PP shall obtain CTE/CTO from State Pollution Control Board for 6.5 MTPA (5 MTPA – Opencast Mine & 1.5 MTPA - Underground Mine).*
- iii. PP shall take all possible precautions in order to catch natural flow of water along with maintaining natural biodiversity of stream flowing through Mine lease area.*
- iv. PP shall not divert north eastern stream (Bardiya/Jharia Stream) and to maintain safe distance of 100 mts on both sides for the safety embankment with dense plantation.*
- v. PP shall submit six monthly reports to IRO after monitoring implementation of Report on Hydrology prepared by Srushti Seva Private Limited for diversion of Hurdul Stream. The diverted route of Nallah to be protected with dense plantation.*
- vi. PP shall install Water flow meter and Ground water piezometer near to the nallah flowing through Mine lease area at various location for measuring surface as well as ground water level.*
- vii. PP shall install dedicated mechanized system for transportation of 90% of coal through close pipe conveyor system and only 10% by road. As proposed PP to construct 5 km pipe conveyor system from mine pit/face to Power Plant (M/s Mahan Energen Ltd) within 3 and half year, which should be designed upto peak capacity of mine production. SPCB to grant the CTO accordingly.*
- viii. PP shall reduce the carbon footprint after sequestration of CO₂ and 377,081.4 tons of CO₂ to be sequestered in the 2nd year of mining. IRO shall review the progress of CO₂ sequestration. The process of sequestration of CO₂ will include the planting trees, by “Developing carbon capture and storage (CCS) technologies” and implementation of renewable energy mechanism.*

- ix. *PP shall address public hearing issues with the allocated Budget of Rs. 1073 Lakhs/- and activities to be monitored by through dedicated online monitoring mechanism. The maintenance of all activities shall be covered through recurring cost of Public Hearing which will be part of CSR budget.*
- x. *As proposed, PP shall implement the public hearing budget on the items given above in the Minutes of Meeting of EAC at 45.1.3 (xiii) (c) and EMP budget on the items given above at 45.1.3 (xiii) (d).*
- xi. *As committed, PP shall construct dedicated modern facility school on the priority basis considering school capacity as per children's available within the 5 km of the project area. As per the demand, English medium school to be equipped with modern amenities like library, laboratories, sports facilities, virtual learning with free education (or with nominal cost), books, uniform, etc. Total Rs. 420 lakh to be spent on the Educational Facilities only wherein expenditure related to the salary of staff, education fee and other expenditure to be covered as recurring cost under CSR budget so that no burden to be imposed on local public children. .*
- xii. *PP shall create a **"Public Grievance Redressal and Monitoring System"** for resolving any issues related to the pollution of mines and complaint has to resolve as soon as possible not beyond 30 days. In this regard, adequate awareness to be spread among the public to address their grievance to company with simple and easy manner and for which company needs to devise the mechanism. The same shall be reported to IRO within 3 months. A log book to be maintained by PP on **"Public Grievance Redressal and Monitoring System."***
- xiii. *PP shall implement EMP activities with allocated capital budget of Rs. 1723 lakh and recurring cost of Rs. 200 lakhs for compliance with the environmental protection and mitigation.*
- xiv. *PP shall make use of advanced computer simulation techniques for design and execution of blasting operation in the mine. PP shall make use of Electronic Delay Detonators for optimal blasting in coal and OB rock to minimize the environmental impacts of blasting such as ground vibration, fly rocks and excessive dust generation.*
- xv. *PP shall deploy atleast 20% of overall fleet of dumpers/trucks as electrical or CNG/LNG based dumpers/trucks for transportation of coal/OB etc.*
- xvi. *No village road shall be used for transportation of coal and no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals etc. PP shall take legal undertaking from its consumers accordingly.*
- xvii. *PP to develop 5 ha of nursery particularly for Sal Trees and plantation to be carried out in reclaimed area focusing on the development of Sal Forest.*
- xviii. *PP shall ensure the employment for the Project Affected Families (PAF) on permanent basis as per qualification and provide the free transportation to the work site.*
- xix. *PP shall ensure distribution of water from the artificial reservoir within and outside Mine lease area in consultation with gram panchayat. The water treatment plant to meet the requirement with the start of production.*

- xx. *PP shall construct a pucca road to maintain the safety of people residing nearby along the transportation route with plantation on either side of the road.*
- xxi. *PP shall install fixed fog cannon (mist spayer) and fixed sprinkler all along the haul road till CHP, Railway siding and OB Dump area and accordingly sufficient number of fog cannons (not less than 20 nos.) with 40 mts jet length shall be installed within 6 months. It should be ensured that air pollution level confirm to the standards prescribed by the MOEFCC/CPCB.*
- xxii. *PP shall deploy only 35-40 tonnes covered trucks/dumper to reduce fleet size till closed conveyor pipe loading system is put in place and also to implement surface miner and conveyor belt system from pit head to CHP, as feasible.*
- xxiii. *PP shall conduct third party audit of compliance of EC condition at an interval six months and its report shall be submitted to IRO, MoEF&CC.*
- xxiv. *The status of mine closure activities must be included in every six months' compliance report submitted to the state pollution control board and IRO.*
- xxv. *PP to maintain the topped haul road properly to minimized the dust emission. PP to also develop pucca roads by seeking consent from the panchayat with widening of roads especially roads inter linking the villages within the study area of 10 km radius buffer zone.*
- xxvi. *PP to install solar lights along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year.*
- xxvii. *PP to provide bio toilets to the villages located within the study areas within 1 year from the grant of this EC.*
- xxviii. *Persons of nearby villages shall be given training on livelihood and skill development to make them employable with its proper records.*
- xxix. *PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.*
- xxx. *PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis. Any non- compliance or infringement should be reported to the concerned authority.*
- xxxi. *PP to implement the recommendation of land subsidence study carried out for underground mine and report shall be submitted to IRO in every six monthly report.*
- xxxii. *PP to obtain the star rating as per the guidelines of Ministry of Coal.*
- xxxiii. *Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders*

shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEF&CC.

Agenda No. 45.2

Tawa III Underground Mine for a production capacity of 0.48 MTPA/ 0.60 MTPA (N/P) in land area of 207.47 by M/s Western Coalfields Limited located at Gandhigram village, Tehsil Ghoradongri, District Betul (Madhya Pradesh) – Reconsideration for Environmental Clearance –reg.

[Online proposal No. IA/MP/CMIN/84545/2018; File No. J-11015/163/2018- IA-II (M)]

45.2.1 The proposal is for Environmental Clearance for Tawa III Underground Mine for a production capacity of 0.48 MTPA/ 0.60 MTPA in land area of 207.47 ha by M/s Western Coalfields Limited located at Gandhigram village, Tehsil Ghoradongri, District Betul (Madhya Pradesh).

45.2.2 The EAC during deliberations noted the following:

Earlier, the proposal was considered in the 27th EAC meeting held on 3-4 March, 2023 wherein the committee deferred the proposal for the submission of the desired information. Further the PP has submitted the pointwise reply vide letter dated 15.05.2023 as follows:

S. No.	Observation of 27th EAC	Status of Compliance
1.	PP shall conduct one season base line data again and submit the draft EIA report to SPCB for issuance of Public notice in local and national newspaper informing the earlier information was not as per provisions of EIA Notification, 2006 and further seek comments from public and includes the	One season baseline data has been generated from April 2022 to June 2022 and draft EIA –EMP report has been prepared and submitted to Madhya Pradesh Pollution Control Board for issuance of Public Notice. Public Notice in local and national newspapers (namely Dainik Bhaskar, Dainik Jagarn & Navbharat) to seek comments from public has been issued on 01.01.2023. As per the letter from RO. MPPCB, no comments have been received up to 09.02.2023 (Attached as Annexure –XVII of Revised EIA-EMP).

concerns while submitting the revised EIA-EMP report.

2. Further, Clarification on the baseline monitoring conducted from mid-March to mid-June, 2020 which mostly fall under the Covid-19 lockdown phase. Coal mining is an essential service and has been exempted from lockdown under ESMA 1981 as per GoI. Thus, mining activities were being carried out as usual. Baseline data has been collected during this period for grant of EC of Tawa-III UG which would facilitate coal production.
3. The traffic study due to road transportation to be conducted by PP and furnish with EIA/EMP report. Traffic Study has been carried out and has been given in Chapter - VII. As per the result of the study, capacity of the existing and proposed roads will be adequate to handle the increased load.
4. PP must submit the Approved Mine Plan with Mine closure plan of Tawa-III mine as per the latest guidelines issued by Moc in 2020. Mining Plan along with Mine Closure Plan has been approved by WCL Board vide WCL/BD/SECTT/BM-299/2018/1412 dated 24.04.2018. This Mine Closure Plan has provision of ₹ 5.0217 Crore.

It is worthwhile to mention here that as per the latest guidelines of 29.05.2020 para 2.8, actual corpus to be deposited is based on the updated cost estimate at the time of Escrow agreement with CCO. The escrow agreement shall be done after grant of Statutory clearances e.g. Environmental Clearance.

5. PP must provide the budgetary bifurcation and time bound action plan of proposed CSR activities to be conducted as per the need base assessment study carried out by M/c WCL. Budgetary bifurcation and time bound action plan of proposed CSR activities as per the need-based assessment study is enclosed in Revised EIA-EMP.

Recommendation of Need based assessment study

As recommended in the Need Based Assessment Study, that WCL should promote soft skills development activities under CSR.

Action to be taken

In FY 2022-23, WCL is doing CSR Project for Improving learning outcomes & education quality

through smart classroom solutions in 15 Government Schools of Betul Dist, M.P.

6. PP shall take the approval of conservation plan from competent authority as area fall under biosphere reserve encompassing WL/Tiger reserves.

The proposed Project area does not fall under Biosphere Reserve, WLS, Tiger reserves etc.

The nearest Tiger corridor is located at a distance of 8.1 km from the project boundary. Pachmarhi Biosphere reserve, which is nearest Biosphere reserve, is located at a distance of 6.5 Km.

It may be noted here that during verification of compliance of Stage-I FC, it has been noted by APCCF, Bhopal, M.P. vide letter karamank/F1/FP/MP/MIN/20920/2016/340 dated 20.01.2020 that proposed area does not fall inside Stapura-Melghat Tiger Corridor & Pachmarhi Biosphere & located within 10 Km from the boundary. There will be no adverse impact due to not falling of the proposed area in Corridor/Biosphere Reserve.

As mining is underground there will be no adverse impact on the wildlife.

However, as precautionary and proactive measures, a conservation plan with adequate fund provisions has been prepared. The same has been given in Section 4.9 (Impact on Flora & Fauna). Tentative budgetary provisions of ₹1.59 Crore has been made in Conservation Plan and details with activity. This Conservation plan has been submitted to DFO, North Betul Division, M.P. vide WCL/PKD/AGM/PLG/2022/584-A dated 09.02.2022.

7. Time bound action plan with budgetary provision wrt to Tawa-III mine project for commitment made on the issues raised during public hearing in EIA-EMP report else to be provided by PP.

Time bound plan with budgetary provision w.r.t to Tawa-III mine project for commitment made on the issues raised during public hearing has been provided in Section 7.1 (Public Conservation) of Revised EIA-EMP.

Total Rs. 224.51/- Lakhs has been kept for Action taken for issues raised during Public Hearing.

8. The provision of skill development plan with respect to coal mining sector must be prepared by PP and detail to be provided in EIA/EMP report.
- Skill development plan with respect to coal mining sector has been prepared by PP and detail has been provided in EIA/EMP report at Chapter –VIII Section 8.3.
- Western Coalfields Ltd under the MOU of Coal India Ltd with Central Institute of Petrochemicals Engineering & Technology (CIPET) Bhopal sponsoring skill development training for local villagers/youth of Betul and Chhindwara district of Madhya Pradesh under its CSR.
- For FY 2022-23 WCL planned to be trained 100 local youth from Betul and Chhindwara District under Skill Development Programme with CIPET Bhopal.
- Budget for FY 2022-23 is ₹70.00 Lakhs for CIPET Bhopal.
9. The revised bifurcation of EMP cost as suggested to be furnished by PP.
- Revised bifurcation has been provided as below
- A) Air Quality Improvement/Activity wise Management Cost.
- Dust suppression in mine premises & Integrated Coal Transport Route – Rs. 36.26 lakhs.
- B) Water Quality Improvement/ Activity wise Management Cost
- Settling Tank for Mine Discharge – RS. 35.40 Lakhs
 - Effluent Treatment Plant, Sewerage system for Office Premises –Rs. 60.43 Lakhs.
- C) Other Environmental Improvement/Activity wise Management Cost
- Base Line Data Generation –Rs. 11.80 Lakhs
 - Land use Mapping by Remote Sensing –Rs. 10.62 Lakhs.
 - Scientific Studies including Subsidence prediction Studies, hydrogeological studies etc. Ts. 70.0 Lakhs.
- Grand Total (A+B+C) –RS 224.51 Lakhs.

As revenue provision, ₹6/tonne has been kept which works out to be ₹28.80 Lakh/Annum for production of 0.48 MTPA and total fund provision for 7.166 MT over the mine life would come out to be ₹429.96 Lakh as revenue provision. Detailed breakup has been provided in Chapter –X, Section 10.3 of Revised EIA-EMP Report.

45.2.3 Details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meeting, are given as under:

- i. Terms of Reference granted vide J-11015/163/2018.IA-II (M) dated 08.02.2019. ToR validity extended for a period of 1 year as per MOEF&CC gazette notification vide no. S.O. 221(E) dated 18.01.2021
- ii. Total mining lease area as per block allotment is 207.47 ha. Project Report/ Mining Plan (Including Progressive Mine Closure Plan) has been approved by the WCL Board vide resolution no. WCL/BD/SECTT/BM-299/2018/1412 dated 24.04.2018.
- iii. 127.466 ha of forest land has been reported to be involved in the project. Approval under the Forest (Conservation) Act, 1980 for diversion of 101.62 ha of forest land for non-forestry purposes has been obtained vide MoEF&CC letter No File No. 8-12/2019-FC dated 27/10/2021 and Approval under the Forest (Conservation) Act, 1980 for diversion of 25.866 ha of forest land for non-forestry purposes has been obtained vide MoEF&CC letter No F. No. 6-MPC 001/2018-BHO/430 dated 27/05/2021
- iv. Baseline data has been again generated as per 27th EAC directives from April 2022 to June 2022. Earlier it was generated during Oct 2016 to Dec 2016 & Mar 2020 to June 2020. Results are within the permissible limit
- v. No court cases, violation cases are pending against the project of the PP pertaining to Environment aspect.
- vi. Environment Laboratory of RI-IV, Nagpur, which was involved in analysis of water, air, noise & soil quality data has been accredited with National Accreditation Board for Testing and calibration Laboratories (NABL) with conformance of ISO 17025:2005 vide certificate no. TC-7102 valid upto 28.06.2024). Baseline data has been provided in the EIA Report of Tawa – III UG.
- vii. Detail of Air quality and surface water quality
 - i. Air quality:
Number of sampling location monitored: 08 Nos.
Industrial Zone: - PM₁₀ and PM_{2.5} concentrations were observed in the range of 36 to 166 µg/m³ and 20 to 43 µg/m³. SO₂ and NO_x concentration were in the range of <10 µg/m³ to 14 µg/m³ and 10 to 17 µg/m³ respectively.

Residential Zone: - PM₁₀ and PM_{2.5} concentrations were observed in the range of 54 to 90 µg/m³ and 20 to 48 µg/m³. NO_x concentrations were in the range of 6 to 14 µg/m³. SO₂ concentration was found to be <10 µg/m³.

The incremental increase in the values were projected to be 0.94 µg/m³ for PM₁₀, 0.23 µg/m³ for PM_{2.5}, 0.05 µg/m³ for SO₂, and 7.38 µg/m³ for NO_x. The value of Total GLC is 88.94 µg/m³ for PM₁₀, 35.23 µg/m³ for PM_{2.5}, 10.05 µg/m³ for SO₂, and 24.38 µg/m³ for NO_x. The observed pollutant levels were compared with CPCB National Ambient Air Quality Standards and GSR 742 (E) and found to be within prescribed standards.

ii. Surface water quality:

Number of sampling location monitored: Total 10 nos. of water quality samples were collected out of which 03 were surface water quality.

Sr. No.	Name of Sampling Locations
1.	Tawa River U/s
2.	Tawa river Downstream
3.	Satpura Reservoir

- The maximum and minimum values of the pH ranges between 7.44 to 7.86, DO ranges between 4.9 mg/l to 5.2 mg/l, Nitrate ranges between 2.26 mg/l to 2.34 mg/l, COD ranges between 24 mg/l to 32 mg/l, BOD ranges between 2 mg/l to 3 mg/l and Fluoride ranges between 0.39 mg/l to 0.7 mg/l.

viii. Satpura Reservoir, Pachmarhi Biosphere Reserve, Pench – Satpura Tiger corridor, Melghat – Satpura Tiger Corridor fall within 10 km boundary of the project.

ix. Commitment made by the Project Proponent to address the Public Hearing concerns mentioned in the following table:

Sl. No.	Particulars	Location (Name School/Village/Area)	Year - 1 (in lakhs)	Year - 2 (in lakhs)	Year - 3 (in lakhs)	Year - 4 & onwards (in lakhs)	Total (in lakhs)
1.	Infrastructure creation for Drinking Water supply	Gandhigram Village	4.13	-	-	5.00	9.13
2.	Skill Development	Pathakhera	18.90	25.20	70.00	45.00	159.10

3.	Roads	Gandhigram Village	4.74	-	-	20.00	24.74
4.	Rain-Water Harvesting	Check Dam- Hirapalla, Gopalpur, Gandhigram Shobhapur	-	-	10.00	10.00	10.00
5.	Health	Bhogaikhapa Gram & Other villages	1.00	-	-	5.00	6.00
6.	Art, Culture & Sports	Gandhigram & Nearby Village	0.50	-	-	1.00	1.50
7.	Agricultural Programme	Shaktigarh Village – Treated mine water for irrigation purpose	-	-	-	35.40	34.40
8.	Others	Nil	-	-	-	25.00	25.00
Total			29.27	25.20	80	146.40	280.87

- x. PP has submitted the following activity wise cost for Environment Management plan as mentioned below in the following table:

Sl. No	Particulars	Amount in ₹ (Lakhs)
Air Quality Management Cost		
1	Dust suppression in mine premises & Integrated Coal Transport Route including installation of fixed sprinkler along coal transportation route	48.06
2	Continuous Ambient Air Quality Monitoring System (CAAQMS)	110.00
Water Quality Management Cost		
3	Settling Tank for Mine Discharge	35.40
4	Effluent Treatment Plant, Sewerage system for Office Premises	60.43
Other Environmental Management Cost		
5	Land use Mapping by Remote Sensing	10.62
6	Scientific Studies including Subsidence prediction Studies, hydrogeological studies etc.	70.00
	Sub Total	344.51
	Revenue Cost (₹6/ tonne of coal production) (₹429.96 lakh @ 7.166 MT Coal reserve)	
1	Plantation along the Coal transportation road, Coal Stockyard and CHP.	30.00

2	Other expenditure related to environment including statutory obligations.	399.96
	Sub Total	429.96

45.2.5 *The EAC after detail deliberation noted that the instant project is a Greenfield underground project. The forest clearance for 127.466 ha has been obtained on 27.05.2021. The Committee noted that Pachmarhi Biosphere Reserve, Pench – Satpura Tiger corridor, Melghat – Satpura Tiger Corridor fall within 10 km boundary of the project. These two Tiger reserve corridors are at distances of 8.1 km and 8.5 kms from the mine, however these were depicted on map without scale and also these corridors are come across the coal transportation route. Therefore, the EAC asked MoEF&CC to seek comments from NTCA on these corridors while considering this project.*

The Committee also noted the issues highlighted by the “Conservation Action Trust”, which was addressed to committee and the Committee in turn sought the comments from the project proponent. Replies internally discussed and found that issues have been addressed by PP and also discussed in EAC for framing suitable conditions.

The PP has revised and submitted the budget for the public hearing i.e. Rs. 280.87 lakh and cost for Environment management plan is Rs. 429.96 lakh. PP shall spend allocated amount through dedicated online monitoring system in time bound manner. Committee emphasized to use the higher capacity trucks size of 40 tonne for transportation of coal. PP committed for transportation of coal from Tawa III UG mine to Satpura thermal power plant through dedicated route.

*Based on the above discussion the committee **recommended** the proposal for Environment clearance for Tawa III Underground Mine for a production capacity of 0.48 MTPA/ 0.60 MTPA (N/P) in land area of 207.47 by M/s Western Coalfields Limited located at Gandhigram village, Tehsil Ghoradongri, District Betul (Madhya Pradesh) under EIA notification 2006 and its amendment therein with the following additional specific conditions to be followed:*

- i. PP shall obtain CTE/CTO from State Pollution Control Board for 0.48/0.6 MTPA (Underground Mine).*
- ii. PP shall address public hearing issues with the allocated Public hearing Budget of Rs. 280.87 Lakh and activities to be monitored by through dedicated online monitoring mechanism. The maintenance of all activities shall be covered through recurring cost of Public Hearing which will be part of CSR budget.*
- iii. As proposed, PP shall implement the public hearing budget on the items given above at 45.2.4 (ix) and EMP budget on the items given above at 45.2.4 (x).*

- iv. *PP to fulfil all the commitment made in the minutes of public hearing to address the issues raised therein in a time bound manner and a progressive report to be furnished to IRO in every six monthly as compliance report*
- v. *PP shall implement EMP activities with allocated capital budget of Rs. 429.96 for compliance with the environmental protection and mitigation.*
- vi. *PP shall create a “**Public Grievance Redressal and Monitoring System**” for resolving any issues related to the pollution of mines and complaint has to resolve as soon as possible not beyond 30 days. In this regard, adequate awareness to be spread among the public to address their grievance to company with simple and easy manner and for which company needs to devise the mechanism. The same shall be reported to IRO within 3 months. A log book to be maintained by PP on “**Public Grievance Redressal and Monitoring System**.”*
- vii. *PP shall construct water harvesting structure with the facility of ground water recharge facility.*
- viii. *PP shall ensure the employment for the Project Affected Families (PAF) on timely basis.*
- ix. *PP shall deploy only 40 tonnes covered trucks/dumper for transportation of coal.*
- x. *PP to maintain the transportation road properly to minimize the dust emission. PP to also develop pucca/concrete roads by seeking consent from the panchayat with widening of roads especially roads inter linking the villages within the study area of 10 km radius buffer zone.*
- xi. *PP to monitor the water quality of the ground water and surface water body located within the core zone and 5 km radius from the periphery of the mine boundary as per procedure laid down by CPCB.*
- xii. *PP to install 1 continuous ambient air quality monitoring stations at suitable locations preferably village side with consultation of SPCB. The real time data so generated shall be uploaded on company website and linked it with website of CPCB & SPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.*
- xiii. *PP must explore innovative technology to recover methane from gases extracted from underground mine while venting.*
- xiv. *PP shall conduct third party audit of compliance of EC condition at an interval six months and its report shall be submitted to IRO, MoEF&CC.*
- xv. *The status of mine closure activities must be included in every six months compliance report submitted to the state pollution control board and IRO.*
- xvi. *PP to install solar lights along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year.*
- xvii. *PP to provide bio toilets to the villages located within the study areas within 1 year from the grant of this EC.*

- xviii. *PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.*
- xix. *PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis. Any non- compliance or infringement should be reported to the concerned authority.*
- xx. *PP to implement the recommendation of land subsidence study carried out for underground mine and report shall be submitted to IRO in every six monthly report.*
- xxi. *PP to accomplish the recruitment of a full-fledged qualified manpower with Environmental Engineer/Environment Science degree background in Environment Management Cell etc. within six months at site and same shall be reported to IRO, MoEF&CC.*
- xxii. *PP shall implement Effluent Treatment Plant for wastewater generated from workshop and Sewage Treatment Plan for its colony. No untreated water shall be discharged from mine boundaries to ponds/nallah/river*
- xxiii. *PP to obtain the star rating as per the guidelines of Ministry of Coal.*
- xxiv. *PP to plant additional plants with three tier plantation along the transportation route, if not completed and identified areas with consent to the gram panchayat within two years.*
- xxv. *PP shall maintain at least 10 mtrs width tree plantation of broad leaves and wind break/green-shield of about 10 mts height along the boundary of coal storage yard.*

Agenda No. 45.3

Expansion of Nigahi opencast coal mining project for increase in production capacity from 21 MTPA to 22.5 MTPA (increase of 10% w.r.t 1.5 MTPA) in land area of 3018.4 Ha by M/s Northern Coalfields Ltd, located in the village Nigahi, Tehsil Singrauli, District Singrauli (Madhya Pradesh) – For Reconsideration of Environmental Clearance under OM vide no. F. No. IA3-22/10/2022-IA.III 07.05.2022- [Availing total 50% relaxation of OM dealing with exemption of public hearing under clause 7 (ii) of EIA notification].

[Proposal No. IA/MP/CMIN/413291/2023; File No. J-11015/79/2013-IA-II (M)]

45.3.1 The proposal is for appraisal of Environmental Clearance issued under OM dated 07.05.2022 which has availed 50% relaxation for Nigahi opencast coal mining project for increase in production capacity from 21 MTPA to 22.5 MTPA (increase of 10% w.r.t 1.5 MTPA) in land area of 3018.4 Ha by M/s Northern Coalfields Ltd, located in the village Nigahi, Tehsil Singrauli, District Singrauli (Madhya Pradesh).

45.3.2 Details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meeting, are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No 63/L /12 and is bounded by Latitude 24°06'3.29" North to 24°11'16.37" North and Longitude 82°35'28.23" East to 82°39'50.12" East.
- (ii) Coal linkage of the project is proposed for transportation of coal to NTPC, Vindhyanagar through MGR system and it will also serve as Basket Linkage mine to meet the overall demand of power grade coal on NCL.
- (iii) Joint venture cartel has NOT been formed.
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance. However, The Singrauli area is under Severely Polluted Area (SPA) specified by CPCB.
- (v) Employment generation, 2827 nos. (As per EIA/ EMP 22.50 MTPA) persons will be provided from the project.
- (vi) The project is reported to be beneficial in terms of (i) Environmental: Post mining enhancement of green cover; (ii) Economic: Providing energy security to the nation and serving largest thermal plant of the nation i.e. NTPC VSTPS, Increase in employment potential and contribution to the exchequer of the adjoining area; (iii) Social: Improvement in social infrastructure of the adjoining area.
- (vii) Earlier, the environment clearance to the project was obtained under EIA Notification, 2006 vide Ministry's letter No J-11015/79/2013-IA. II (M) dated 03.02.2020 for 21.00 MTPA in mine lease area of 3018.40 Ha. Subsequently, Environment Clearance has also been obtained by Nigahi OCP for production of 22.50 MTPA Coal (Expansion from 21.00 MTPA to 22.50 MTPA) in same leasehold area of 3018.400 Ha, vide MoEF&CC's vide F.No. J-11015/79/2013-IA-II(M) dated 25.07.2022.
- (viii) Terms of Reference granted on – (for EC proposals)- Not Applicable
- (ix) Total mining lease area as per block allotment is 3018.4 Ha. Mining Plan including Mine Closure Plan for capacity expansion of Nigahi OCP (22.50 Mtpa) has been approved by NCL Board in 276th meeting on 30.05.2022.
- (x) The land usage pattern of the project is as follows:

Pre-mining land use details

(Area in Ha)

S. No.	LANDUSE	Within ML Area (Ha)	Outside ML Area (Ha)	Total
1.	Agricultural land (Tenancy Land)	1523.883	Nil	1523.883
2.	Forest Land	1280.517	Nil	1280.517
3.	Wasteland	0	Nil	0
4.	Grazing land	0	Nil	0

5.	Surface water bodies	0	Nil	0
6.	Settlements	5.000	Nil	5.000
7.	Others (Government land)	209.000	Nil	209.000
8.	Old Excavation Area (East Quarry)	0	0	0
9.	Old OB Dumps	0	0	0
10.	Roads & Mine Infrastructure	0	0	0
11.	Staff colony	0	0	0
12.	Green belt	0	0	0
13.	Balance area	0	0	0
Total		3018.4	Nil	3018.4

Post-Mining:

S.No.	Landuse during Mining	Land Use (ha)				
		Plantation	Water Body	Public Use	Undisturbed	TOTAL
1	External OB dump	418.000	0	0	0	418.000
2	Top soil dump	Topsoil will be completely used in reclamation of dumps.				
3	Excavation	1405.000	60.000	0	0	1465.000
4	Roads (Including Railways)	0	0	74.000	0	74.000
5	Built up area	0	0	379.400	0	379.400
6	Green Belt	335.00	0	0	0	335.00
7	Undisturbed Area (Safety Zone & Others)	147.000	0	129.400	70.600	347.000
Total		2305.000	60.000	582.800	70.600	3018.400

(xi) Total geological reserve reported in the mine lease area 140.33 MT (Balance Reserve as on 01.04.2023) with 140.33 MT (Balance Reserve as on 01.04.2023) mineable reserve. Out of total geological reserve of 504.61 MT, 483.01 MT are available for extraction. Percent of extraction is 95.71 %.

(xii) Three number of seams (namely Purewa Top, Purewa Bottom, Turra; Purewa Top and Purewa Bottom Seams merge to form a thick composite seam, named Purewa Merged

Seam, in Western section of Nigahi OCP) seams with thickness ranging from 4.00 m to 27.50 m are workable. Grade of coal is G-9 (Average Grade), stripping ratio 4.26m³/t, while gradient is 2 to 3 degree.

- (xiii) Method of mining operations envisages by 'combined mining system deploying dragline and shovel dumper combination and Surface Miner' method
- (xiv) Life of mine is 08 years from 01.04.2023.
- (xv) The project has 2 number of external OB dumps in an area of 418.00 ha with 150 m height and 231.00 Mm³ of OB, 3 number of internal OB dumps in an area of 630.57 ha with 853.10 Mm³ of OB is envisaged in the project.
- (xvi) Total quarry area is 1465.00 ha out of which backfilling will be done in 1405.00 ha while final mine void will be created in an area of 60.00 ha with a depth of 30-40 m. Backfilled quarry area of 1405.00 ha shall be reclaimed with plantation. Final mine void will be converted into a water body.
- (xvii) Transportation of coal has been proposed by dumpers in mine pit head, from surface to SILO by Closed Conveyor Belt System and from SILO by MGR through automatic RLS (Rapid Loading System). Nigahi OCP also serves as a basket mine and depending upon the demand supply scenario of NCL, a small quantity of coal is proposed to be transported through road mode.
- (xviii) Reclamation Plan in an area of 2305.00 ha, comprising of 418.00 ha of external dump, 1405.00 ha of internal dump and 335.00ha of green belt. In addition to this, an area 147.00 ha included in the safety zone/rationalization area has also been proposed for green belt development.
- (xix) 1280.517 ha of forest land has been reported to be involved in the project. Approval under the Forest (Conservation) Act, 1980 for diversion of 1280.517 ha of forest land for non-forestry purposes has been obtained in two stages, i.e., for 874 Ha {Original forest clearance was granted vide F.No. 8-62/86-FC dated 18.06.1987 and Forest Clearance (Stage-II) for renewal of lease, was granted vide F. No. 8-62/ 1986-FC (Pt.) dt. 16.10.2020} and 406.517 Ha {Forest Clearance(Stage-II) was granted vide F.No. 8-26/2015-FC, dated 12.04.2018, for 424.517 ha Forest Area, out of which 18.00 ha Forest Area has been carved out from Nigahi OCP to Jayant OCP of same owner, i.e., NCL, vide EC amendment letter no. J-11015/79/2013-IA. II dated 12.10.2018}.
- (xx) Please mention any National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones fall within 10 km boundary of the project- No
- (xxi) Wildlife conservation plan for schedule- I species has been submitted to NA
- (xxii) The ground water level has been reported to be varying between 0.95m to 17.01 m during pre-monsoon and between 0.84 m to 16.20 m during post-monsoon. Total water requirement for the project is 7,638 m³/day.
- (xxiii) Application for obtaining the approval of the Central Ground Water Authority for ground water clearance for Nigahi OCP, has been submitted on 07.09.2021, and CGWA NOC has

been obtained, vide NOC no. CGWA/NOC/ MIN/ORIG/2021/ 12799 dated 07.09.2021, which is valid up to 06.09.2023.

(xxiv) Public hearing for the project of 15.00 MTPA capacity in an area of 3036.40 ha was conducted on 18.12.2005 at Community Hall, Waidhan, Singrauli, MP, under the Chairmanship of District Collector- Sidhi. Major issues raised in the public hearing include issues involves employment, community development works and infrastructure etc., Appropriate action to address the issues raised in the Public Hearing have already been taken.

(xxv) Commitment made by the Project Proponent to address the Public Hearing concerns in lieu of Corporate Environment Responsibility (CER) to be mentioned in the following table:

There was no issue in the public hearing regarding CER, since there was no concept of CER at the time of public hearing. However, various works related CER have been conducted in the nearby villages i.e. Plantation, distribution of fruit bearing plants, construction of ponds etc.

(xxvi) No River/nalla is flowing near boundary of lease.

(xxvii) Regular monitoring of ambient air quality is being carried out on fortnightly basis. The documented report is submitted to MPPCB, CPCB and also to MoEF&CC along with half yearly EC compliance report. In general, the results of ambient air quality monitoring data were found within prescribed limits except few aberrations which can be attributed to the specific local conditions during the day of sampling.

(xxviii) No court cases, violation cases are pending against the project of the PP.

(xxix) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The coal production from the mine was started from the year 1990-91 onwards.

(xxx) The project involves 1391 project affected families. R&R of the PAPs has been done as per R&R Policy of Coal India Limited. (Note: Current proposal is under clause 7(ii) of EIA Notification 2006, which involves no new to be displaced. All PAFs displaced earlier have been settled.

(xxxi) Total cost of the project is Rs. 2197.31 Crore (There is no additional capital investment in the proposed expansion). Cost of production is Rs. 847.28 per tonne, CSR cost is 2% of the average net profit of the company for the three immediately preceding financial years, R&R cost is 20.13 Crore (there is no PAFs involved in this proposal), Environment Management Cost is Rs. 35.00 crore (as per EPR 15 MTPA).

(xxxii) Consent to Operate (CTO) was obtained from the State PCB on 28.12.2022 and is valid till 31.12.2023.

(xxxiii) Past Production details comparison with existing EC

Year	EC Sanctioned Capacity (MTPA)	Actual Production (MTPA)	Excess production beyond the EC sanctioned capacity
1985-1986	4.20	0.00	NIL
1986-1987	4.20	0.00	NIL

1987-1988	4.20	0.00	NIL
1988-1989	4.20	0.00	NIL
1989-1990	4.20	0.00	NIL
1990-1991	4.20	1.05	NIL
1991-1992	4.20	1.90	NIL
1992-1993	4.20	2.21	NIL
1993-1994	4.20	2.87	NIL
1994-1995	4.20	3.60	NIL
1995-1996	4.20	4.20	NIL
1996-1997	10.00	4.20	NIL
1997-1998	10.00	4.00	NIL
1998-1999	10.00	4.13	NIL
1999-2000	10.00	4.50	NIL
2000-2001	10.00	5.40	NIL
2001-2002	10.00	6.06	NIL
2002-2003	10.00	7.59	NIL
2003-2004	10.00	9.50	NIL
2004-2005	10.00	10.40	0.40
2005-2006	10.00	11.05	1.05
2006-2007	10.00	11.10	1.10
2007-2008	15.00	11.30	NIL
2008-2009	15.00	11.66	NIL
2009-2010	15.00	12.36	NIL
2010-2011	15.00	12.02	NIL
2011-2012	15.00	10.88	NIL
2012-2013	15.00	13.52	NIL
2013-2014	15.00	13.65	NIL
2014-2015	15.00	13.66	NIL
2015-2016	18.75	15.01	NIL
2016-2017	18.75	15.52	NIL
2017-2018	18.75	17.13	NIL

2018-2019	18.75	18.48	NIL
2019-2020	21.00	19.59	NIL
2020-2021	21.00	20.66	NIL
2021-2022	21.00	21.00	NIL
2022-2023	22.50	22.50	NIL

(xxxvi) Base line monitoring status:

- a) Mention the Period/ Season of baseline study carried out from 4.10.2021 to 31.12.2021
- b) Whether the Laboratory has been accredited by the NABL/ MoEF&CC certification involved in analysis of water, air, noise & soil quality data, also providing its respective lab reports. Yes, lab report is enclosed at Annexure-XXIII (pg. A-175) of EIA/EMP report.
- c) Detail of Air quality and surface water quality

(iii) Air quality:

Number of sampling location monitored: 08 (02 in core and 06 in Buffer Zone) Stations

(i) Particulate Matter (PM 10): In core zone Industrial area varies from 247.5 to 290.9 $\mu\text{g}/\text{m}^3$ and in buffer zone in Residential area varies from 67.2 to 136.0 $\mu\text{g}/\text{m}^3$.

(ii) PM 2.5: In buffer zone in Residential area varies from 36.4 to 72.1 $\mu\text{g}/\text{m}^3$.

(iii) Sulphur Dioxide: In core zone under Industrial area varies from 27.1 to 40.9 $\mu\text{g}/\text{m}^3$ and in buffer zone in Residential area varies from 14.0 to 38.3 $\mu\text{g}/\text{m}^3$.

(iv) Oxides of Nitrogen: In core zone under Industrial area varies from 30.5 to 50.3 $\mu\text{g}/\text{m}^3$ and in buffer zone in Residential area varies from 17.0 to 46.0 $\mu\text{g}/\text{m}^3$.

(v) The observed pollutant levels were compared with CPCB National Ambient Air Quality Standards and found to be mostly within the prescribed limits as setup by CPCB NAAQS

(iv) Surface water quality: Number of sampling location monitored: 4

The results indicate that by adopting the environmental protection measures. The result indicates that the maximum and minimum values of

- a) DO ranges between 5.7 mg/l to 6.1 mg/l,
- b) Hardness ranged between 101mg/l to 252 mg/l
- c) BOD ranges between <2 mg/l to 2.7 mg/l
- d) TDS ranges between 198-320 mg/l
- e) Fluoride ranges between 0.1 mg/l to 0.9 mg/l
- f) Chlorides ranges between 30 mg/l to 78 mg/l

Bareja pond water – (S/W 1):

- At this location, pH value is found to be 6.68 while TDS values are found to be 320mg/l respectively.

- Total Hardness, Calcium and Magnesium values are found to be 252mg/l, 49.7mg/l and 31.1mg/l
- BOD and DO values are found to be 2.7mg/l and 5.8mg/l respectively

45.3.3 The EAC during deliberations noted the following:

- Total 1280.517 ha of forest land has been reported to be involved in the project. Approval under the Forest (Conservation) Act, 1980 for diversion of 1280.517 ha of forest land for non-forestry purposes has been obtained in two stages, i.e., for 874 Ha {Original forest clearance was granted vide F.No. 8-62/86-FC dated 18.06.1987 and Forest Clearance (Stage-II) for renewal of lease, was granted vide F. No. 8-62/ 1986-FC (Pt.) dt. 16.10.2020} and 406.517 Ha {Forest Clearance(Stage-II) was granted vide F.No. 8-26/2015-FC, dated 12.04.2018, for 424.517 ha Forest Area.
- Application for obtaining the approval of the Central Ground Water Authority for ground water clearance for Nigahi OCP, has been submitted on 07.09.2021, and CGWA NOC has been obtained, vide NOC no. CGWA/NOC/ MIN/ORIG/2021/ 12799 dated 07.09.2021, which is valid up to 06.09.2023.
- Public hearing for the project of 15.00 MTPA capacity in an area of 3036.40 ha was conducted on 18.12.2005 at Community Hall, Waidhan, Singrauli, MP, under the Chairmanship of District Collector- Sidhi. Major issues raised in the public hearing include issues involves employment, community development works and infrastructure etc.
- PP has obtained the following Environmental Clearance and their amendment such as:

EC Capacity (MTPA)	EC Reference No. with dates
10.00	J-11015/292/94-IA.II(M) dated 28.02.1996
15.00	J-11015/235/2006-IA.II(M) dated 08.05.2007 with Public Hearing
18.75	J-11015/79/2013-IA.II(M) dated 19.03.2015 under Clause 7(ii) of EIA Notification, 2006 (25% increase w.r.t 15 MTPA)
21.00	J-11015/79/2013-IA.II (M), dated 03.02.2020 under Clause 7(ii) of EIA Notification, 2006 (40% increase w.r.t. 15 MTPA)
22.50	Vide identification no. EC22A042MP180012 dated 26.07.2022 as per OM dated 07.05.2022 under Clause 7(ii) of EIA Notification, 2006 (50% increase w.r.t. 15 MTPA)

- Past Production details comparison with existing EC

Year	EC Sanctioned Capacity (MTPA)	Actual Production (MTPA)	Excess production beyond the EC sanctioned capacity
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2017-2018	18.75	17.13	NIL
2018-2019	18.75	18.48	NIL
2019-2020	21.00	19.59	NIL
2020-2021	21.00	20.66	NIL
2021-2022	21.00	21.00	NIL
2022-2023	22.50	22.50	NIL

- (vi) PP has collected the Base line data for period from 04.10.2021 to 31.12.2021.
- (vii) No court cases pending on project proponent.
- (viii) From the submission of PP, it reveals that Banjay National Park and Tiger Reserve is about 5.03 km from the mine boundary and Bagdara WL santusry is about 55.38 kms.

45.3.4 *The EAC, after deliberations observed that the instant project has been submitted in compliance of Ministry's OM dated 7th May, 2022 wherein expansion in capacity was granted in advance (10% beyond 40% from the existing capacity) subject to certain conditions related to submission of EIA-EMP report and compliances of existing EC conditions within six months along with other statutory requirements. This prior EC was granted on 25th July, 2022 by MoEF&CC due to shortage of coal in the country and as per the condition contained therein. The committee noted that proposal has been submitted with delay of more than two months beyond the prescribed time limit of six months.*

Earlier, Ministry was issuing the EC and Expansion of EC vide Ministry's letter dated 28.02.1996, 08.05.2007(with Public hearing), 19.03.2015, 03.02.2020 and latest EC issued on 26.07.2022. The certified compliance report was also discussed which has been submitted vide letter dated 01.05.2023. The committee observed certain pending works such as construction of 10 MTPA CHP, which are reported to be under progress. On enquiry, PP committed to complete the pending CHP work by 31.03.2024. The installation of continuous effluent quality system for ETP is still at tendering stage, PP committed to complete the installation process as soon as possible. Through KML file, photographs and records, the committee noted that PP developed the green belt adequately.

The Committee advised PP to start progressive mine closure activity wherein PP shall have to ensure that the combination of layers of top soil and Fly ash to be utilized for mine reclamation with the development of grazing facility. The Mine closure plan shall be implemented as per the Mine closure already issued with the Mine plan and status of the same to be submitted to IRO. PP has informed about the ongoing carrying capacity is in process by ISM Dhanbad. The PP shall submit the recommendation of the report to the MoEF&CC immediately after completion of the study. The budget allocated for the public hearing, CSR and EMP needs to be dealt separately, therefore committee opined that Rs 9.0 Crore is not sufficient to address w.r.t. issues highlighted

in the public hearing. The Committee opined that at least 1.5% of the total project cost to be spent upon EMP and Public Hearing.

The Committee noted the issues highlighted by the “Conservation Action Trust”, which was addressed to committee and sought the comments from the project proponent. Replies internally discussed and found that issues have addressed by PP and also part of discussion of EAC.

The committee appreciated PP for taking extra effort within in the Mine lease area for making mining process sustainable and taking measures for reducing the pollution load on environment. The Committee noted the digital tools engaged by the PP within mine which is linked with transportation of coal, tracking for tankers, land management system (OB and backfilling coverage) and drone based survey.

*In view of the above, EAC after detailed deliberation **recommended** and revalidated the condition required for Environmental Clearance dated 26.07.2022 issued under OM dated 07.05.2022 for 50% relaxation availed for Nigahi opencast coal mining project for increase in production capacity from 21 MTPA to 22.5 MTPA (increase of 10% w.r.t 1.5 MTPA) in land area of 3018.4 Ha by M/s Northern Coalfields Ltd, located in the village Nigahi, Tehsil Singrauli, District Singrauli (Madhya Pradesh), under the provisions of EIA Notification, 2006 and its amendments therein with specific conditions for environmental safeguards mentioned below:*

Specific conditions: -

- i. As proposed, PP shall construct and complete the work for installation of CHP for 10 MTPA capacities before 31.03.2024.*
- ii. PP shall fulfil the water requirement for agricultural purpose by creating artificial ponds and shall also fulfil the drinking water requirement after treatment through dedicated well or alternate sources for villagers.*
- iii. PP shall complete activities proposed upto to 1.5% of project cost to address the issues arising from public hearing against provision of 9 crores and implement the works withing 3 years. Status of implementation shall be submitted in six monthly report to IRO, MoEF&CC.*
- iv. PP shall install continuous effluent quality system for ETP within six months and the monitoring results shall be submitted to the IRO, MoEF&CC.*
- v. PP shall start reclamation of the mine with combination of top soil and Fly ash with the development of grazing facility and other activities to be considered from the progressive mine closure plan.*
- vi. PP shall immediately submit the status of the closure of the mine as per the approved progressive mine closure plan.*

- vii. *PP shall submit the recommendation of the ongoing carrying capacity study by ISM Dhanbad.*
- viii. *PP shall engage the electric vehicle or small vehicles for internal roads within mine using green fuel. No vehicle shall be used based fossil fuel.*
- ix. *PP shall submit the report upon the status of the training session already conducted in order to provide livelihood and skill development to near-by villagers to make them employable.*
- x. *PP shall complete the dense plantation along mine roads, on OB dumps and non-dump areas with local species particularly of Sal tree/species. PP shall develop 5 ha of Sal nursery in the project area and use it for plantation and distribute freely to the nearby areas.*
- xi. *PP to shall complete the tree plantation particularly fruit bearing tree along the village road within six months from date of issue of EC to IRO, MoEF&CC. The plantation shall also be planted along the Mine boundary and Mine pit. A detailed report with GIS images of every six months subsequently be submitted in every six monthly report to justify the adequate tree plantation.*
- xii. *PP shall make the pucca roads within the mine lease area and same should be maintained time to time.*
- xiii. *PP needs to submit the compliance of SoP issued by CPCB for dumping of mine void by fly ash.*
- xiv. *PP needs to submit the physical and financial target for the implementation of the action plan for conservation and protection of endangered flora and fauna.*
- xv. *PP needs to submit the detail report upon the steps already taken or to be taken towards medical health check-ups for Mine workers.*
- xvi. *The project proponent shall include development of solar parks, eco-friendly-parks, fish farming pond, picnic spot and sports compound in its Mine Closure Report. Further if possible, maximum possible area of quarry shall be brought upto original ground level and handover the land to Project affected Families.*
- xvii. *Proper garland drain and retaining wall should be made (if required) and same should be revived from time to time.*
- xviii. *The PP shall not use the ground water for any type of mine closure activity. PP shall maintain one permanent Piezometer for monitoring of ground water level.*
- xix. *No village road shall be used as well as no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals etc.*
- xx. *The project proponent shall install effective dust suppression system at the suitable location in the other parts of the mining lease to arrest the fugitive dust emission.*
- xxi. *The project proponent shall arrange Periodical health check-up camp and in long term PP shall arrange permanent health facility near village area.*
- xxii. *Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 directed the Union of*

India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent”. The implementation report of the above said condition shall be sent to the Regional Office of the MoEF&CC.

xxiii. All the other terms and condition of earlier EC dated 08.05.2007, 19.03.2015, 03.02.2020 and 26.07.2022 shall remain same.

Agenda No. 45.4

Coal Washery of production capacity of 5.0 MTPA (2.5 X 2.5 MTPA) based on Heavy Media Cyclone in an area of 12.65 Ha by M/s Aryan Ispat & Power Pvt Ltd. located at village Bomalai, Tehsil Rengali, District Sambalpur (Odisha) – Reconsideration of Environmental Clearance reg.

[Online Proposal No. IA/OR/CMIN/402999/2022; File No. J-11015/68/2016-IA-II (M)]

45.4.1 The proposal for reconsideration of Environmental Clearance for Coal Washery of production capacity of 5.0 MTPA (2.5 X 2.5 MTPA) based on Heavy Media Cyclone in an area of 12.65 Ha by M/s Aryan Ispat & Power Pvt. Ltd. located at village Bomalai, Tehsil Rengali, District Sambalpur (Odisha).

45.4.2 The proposal was earlier considered in the 38th EAC meeting held during 14-15th December, 2022 wherein committee deferred the proposal for submission of information. PP has submitted the point wise reply as mentioned below:

S. No.	Observations by EAC	Reply by PP
i	PP shall obtain the EC amendment issued to Steel Manufacturing plan of M/s Aryan Ispat & Power Pvt. Ltd. dated	Application for amendment in Environmental Clearance for Steel Plant has been submitted on Parivesh Portal. Acknowledgement is enclosed. Following information may kindly be considered: <ul style="list-style-type: none"> • A MoU between Govt. of Orissa and AIPPL was signed on 27.11.2004 for allocation of 260 acres of land for setting up a Steel plant. • Accordingly, AIPPL forwarded proposal for seeking Environmental clearance over 260 Acres area for the steel plant. • Environmental clearance for the Integrated Steel Plant (Sponge Iron Plant (2,60,000 TPA), Mini Blast furnace (1,00,000 TPA), Steel Melt

	<p>16.09.2008 for reduction in the area and demarcate properly the washery area.</p>	<p>Shop (3,00,000 TPA) Coal washery (7,00,000 TPA), Captive Power Plant (WHRB: 21 MW& FBB 24 MW) at Village: Bomaloi (within the existing premises of the Plant), Tehsil: Rengali, District: Sambalpur, Odisha.) was granted on 16th September, 2008 for 260 Acres (105.17 Ha) area.</p> <ul style="list-style-type: none"> • However, Govt. of Odisha has handed over only 204.56 acre (82.78 Ha) land out of approved 260 acres till date in various stages. • Further, AIPPL approached MoEF&CC for expansion of Steel plant by installation of 5 MTPA coal washery in year 2015. However, the EAC directed vide Minutes of 44th EAC Meeting held on 8th & 9th October 2015 that AIPPL should submit separate application for the 5.0 MTPA Coal washery as a stand-alone project in the same premises. • Accordingly, AIPPL applied to EAC (Coal Mining), MoEF&CC for Environmental Clearance of 5.0 MTPA coal washery in 12.65 Ha area within the acquired land of 204.56 Acre (82.78 Ha) of the steel plant. • Terms of Reference (TOR) were first issued vide MoEF&CC Letter No. J-11015/68/2016-IA.II (M) dated 6th April 2017. The Public Hearing for the Coal Washery Project was conducted on 12th Jan. 2021. • EAC (Coal Mining), MoEF&CC appraised the project in its 38th meeting held on 14.12.2022 and has sought to obtain amendment in earlier EC granted for the steel plant, in view of the location of stand-alone coal washery in the steel plant premises. <p>Thus, this application is being submitted for amendment in Environmental Clearance for reduction in area by excluding 12.65 Ha area proposed for standalone 5.0 MTPA coal washery. Following amendment is requested.</p> <table border="1" data-bbox="508 1325 1463 1839"> <thead> <tr> <th data-bbox="508 1325 670 1434">Facility</th> <th data-bbox="670 1325 873 1434">Existing configuration</th> <th data-bbox="873 1325 1076 1434">Proposed configuration</th> <th data-bbox="1076 1325 1295 1434">Final configuration</th> <th data-bbox="1295 1325 1463 1434">Remarks, if any</th> </tr> </thead> <tbody> <tr> <td data-bbox="508 1434 670 1839">Integrated Steel Plant</td> <td data-bbox="670 1434 873 1839">260 Acre</td> <td data-bbox="873 1434 1076 1839">-31.25 Acre (- 12.65 Ha)</td> <td data-bbox="1076 1434 1295 1839">228.74 Acre (92.52 Ha)</td> <td data-bbox="1295 1434 1463 1839">Deduction in area for proposed installation of 5.0 MTPA standalone coal washery.</td> </tr> </tbody> </table>	Facility	Existing configuration	Proposed configuration	Final configuration	Remarks, if any	Integrated Steel Plant	260 Acre	-31.25 Acre (- 12.65 Ha)	228.74 Acre (92.52 Ha)	Deduction in area for proposed installation of 5.0 MTPA standalone coal washery.
Facility	Existing configuration	Proposed configuration	Final configuration	Remarks, if any								
Integrated Steel Plant	260 Acre	-31.25 Acre (- 12.65 Ha)	228.74 Acre (92.52 Ha)	Deduction in area for proposed installation of 5.0 MTPA standalone coal washery.								

		Acknowledgement of the application is enclosed.
ii	PP shall submit the phase wise implementation and installation plan of the Coal washery keeping in mind that no tree to be cut in the mine lease area.	<p>Proposed implementation and installation plan:</p> <p>Phase I – 2.5 MTPA: Within 18 months after grant of EC</p> <p>Phase II – 2.5 MTPA: Within 12 months after commencement of operation of Phase I. (Refer layout plan as Map-I)</p> <p>There will not be any tree cutting involved during installation of the coal washery project. Undertaking regarding this is enclosed.</p>
iii	PP shall submit an authenticated map showing the exact location of the project area w.r.t. the existing wildlife sanctuary and certify the same from PCCF that project does not come any notified sanctuary.	The ESZ of Badrama & Khalasuni Wildlife Sanctuary is located at 12.2 km South east of the proposed coal washery boundary. Authenticated map from PCCF showing Sr. No. Observations by distance of Badrama & Khalasuni Wildlife Sanctuary from Proposed Coal washery area is enclosed herewith as Map-II .
iv	The PP shall submit the plan to protect the nearest fringe of Sambalpur Elephant Reserve [SER]	Wildlife Conservation Plan has been submitted in respect of nearest fringe of Sambalpur Elephant Reserve [SER] lie at distance of 0.1 km towards east direction enclosed.

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v	PP shall submit the land use pattern considering 33% of three tier plantation excluding the area of steel plant.	<ul style="list-style-type: none"> • The coal washery will be installed in 12.65 Ha area out of the 82.78 Ha area under possession with AIPPL. • Out of 12.65 Ha of proposed coal washery area, 4.17 Ha (33%) will be developed as green belt & plantation. • Separate Green belt & Plantation will be developed & maintained in 33% area of the steel plant and coal washery respectively. <p>The breakup of area under Green belt & Plantation in Steel Plant & Coal washery is presented in Table below:</p> <table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Particulars</th> <th>Total Area (Ha)</th> <th>Green Belt area (Ha)</th> <th>% of Total area</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Total Plant area</td> <td>82.78</td> <td>27.32</td> <td>33%</td> </tr> <tr> <td>2</td> <td>Steel Plant Area</td> <td>70.13</td> <td>23.15</td> <td>33%</td> </tr> <tr> <td>3</td> <td>Coal washery Area</td> <td>12.65</td> <td>4.17</td> <td>33%</td> </tr> </tbody> </table> <p>The land use pattern of the proposed coal washery is given below:</p> <table border="1"> <thead> <tr> <th>Land Use</th> <th>Total (Ha)</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Washery Plant</td> <td>3.14</td> <td>24.8</td> </tr> <tr> <td>ROM Coal Stock Yard</td> <td>2.02</td> <td>16.0</td> </tr> <tr> <td>Clean Coal, Middling & Rejects Staking Area</td> <td>1.42</td> <td>11.2</td> </tr> <tr> <td>Other Infrastructure like Office building, Internal roads, Weigh bridge, Water reservoir, Canteen, Labourer room, Maintenance shed, Stores etc.</td> <td>1.90</td> <td>15.0</td> </tr> <tr> <td>Three tier Greenbelt & Plantation</td> <td>4.17</td> <td>33.0</td> </tr> <tr> <td>Total Project Area =</td> <td>12.65</td> <td>100.0</td> </tr> </tbody> </table>	Sr. No.	Particulars	Total Area (Ha)	Green Belt area (Ha)	% of Total area	1	Total Plant area	82.78	27.32	33%	2	Steel Plant Area	70.13	23.15	33%	3	Coal washery Area	12.65	4.17	33%	Land Use	Total (Ha)	%	Washery Plant	3.14	24.8	ROM Coal Stock Yard	2.02	16.0	Clean Coal, Middling & Rejects Staking Area	1.42	11.2	Other Infrastructure like Office building, Internal roads, Weigh bridge, Water reservoir, Canteen, Labourer room, Maintenance shed, Stores etc.	1.90	15.0	Three tier Greenbelt & Plantation	4.17	33.0	Total Project Area =	12.65	100.0
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		Layout plan of proposed plantation area is shown in Map-III .																		
vi	PP shall submit the proof of submission of Draft EIA to SPCB before issuance public notice.	Acknowledgement copy of submission of Draft EIA to SPCB before issuance of Public Notice is Enclosed.																		
vii	PP shall submit the air quality data for 3 months and analysis data all heavy metals in surface and ground water as per Terms of Reference.	<ul style="list-style-type: none"> • Ambient air quality data for 3 months enclosed. • Surface and Groundwater quality monitoring results along with all heavy metals has been done and enclosed. 																		
viii	PP shall submit the detail plan for source of water, discharge, treatment and recycling of wastewater generated from washery w.r.t. Zero Liquid Discharge system.	<p>Water Requirement: Hourly water requirement for the proposed coal washery is presented in Table below:</p> <table border="1"> <thead> <tr> <th rowspan="2">Particulars</th> <th colspan="3">Quantities in cum/Hr</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Requirement</th> <th>Consumption</th> <th>Waste water generation</th> </tr> </thead> <tbody> <tr> <td>Process water requirement (Make up water)</td> <td>44</td> <td>44</td> <td>-</td> <td>-</td> </tr> <tr> <td>Domestic & Other</td> <td>3</td> <td>1</td> <td>2</td> <td>Treatment in STP & will be recycled in</td> </tr> </tbody> </table>	Particulars	Quantities in cum/Hr			Remarks	Requirement	Consumption	Waste water generation	Process water requirement (Make up water)	44	44	-	-	Domestic & Other	3	1	2	Treatment in STP & will be recycled in
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					Dust suppression & Plantation
		Dust suppression & Plantation	8	8	-
		Total	55	53	2
					Zero Effluent Discharge
		Details are enclosed.			
ix	PP shall submit the plan for medical facility, public school, children park and village pond with suitable photographs and the demarcated land area for the same.	<p>Medical Facility: AIPPL will conduct periodic health camps in nearby villages. Health Center is already established in the Integrated Steel Plant premise, which is open for nearby villagers. A well-equipped ambulance will be provided to the villagers free of cost, in case of any emergency.</p> <p>Public School: Donation of computers in Public School in Village Phulchanger & Bomalai.</p> <p>Children Park: Provision of Kids playing equipment and development of garden in Bomalai park.</p> <p>Village Pond: AIPPL has already constructed a pond in Phulchanger village. Desiltation of pond and construction of Bathing ghat will be carried out in this pond. Necessary budget provision for the above activities has been made under CSR plan.</p> <p>Photographs of the above facilities are enclosed.</p>			
x	PP shall submit letter from PCCF regarding no Schedule-I species present in the 10 km buffer area of	Wildlife Conservation Plan has been submitted in respect of nearest fringe of Sambalpur Elephant Reserve [SER] lie at distance of 0.1 km towards east direction enclosed.			

	project since it has submitted in EIA that Elephant Reserve is at a distance of 0.1 KM. Wildlife Conservation Plan should be submitted as per presence of Schedule I species.											
xi	PP shall submit the plan for drinking water supply to the two villages Phulchanger and one adjacent village.	<p>AIPPL is already providing drinking water through pipeline in the Phulchanger village. The same will be further extended to cover entire population of the village.</p> <table border="1"> <tr> <td>Population of Phulchanger village:</td> <td>Approx. 400</td> </tr> <tr> <td>Existing water supply quantity:</td> <td>8 Public taps, 10 KLD</td> </tr> <tr> <td>Proposed additional water supply quantity:</td> <td>15 KLD</td> </tr> <tr> <td>Additional taps proposed to be provided:</td> <td>10 Public Taps</td> </tr> <tr> <td>Proposed additional budget for drinking water supply:</td> <td>Rs. 4.00 Lakh</td> </tr> </table> <p>Photograph showing existing public tap provided by AIPPL Enclosed.</p>	Population of Phulchanger village:	Approx. 400	Existing water supply quantity:	8 Public taps, 10 KLD	Proposed additional water supply quantity:	15 KLD	Additional taps proposed to be provided:	10 Public Taps	Proposed additional budget for drinking water supply:	Rs. 4.00 Lakh
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xii	PP shall submit the plan for connecting road to village Phulchanger.	AIPPL has already constructed approach road for Phulchanger village from SH-10. The approach road and internal village roads will be periodically maintained by the company. Budget for the same has been provided under CSR Fund. Photographs of the village roads are enclosed.										
xiii	PP shall submit the number of employment to be provided to the local	<p>The proposed coal washery will provide direct employment to 70 persons in the project. The break-up of manpower will be as follows:</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Numbers</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Particulars	Numbers								
Particulars	Numbers											

	people as per their educational qualification and also mention the skill to be provided to the locals so that they can withstand their family.	Supervisory	5										
		Highly skilled	12										
		Semi-skilled	20										
		Unskilled	33										
		Total	70										
		<p>Out of these, the semi-skilled and unskilled workers will be employed from nearby villages based on their availability and eligibility.</p> <p>Apart from these, the local people will benefit from indirect employment in supporting facilities like coal transport, shops, garages, canteen/restaurants, etc.</p> <p>Trainings to be provided to local interested youth:</p> <p>M/s AIPPL will provide following skill development programs for local interested youth / local women under CSR activities:</p> <ul style="list-style-type: none"> • ITI training to interested youth from nearby villages and will also provide on the job training to interested eligible candidates. After completing training, suitable candidates will be provided employment in the plant as per the requirement. • Sewing/embroidery training to interested local women & provision of sewing machine after successful completion of the course. • Computer training to interested local youth. • Mobile / Computer/TV repairing, etc. 											
xiv	PP shall submit the revised EMP budget so that they can address the above issues and separately mention the Budget of Public Hearing excluding the	<p>The proposed budget under EMP, Public Hearing & CSR is provided below:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Particulars</th> <th>Capital Cost</th> <th>Recurring expenses</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Implementation of Environmental Management plan (EMP)</td> <td>Rs. 232 Lakh</td> <td>Rs. 43.75 Lakh/Year</td> <td></td> </tr> </tbody> </table>		S. No.	Particulars	Capital Cost	Recurring expenses	Remarks	1.	Implementation of Environmental Management plan (EMP)	Rs. 232 Lakh	Rs. 43.75 Lakh/Year	
S. No.	Particulars	Capital Cost	Recurring expenses	Remarks									
1.	Implementation of Environmental Management plan (EMP)	Rs. 232 Lakh	Rs. 43.75 Lakh/Year										

	activities of CSR.	2.	Action Plan for addressing issues raised during Public Hearing	Rs. 73 Lakh		To be spent in first two years.
		3.	Activities proposed under CSR	Rs. 43.70 Lakh		
Detailed proposed budgets for implementation of EMP, Action plan for addressing issues raised during Public Hearing and Activities proposed to be implemented under CSR is provided in Annexure 10.						
xv	PP shall submit the transportation route via rail for incoming and outgoing supply of Coal.	The name & distance of nearby coal mines, from where, ROM coal will be brought to the proposed coal washery, is presented below:				
		S. No.	Name of Coal Mine	Distance from Coal washery	Rail facility availability	
		1.	Talabira OCP	7.2 Km	No	
		2.	Samleshwari OCP	18 Km	Yes	
		3.	Lajkura Coal Mine	19 km	Yes	
		4.	Belpahar Coal Mine	19 Km	Yes	
		5.	Lakhanpur Coal Mine	20km	Yes	
		6.	Dulanga Coal Mine	35Km	Yes	
		7.	Manoharpur OCP	38Km	Yes	
		8.	Garjanbahal OCP	45Km	No	
		9.	Kulda OCP	47 Km	No	
		10.	Basundhara Coal Mine	50 Km	Yes	
		11	Bhubaneswari Coal Mine	145 Km	Yes	
		12.	Lingraj Coal mine	145 Km	Yes	

		13.	Ananta OCP	145 Km	Yes
		14.	Jagannath OCP	145 Km	Yes
		15.	Bharatpur OCP	145 Km	Yes
		<p>From the above table, it can be observed that excluding Talabira OCP, Garjanbahal OCP & Kulda OCP, all other mines are connected with rail transport network. Transport of coal by railway mode is economical only for longer distances. For shorter distance, the rail transport is not economically viable.</p> <p>Also, the ROM coal will be transported to the coal washery from different mines at different times as per the availability of coal in the mine and contract with the user industries. Thus, no fixed route of inward coal transport can be determined as it will change from time to time based on location of the mines.</p> <p>Washed clean coal (2.2 MTPA) will be transported 100% through rail mode to the user industries connected with rail network.</p> <p>Middlings (2.35 MTPA) will be transported to nearby TPPs by road. Reject coal (0.45 MTPA) will be sold to nearby brick kiln operators</p>			
xvi	PP shall submit cumulative impact of steel plant (already existing) and proposed coal washery plant.	Cumulative impact of steel plant (already existing) and proposed coal washery plant is enclosed.			

45.4.3 Details of the proposal, as ascertained from the proposal documents and as revealed from the discussions held during the meeting, are given as under:

- i. The project area is covered under Survey of India Topo Sheet **No.** 73 C/2 and is bounded by the geographical coordinates ranging from 21°42'39.1" to 21°42'49.6" N and Longitude 84°02'25.2" to 84°02'43.9" E.

- ii. Coal linkage of the project is proposed for **commercial** use for various industries.
- iii. Joint venture cartel has been formed: **No**
- iv. Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- v. Employment generation, **Direct** employment to **70** persons will be provided from the project.
- vi. The project is reported to be beneficial in terms of **Environmental, Social, Financial aspects.**
- vii. No Earlier, the environment clearance to the project was obtained under EIA Notification, 2006.
- viii. Terms of Reference granted on **28.06.2022.**
- ix. Total project area proposed is **12.65 ha.**
- x. The land usage pattern of the project is as under

Pre-mining land use details

(Area in Ha)

Land Use	Within ML Area	Outside ML Area	Total (Ha)
Agricultural Land	0	Nil	0
Forest Land	0	Nil	0
Waste land	0	Nil	0
Grazing Land	0	Nil	0
Surface Water Bodies	0	Nil	0
Settlements	0	Nil	0
Others (Road, Community/other use): Industrial use	12.65	Nil	12.65
Old Excavation Area (East Quarry)	0	Nil	0
Old Excavation Area (East Quarry)	0	Nil	0
Old OB Dump	0	Nil	0
Roads & Mine Infrastructure	0	Nil	0
R & R colony	0	Nil	0
Staff Colony	0	Nil	0
Green Belt	0	Nil	0
Balance Area	0	Nil	0
Total Project Area =	12.65	Nil	12.65

Proposed Land use pattern:

Land Use	Total (Ha)
Washery Plant	3.14
ROM Coal Stock Yard	2.02
Clean Coal, Middling & Rejects Staking Area	1.42

Land Use	Total (Ha)
Other Infrastructure like Office building, Internal roads, Weigh bridge, Water reservoir, Canteen, Labourer room, Maintenance shed, Stores etc.	1.90
Plantation	4.17
Total Project Area =	12.65

- xi. Transportation of coal has been proposed by belt conveyor in coal washery, from washery to Siding by truck and at siding onwards by rail.
- xii. Reclamation Plan in an area of 4.17 ha, comprising green belt.
- xiii. No forest land has been reported to be involved in the project.
- xiv. **No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones** have been reported with 10 km boundary of the project.
- xv. Wildlife conservation plan for schedule – I species has been submitted to **District Forest Officer, Sambalpur on 03.04.2023.**
- xvi. The ground water level has been reported to be varying between **6.5 m to 10.6 m** during pre-monsoon and between **1.9 m to 3.1 m** during post-monsoon. Total water requirement for the project is **1320 KLD (55 cum/Hr).**
- xvii. Application for obtaining the approval of the Central Ground Water Authority for has been submitted on : **Not Applicable as no groundwater abstraction proposed.**
- xviii. Public hearing for the project of **coal washery of 5.0 MTPA** capacity in an area of **12.65 Ha** was conducted on **12.01.2021 at Bomaloi Gram Panchayat Office Premises, Rengali Tehsil, Sambalpur District, Odisha** Major issues raised in the public hearing include **Air & water pollution, Employment, Village infrastructure, Education, Health, etc.** Accordingly, appropriate action to address the issues raised in the Public Hearing are addressed in final EIA/EMP. A **budget of Rs. 73.00 Lakh** has been earmarked for implementation of the Action plan for addressing issues raised in the public hearing.
- xix. Commitment made by the Project Proponent to address the Public Hearing concerns in lieu of Corporate Environment Responsibility (CER) to be mentioned in the following table:

	Particulars	Location (Name School/Village/Area)	Year-1 (In Lakhs)	Year-2 (In Lakhs)	Total (In lakhs)
1	Infrastructure creation for Drinking Water supply	Phulchangar	2.00	2.00	4.00
2	Sanitation	Phulchangar	3.00	3.00	6.00
3	Education	Bomblai, Phulchangar	5.00	5.00	10.00
4	Skill Development	Bomblai, Phulchangar, Tilaimal, Lapanga, Rengali	7.00	7.00	14.00
5	Roads	Bomblai, Phulchangar	5.00	5.00	10.00

6	Cross drains		-	-	-
7	Electrification including solar power	Rengali, Bomblai	1.00	1.00	2.00
8	Solid waste management facilities	Bomblai, Phulchangar	2.00	2.00	4.00
9	Scientific support and awareness to local farmers to increase yield of crop and fodder	Bomblai, Phulchangar, Tilaimal, Lapanga, Rengali	5.00	5.00	10.00
10	Rain water Harvesting	Phulchangar	1.00	1.00	2.00
11	Soil moisture conservation works		-	-	-
12	Avenue plantation		-	-	-
13	Plantation in community areas	Bomblai, Phulchangar	1.00	1.00	2.00
14	Infrastructure		-	-	-
15	Health	Bomblai, Phulchangar	1.00	1.00	2.00
16	Art, Culture & Sports	Bomblai, Phulchangar	0.50	0.50	1.00
17	Livelihood		-	-	-
	Agricultural programme:	Bomblai, Phulchangar, Tilaimal, Lapanga, Rengali	3.00	3.00	6.00
	Total		36.50	36.50	73.00

- xx. Hearing have already been taken taken are as under:
- xxi. Consent to Operate for the shall be obtained from the Odisha State PCB.
- xxii. Seasonal nala is flowing adjacent to southern side of the project boundary. No nala diversion is proposed.
- xxiii. Regular monitoring of ambient air quality is being carried out on fortnightly basis for the existing integrated steel plant. The documented report is being submitted to OPCB and also to MoEF&CC along with half yearly EC compliance report. In general, the results of ambient air quality monitoring data were found within prescribed limits except few aberrations which can be attributed to the specific local conditions during the day of sampling.
- xxiv. No court cases, violation cases are pending against the project of the PP.
- xxv. The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The project is yet to be established.
- xxvi. The project involves Nil project affected families. R&R of the PAPs is not required.
- xxvii. Total cost of the project is Rs. 6070 lakhs. Cost of production is Rs. NA, CSR cost is Rs. 1.0 per tonne, R&R cost not applicable. Environment Management Cost is Rs. 232 Lakh as capital and Rs. 43.75 Lakh/annum as recurring cost.
- xxviii. Consent to operate (CTO) will be obtained from the Odisha State Pollution Control Board after obtaining environmental clearance.
- xxix. Past production details comparison with existing EC – **Not applicable**
- xxx. Base line monitoring status:

- a) Mention the Period/ Season of baseline study carried out.
 - Initially the baseline study has been carried out during post monsoon season 2019 (October 2019 to December 2019).
 - As directed by EAC (Coal Mining) during its 38th meeting baseline study has been carried out for ambient air quality monitoring along with analysis data all heavy metals in surface and ground water as per Terms of Reference.
 - b) Whether the Laboratory has been accredited by the NABL/ MoEF&CC certification involved in analysis of water, air, noise & soil quality data, also providing its respective lab reports.
 - Laboratory has been accredited by the NABL certification involved in analysis of water, air, noise & soil quality data, the report is enclosed.
 - c) Detail of Air quality and surface water quality
Air quality is enclosed as **Enclosure 1** and water quality is enclosed as **Enclosure 2**.
- (iii) Air quality: Number of sampling location monitored:
- As per study during Jan to Dec 2023 the result indicates that the maximum and minimum values of PM10 are in the range of 45.5 to 81.6 whereas the PM2.5 are in the range of 24.2 to 39.5 to $\mu\text{g}/\text{m}^3$.
 - The SO₂ concentrations within the study area are in the range of 4.4 to 15.0 and the NO_x are in the range of 8.7 to 22.1
 - The observed pollutant levels were compared with CPCB National Ambient Air Quality Standards and found to be below NAAQ standard limit.
 - Surface water quality: Number of sampling location monitored: Six
 - The result indicates that the maximum and minimum values of DO ranges between 7.9 to 141.0, hardness ranged between 60.5 to 87.5.

45.4.4 The Committee observed the following during the EAC meeting:

- i. The proposed project lies within existing Spong Iron Plant whose Environmental Clearance was granted vide Letter No. J-13012/60/2007-IA-II(I) dated 16th September, 2008 for the expansion of Spong Iron Plant by M/s Aryan Ispat & Power Pvt. Ltd.
- ii. The EAC observed that no forest land involved in the project area.
- iii. The Ground water will be used for drinking purpose only not for the project. The water requirement will be fulfilled from Hirakud reservoir after getting all statutory clearance.
- iv. Terms of Reference was granted on 28.06.2022 with exemption in public hearing. PP has issued public notice in English Newspaper 'Times of India' vide dated 03.08.2022 and collected the objections/ suggestions in the EIA/EMP report.
- v. Earlier, PP has conducted the public hearing on 12.01.2021 for the same project of coal washery of 5.0 MTPA in an area of 12.65 ha. PP submitted the action plan for addressing the issues raised in public hearing with the **budget** of Rs. 73.00 Lakh, which are as follows:

	Particulars	Location (Name of School/Village/Area)	Year-1 (In Lakhs)	Year-2 (In Lakhs)	Total (In lakhs)
1	Infrastructure creation for Drinking Water supply	Phulchangar	2.00	2.00	4.00
2	Sanitation	Phulchangar	3.00	3.00	6.00
3	Education	Bomblai, Phulchangar	5.00	5.00	10.00
4	Skill Development	Bomblai, Phulchangar, Tilaimal, Lapanga, Rengali	7.00	7.00	14.00
5	Roads	Bomblai, Phulchangar	5.00	5.00	10.00
6	Cross drains		-	-	-
7	Electrification including solar power	Rengali, Bomblai	1.00	1.00	2.00
8	Solid waste management facilities	Bomblai, Phulchangar	2.00	2.00	4.00
9	Scientific support and awareness to local farmers to increase yield of crop and fodder	Bomblai, Phulchangar, Tilaimal, Lapanga, Rengali	5.00	5.00	10.00
10	Rain water Harvesting	Phulchangar	1.00	1.00	2.00
11	Soil moisture conservation works		-	-	-
12	Avenue plantation		-	-	-
13	Plantation in community areas	Bomblai, Phulchangar	1.00	1.00	2.00
14	Infrastructure		-	-	-
15	Health	Bomblai, Phulchangar	1.00	1.00	2.00
16	Art, Culture & Sports	Bomblai, Phulchangar	0.50	0.50	1.00
17	Livelihood		-	-	-
	Agricultural programme:	Bomblai, Phulchangar, Tilaimal, Lapanga, Rengali	3.00	3.00	6.00
	Total		36.50	36.50	73.00

- vi. PP has submitted the capital cost for EMP Rs. 232 Lakh and recurring cost Rs. 43.75 Lakh/year. (Activity / Item for Environmental Management Plan shall be as per Table 10.2 of the EIA-EMP report). The detail activity of EMP mentioned below:

Activity/Item	Units	Rs. In Lakhs

Sr. No.			Capital Cost	Recurring expenses/year
1	Air Pollution Control		75.00	7.00
2	Water Pollution Control		20.00	2.00
3	Noise & Vibration Control			1.00
4.	Solid Waste Management		15.00	5.00
5.	Pollution Monitoring		52.00	15.00
6.	Conservation of Natural Resources		20.00	3.50
7.	Plantation		15.00	3.00
a.	Development of green belt plantation	LS	15.00	3.00
8.	Occupational Health		10.00	2.75
a.	Personal Dust sampler@Rs.0.50 Lakh, Noise dosimeter @Rs. 0.50 Lakh, Noise level meter @Rs. 0.25 Lakh	1	1.25	--
b.	Training, Awareness Programmes, Health Insurance Etc.	LS	3.75	1.25
c.	Personnel Protection Equipment (Helmets@Rs.500, safety boots@Rs.500, ear muffs/plugs, gloves, dust mask, goggles @Rs.750, Reflective jackets@Rs.250, Uniforms @ Rs.500) = Rs. 2500/ person	200	5.00	1.50
9.	Miscellaneous		25.00	3.50
a.	Fire extinguishers	LS	5.00	1.50
b.	Ambulance	LS	20.00	2.00
	Total		232.00	43.75

vii. PP has submitted the increased the budget from Rs. 105.55 Lakh to Rs. 191.05 Lakh for Monitoring – wildlife conservation plan (WLCP) are as follows:

S. No.	Item Name	Unit	Rate	Cost involved (In Lakh)	Remark
A.	Sound Barrier (To be install along with boundary wall in plant premises)	90 Pcs	0.95L	85.50	
B. Habitat Improvement					
1	ANR 500 plants/ha	20 Ha	99330/-	19.86	Wage rate @ 333/-
C. Human Wildlife Conflict Management					
2.	Construction of Barrack	1 No	15L	15.00	
3	Forest File Management				
3(A)	Fire Fighting Squad	1 Unit	42.10L	42.100	
3(b)	Fire Blowers with fuel	5 nos	0.70L	3.50	
4	Incentive to VSS	5VSS	0.20	1.00	
5	Providing Solar Lights	5Nos for 5villges	0.30	1.50	
6	Skill up gradation & Public Awareness Camp	5 camps for 5 yr	1.00 per year	5.00	
	G. Total			173.46	
	Add 20% Esc			17.59	
	G. Total			191.05	

45.4.5 EAC after deliberations noted that the instant proposal is green field coal washery project. Since the instant project is proposed to set up within campus of existing steel plant, therefore the committee emphasized to obtain the EC amendment issued on 16.09.2008 for reduction in area of steel plant. In this regard, separately, PP has submitted the application for amendment in

Environmental Clearance for Steel Plant vide proposal no. IA/OR/INDI/426583/2023. However, the Committee desired the project proponent to submit the copy of EC amendment to IRO, MoEF&CC.

As per the letter dated 28/2/2023 issued by DFO and further discussions by the Committee with PP in context of EIA report and wildlife Conservation Plan, it was found that elephant movements exist in the nearest fringe of Sambalpur Elephant Reserve, which lies merely at a distance of 0.1 km (100 mts) towards east from project area. Also during presentation PP described the elephant movement near to project site. Therefore, the Committee advised MoEF&CC to take the opinion of WL division as the site is closely located to fringes of Elephant corridor.

On other hand, the Committee emphasized PP to strictly implement the Monitoring – wildlife conservation plan (WLCP) with budget of Rs. 191.05 Lakh, which shall include the installation of sound barrier, appropriate flood light arrangement on site and same to be monitored in every six months. The Committee advised PP to conduct independent study by reputed wildlife institute w.r.t. elephant movement during operational period of Coal washery.

The Committee also emphasized to use Gas engine/ Cleaner fuel engine in order to reduce the pollution load on environment. It was desired to use rail network for the transportation of coal, however PP expressed unwillingness to use 100% rail transportation. After deliberation, it was agreed to transport about 80% of Washed coal, Reject/Middling of washed Coal through rail and remaining 20% by road. On other hand, 60% of raw coal will be transported by rail and 40% by road to the washery.

In view of the above, EAC after detailed deliberation recommended the proposal for Coal Washery of production capacity of 5.0 MTPA (2.5 X 2.5 MTPA) based on Heavy Media Cyclone in an area of 12.65 Ha by M/s Aryan Ispat & Power Pvt Ltd. located at village Bomalai, Tehsil Rengali, District Sambalpur (Odisha), under the provisions of EIA Notification, 2006 and its amendments therein with specific conditions for environmental safeguards mentioned below:

Specific Condition:

- i. PP to obtain the CTO for 5.0 MTPA capacity after grant of EC.*
- ii. As committed, 80% of Washed coal, Reject/Middling Coal to be transported by rail through railway siding and remaining 20% by road. Similarly, 60% of raw coal shall be transported by rail and 40% by road. SPCB to grant CTO based on said calculation.*
- iii. PP to deploy the trucks of 40 tons for road transportation of raw coal, clean coal and middling, rejects to reduce the fleet size.*
- iv. No village road shall be used for transportation of coal and no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals etc. PP shall take legal undertaking from its consumers accordingly.*

- v. *PP shall submit copy of amendment of Environmental Clearance vide dated 16.09.2008 issued for Steel Plant to IRO, MoEF&CC.*
- vi. *PP shall install sound barrier in the project site facing towards fringe of Sambalpur Elephant Reserve (SER).*
- vii. *PP shall install the lightening system in a way so that the movement of elephant will not be disturbed.*
- viii. *PP shall conduct a survey through reputed organization regarding movement of wildlife in the nearest corridor after commissioning of Washrey. Regular monitoring shall be ensured w.r.t. elephant after six months from the installation of Coal washery.*
- ix. *PP shall strictly implement the Monitoring – wildlife conservation plan (WLCP) with allocated budget of Rs. 191.05 Lakh.*
- x. *PP shall use of Gas engine/ Cleaner fuel engine for use of machines or as power back up to reduce the pollution load on environment.*
- xi. *PP to fulfil all the commitment made to address the public hearing issues in time bound manner as committed in EIA/EMP report and action taken report should be furnished to IRO. As proposed, Rs. 73 lakhs earmarked for PH activities, shall be accomplished within period of 3 years.*
- xii. *PP shall strictly implement the facility as per the issues of public hearing as mentioned in the para no. 45.4.4 (v) and complete in a time bound manner as proposed.*
- xiii. *PP shall address issues raised by public such as equipped ambulance for villagers (free of cost in case of any emergency), provide computers in Public School in Village Phulchanger & Bomalai, Kids playing equipment and development of garden in Bomalai park, Desiltation of pond and construction of Bathing ghat for constructed pond in Phulchanger village under CSR.*
- xiv. *PP shall implement activity wise Environmental Management Plan as mentioned in the para no. 45.4.4. (vii).*
- xv. *Thick green belt of 30-50 m width to be provided around the washery to mitigate/check the dust pollution. A 3-tier avenue plantation having 33% plantation of total area should also be developed along vacant areas, storage yards, loading/transfer points, and also along internal roads/main approach roads. A detailed action plan with budgetary provision should be submitted within 6 months to IRO. Aerial images in this regard needs to be submitted in six monthly reports to IRO. PP shall spend Rs. 15 Lakhs and Annual Recurring Cost for greenbelt - Rs. 3 Lakhs for development of greenbelt. The plant density should be 500 plants per Hectare.*
- xvi. *As proposed by PP, no ground water and surface/river water shall be extracted for washery operation. For domestic water usage, PP may use groundwater preferably if surface water not provided by Municipality.*
- xvii. *PP shall develop rain water harvesting facility within the premise of coal washery area and PP shall develop 2 water harvesting pond in nearby villages of suitable area in consultation with Gram Panchayat within 1 year.*

- xviii. *The technology so chosen for ETP within washery should conform to 'Zero Liquid Discharge'. No treated & untreated wastewater shall be discharged outside the boundaries of project area.*
- xix. *PP to install 1 continuous ambient air quality monitoring stations at suitable locations preferably village side with consultation of SPCB before commission of washery operations. The real time data so generated shall be uploaded on company website and linked it with website of CPCB & SPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.*
- xx. *Heavy metal content in raw coal, and washed coal shall be analyzed once in a year and records maintained thereof and it should be reported in IRO, report.*
- xxi. *PP to undertake the recruitment of a full-fledged qualified manpower with Environmental Engineer/Env. Science degree background in Environment Management Cell etc at coal washery plant for compliance of EC conditions.*
- xxii. *Solar street light to be installed with its proper maintenance along the road of incoming raw coal to avoid accident in nearby villages and a record must be furnished to IRO IRO with six monthly compliances.*
- xxiii. *The fog cannon must be installed at periphery of the washery located near to the villages in order to suppress the dust.*
- xxiv. *Raw coal, washed coal and rejects shall be stored in covered silos or in dome shaped storage facility. Fixed type high pressure sprinkler shall be installed in this storage yards.*
- xxv. *PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.*
- xxvi. *PP must also carry out plantation drive (fruit bearing trees, local species etc) with its proper maintenance in nearby villages by seeking consent of gram panchayat and villagers in coming monsoon and a proper record must be furnished to IRO with six monthly compliances.*
- xxvii. *The PP must provide the workers proper PPE and must also trained them and a record of training must be furnished to IRO.*
- xxviii. *Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly.*

Agenda No. 45.5

Cluster 12 comprising of 15 mixed mines with combined production capacity of 31.83 MTPA (Peak) in ML area of 12,736 ha of M/s Eastern Coalfields Limited located in Raniganj Coalfields Tehsil Haripur Block, District Burdwan (West Bengal) - For Amendment in Environmental Clearance letter dated 09.02.2015 - reg.

[Online proposal No. IA/WB/CMIN/295300/2022; File No. J-11015/76/2011-IA-II (M)]

45.5.1 The proposal is for Amendment in Environmental Clearance dated 09.02.2015 to Cluster 12 comprising of 15 mixed mines with combined production capacity of 31.83 MTPA (Peak) in ML area of 12,736 ha of M/s Eastern Coalfields Limited located in Raniganj Coalfields Tehsil Haripur Block, District Burdwan (West Bengal).

45.5.2 The EAC, during deliberations noted the following:

- Environment Clearance for the project was granted to Cluster 12 comprising of 19 mixed mines vide letter no. J-11015/76/2011-II (M) dated 09.02.2015 with production capacity of 27.16 MTPA (normative)/ 31.83 MTPA (peak) in MLA of 13,759.55 ha.
- The 1st amendment of EC was granted to Cluster 12 comprising of 15 mixed mines vide letter no. J-11015/76/2011-II (M) dated 03.03.2016 with production capacity of 31.83 MTPA (peak) in MLA of 12,736 ha.
- The 2nd amendment of EC was granted to Cluster 12 comprising of 15 mixed mines vide letter no. J-11015/76/2011-II (M) dated 31.07.2020 with production capacity of 31.83 MTPA (peak) in MLA of 12,736 ha.
- At present, PP has requested for another amendment to increase the production capacity of Sonapur – Bazari OCP from 12.0 to 14.0 MTPA as amendment in Environmental Clearance letter dated 09.02.2015 on the basis that there is no change in the cluster boundary or area and overall production capacity of the cluster which is capped at the existing EC capacity of 31.83 MTY and all proposed changes are within the existing cluster boundary and cluster capacity.
- Earlier the proposal was considered in the 39th EAC meeting held during 12-13 January, 2023 wherein committee deferred the proposal for submission of desired information. The PP has submitted the reply vide dated 12.05.2023 on the PARIVESH portal and the same is noted by EAC:

**S. Observation of EAC
No.**

1. PP shall justify the technical reason for not achieving the rated capacity from its approved sanctioned (EC) capacity and how Sonapur-Bazari mine will be adjusted once other mines proposed to retain at their sanctioned production capacity. Hence, PP needs to justify the name of mines whose sanctioned production capacity to be lowered in lieu of enhanced production.

Reply by PP

EC for all the mines in the cluster has been obtained for their individual peak capacities. However, it is to be noted that each mine has its own production curve and all the mines will not produce at peak capacity simultaneously. As such, in the present cluster configuration, the cluster will not achieve the assigned capacity of

31.83 MTPA, which is only an arithmetic sum of the peak capacities of the constituent mines. The envisaged 10-year production from FY 2023-24 onwards as mentioned below:

Table 1: Proposal restructuring of production capacity with no change in overall production capacity and mine lease area

#	Name of the Mine / Project	Lease / Project Area (Ha)	EC Capacity (MTPA)	Balance Life span 01.04.2023 (years)	Production during FY 2022-23	Targeted Production Schedule(MT)									
						23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31	31-32	32-33
1	Pandaveswar-Dalurband UG & OC	1385	2.25	>25	0.24	0.1	0.1	0.25	0.51	0.51	0.51	1.05	1.05	1.05	1.05
						0.9	0.9	0.7	0.64	1	1	1.2	1.2	1.2	1.2
2	Manderboni – South Samla UG	1025	0.28	>25	0.05	0.08	0.08	0.15	0.18	0.20	0.28	0.28	0.28	0.28	0.28
3	Madhaipur UG & OC	622	0.65	>25	0.07	0.05	0.05	0.05	0.65	0.65	0.65	0.05	0.05	0.05	0.05
						0.2	-	-	-	-	-	-	-	-	-
4	Nutannga UG	543	Production suspended	-	0.0	-	-	-	-	-	-	-	-	-	-
5	Kendra UG	459	Production suspended	-	0.0	-	-	-	-	-	-	-	-	-	-
6	Samla UG & OC	676	0.60	3	0.0	-	-	-	-	-	-	-	-	-	-
						-	-	-	0.1	0.6	0.23	-	-	-	-
7	Sonepur Bazari OC	2405	12.00 (existing) 14.00 (proposed)	10	12	14	14	14	12	12	12	12	12	10	8

8	Nakrakonda – Kumardih B UG & OC	642	4.12	>25	1.77	1.05	1.05	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
						1	1.2	1.5	1.8	2	2.3	2.75	3	3	3
9	Kumardihi A UG	457	0.20	>25	0.09	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10	Jhanjra UG	152	5.00	>25	2.92	4	4	4	5	5	5	5	5	5	5
11	Tilaboni UG	827.47	2.14	>25	0.13	1	1	1.2	1.6	1.9	2.14	2.14	2.14	2.14	2.14
12	ShyamsundarpurUG	533	1.59	>25	0.66	1.27	1.3	1.59	1.59	1.59	1.41	1.41	1.32	1.32	1.32
13	Bankola UG	830	0.3	>25	0.19	0.25	0.25	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
14	Khottadih UG & OC	770	2.7	>25	1.07	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
						0.7	0.9	1.1	1.8	1.8	1.1	-	-	-	-
		1269	31.83		19.19	25.70	25.9	27.0	28.3	29.7	29.14	28.4	28.5	26.56	24.5
		4.47					3	6	9	7		6		6	

S. Observation of EAC

No.

- PP shall submit Certified Compliance report from Ministry's IRO of previous EC conditions.
- PP shall collect one-month baseline data, impact assessment and submit it with the current photographs authorized by the head of the department.

Reply by PP

IRO, Kolkata had visited Cluster No. 12 on 09.02.2023 and 10.02.2023. CCR has been issued on 21.03.2023. Project Proponent submitted the Action taken report (ATR) on the observations made in CCR on 13.04.2023. IRO, Kolkata on 02.05.2023, has provided the satisfactory report on the acceptance of ATR on observations of CCR.

One Month Baseline Data for the month of December, 2021.

One-month baseline data w.r.t. air quality, water quality and noise level (Dec'21) has been generated by Environment Laboratory, CMPDI, RI-I, Asansol which is having NABL Accreditation.

- 200.95 Ha of forest land has been reported to be involved in the project for non-forestry activity. Details are given below:

Area (in ha)	Stage-I FC issued vide letter no. & date	Validity period of FC
90.30 Ha for in Jhanjra UGP	File No. – 8-68/1992-FC dated 18.11.2014	Initially diverted in 31-01-1996. Further Stage-I Approval for renewal of diversion have been accorded on 18.11.2014 and Stage – II approval is granted on 16.08.2016.
78.0 Ha for Jhanjra UGP	File No. – 8-101/2004-FC dated 24.06.2015	Stage-I Clearance have been accorded on 24.06.2015 and Stage – II approval is granted on 14.03.2016.
32.65 Ha for Sonapur – Bazari OCP	File No. – 5-WBC063/2013-BHU dated 29.06.2015	Stage-I Clearance have been accorded on 29.06.2015 and Stage – II approval is granted on 28.03.2017.

- The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The coal production from the mine was started from the year onwards. No excess production of coal from the sanctioned capacity has been realized since the commencement of mining operations. The coal production, realized from the project, from 1993-94 onwards, is as under:

Name of Project	EC sanctioned capacity (MTPA)	Year	Actual production (MTPA)	Excess production beyond the EC sanctioned capacity
Cluster No. 12 (Group of mines)	31.83 MTY	2015 – 16	11.22	Nil
		2016 – 17	14.44	Nil
		2017 – 18	16.47	Nil
		2018 – 19	17.13	Nil
		2019 – 20	18.45	Nil
		2020 – 21	16.33	Nil
		2021 – 22	16.57	Nil
		2022 – 23	19.19	Nil

- Consent to operate (CTO) was obtained from the State Pollution Control Board on 10.12.2019 and is valid till 30.04.2024.

45.5.5 The EAC, after deliberation observed that instant proposal is restructuring of production capacity of individual mines with no changes in overall granted production capacity and mine lease area as in EC. Project proponent has requested for increase in production capacity of Sonapur - Bazari OCP, reduction in production capacity of Pandaveswar – Dalurband UG & OC* and further reduction in another Nakrakonda – Kumardih B UG & OC* mine by keeping same

overall EC capacity i.e 31.83 MTPA and lease area 12694.47 ha. The individual mine wise capacity and changes are given Table 1 and Table 2 above.

The committee further deliberated the report on compliance of EC conditions from Ministry's IRO and observed the major non-compliance of the previous EC w.r.t. three tier plantation around railway siding and road siding, construction of catch drains around OB dump, non-functioning ETP and non-implementation of STP. Finding major non-compliances EAC was of the view that PP must complete these major non-compliances strictly within one year and accordingly the committee agreed to the proposed amendment for one year so that coal production shall not hamper.

In view of above, EAC with due consideration, **recommended** the proposal for amendment in EC for restructuring of individual mines as mentioned in Table 1 to Cluster 12 comprising of 15 mixed mines with combined production capacity of 31.83 MTPA (Peak) in ML area of 12,736 ha of M/s Eastern Coalfields Limited located in Raniganj Coalfields Tehsil Haripur Block, District Burdwan (West Bengal) for a period of one year, under the provisions of Environment Impact Assessment Notifications, 2006 and its amendments therein with following additional conditions for environmental safeguards:

- (i) PP shall construct STP to all the residential colony and ETP to all the workshops within one year. Accordingly, SPCB shall grant CTO to the instant cluster.
- (ii) PP shall obtain NOC from Central Ground Water Authority within six months of issuance of this letter.
- (iii) PP shall construct catch drains and siltation ponds in the opencast mines of Pandaveswar area to arrest silt and sediment flows within six months.
- (iv) PP shall not increase the area of quarry of sonapur bazari mine and only extract coal from existing quarry and working seams.
- (v) PP shall submit the approved budget for Wildlife Conservation Plan to Forest Department within 6 months.
- (vi) PP shall conduct tree plantation along with railway siding for mitigation of dust emission in this monsoon and Geotag it.
- (vii) PP shall replace sand for stowing in underground mine to manufactured sand extracted from overburden dump and accordingly sand transportation shall be stopped within certain timeline.

Agenda No. 45.6

Amalgamation of Chotia I & II opencast cum underground coal mining project for production capacity of 1.0 MTPA in combined mine lease area of 1179.826 ha along with validation of Existing EC as per notification S.O. 1530 (E) dated 06.04.2018 for Chotia I

Coal Mine by M/s Bharat Aluminium Company Limited (BALCO) located at villages Chotia, Baniya and Salaigot, Tehsil Podiuprodha, District Korba (Chhattisgarh) – For Terms of Reference reg.

[Online proposal No. IA/CG/CMIN/429143/2023; File No. J-11015/96/2004-IA-II(M)]

45.6.1 The proposal is for Terms of Reference with Validation of Existing EC as per notification dated 06.04.2018 for Chotia I Coal Mine and amalgamation of Chotia I & II opencast cum underground coal mining project for production capacity of 1.0 MTPA in combined mine lease area of 1179.826 ha by M/s Bharat Aluminium Company Limited (BALCO) located at villages Chotia, Baniya and Salaigot, Tehsil Podiuprodha, District Korba (Chhattisgarh).

45.6.2 Committee during the EAC meeting noted the following:

- i. Chotia Coal Mines has been vested with BALCO vide vesting order no. 104/11/2015/NA dated 23rd March 2015.
- ii. Mining lease was granted on 09.07.2015 and Mining lease deed was executed on 16.10.2015 for a period of 20 years (valid till 15.10.2035).
- iii. Chotia I and Chotia II are sub-blocks of Mining Lease over an area of 1179.826 ha (Chotia I-863 Ha + Chotia II – 316.826 Ha).
- iv. Mine Plan for combined Peak production capacity of 1.0 MTPA within Mine lease area of 1179.826 ha has been approved by Ministry of Coal vide letter no. 34011/07/2019-CPAM dated 01.07.2019.
- v. As per MoC's OM F. No. 34011/28/2019-CPAM dated 29.05.2020, PP has obtained the permission for another 3 years on 25.04.2023 for opencast mining operation at Chotia II Mine.
- vi. EC for Chotia I mine in favor of M/s Prakash Industries Ltd for 0.75 MTPA coal production has been obtained from MoEFCC vide letter No J-11015/96/2004-IA. II (M) on 10.11.2005.
- vii. EC for Chotia II mine in favor of M/s. Prakash Industries Ltd for 0.25 million TPA coal production has been obtained from MoEFCC vide letter No J-11015/95/2004-IA. II (M) on 10.11.2005.
- viii. EC for Chotia II mine in favor of M/s. Bharat Aluminium Company Limited (BALCO) for 1.0 million TPA coal production has been obtained from MoEFCC vide letter No J-11015/96/2004-IA. II (M) dated 18.07.2018 and the amendment in said EC for Chotia II mine in favour of M/s. Bharat Aluminium Company Limited (BALCO) has been obtained from MoEFCC vide letter No J-11015/96/2004-IA. II (M) on 06.05.2019.
- ix. Total mining lease area is 1179.826 ha, out of which 960.286 ha is forest land on which Stage I Forest clearance for diversion of 188.326 ha of forest land for underground coal mining has been accorded in favour of M/s. Prakash Industries Limited on 10.11.2005

and Stage II Forest clearance for diversion of 188.326 ha of forest land for underground coal mining has been accorded in favour of M/s. Prakash Industries Limited on 29.03.2006. Stage I Forest clearance for diversion of 726.349 ha of forest land for opencast coal mining has been accorded in favour of M/s. Prakash Industries Limited on 04.01.2011 and Stage II Forest clearance for diversion of 726.349 ha of forest land for opencast coal mining has been accorded in favour of M/s. Prakash Industries Limited on 07.06.2011.

- x. The FC for diversion of 960.286 ha of forest land has been transferred to M/s. Bharat Aluminium Company Limited (BALCO) from MoEFCC (Forest Conservation Division) vide letter no. F. No. 8-64/2005-FC dated 18.05.2015.
- xi. Life of Mine is 17 years up to year 2042.
- xii. Total water requirement for the project is 600 KLD and the same will be sourced from bore wells and mine sump water. Ground water withdrawal permission has been obtained from Central Ground Water Authority vide NOC No: CGWA/NOC/MIN/ORIG/2016/2206 dated 23.06.2016 and its renewal has been obtained vide letter no. CGWA/NOC/MIN/REN/2/2021/6179 dated 12.06.2021 which is valid till 11.06.2023. The application for renewal of NOC from CGWA is under process.
- xiii. CTO for Chotia I mine with 0.75 MTPA coal production has been obtained from CECB vide letter No 143/TS/CECB/2023 on 11.04.2023 which is valid upto 31.03.2024.
- xiv. CTO for Chotia II mine with 1.0 MTPA coal production has been obtained from CECB vide letter No 3370/TS/CECB/2022 on 08.08.2022 valid till 30.06.2023. The application for renewal of CTO of Chotia II Mine is under process.
- xv. Baseline Monitoring has been carried for Winter Season (December 2022 to February 2023). The results of ambient air quality monitoring data were found within prescribed limits which can be attributed to the specific local conditions during the day of sampling.
- xvi. Earlier the proposal for validation of EC was appraised in 36th, 42nd & 56th EAC meeting held on 31.08.2018, 24.01.2019 & 30.06.2020 respectively.
- xvii. Public Hearing was conducted on 4th September, 2004 by the State Pollution Control Board.

45.6.3 *The EAC after detailed deliberations observed that the instant proposal is for Terms of Reference involving validation of Existing EC for Chotia I Coal Mine as per Notification dated 06.04.2018 with amalgamation of Chotia I & II. During discussion on KML files, it was noted that the Chotia mine block (1179.826 ha) was allocated to M/s BALCO having two sub-blocks namely Chotia I (863 ha) & Chotia II (316.826 ha). While examining the kml file of the Chotia block, it was observed that the blocks are not contiguous to each other but located at distance of 7.5 km, therefore the proposal proposed by PP for amalgamate of Chotia I & II mine is not feasible for sustainable environmental management and monitoring. *

Further, recognizing that sub-blocks shares the common mine lease with same mine plan and also with the fact that previously MoEF&CC had granted ECs to both the mines separately, the Committee was of the view that both the mines in present circumstances to be dealt separately. It was noted that EC for Chotia II mine has been granted by MoEF&CC with subsequent amendment in the year 18.07.2018 and 06.05.2019. While, the revalidation of Chotia I has been pending with PP with certain observations. During discussion, PP requested to grant the extension of mine in case of Chotia II on which the EAC advised PP to apply separate application on PARIVESH as this is sub block of the Chotia mine with common mine lease and mine plan. Further PP was advised to prepare a mine plan and progressive mine closure plan for Chotia mine having two sections separately in the form of Part A (for Chotia I) and Part B (for Chotia II).

Based on the above discussion EAC recommended to return the proposal for appraisal in EAC.

Annexure-I

Standard EC Conditions for Coal Mining Project (Opencast mining):

All the projects recommended for grant of environmental clearance by the EAC shall also comply with the following Standard EC conditions as per Ministry's circular issued from time to time:

(a) Statutory compliance

- (i) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of Schedule-I species in the study area).
- (iv) The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- (v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vi) Solid/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.

(b) Air quality monitoring and preservation

- (i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
- (ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September,

2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.

- (iii) Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM₁₀/PM_{2.5}) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
- (iv) The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.
- (v) Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
- (vi) Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid airborne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
- (vii) Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

(c) Water quality monitoring and preservation

- (i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.
- (ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J- 20012/1/2006-1A.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
- (iii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and

winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

- (iv) Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
- (v) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- (vi) Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.
- (vii) Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).
- (viii) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP /STP needs to be provided.
- (ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- (x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.

- (xi) The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

- (d) Noise and Vibration monitoring and prevention**
 - (i) Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.
 - (ii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
 - (i) The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

- (e) Mining Plan**
 - (i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
 - (ii) Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
 - (iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.
 - (ii) Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

- (f) Land reclamation**
 - (i) Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
 - (ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land shall be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the

guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.

- (iii) The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the “during mining”/”post mining” land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.
- (iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- (v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.
- (vi) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.
- (g) Green Belt**
 - (i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
 - (ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.
- (h) Public hearing and Human health issues**
 - (i) Adequate illumination shall be ensured in all mine locations (as per DGMS standards)

and monitored weekly. The report on the same shall be submitted to this ministry & its RO on six-monthly basis.

- (ii) The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.
- (iii) Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
- (iv) Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
- (v) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(i) Corporate Environment Responsibility

- (i) The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No.22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- (ii) The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.
- (iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- (iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the

Ministry/Regional Office along with the Six Monthly Compliance Report.

- (v) Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
- (j) **Miscellaneous**
 - (i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
 - (ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
 - (iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
 - (iv) The project proponent shall monitor the criteria pollutants level namely; PM10, SO₂, NO_x(ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
 - (v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
 - (vi) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.
 - (vii) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
 - (viii) The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
 - (ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
 - (x) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
 - (xi) No further expansion or modifications in the plant shall be carried out without prior

- approval of the Ministry of Environment, Forests and Climate Change.
- (xii) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
 - (xiii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
 - (xiv) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
 - (xv) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
 - (xvi) The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

Annexure-II

Standard EC Conditions for Coal Mining Project (Underground mining):

All the projects recommended for grant of environmental clearance by the EAC shall also comply with the following Standard EC conditions as per Ministry's circular issued from time to time:

I. Statutory compliance:

- (i) The Environmental clearance shall be subject to orders of Hon'ble Supreme Court of India, Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project
- (ii) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (iii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iv) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area)
- (v) The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- (vi) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vii) Solid waste/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules, 2016

II. Air quality monitoring and preservation

- i. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc. to be carried out at least once in six months. Online ambient air quality monitoring station/stations may also be installed in addition to the regular air monitoring stations as per the requirement and/or in consultation with the

SPCB

- ii. The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- iii. Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water sprinkling/rain gun/mist sprinkling etc., shall be carried out in critical areas prone to air pollution with higher level of particulate matter all through the coal transport roads, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
- iv. Major approach roads shall be black topped and properly maintained.
- v. The transportation of coal shall be carried out as per the provisions and route proposed in the approved mining plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed that the impact of sound, dust and accidents could be appropriately mitigated.
- vi. Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
- vii. Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid airborne dust. Side cladding all along the conveyor gantry should be made to avoid airborne dust. Drills shall be wet operated or fitted with dust extractors.
- viii. Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

III. Water quality monitoring and preservation

- i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.
- ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-1A.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
- iii. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new

piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

- iv. Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
- v. Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- vi. The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side, stabilized with plantation so as to withstand the peak water pressure preventing any chance of mine inundation.
- vii. Garland drains (of suitable size, gradient and length) around the critical areas
i.e. mine shaft and low lying areas, shall be designed keeping at least 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. The sump capacity shall also provide adequate retention period to allow proper settling of silt material of the surface runoff
- viii. The water pumped out from the mine, after siltation, shall be utilized for industrial purposive. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- ix. Industrial waste water from coal handling plant and mine water shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made thereunder, and as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluent. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste water.
- x. Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xi. The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations shall be prepared, considering the presence of any river/rivulet/pond/lake etc., with impact of mining activities on it, and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the provisions of the approved Mining Plan/EIA-EMP submitted to this Ministry and the same should be done with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any

danger against inrush of surface water into the mine should be as per the approved mining plan and as per the permission of DGMS.

- xii. The project proponent shall take all precautionary measures to ensure reverian/ riparian ecosystem in and around the coal mine upto a distance of 5 km. A revarian /riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

IV. Noise and Vibration monitoring and prevention

- i. Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in underground mining operations, operation of HEMM, etc. shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms/guidelines in this regard. Progress in usage of such accessories to be monitored. Adequate awareness programme for users to be conducted.
- ii. The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

V. Mining Plan

- i. Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
- ii. No change in mining method i.e. UG to OC, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).
- iii. Mining shall be carried out as per the approved mining plan (including mine closure plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- iv. Underground work place environmental conditions shall be rendered ergonomic and air breathable with adequate illumination in conformance with DGMS standards.
- v. No mining activity shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980 and also adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.
- vi. Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

VI. Land reclamation

- i. Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- ii. Post-mining land be rendered usable for agricultural/forestry purposes and shall be

handed over to the respective State Government, as specified in the Guidelines for Preparation of Mine Closure Plan, issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.

- iii. Regular monitoring of subsidence movement on the surface over and around the working areas and its impact on natural drainage pattern, water bodies, vegetation, structure, roads and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence beyond the limit prescribed, appropriate effective mitigation measures shall be taken to avoid loss of life and materials. Cracks should be effectively plugged in with ballast and clay soil/suitable material.
- iv. Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling or stowing of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- v. A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.
- vi. Thorough inspection of the mine lease area for any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.
- vii. Native tree species shall be selected and planted over areas affected by subsidence.
- viii. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Green Belt

- i. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted/reported in the study area. Action plan, in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife

Department.

- ii. Greenbelt, consisting of three-tier plantation, of width not less than 7.5 m, shall be developed all along the mine lease area in a phased manner. The greenbelt comprising of a mix of native species shall be developed all along the major approach roads/ coal transportation roads.

VIII. Public hearing and Human health issues

- i. Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored.
- ii. The Project Proponent shall undertake Occupational Health survey for initial and Periodical medical examination of the workers engaged in the Project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS Circulars. Besides carrying out regular periodic health check-up of their workers, 20% of the workers engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any.
- iii. Personnel (including outsourcing employees) working in dusty areas shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
- iv. Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.
- v. Effective arrangement shall be made to provide and maintain at suitable points conveniently situated, a sufficient supply of drinking water for all the persons employed.
- vi. Implementation of Action Plan on the issues raised during the Public Hearing shall be ensured. The Project Proponent shall undertake all the tasks as per the Action Plan submitted with budgetary provisions during the Public Hearing. Land oustees shall be compensated as per the norms laid out R&R Policy of the Company/ or the National R&R Policy/ R&R Policy of the State Government, as applicable
- vii. The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

IX. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation/ violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vi. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

- xi. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- xiv. The above conditions shall be enforced, inter-alia under the provisions of the Water(Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986,Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subjectmatter.
- xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Standard EC Conditions for Coal Washery Project

I. Statutory compliance:

- (i) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. Therecommendations of the approved Site-Specific Conservation Plan / WildlifeManagement Plan shall be implemented in consultation with the State ForestDepartment. The implementation report shall be furnished along with the six-monthly compliance report. (incase of the presence of Schedule-I species in thestudy area)
- (iv) The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water(Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- (v) The project proponent shall obtain the necessary permission from the CentralGround Water Authority.
- (vi) Solid waste/hazardous waste generated in the washery needs to addressed inaccordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules,2016.
- (vii) Coal beneficiation practices shall be carried out under strict adherence to provisions of the Factories Act, 1957 and subordinate legislations made there under.

II. Air quality monitoring and preservation

- i. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc. carried out at least once in six months.
- ii. Continuous ambient air quality monitoring stations as prescribed in the statue be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitivetargets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be

installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

- iii. Transportation of coal by road shall be carried out by covered trucks/conveyors. The transportation of clean coal and rejects shall be by rail with wagon loading through silo. Effective measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulates such as roads, belt conveyors, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled at source. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board
- iv. All approach roads shall be black topped and internal roads shall be concreted. The roads shall be regularly cleaned. Coal transportation shall be carried out by covered trucks.
- v. Covered trucks shall be engaged for mineral transportation outside the washery up to the railway siding, shall be optimally loaded to avoid spillage en-route. Trucks shall be adequately maintained and emissions shall be below notified limits.
- vi. Facilities for parking of trucks carrying raw material from linked mine shall be created within the unit.
- vii. Vehicular emissions shall be kept under control and regularly monitored. The vehicles having 'PUC' certificate from authorized pollution testing centres shall be deployed for washery operations.
- viii. Hoppers of the coal crushing unit and other washery units shall be fitted with high efficiency bag filters/mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of closed belt conveyor systems and from transportation roads.
- ix. The raw coal, washed coal and coal wastes (rejects) shall be stacked properly at earmarked site (s) within stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored mineral does not catch fire.
- x. The temporary reject sites should be appropriately planned and designed to avoid air and water pollution from such sites.

III. Water quality monitoring and preservation

- i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.
- ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-1A.11 (M) dated

27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for compliance.

- iii. Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time.
- iv. The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the washery. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the riverfront side stabilised with plantation so as to withstand the peak water pressure preventing any chance of inundation.
- v. Heavy metal content in raw coal and washed coal shall be analysed once in a year and records maintained thereof.
- vi. The rejects should preferably be utilized in FBC power plant or disposed off through sale for its gainful utilization. If the coal washery rejects are to be disposed off, it should be done in a safe and sustainable manner with adequate compaction and post closure arrangement to avoid water pollution due to leachate from rejects and surface run off from reject dumping sites.
- vii. An Integrated Surface Water Management Plan for the washery area up to its buffer zone considering the presence of any river/rivulet/pond/lake etc. with impact of coal washing activities on it, shall be prepared, submitted to MoEFCC and implemented.
- viii. Waste Water shall be effectively treated and recycled completely either for washery operations or maintenance of green belt around the plant.
- ix. Rainwater harvesting in the washery premises shall be implemented for conservation and augmentation of ground water resources in consultation with Central Ground Water Board.
- x. No ground water shall be used for coal washing unless otherwise permitted in writing by competent authority (CGWA) or MoEFCC. The make-up water requirement of washery should not exceed 1.5 m³/tonne of raw coal.
- xi. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO. Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
- xii. The project proponent shall take all precautionary measures to ensure riverine/ riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in

consultation with the irrigation / water resource department in the state government

IV. Noise and Vibration monitoring and prevention

- i. The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis
- ii. Adequate measures shall be taken for control of noise levels as per noise pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.

V. Coal beneficiation

- i. Coal stacking plan shall be prepared separately for raw coal, clean coal, middling and rejects.
- ii. Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy.

VI. Green Belt

- i. Three tier greenbelt comprising of a mix of native species, of minimum 30 m width shall be developed all along the washery area to check fugitive dust emissions and to render aesthetic to neighbouring stakeholders. A 3-tier green belt comprising of a mix of native species or tree species with thick leaves shall be developed along vacant areas, storage yards, loading/transfer points and also along internal roads/main approach roads.
- ii. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Public hearing and Human health issues

- i. Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & its RO on six-monthly basis. The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any. as amended time to time.
- ii. Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information

- on safety and health aspects.
- iii. Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
 - iv. The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

VIII. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

IX. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local n

- ii. newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- iii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iv. The project proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- v. The project proponent shall monitor the criteria pollutants level namely; PM₁₀, SO₂, NO_x (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- vi. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- vii. The project proponent shall submit the environmental statement for each financial year in form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- viii. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- ix. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- x. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- xi. No change in coal beneficiation process and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC) with such conditions mentioned therein. No change in the maximum quantum of raw material feed per annum against the approved washery capacity shall be made
- xii. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xiii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xiv. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xv. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions.

The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

- xvi. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xvii. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

ANNEXURE-IV

Generic ToR for coal washery

- i. Siting of washery is critical considering to its environmental impacts. Preference should be given to the site located at pit head; in case such a site is not available, the site should be as close to the pit head as possible and coal should be transported from mine to the washer preferably through closed conveyor belt to avoid air pollution.
- ii. The washery shall not be located in eco-sensitive zones areas.
- iii. The washery should have a closed system and zero discharge. The storm drainage should be treated in settling ponds before discharging into rivers/streams/water bodies.
- iv. A thick Green belt of about 50 m width should be developed surrounding the washery.
- v. A brief description of the plant along with a layout, the specific technology used and the source of coal should be provided.
- vi. The EIA-EMP Report should cover the impacts and management plan for the project of the capacity for which EC is sought and the impacts of specific activities, including the technology used and coal used, on the environment of the area (within 10km radius), and the environmental quality of air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. Cumulative impacts for air and water should be a part of EIA in case coal mine, TPP and other washeries are located within 10km radius. The EIA should also include mitigative measures needed to minimize adverse environmental impacts.
- vii. A Study Area Map of the core zone as well as the 10km area of buffer zone showing major industries/mines and other polluting sources should be submitted. These maps shall also indicate the migratory corridors of fauna, if any and areas of endangered fauna; plants of medicinal and economic importance; any ecologically sensitive areas within the 10 km buffer zone; the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc. along with the comments of the Chief Wildlife Warden of the State Govt.
- viii. Data of one-season (non-monsoon) primary- base-line data on environmental quality of air (PM10, PM2.5, SOx and NOx, noise, water (surface and groundwater), soil be submitted.
- ix. The wet washery should generally utilize mine water only. In case mine water is not available, the option of storage of rain water and its use should be examined. Use of surface water and ground water should be avoided.
- x. Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-a-vis washery should be given. If the source of water is from surface water and/or ground water, the same may be justified besides obtaining approval of the Competent Authority for its drawl.
- xi. 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 specific points where fugitive emissions can arise and specific pollution control/mitigative measures proposed to be put in place. The washed coal and rejects should be transported by

train as far as possible. Road transport of washed coal and rejects should generally be avoided. In case, the TPP is within 10km radius, it should be through conveyer belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road be examined in detail and its impacts along with the mitigation measures should be clearly brought out in EIA/EMP report.

- xii. Details of various facilities proposed to be provided in terms of parking, rest areas, canteen etc. to the personnel involved in mineral transportation, workshop and effluents/pollution load from these activities should be provided.
- xiii. Impacts of CHP, if any, on air and water quality should also be spelt out along with Action Plan.
- xiv. O.M.no. J-II0I3/25/2014-IA.I dated 11th August, 2014 to be followed with regard to CSR activities.
- xv. Details of Public Hearing, Notice(s) issued in newspapers, proceedings/minutes of Public Hearing, points raised by the general public and response/commitments made by the proponent along with the Action Plan and budgetary provisions be submitted in tabular form. If the Public Hearing is in the regional language, an authenticated English translation of the same should be provided. Status of any litigations/ court cases filed/pending, if any, against the project should be mentioned in EIA.
- xvi. Analysis of samples indicating the following be submitted:
 - Characteristics of coal prior to washing (this includes grade of coal, other characteristics of ash, S and heavy levels of metals such as Hg, As, Pb, Cr etc).
 - Characteristics and quantum of coal after washing.
 - Characteristics and quantum of coal rejects.
- xvii. Details of management/disposal/use of coal rejects should be provided. The rejects should be used in TPP located close to the washery as far as possible. If TPP is within a reasonable distance (10 km), transportation should be by conveyer belt. If it is far away, the transportation should be by rail as far as possible.
- xviii. Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC is being sought should be submitted.
- xix. 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.
- xx. A detailed action Plan for Corporate Social Responsibility for the project affected people and

people living in and around the project area should be provided.

- xxi. Permission of drawl of water shall be pre-requisite for consideration of EC.
- xxii. Wastewater /effluent should confirm to the effluent standards as prescribed under Environment (Protection) Act, 1986
- xxiii. Details of washed coal, middling and rejects along with the MoU with the end-users should be submitted.

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT for EC

- (i) An EIA-EMP Report shall 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 to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A toposheet specifying locations of the State, District and Project site should be provided.
- (iv) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/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 study area 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 on the land use.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, 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 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (viii) A detailed Site plan of the mine showing the 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 -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channeling of the water courses, etc.,

- approach roads, major haul roads, etc should be indicated.
- (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 as per the approval of Irrigation and flood control Department of the concerned state.
 - (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 in the map along with the status of the approval of the competent authority.
 - (xi) Break up of lease/project area as per different land uses and their stage of acquisition should be provided.

LAND USE DETAILS FOR OPENCAST PROJECT should be given as per the following table:

Sl. No.	Land use	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 plan should be provided.
- (xiii) Impact of changes in the land use due to the project if the land is predominantly agricultural land/forestland/grazing land, should be provided.
- (xiv) One-season (other than monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xv) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones 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. Observed values should be provided along with the specified standards.

- (xvi) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (xvii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided 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. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xix) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xx) Detailed water balance should be provided. The break-up of water requirement for the various mine operations should be given separately.
- (xxi) Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users in the upstream and downstream of the project site. should be given.
- (xxii) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xxiii) Impact of blasting, noise and vibrations should be given.
- (xxiv) Impacts of mining on the AAQ and predictions based on modeling using the ISCST-3 (Revised) or latest model should be provided.

- (xxv) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xxvi) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xxvii) Details of waste OB and topsoil generated as per the approved calendar programme, and their management shown in figures as well explanatory notes tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use should be given. OB dump heights and terracing based on slope stability studies with a max of 28° angle as the ultimate slope should be given. Sections of final dumps (both longitudinal and cross section) with relation to the adjacent area should be shown.
- (xxviii) Efforts be made for maximizing progressive internal dumping of O.B., sequential mining, external dump on coal bearing area and later rehandling into the mine void. --to reduce land degradation.
- (xxix) Impact of change in land use due to mining operations and plan for restoration of the mined area to its original land use should be provided.
- (xxx) Progressive Green belt and ecological restoration /afforestation plan (both in text, figures and in the tabular form as per the format of MOEFCC given below) and selection of species (native) based on original survey/land-use should be given.

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

S.N.	Land use Category	Present (1 st Year)	5th Year	10th Year	20th Year	24 th Year (end of mine life)*
1.	Backfilled Area Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area(brought under plantation)					

7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL					

* As a representative example

Table 2: Stage Wise Cumulative Plantation

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

* As a representative example

(xxx) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.

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

S.N.	Land use during Mining	Land Use (ha)

		Plantation	Water Body	Public Use	Undisturbed	TOTAL
1.	External OB Dump					
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
5.	Built up area					
6.	Green Belt					
7.	Undisturbed Area					
	TOTAL					

- (xxxii) Flow chart of water balance should be provided. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. should be provided. Details of STP in colony and ETP in mine should be given. Recycling of water to the max. possible extent should be done.
- (xxxiii) 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 in the mine should be given.
- (xxxiv) Risk Assessment and Disaster Preparedness and Management Plan should be provided.
- (xxxv) Integration of the Env. Management Plan with measures for minimizing use of natural resources - water, land, energy, etc. should be carried out.
- (xxxvi) Cost of EMP (capital and recurring) should be included 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 should be given.
- (xxxviii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
- (xxxix) Corporate Environment Responsibility:
- The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - 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.
 - 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.
 - (xl) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details 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.
 - (xli) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
 - (xlii) Status of any litigations/ court cases filed/pending on the project should be provided.
 - (xliii) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
 - (xliv) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

FOREST CLEARANCE: Details on the Forest Clearance should be given as per the format given:

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 forest land
		If more than, provide details of each FC			

GENERIC TORs FOR AN UNDERGROUND COAL MINE PROJECT

- (i) An EIA-EMP Report shall 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 to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for MTPA of coal production based on approved project/Mining Plan for MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/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 study area should be given.
- (iv) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, 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.
- (v) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (vi) A detailed Site plan of the mine showing the 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 -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, 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. should be indicated.
- (vii) Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling

within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified.

S. N	ML/Project Land use	Area under Surface Rights(ha)	Area Under Mining Rights(ha)	Area under Both (ha)
1.	Agricultural land			
2.	Forest Land			
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	

- (viii) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (ix) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided 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. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (x) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xi) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the

lease/project and the impact on the existing users and impacts of mining operations thereon.

- (xii) One-season (other than monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xiii) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones 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. Observed values should be provided along with the specified standards.
- (xiv) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xv) Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
- (xvi) Detailed water balance should be provided. The breakup 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.
- (xvii) 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 should be provided.
- (xviii) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xix) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.

- (xx) Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
- (xxi) The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
- (xxii) Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
- (xxiii) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre-mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
- (xxiv) Greenbelt development should be undertaken particularly around the transport route and CHP. 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 submitted.
- (xxv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- (xxvi) 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 should be given.
- (xxvii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
- (xxviii) 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.

- (xxix) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details 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.
- (xxx) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
- (xxxi) Status of any litigations/ court cases filed/pending on the project should be provided.
- (xxxii) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxxiii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

Details on the Forest Clearance should be given as per the format given:

Total ML /Project Area (ha)	Total Forest Land (ha)	Date of FC	Extent of Forest Land	Balance area for which FC is yet to be obtained	Status of appl. For diversion of forest land
		If more than one provide details of each FC			

ANNEXURE-VII

GENERIC TORs FOR AN OPENCAST -CUM UNDERGROUND COAL MINE PROJECT

- (i) An EIA-EMP Report would be prepared for a combined peak capacity of.....MTPA for OC-cum-UG project which consists of.... MTPA in anML/project area of ha 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 to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for MTPA of coal production based on approved project/Mining Plan for MTPA. Baseline data collection can be for any season (three months) except monsoon.

- (iii) The ToRs prescribed for both opencast and underground mining are applicable for opencast – cum underground mining.

**LIST OF PARTICIPANTS OF EAC (COAL) IN 45th MEETING HELD ON 31st
May, 2023 THROUGH VIDEO CONFERENCING**

1.	Shri G.P Kundargi			1- DAY
		-	Chairman	P
2.	Dr. N. P. Shukla	-	Member	P
3.	Shri Suramya Dolarray Vora, IFS (Retd)	-	Member	P
4.	Dr. Umesh Jagannathrao Kahalekar	-	Member	P
5.	Shri K.B. Biswas	-	Member	P
6.	Dr. Nandini.N	-	Member	P
7.	Dr. Unmesh Patnaik	-	Member	A
8.	Professor S S Rai, Representative of IIT/ISM Dhanbad	-	Member	P
9.	Shri M.P Singh, Representative of CEA	-	Member	P
10.	Dr. Santosh Kumar Hampannavar	-	Member	P
11.	Prof R.K. Giri Representative of IMD	-	Member	A
12.	Dr. Nazimuddin Representative of Central Pollution Control Board	-	Member	P
13.	Shri Lalit Bokolia, Director, MoEFCC	-	Member Secretary	P
