

**MINUTES OF 27<sup>th</sup> (A) MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENT APPRAISAL OF COAL MINING PROJECTS HELD ON 3<sup>rd</sup> MARCH 2022 THROUGH VIDEO CONFERENCE.**

**Confirmation of the Minutes of 26<sup>th</sup> Meeting of the EAC (Coal) held on 18<sup>th</sup> February, 2022:** The subsequent minutes of the 26<sup>th</sup> meeting of the EAC held during 18<sup>th</sup> February, 2022 as 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 27<sup>th</sup> (A) meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on, 3<sup>rd</sup> March, 2022 through video conferencing with support NIC team due to Covid-19. The EAC considered proposals as per agenda adopted for the meeting. List of participants attended the meeting is annexed. The details of deliberations held & decisions taken in the meeting are as under.

**Agenda No. 27A.1**

**Cluster 8 with Group of 7 mines (1.53 MTPA normative to 2.75 MTPA peak) in an ML area of 8281 ha) of M/s Eastern Coalfields Limited, located in Bagrasola, Baijantipur, Banali, Berala, Bhanora, Bonbishnupur, Chanda, Damodarpur, Jamuria, Jhiladanga, Joba, Kaithi, Kankhaya, Kendulia, Keshabganj, Khalrui, Mithapur, Mondalpur, Nandi, Ningha, District Burdwan (West Bengal) - For Amendment in Environmental Clearance – reg.**

**[Online proposal IA/WB/CMIN/244582/2021, File No. J-11015/107/2011-IA-II(M)]**

**27A.1.1** The proposal is for Amendment in Environment Clearance of Cluster 8 with Group of 7 mines (1.53 MTPA normative to 2.75 MTPA peak) in an ML area of 8281 ha) of M/s Eastern Coalfields Limited, located in Bagrasola, Baijantipur, Banali, Berala, Bhanora, Bonbishnupur, Chanda, Damodarpur, Jamuria, Jhiladanga, Joba, Kaithi, Kankhaya, Kendulia, Keshabganj, Khalrui, Mithapur, Mondalpur, Nandi, Ningha, District Burdwan (West Bengal)

**27A.1.2** Project Proponent (PP) had requested the amendment in production capacity of the individual mine without change in overall capacity of project as per existing EC granted on 19.03.2015. Earlier, the environment clearance to the Cluster No. 08 was obtained under EIA Notification, 2006 vide Ministry's letter No J – 11015/107/2011 – IA – II (M) dated 19.03.2015 for 2.75 MTPA in mine lease area of 8281.0 Ha.

**27A.1.3** The 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 changes are proposed with the Revised Mining Plan for Cluster No. 8, duly approved by Board of Directors, ECL on 01.12.2021. The proposed changes against the approved EC are depicted in the following table:

Sl. No.	Name of Mine	Leasehold Area (Ha)	EC Capacity (MT)	Life (Years)	Name of Mine	Lease hold area (Ha)	Proposed EC Capacity (MTY)	Change in capacity (MTY)	Revised Life (years)
<b>As per EC dated 19.03.2015</b>					<b>As per revised proposal</b>				
1	Bhanora UG	1330	0.30	>20	Bhanora UG & OC	1330	0.60	(+) 0.30	>20
2	Girmint/KDI UG	1981	0.65	>50	Girmint/KDI UG	1981	0.0	(-) 0.65	-
3	Sripur UG	2338	0.024	>20	Sripur UG	2338	0.0	(-) 0.024	-
4	Sripur Seam Incline UG	279	0.136	>25	Sripur Seam Incline UG & Sripur Seam Incline (Ningah) OC	279	1.04	(+) 0.904	>25
5	Ningah UG	1072	0.10	>50	Ningah UG	1072	0.36	(+) 0.26	>50
6	Mithapur West UG & OC	527	0.34	>50	Mithapur West UG & OC	527	-	(-) 0.34	-
7	Satgram UG	754	1.20	>30	Satgram UG	754	0.75	(-) 0.45	>30
<b>Total</b>		<b>8281</b>	<b>2.75</b>			<b>8281</b>	<b>2.75</b>	<b>0.0</b>	

**27A.1.4** During the discussion, the EAC found that the PP is proposing the Sripur mine from underground to opencast as there may be a high risk of subsidence for production of 1 MTPA. EAC asked about the environmental cost benefit analysis for conversion of mining method, however, no proper response was given by PP. EAC further enquired about the closure of the abandoned mine for which PP replied that no progressive closure has been undertaken so far. From the KML file it was also seen that plantation was not adequate. PP informed that a MoU has been signed with DFO for plantation including maintenance for 5 years, but no major plantation was seen in kml file. Further on enquiring about the EMP measure, PP informed that one CAAQMS has been proposed. In this connection, EAC emphasized to install 3 CAAQMS as mine area is huge and their location shall be finalized in consultation of SPCB. The monitoring result shown for Ajay River were inconsistent and has no correlation with other parameters, therefore, EAC advised to re-monitor and gather water quality data for surface water.

The EAC, after deliberations noted that transportation of coal is being carried out through road up to the railway sidings located at a distance of 6.0 km and 25 km and on enquiry PP could not explained suitable EMP measures due to road transportation. PP informed that SPCB is issuing CTOs to each mine wise instead of cluster. PP could not explain the safety aspects of individual mines. PP has re-applied this application without certified compliance report though the same was communicated through EDS. EAC expressed displeasure on the manner at which the application is applied and cautioned consultant to revisit the information based on above observations.

Based on above, EAC desired following information from PP for further deliberations:

- (i) PP shall submit certified compliance of existing EC with the details of Mine closure activities. Drone survey of area shall be undertaken as proof of compliance.
- (ii) Adequate EMP measure shall be submitted to reduce the dust emission with budgetary provision all along the road transportation till railway siding.
- (iii) Annual Production status of individual mines after the grant of EC.
- (iv) PP must provide yearly progressive plan for handling the OB dump
- (v) PP must provide the copies of CTO of individual mines issued by state pollution control board.
- (vi) PP shall provide proof of installation of 3 CAAQMS with picture and online data linked with CPCB and SPCB.
- (vii) PP must provide the copy of MoU signed for plantation and proof of tree plantation undertaken so far through remote sensing images.
- (viii) PP to reanalysis the surface water quality of the rivers and streams flowing within the study area for drinking water standard.
- (ix) Compliance status to recommendation of land subsidence study carried out for underground mines.
- (x) A copy of star rating shall be submitted as per the guidelines of Ministry of Coal.

The proposal is **deferred** for further deliberation by EAC

## **Agenda No. 27A.2**

**Bhubaneshwari Opencast Expansion Project of 28 MTPA in existing ML area of 638.341 ha of M/s Mahanadi Coal Fields Ltd, Tehsil Talcher, District Angul (Odisha) - For Amendment in Environmental Clearance – reg.**

**[Online proposal IA/OR/CMIN/255383/2022, File No. J-11015/280/2013-IA-II(M) pt]**

**27A.2.1** The proposal is for Amendment in Environment Clearance of Bhubaneshwari Opencast Expansion Project of 28 MTPA in existing ML area of 638.341 ha of M/s Mahanadi Coal Fields Ltd, Tehsil Talcher, District Angul (Odisha).

**27A.2.2** The PP has requested the amendment in the general condition no. 4.1 (a) which is reproduced below;

*Generic Conditions: No: i) “No change in mining technology and scope of work shall be made without prior approval of the ministry of Forest and Climate Change. No change in the calendar plan including excavation, quantum of coal and waste should be made.”*

PP is seeking amendment in EC due to increase in excavation area within same Mining Lease area. As per existing EC, the quarry excavation area is 442.258 Ha however in proposal total excavation area is 583.752 Ha. The proposed change in excavation area is due to amalgamation of external dump area and blasting zone area into excavation area to enhance mineable reserve and life of the mine. Finally, PP submitted that amendment is being sought due to proposed change in following mining parameters:

- Excavation area will increase and external dump area will reduce.
- Change in mineable reserve, life and stripping ratio.
- Change in production built up and schedule.

Further PP submitted that in absence of a non-coal-bearing area in the vicinity, the area on the northern side of the mine boundary was considered to have a dump capacity of 37 million cubic metres (MCM). Details of the mineable reserve under the existing external OB dump is mentioned in Table below.

<b>Location</b>	<b>Coal (MT)</b>	<b>OB (MCUM)</b>
External OB Dump	<b>41.97</b>	<b>62.15</b>

**27A.2.3** The EAC during deliberations noted the followings:

- (i) Total mining lease area as per block allotment is 638.341 Ha. Mining Plan was approved by MCL Board in its meeting held on 20.01.2022 & by vide letter no. MCL/SBP/CS/BD/243/Exct/2022/12291 dt: 01.02.2022.
- (ii) EC was granted by MoEF & CC vide letter dated 16.02.2018 & subsequently MoEF&CC sought clarification vide letter dated 16.03.2019.

**27A.2.4** *The EAC, after deliberations observed that PP intends to change the mine execution area, within same mine lease. As long as no increase in mine lease area, and production capacity, the committee realized that amendment of EC may not require as change in land use with progressive mining & backfilling is usual as per mining plan. But PP further informed that the re handling of OB dump was not included earlier in mining plan. EAC expressed its concern on rising air pollution by re handling of OB dump and it would require proper mitigation measures.*

*Further, EAC enquired about the OB dumping zone of Arkhapaal mine, which is located adjacent to this mine and wanted to know whether the area of OB dumps is being overlapped or not. It was desired to share the land use of both mines (Bhubaneshwari & Arkhpaal) i.e. However, PP could not provide the*

requisite details. Further, the life of mine is remaining for 5 years so EAC also enquired about the Mine closure activity, but PP could not have replied adequately.

Based on above, EAC desired following information from PP for further deliberations:

- (i) PP shall provide the details of progressive mine closure activities for final mine closure as life of mine is 5 years as on date 01.04.2021
- (ii) PP shall furnish the layout plan of both adjacent mines i.e (Bhubaneshwari & Arkhpaal) indicating their OB dump areas.
- (iii) PP must provide the copy of EC of the Arkhpal Mine with its layout plan
- (iv) PP must provide the Approval letter of the revised mine plan of existing mine
- (v) PP must explore the plan to reduce the over burden by sand extraction and or by backfilling.

The proposal was **deferred** on above lines.

### **Agenda No. 27A.3**

**Wet type Coal Washery based on Heavy Media Cyclone of 4.0 MTPA (Peak) in an area of 10 ha by M/s Raipur Coal Feeder Pvt. Ltd located at Village Daga (Bargwan), Tehsil Deoser, District Singrauli (Madhya Pradesh) - For Terms of References- reg**

**[Online proposal IA/MP/CMIN/257720/2022, File No. IA-J-11015/16/2022-IA-II(M)]**

**27A.3.1** The proposal is for Terms of Reference of Wet Type Coal Washery based on Heavy Media Cyclone of 4.0 MTPA (Peak) in an area of 10 ha by M/s Raipur Coal Feeder Pvt. Ltd located at Village Daga (Bargwan), Tehsil Deoser, District Singrauli (Madhya Pradesh).

**27A.3.2** Details of the proposal, as ascertained from the proposal documents and as revealed from discussions held during the meeting, are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No G44W8 and is bounded by the geographical coordinates ranging from 24°10'37.66"N to 24°10'47.58"N and 82°28'8.23"E to 82°28'29.89"E.
- (ii) Details of coal linkage: The coal washery is not linked to any coal mine. Singrauli area has number of coal mines. It will wash coal supplied by different vendors.
- (iii) The project falls under Category' A' of Schedule 2 (a), as per the EIA Notification, 2006 & its amendment till date and will be appraised by EAC (Coal Mining), MoEFCC, New Delhi.
- (iv) The project is located in the Critically Polluted Area (CPA) of Singrauli as per CPCB CEPI Score.
- (v) Cost of the project: INR 63.33 Cr

- (vi) Employment generated: About 65 nos. direct and 150 nos. indirect employment will be generated.
- (vii) Benefits of the project: Clean coal containing 30-34% ash is required by steel plants and cement plants. The coal washery will add value to the high ash containing ROM coal extracted from Singrauli area. Local people will get direct and indirect employment. More revenue will be generated by the way of GST.
- (viii) Range of ground water level: the water level at Pre- monsoon varies from 4.13m to 18.50m & Post-monsoon varies from 2.94 m to 15.17 m.
- (ix) 950 m<sup>3</sup>/day water will be required for the coal washing. Ground Water will be used. Wastewater produced after coal washing will be treated in an elaborate ETP in close circuit. The water after treatment will be reused for coal washing. Water required for the proposed coal Washery will be mainly for Process and domestic purpose. Proposed coal Washery is envisaged to operate on closed circuit water, therefore only make up water requirement has been considered.
- (x) Whether ambient air quality seasonal data has been documented. If so, from which season to which season and whether the results are within the prescribed limits: we will start the baseline data from 05th March 2022 to 5th June 2022 for the season of Pre Monsoon.
- (xi) The site has good connectivity to railway siding (public siding at 2.5 km away) and road.
- (xii) Land identified for the project is 10 ha, out of which 3.5 ha land is earmarked for greenbelt development:

Sr. No.	Description	Area in ha	Area (%)
1.	Area of processing Plant	0.5	5.0
2.	Coal Storage Yard	1.3	13.0
3.	Clean Coal Storage Yard	1.0	10.0
4.	Reject Coal Storage Yard	0.5	5.0
5.	Green belt and plantation area	3.5	35.0
6.	Water Reservoir & Rainwater Harvesting Area	0.5	5.0
7.	Office Building and Rest Shelters/labour room	1.2	12.0
8.	Area of Weigh Bridge	0.5	5.0
9.	Area of Road	1.0	10.0
	<b>Total Land</b>	<b>10.0</b>	<b>100.00</b>

- (xiii) Some cutting and filling is required for levelling of the Site.
- (xiv) The Washery will produce washed coal of an average ash content of around 34 % (OCV 4200 - 4500 Kcal/Kg) & reject, ash content about 60% (OCV 2200 - 2400 Kcal/Kg), useable as fuel in AFBC/CFBC boilers. It is envisaged that about 1.0 MTPA of Washery Rejects will be generated.
- (xv) 2.0 MW electricity will be required for the project. It will be supplied by Madhya Pradesh State Electricity Board.
- (xvi) No Forest Land Area is involved in the project area.

- (xvii) There is no village or human settlement in the plant area. No existing infrastructure within the plant area. The proposed site is an undeveloped land which does not include forestry, water bodies (including CRZ) etc.
- (xviii) There is no displacement of any houses, habitation or livestock. Thus the project does not require any R & R plan.
- (xix) No court cases are pending.
- (xx) Ampl Environ Pvt. Ltd. accredited with Quality Council of India (QCI) /National Accreditation Board of Education and Training (NABET) as per the MoEF&CC OM dated 2nd December, 2009 vide Certificate No. NABET/EIA/2023/IA0061 has validity upto 22/10/2023.

**27A. 3.3** The EAC during deliberations noted the following:

1. Location of Washrey falls in singraulli area which is currently under Severally Polluted Area (SPA). This site is allotted by MP Industrial Development Corporation Ltd. vide allotment order no. 1436/MPIDC/RO/Rewa/2021 dated 03.12.2021. The final lease is yet to be obtained by PP.
2. No forest land is involved in the project area.
3. Total land is 10 ha, out of which 3.5 ha land is earmarked for greenbelt development
4. About 7650 cum excavated material will be generated. Top soil will be used for green belt development.
5. Rejects generated will be given to nearby captive power plants.

*27A.3.4 The EAC after deliberations observed that though the instant proposal is green field but currently it falls under severely polluted area, wherein additional safeguard would be required for preparation of EIA-EMP report. PP informed that after exploring various options, this land was made available by State Govt., which is near to railway siding. EAC asked the PP to take adequate EMP measures for mitigating air pollution due to road transportation of 3 kms and suggested to construct lack top road from site to the highway with proper green belt development along the road. The raw coal and the washed coal will be transported through railway siding via national highway.*

*Finally The EAC **recommended** the proposal for Terms of Reference to Wet type Coal Washery based on Heavy Media Cyclone of 4.0 MTPA (Peak) in an area of 10 ha by M/s Raipur Coal Feeder Pvt. Ltd located at Village Daga (Bargwan), Tehsil Deoser, District Singrauli (Madhya Pradesh) and specific conditions as below and as defined in the Standard ToR issued by this Ministry for such projects/activities under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto*

- (i) *Public Consultation, including public hearing, shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal should be need/requirement based of local people.*

- (ii) *Site, being a severally polluted, therefore PP needs to conduct cumulative impact assessment studies with adequate EMP measures for proposed washery operation.*
- (iii) *PP shall prepare EIA-EMP with detailed land use plan for washery infrastructure and furnish details of 33 % of the green belt plantation with trees within the plant boundary and also in adjoining area. Accordingly, three Tier Green belt developments all along the boundary in with time bound action plan in EIA/EMP report*
- (iv) *PP must provide budgetary provision in time bound manner to construct pucca black top road with the three tier green belt plan to be proposed separately on both side of the road from site to nearby Highway and highway to railway siding.*
- (v) *PP shall prepare EIA-EMP report with compliance of Action Plan drawn by CPCB/SPCB for critically polluted area/severally polluted area.*
- (vi) *PP shall explore the possibility of pond water /surface water in lieu of groundwater for washery operation since a ponds located near the project site.*
- (vii) *PP should submit the complete water balance cycle considering water usage for washery operations. In addition to this PP should submit a detailed plan for rain water harvesting measures to be taken. The PP should submit the year wise target for reduction in consumption of the water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.*
- (viii) *PP should submit the real time aerial footage and video of the Coal Washery made through drone*
- (ix) *PP shall furnish the MoU for its raw coal, washed coal and reject management, as per the respective MoC guidelines*
- (x) *PP shall propose to develop two water harvesting pond of 15 days storage capacity of washery operations.*
- (xi) *The socio-economic study to conducted with actual survey report and a comparative assessment to be provided from the census data of 2011-part B to be provided in EIA/ EMP report also economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data of 2011 part A to be provided and to link it with the initialization and quantification of need based survey for CSR activities to be followed.*
- (xii) *A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road.*
- (xiii) *For proper baseline air quality assessment, Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ shall be planned by the collection of air quality data by adequate monitoring stations in the downwind areas. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area.*
- (xiv) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (xv) *Impact of proposed project/activity on hydrological regime of the area shall be assessed and*

report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted

- (xvi) Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report Sulphur content.
- (xvii) The parameters Arsenic, Lead and Silica shall also be analyzed in ambient air quality.
- (xviii) The washing technology shall be based 'Zero Liquid Discharge' concept and no effluent shall be discharged outside the premises.

#### **Agenda No. 27A.4**

**Rajbar E &D opencast coal mine with production capacity of 10 MTPA (Peak) in mine lease area of 1351 Ha of M/s Tenughat Vidyut Nigam Limited located at Auranga Coalfield, Tehsil & District Latehar (Jharkhand)- For Terms of References- reg**

**[Online proposal IA/JH/CMIN/257580/2022; File No. IA-J-11015/44/2017-IA-II(M)]**

**27A.4.1** The proposal is for Terms of Reference Expansion of Rajbar E &D opencast coal mine with production capacity of 10 MTPA (Peak) in mine lease area of 1351 Ha of M/s Tenughat Vidyut Nigam Limited located at Auranga Coalfield, Tehsil & District Latehar (Jharkhand)

**27A.4.2** Details of the proposal, as provided by PP from the proposal documents are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No F45A9 and is bounded by the geographical coordinates ranging from Latitudes: 23° 45' 27.491" to 23° 48' 2.68" N Longitudes: 84° 37' 38.78" to 84°40' 27.119"E
- (ii) Coal linkage of the project is proposed for Expansion programme for 2 x 660 MW at Tenughat Thermal Power Station (TTPS), Village Lalpania, Dist. Bokaro, Jharkhand. The project will contribute in meeting the demand of electricity.
- (iii) No Joint venture cartel has 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.
- (v) Employment generation, employment to 1461 (direct) +5000 (indirect) persons will be provided from the project.
- (vi) The project is reported to be beneficial in terms of Financial, Environment and Social aspects.
- (vii) Total mining lease area as per block allotment is 1351 ha. Mining Plan (Including e Mine Closure Plan) has been approved by Ministry of Coal, Government of India vide No.34011-18-2017-CPAM, dated 13.03.2019.
- (viii) The land usage pattern of the project is as under

Present Land Uses	Proposed Land Uses (At end	Post Mining Land Uses after Mine Closure Area in ha
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			of Mine life)								
Sl. No.	Land Uses	Area in ha	Sl. No.	Land Uses	Area in ha	Agriculture Use	Plantation	Water Body	Public & Other Use	Un-disturbed	Total
1.	Tenancy	581.18	1.	Excavation area on Surface	1262	497.48	495.52	269.00			1262.00
2.	Govt. NF	272.54	2.	Road	11				11.00		11.00
3.	Forest		3.	Electrical Substation	2	2.00					2.00
	Reserve		4.	Workshop	2.9	2.90					2.90
	Protected	495.20	5.	Store	1.9	1.90					1.90
	C-J-B-J	2.08	6.	CHP & Coal Storage	12.7		12.70				12.70
			7.	Garland Drain	4.3				4.30		4.30
			8.	Embankment	9.5				9.50		9.50
			9.	Green Belt	28.9		28.90				28.90
			10.	Sedimentation Tank	0.6				0.60		0.60
			11.	Township	10.1				10.10		10.10
			12.	Office	1.9				1.90		1.90
			13.	ETP	1.2	1.20					1.20
			14.	Magazine	1	1.00					1.00
			15.	Undisturbed (UG entry)	1					1.00	1.00
Total		1351	Total		1351	506.48	537.12	269.00	37.40	1.00	1351.00

- (ix) Total geological reserve reported in the mine lease area is 567.01 MT with 442.34 MT mineable reserve. Out of total mineable reserve of 442.34 MT, 420.22 MT are available for extraction. Percent of extraction is 73 %.
- (x) Nine (9) seams with thickness ranging from 0.15m (Seam I Bot) to 24.26m (Seam III Bot) – Excl. NCB are workable. Grade of Coal is G5 to G14, Stripping Ratio-5.04, while gradient is 7.50 to 9.50 (workable).
- (xi) Method of mining operations envisages by Opencast mining method. Life of mine is 48 years.
- (xii) One (1) internal OB in an area of 982 ha with 2119 Mm<sup>3</sup> of OB is envisaged in the project.
- (xiii) Total quarry area is 1262 ha out of which backfilling will be done in 982.00 ha while final mine void will be created in an area of 269 Ha with a depth of 250 m. Backfilled quarry area of 495.52 ha will be reclaimed with plantation. Final mine void will be

converted water reservoir.

- (xv) Transportation of coal has been proposed by in mine pit head, from surface to siding by Conveyer and at sidings by Rail.
- (xvi) Reclamation Plan in an area of 1351 ha, comprising of 0 ha of external dump, 982 ha of internal dump and 495.52 Ha of green belt. In addition to this, an area of 28.9 Ha, included in the safety zone/rationalization area, has also been proposed for green belt development.
- (xvii) 520.35 ha of forest land has been reported to be involved in the project. Approval under the Forest (Conservation) Act, 1980 for diversion of 520.35 ha of forest land for non-forestry purposes has been applied vide MoEF&CC letter No. FP/JH/MIN/48598/2020.dated 10.09.2020.
- (xviii) Please mention any National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones fall within 10 km boundary of the project. No. Certificate issued vide no.154, dt.20.01.2021 stating no ESZ protected area / animal corridor situated in ML Area by PCCF & Chief Wildlife Warden, Government of Jharkhand.
- (xix) Wildlife conservation plan for schedule – I species has been submitted to N/A
- (xx) The ground water level has been reported to be varying between 2 m to 10 m during pre-monsoon and between 2 m to 15 m during post-monsoon. Total water requirement for the project is 2670 KLD.
- (xxi) Application for obtaining the approval of the Central Ground Water Authority. TVNL has submitted / uploaded an Undertaking vide no.1038/21-22, dt.18.02.2022 for obtaining CGWA Clearance prior to grant of EC.
- (xxii) Consent to Operate for the existing capacity was obtained from the MPPCB on 10.05.2021 and is valid till 30.06.2022 and from UPPCB on 14.10.2021 and is valid till 31.12.2023.
- (xxiii) No River/nalla is flowing near boundary of lease.
- (xxiv) Consent to Operate for the existing capacity shall be obtained from the State PCB.
- (xxv) Sukri River on northern edge of proposed mine. The diversion of Sukri river is not envisaged
- (xxvi) No court cases, violation cases are pending against the project of the PP.
- (xxvii) The project does not involve violation of the EIA Notification, 2006 and amendment issued there under. The coal production from the mine has not commenced.
- (xxviii) The project involves 550 families affected families
- (xxix) Total cost of the project is Rs. 2916.22 Cr and Environment Management Cost is Rs 145.81 crores.

**27A.4.3** The EAC during deliberations noted the following:

- The vesting order was issued in the name of M/s Tenughat Vidyut Nigam Limited vide order no NA-103/19/2015-NA dated 30.06.2015.
- Total 520.35 Ha forest land is involved in the project and about 550 families need to be relocated from four villages
- The Rajbar E&D Coal Mine is within the allotted block, but 31 Ha of non -coal bearing area adjacent to the coal block is also proposed to acquire by PP for other uses therefore the total project boundary covers 1351 Ha area. As per guidelines of MoC GoI vide no 34011/4802009-CPAM dated 8<sup>th</sup> may, 2018, a letter of request has been made by M/s

- TVNL to the state Govt of Jharkhand by PP
- Sukri river is flowing along the northern boundary of the project area. From the KML file, it is also seen that few stream /small ponds located within the mines and also a canal is under construction as per the toposheet uploaded by PP

*27A.4.4 The EAC observed that PP is proposing to divert the Sukri River, which is flowing all along the northern boundary in the 4<sup>th</sup> year. In this regard, EAC asked PP to avoid the river or rivulet diversion as it involve a huge catchment area with dense green forest and finally PP agreed for not diverting stream. It was suggested to conserve the rivers/rivulets with proper safety barrier of 20 to 60 m & plantation along the bank of the river.*

*It was also seen that the PP is acquiring the area outside the mine lease allotted for other purpose. EAC desired to provide the document of land acquisition while coming for EC. EAC advised PP that no infrastructure development or OB dumping to be proposed in forest area and towards the river. PP also informed about the conveyor belt system to be installed by April, 2024 for transportation of coal to railway siding.*

*The EAC after deliberation **recommended** for grant of Terms of Reference Expansion of Rajbar E &D opencast coal mine with production capacity of 10 MTPA (Peak) in mine lease area of 1351 Ha of M/s Tenughat Vidyut Nigam Limited located at Auranga Coalfield, Tehsil & District Latehar (Jharkhand) under the provisions of EIA Notification, 2006 and its amendments therein with specific conditions mentioned below:*

***Specific condition***

- (i) Public Consultation shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal. All the issues should be incorporated in EIA along with its time bound action plan and budgetary provision.*
- (ii) PP to seek land acquisition of the area lying outside and adjacent to the boundary and the provide it the time of EC application*
- (iii) PP should submit the real time aerial footage and video of the Mining lease area made through drone with a special focus on the area adjacent to the rivers.*
- (iv) As committed by PP, no river diversion shall take place and PP to submit the adequate plan for protection of river with adequate safety measures.*
- (v) PP shall prepare a Plan for implementation of Continuous Automatic Air Quality Monitoring Station (CAAQMS) at mine site or its vicinity.*
- (vi) PP must explore the usage of pond water located within the mine boundary*
- (vii) Stage-I Forest Clearance for diversion for non-forestry activity shall be submitted.*
- (viii) PP must certify from DFO that no schedule – I species fall within the study area comprising project area and 10 km buffer zone*

- (ix) *PP shall explore the possibilities of utilization of OB material for different purposes (in construction of roads/ manufacture of artificial sand, aggregates/ use for farmers etc.) and accordingly Plan shall be included in EIA/EMP Report.*

### **Monitoring**

- (x) *In addition to existing data already collected (if any), PP to carry out cumulative impact assessment study by having source apportionate study of polluting units in buffer zone of mines considering the ecosystem services and biodiversity of the area.*
- (xi) *Air pollution impact predication shall be conducted by considering the maximum values.*
- (xii) *Wind rose pattern in the area should be reviewed and accordingly location of AAQMS shall be planned by the collection of air quality data. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area.*
- (xiii) *Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted*
- (xiv) *The impact of mine operation on the river bodies flowing within the boundary of the mine with its mitigation measures adopted should be clearly spell in the EIA/EMP report with flood plain protection measures.*
- (xv) *Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report. Further, detailed mineralogical and chemical composition of the mineral and percentage of free silica in Air quality and other parameters Arsenic, Lead shall also be analyzed in ambient air quality & to be furnished in EIA/EMP report*
- (xvi) *The PP while carrying out base line monitoring should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should also submit the original Lab reports of air, water, soil and noise quality and NABL/MoEF&CC certificates of the respective laboratory.*
- (xvii) *PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs.*
- (xviii) *A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road. The project will increase the no. of vehicle along the road which will indirectly contribute to carbon emission so what will be the compensatory action plan should be clearly spell out in EIA/ EMP report.*
- (xix) *The socio-economic study to be conducted with actual survey report and a comparative assessment to be provided from the census data of 2011-part B to be provided in EIA/ EMP report also economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data of 2011 part A to be provided and to link it with the initialization and quantification of need based survey for CSR activities to*

*be followed.*

- (xx) *The Ecology and biodiversity study should also indicate the likely impact of change in forest area for surface infrastructural development or mining activity in relation to the climate change of that area and what will be the compensatory measure to be adopted by PP to minimize the impact of forest diversion.*

### **Infrastructure & Mine Management**

- (xxi) *Inpit conveyor belt with silo loading shall be proposed and installed for transportation of coal till railway siding. No transportation of coal by trucks/dumpers shall be proposed in EIA/EMP.*
- (xxii) *PP shall submit detailed plan for implementation of railway siding for evacuation of coal with its target date of completion. Target date should be such that railway siding should be operational within 3 years of commissioning of mine operations. Forest Clearance shall be submitted if railway siding land comes under forest land.*
- (xxiii) *PP shall provide the details of mining technology/methodology proposed to be adopted for coal mining operations and its associated environmental benefits of using from Climate Change perspective by i.e. the likely emissions of greenhouse gases from the mining operations to be estimated with the modelling for future prediction related to the climate of that study area.*
- (xxiv) *Details of toe wall and garland drain to be constructed along the OB dump and proper plantation to be carried out Reclamation to be done using geo-texturing technique of the dumps close to habitation and a cause of visual intrusion.*
- (xxv) *PP should bring out the awareness campaign to be carried out on various Environmental issues, practical training facility to be provided to the environmental engineer/diploma holders, mining engineer/diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.*
- (xxvi) *PP shall propose to use LNG/CNG based mining machineries and LNG/CNG/ Electric trucks for mining operation and transportation of coal.*
- (xxvii) *No trucks or vehicles used for transportation of Coal to be passed by village roads or roads located near to the villages. PP shall develop a pucca haul road for transportation of coal proper widening considering its carrying capacity, lightening and three tire plantation along the haul road. Details of black topping of permanent haul roads to be furnished in EIA /EMP report with its measurement and budgetary provision.*

### **Other**

- (xxviii) *The environmental sensitivity mentioning not only about the surface water bodies, Forest areas, Inter -state or country boundary etc but also the nearby other mines, coal washery, power plants and other industries etc located within the 10 km radius buffer zone present with its distance and direction from the periphery of the project boundary must be furnished in EIA/EMP report.*
- (xxix) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report*
- (xxx) *Detailed Social Impact Assessment shall be prepared in villages for Rehabilitation and Re-*

*settlement. R &R Activity shall be proposed with timeline and allotted fund with the approval of District Commissioner/collector. PP shall be submitting R &R in respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programs prepared and submitted accordingly, integrating the sectoral programs of line departments of the State Government.*

### **Agenda No. 27A.5**

**Jhamkhani Coal Mine Project (2.6 MTPA) of M/s Vedanta Limited, in mine lease area of 847 ha located in villages Jamkhani, Mendra, Girisma, Jharpalam, District Sundergarh, Orissa – Amendment & Transfer of EC from M/s Bhusan Power & Steel Ltd. to M/s Vedanta Limited .**

**[Online proposal IA/OR/CMIN/153784/2020, File No. J-11015/322/2007- IA.II(M)]**

**27A.5.1** The proposal is for Amendment as well as transfer of existing Environmental clearance from M/s Bhusan Power & Steel Ltd. to M/s Vedanta Limited for Jhamkhani Coal Mine Project (2.6 MTPA) in mine lease area of 847 Ha located in villages Jamkhani, Mendra, Girisma, Jharpalam, District Sundergarh, Orissa.

**27A.5.2** Details of the proposal, as ascertained from the proposal documents and as revealed from the discussion held during the meeting, are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No. 64N/12 and is bounded by Latitude 22°07'04.41160" to 22°07'03.97546" N and Longitude 83°34'23.93342" to 83°34'29.85172" E.
- (ii) Joint venture cartel is not proposed.
- (iii) 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.
- (iv) Employment generation 667 persons.
- (v) The project benefits are development of the locals by CSR/CER activities. Employment generation and secondary business opportunities will also evolve due to the project.
- (vi) Earlier, the environmental clearance to the project was granted to M/s Bhusan Power & Steel Ltd. under EIA notification, 2006 vide Ministry's letter no. J-11051/322/2007-IA.II(M) dated 24.09.2008 for 2.6 MTPA in the mine lease area of 999.55 Ha. Mining plan was approved by the Ministry of Coal on 14.07.2006.
- (vii) Now Revised mining plan has been submitted to the Ministry of Coal for approval. The land usage pattern of the project is as follows:
- (viii) The land use pattern of the project is as follows:

**Pre Mining land Use:**

Type of Land	Area (ha)
Private Land	552.32
Government Land	234.71
Forest Land	59.97
Total	847

**Post Mining Land Use during Mining (Area in Ha)**

Land Use	Area (Ha)
Backfilled Area	423.55
Excavated Void	104.00
Topsoil Dump	5.94
External Dump	110.11
Safety Zone	9.25
Diversion of Nala	5.78
Settling Pond	1.01
Garland Drains	0.62
Green Belt	12.35
Undisturbed Area	169.08
Road & infrastructure	5.31
Total	847.0

- (ix) Total geological reserve reported in the mine lease area is 222.13 MT with 121.03 MT mineable reserve. Out of the total mineable reserve of 121.03 MT, 114.98 MT are available for extraction. Percent of extraction is 51.76%. The life of mine is 46 Years.
- (x) Lajkura IV top, Lajkura IV Bot, Lajkura III, Lajkura II top 2, Lajkura II (T-1+T1A+bot), Rampur V, Rampur IVB, Rampur IIIA, Rampur III top, Rampur III bot and Rampur II and I seams with average thickness ranging from 1 m are qorkable. Grade of coal is F, stripping ratio is 2.4498 whilst gradient is 3 to 6 degrees.
- (xi) Method of mining operations envisages by Opencast mining method through Continuous Surface Miner and OB removal by Shovel Dumper combination and conventional drilling and blasting.
- (xii) The project has 2 external OB dumps in an area of 110.11 Ha with 60 m height and 281.68 M Cum OB generation.
- (xiii) Total quarry area is 527.55 Ha out of which backfilling will be done in 423.55 Ha while final mine void will be created in an area of 104 Ha with a depth of 140 m. Backfilled quarry area of 423.55 Ha will be reclaimed with plantation.
- (xiv) Transportation has been proposed by 35 T dumpers in mine.
- (xv) Reclamation plan in an area of 110.11 Ha comprising of external dumps.

- (xvi) 59.97 Ha forest land has been reported to be involved in the project. Approval under the Forest (Conservation) Act, 1980 for diversion of 59.97 Ha forest land for non-forestry purposes has been obtained vide MoEF&CC letter no. 8-40/2008-FC dated 24.12.2021.
- (xvii) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones have been reported with 10 km boundary of the project.
- (xviii) Wildlife Management Plan has been submitted by previous lessee
- (xix) The groundwater level has been reported to be varying between 2 m to 5 m. Total water requirement for the project is 795 KLD.
- (xx) Application for obtaining the approval of the Central Ground Water Authority for 91 KLD has been submitted on 23.02.2022 for initial phase of development. Total water requirement is 1094 KLD. Application for the same will be made after initial development of mine infrastructure.
- (xxi) Public Hearing for the project of 2.6 MTPA capacity in an area of 999.55 Ha was conducted on 27.09.2006 under the Chairmanship of Deputy Collector, Sundergarh. Major issues raised in the public hearing include Land Rate, R&R and job prospects. Appropriate action to address the issues raised in the public hearing have already been taken and proposed to be resolved by M/S Vedanta Limited
- (xxii) Bendra Nalla & Budhajolia Nalla flows through the lease area. Diversion length of Bendra Nalla 2.83 km. There is no change in the length for Budhajolia Nalla diversion. Office of Chief Engineer, Research & Quality Control Water Resources, Odisha has granted diversion proposal vide letter W-FC&D-04/12-385 dated 08.02.2013.
- (xxiii) The project does not involve violation of the EIA Notification, 2006 and amendment issued there under. – Not Applicable, this is a new mine.
- (xxiv) Project involves 39 land outsees and 429 land and homestead losers. R&R of the 660 PAPs will be done as per R&R rules of the State. Total cost of the project is Rs. 842Crore. Cost of CSR is Rs. 57 crores (Life of Mine) R&R cost is Rs.163 Crore. Environment Management Cost is Rs. 14.80 Crore.

**27A.5.3** The EAC during deliberations noted the following:

- Earlier EC was issued to M/s Bhushan Power & Steel Ltd. on 24.09.2008 vide letter no. J-11015/322/2007-IA.II(M). But due to non-availability of Stage-1 forest clearance, no mining activities was undertaken within the lease area after 2008.
- Ministry of Coal, Government of India vide their vesting order no NA-104/2/2019-NA dated 10.02.2020 has allotted the Jamkhani Coal Mine in favour of M/s Vedanta Limited as a successful bidder under clause (b) of sub-rule (2) of rule 7 and sub-rule (1) of rule 13 of the Coal Mines (Special Provisions) Rules 2014 read with clause (b) of sub-section (3) of Section 6 and sub-section (3) of Section 8 of the Coal Mines (Special Provisions).
- Transfer of FC (Stage-I & Stage-II approvals of prior allottee) over 59.97 ha was done in favor of M/s Vedanta Ltd. vide File No.8-40/2008-FC on 24.12.2021
- Though Forest Clearance has been transferred in line with Coal Mines (Special Provisions) Act 2015 but while considering transfer of Environmental Clearance, MOEF& CC observed that a

Reserve Forest consisting of an area of around 152.55 Ha lies within mine area on which Forest Clearance of stage I has not been obtained. Therefore, in light of Supreme court Order, M/s Vedanta vide Ministry letter no F. No. J-11015/322/2007- IA.II(M) dated 23.12.2021 was communicated to either obtain Forest clearance for full forest land of 212.52 Ha or revise the Mine Lease area with map excluding the area for which FC stage I is not granted. Therefore, EC transfer could not take place.

- Now, Ministry of Coal vide application no. ORSU/APP00195/2022 dated 07.03.2022 has granted in-principle approval of draft mining plan submitted by PP for Jamkhani Coal mine for rated capacity of 2.6 MTPA /3.9 MTPA (peak) within mine lease area of 847 ha under section 5(2) (b) of the Mines & Mineral (Development & Regulation) Act, 1957 with certain conditions. It is noted that the mining plan contains Phase I Open Cast Operations at Jamkhani without use of reserve forest land of 152.55 Ha and all plates of the mining plan have been accordingly revised. The phase II proposal i.e. mining by underground method, shall come up for in 45th year as per current Mining Plan and separately approval of MoEF&CC would be required with inclusion of 152.55 Ha reserve forest area.

*27A.5.4. The EAC observed that the proposal primarily relates to transfer of EC from M/s Bhushan Power & Steel Ltd. to M/s Vedanta Limited, however due to change in mine lease area, the proposal is covered for amendment of EC. It has been noted that as per revised mine plan submitted by PP, an area of 152.55 ha of reserved forest has been curtailed; while mine rated capacity and mining methods shall remain unchanged. Now mine area of Jamkhani has been reduced from 999.55 Ha to 847 ha. During discussion, PP confirmed that no mining was proposed in the reserved forest area and it was excluded in previous mine plan too. Additionally, the committee observed that Bendra Nalla & Budhajolia Nalla Diversion was proposed by previous lessee. Currently, only Bendra Nalla diversion is proposed by PP. Application has been made to Principal Secretary, Water Resource Department on 07.02.2022 but EAC opined that PP should conserve the Bendra stream as much as possible by adopting sustainable mining operation and excavation of coal should be done by surface miner. EAC also asked PP to ensure that no road transportation will be carried out after 3 years from the date of issue of the EC. PP had agreed to this condition.*

*Further, based on documents and facts submitted by PP, EAC **recommended** the proposal for **amendment and transfer of EC from M/s Bhushan Power & Steel Ltd to M/s Vedanta Limited for Jamkhani Coal Mine Project with production capacity of 2.6 MTPA in an Mine lease area of 847 Ha located in villages Jamkhani, Mendra, Girisma, Jharpalam, District Sundergarh, Orissa under EIA Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the existing EC conditions dated 24.09.2008 in addition to following additional specific conditions for environmental safeguards:***

- (i) PP shall obtain CTO for 2.6 MTPA from State Pollution Control Board for Open cast mining only. No underground mining shall take place in the mine area of 847 ha.*

- (ii) *PP must provide a copy of final approval of revised mine plan from MoC and submit it to IRO within 3 months from date of issue of EC.*
- (iii) *Coal Extraction through Surface Miner and OB removal through Shovel Dumper combination shall be undertaken.*
- (iv) *PP shall obtain No Objection Certificate (NOC) for extraction of Ground Water from Central Ground Water Authority.*
- (v) *PP shall submit allocated fund for wildlife conservation plan within six months and compliance of the same should be submitted to Ministry's IRO.*
- (vi) *PP shall install wind shield around the railway siding to prevent movement of dust through wind to sensitive areas.*
- (vii) *PP shall implement dust mitigation during mining operation like Fixed type & trolley mounted sprinklers, mobile fog cannons of 40 mts throw, wind barrier at coal stockyard, plantation etc with different timeline till April, 2023.*
- (viii) *PP shall implement proposed plantation of 150,000 nos. of native trees for next three years broad leaves along the transportation route in three years to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.*
- (ix) *PP shall install inpit conveyor system and commence Rapid loading system with conveyor belt system by March, 2025 and no road transportation shall be carried out after March, 2025 and no CTO of road transfer shall be granted by SPCB afterward.*
- (x) *PP shall deploy only 40-50 tonnes covered trucks/dumper to reduce fleet size till Rapid loading system.*
- (xi) *PP must address the public hearing issues and compliance of the same should be submitted to Ministry's IRO.*
- (xii) *PP shall explore an action plan for implementation of sand segregation plant to extract sand and aggregate to reduce agricultural land degradation.*
- (xiii) *PP shall conduct substantial numbers of tree plantation in the nearby villages of for dust mitigation measures within 2 years and mark it for certification of Ministry's IRO.*
- (xiv) *PP shall plant 50 mtrs width with miyawaki tree plantation system all along with periphery of Mine boundary within 2 years.*
- (xv) *PP also to provide drinking water facilities like installation of RO with proper water supply pipe fittings to nearby rural areas and also to install hand pumps by seeking consent from panchayat of the villages located within the study area of 10 km radius buffer zone within three years*
- (xvi) *PP to install solar lights within 1 year from the grant of this EC 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 sanitation facility like bio toilets to the villages located within the study areas within 1 year from the grant of this EC.*
- (xviii) *PP shall implement wired fencing along the 152.55 ha to demarcate the forest and mine boundary prior to commencement of mine operations.*

- (xix) *PP to install 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 to websites of SPCB/CPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.*
- (xx) *Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.*
- (xxi) *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. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.*
- (xxii) *Persons of nearby villages shall be given training on livelihood and skill development to make them employable.*
- (xxiii) *The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours.*
- (xxiv) *PP shall implement rain water harvesting mechanism in order recharge the ground water or as water conservation measure in addition to the proposed structure. PP shall carry out regular monitoring of Ground water level and quality.*
- (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) *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.*
- (xxvii) *All conditions contained in Environmental Clearance dated 24.09.2008 shall be applicable in addition to above conditions.*

### **Agenda 27A.6**

**Kathara Opencast Coal Mine of 1.9 MTPA (Peak) in a mine lease area of 773.23 Ha of M/s Central Coalfields Limited, located in Block Bermo, District Bokaro (Jharkhand)- For Reconsideration in Environmental Clearance under violation Category**

**[Online Proposal No. IA/JH/CMIN/179534/2020; File No. J-11015/482/2008-IA-II(M)]**

**27A.6.1** The proposal is for Environment Clearance of Kathara Opencast Coal Mine of 1.9 MTPA (Peak) in a mine lease area of 773.23 Ha of M/s Central Coalfields Limited, located in Block Bermo, District Bokaro (Jharkhand)

**27A.6.2** EAC during deliberations noted the followings:

- The project is considered under violation category for keeping the mining operation beyond its estimated life by not taking EC for extended period. In the project, mine life was estimated to be 3 years as per the environmental clearance dated 8th January, 2014 and EC was valid upto 8th January, 2017 but PP did not apply the extension within the timeline. Mine production was executed after 2017 i.e beyond the validity period of EC and hence the project has been registered for violation.
- Earlier, PP made the application and the project was deliberated in 25<sup>th</sup> EAC meeting held during 18<sup>th</sup> to 20<sup>th</sup> January, 2022 under violation category, however, it was deferred as no policy was available to deal with violation cases at that time.
- Earlier, MoEF&CC had issued a notification wherein violation cases are mandated for grant of EC during the period April, 2017 to October, 2017 with assessment of damage cost and preparation of remedial plan with financial assessment. However, in the instant project, TOR was granted on 27th April, 2021, beyond window period. To facilitate processing of such case, Ministry has issued SOP on 7th July, 2021 but this SOP was stayed on 15th July, 2021 by Hon'ble High Court of Madras.
- Now again MoEF&CC vide OM no. F. No. 22-21/2020.IA.III dated 28th January, 2022, clarified the operation of the SOP to the project in territories beyond the territorial jurisdiction of Madras high court. In this background, the project is again deliberated;

**27A.6.3** *The EAC, after deliberations observed that instant project is for Environment Clearance under violation category on account of not taking extended EC with life of mine. This is also very old project and was started in 1958 and have operations of opencast mining and Washery in area of 792.81 Ha. But now the area of the washery was excluded as separate EC for New Kathara washery has been obtained by PP. Hence area of the project is left to 773.23 Ha.*

*EAC while discussing plan of OB dumping, observed that the OB dump is lying close to the Damodar*

river and PP has planned to progress OB dump towards the Damodar River. EAC enquired about the safety distance which was stated to be 100 to 200 m. EAC emphasized that no further OB dump should be placed towards Damodar river and the river conservation activity to be carried out by PP. EAC found that though no forest land is involving within the mine lease but schedule –I species are available for which PP had prepared the conservation plan without endorsement of DFO. Inadequate plantation was found along the boundary of the coal mine.

Further, EAC also suggested for installation of silo loading at site, uptill washery for which a deadline of March, 2023 was given and till that period a dedicated haul road within the mine site should be constructed by PP. Also the PP was also mandatorily asked to install closed conveyor belt system from washery to Railway siding. EAC also asked PP to revise the EMP budget and provide the break-up of CER activity too, along with time bound action plan to address public hearing issues with proper budgetary provision. The Committee also observed the lack of commitment by PP in supplying drinking water and electricity to nearby villages, as one of issues raised during public consultation. The Committee stressed to make an online grievance cell within CCL portal and also create whatsapp number for local people wherein they can address their grievances.

PP presented the Damage assessment report and its remedial action plan for the violation committed by PP and it was asked to revise the report as many shortcomings were found by EAC. The EAC also asked consultant and PP to revise the calculations as yearly production vis-à-vis profit obtained during violation period and also to include year January, 2017 to January, 2022 under violation.

Based on above, EAC desired following information from PP for further deliberations:

- (i) PP shall revise damage assessment and its remedial action plan for violation on account of excess production on following points;
  - a. PP has obtained EC for this project on 8/01/2014 for an ML area of 798.21 ha which was valid upto 07/01/2017 and whereas the present proposal is for 773.23 ha. It needs proper explanation for the reduced area.
  - b. The total production under violation shall be considered from 08/01/2017 to January 2022 and accordingly damage calculation to be revised.
  - c. Economic benefit accrual shall be revisited and certified by finance department.
  - d. Air Environment-Damage: The emissions shall be considered for all the violation years, without comparison/base year and shall be revised accordingly.
  - e. Water: The rates for GW shall be revised as per CGWA Notification of Sept 2020 for abstraction as well as compensation.
  - f. Surface water rates shall be revised as per the deficiency in provision of SW structures.
  - g. The activities enumerated under Remediation, NRAP and CRAP shall be revised based on the need based survey and further shall be specific, monitor-able besides revising the target period for two years.

- h. *Water balance for STP and ETP shall be revised and submitted and water conservation plan to be drawn.*
  - i. *Provision of RWH structures in the colony shall be submitted.*
  - j. *Compliance status of municipal solid waste generated, as per SWM Rules 2016, shall be submitted.*
  - k. *Cost saved due to the above a/c for the violation years shall be added to CRAP and likewise cost saved EMP also.*
  - l. *Penalties as per SOP of violation shall be submitted apart from damage assessment and natural remediation measures.*
- (ii) *The total damage cost mentioned in the EIA report is 359.59 Lakhs; Total fund proposed for remediation measures 34,799,000, Total cost proposed for Natural & Community Resource Augmentation Measures is 7,200,000, which is to be revised as per recommendation mentioned above.*
  - (iii) *PP shall submit Status of Credible action taken by Project Proponent by State Government*
  - (iv) *PP also to provide IRO Certified Compliance Report of previous EC dated 08 January, 2014*
  - (v) *Status of Wild Life Conservation approval may be providing alongwith clarification of budget reflected in Form-2 @ Rs.80 lacs vs Rs.34 lacs given presentation.*
  - (vi) *PP shall submit action plan for plantation along peripheral boundary with allocated budget and timeline.*
  - (vii) *PP to give proof of grievance cell like creation link in web portal and whatsapp number for local people. Awareness program to be done in this regard among the local people.*
  - (viii) *PP shall provide proof of installation of CAAQMS with picture and online data linked with CPCB and SPCB and further data of piezometer should be shown.*
  - (ix) *PP shall provide drone survey to substantiate environment compliance.*
  - (x) *PP shall provide the receiving of Wildlife Conservation Plan for Schedule-I species and breakup of the proposed activities with budgetary provision submitted to the DFO.*
  - (xi) *PP to provide Protection measures for the streams/nallahs from the lease area to Damodar river. The PP must take inputs by other consultant (third party) regarding the river conservation plan of Damodar River.*
  - (xii) *Time bound action plan with budgetary provision for commitment made on the issues raised during public hearing in both the districts in EIA EMP report also*
  - (xiii) *Plan of action and allocated fund for maintenance and services to provide drinking water pipeline with fittings to the nearby villages with installed RO for 10 years.*
  - (xiv) *PP must provide the plan of action and allocated fund for maintenance and services to provide solar street light in the nearby villages and village roads*
  - (xv) *PP must furnish the photograph of road constructed from Muslin Tola to Yadav Tola*
  - (xvi) *Time bound action plan with budgetary provision for commitment for the construction of new at Swang which has been damaged due to which the local persons have to take a diversion of 2 KM.*
  - (xvii) *PP to submit the revised EIA/ EMP report with revised Form-2 by breakup of activity proposed in CER*

*The proposal is **deferred** on above lines*

**The meeting ended with thanks to the Chair.**

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**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 PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>. 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 25<sup>th</sup> 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/PM2.5) 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 25<sup>th</sup> 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 27<sup>th</sup> 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 purposive. 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 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.

**(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 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 27<sup>th</sup> 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 29<sup>th</sup> 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 1<sup>st</sup> 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, NOx(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 OMNo.Z-11013/5712014-IA.II (M) dated 29<sup>th</sup> 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.

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**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, SO<sub>2</sub> and NO<sub>x</sub>. 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 air borne 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 3<sup>rd</sup> 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 green belt 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 OMNo.Z-11013/5712014-IA.II (M) dated 29<sup>th</sup> 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 1<sup>st</sup> 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 environment 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 subject matter.
- 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.

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**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. 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 waste/hazardous waste generated in the washery needs to be addressed in accordance 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, SO<sub>2</sub> and NO<sub>x</sub>. 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 statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>. 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.
- 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 appropriate 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 m<sup>3</sup>/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.

- xii. 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.
- xiii. 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.

- 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 29<sup>th</sup> 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 1<sup>st</sup> May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approve 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 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, SO<sub>2</sub>, NO<sub>x</sub> (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 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.
- vii. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- ix. 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.
- x. 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.

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**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 conveyer 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 conveyor belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road should 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-II013/25/2014-IA.I dated 11<sup>th</sup> 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 conveyor 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.

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## **ANNEXURE-V**

### **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 mayalso 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 landfor mining operations such as the quarry area, OB dumps, green belt, safetyzone, 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.

LANDUSE 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, PM2.5, SO<sub>x</sub>, NO<sub>x</sub> and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-seasonmet 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 <sup>st</sup> Year)	5 <sup>th</sup> Year	10 <sup>th</sup> Year	20 <sup>th</sup> Year	24 <sup>th</sup> 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 <sup>st</sup> year					
2.	3 <sup>rd</sup> year					
3.	5 <sup>th</sup> year					
4.	10 <sup>th</sup> year					
5.	15 <sup>th</sup> year					
6.	20 <sup>th</sup> year					
7.	25 <sup>th</sup> year					
8.	30 <sup>th</sup> year					
9.	34 <sup>th</sup> year (end of mine life)					
10.	34-37 <sup>th</sup> Year (Post-mining)					

\* As a representative example

(xxxii) 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:

- 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.

(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, PM2.5, SO<sub>x</sub>, NO<sub>x</sub> 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 landuse 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			

**GENERIC TORs FOR AN OPENCAST-CUM-UNDERGROUND  
COALMINEPROJECT**

- (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 an ML/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.

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**LIST OF PARTICIPANTS OF EAC (COAL) IN 27A<sup>th</sup> MEETING OF HELD ON 3<sup>rd</sup> MARCH, 2022 THROUGH VIDEO CONFERENCING**

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