

**MINUTES OF 32<sup>nd</sup> MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENT APPRAISAL OF COAL MINING PROJECTS HELD ON 30<sup>th</sup> June, 2022 THROUGH VIDEO CONFERENCE.**

**Confirmation of the Minutes of 31<sup>st</sup> Meeting of the EAC (Coal) held during 9<sup>th</sup> June, 2022:** The minutes of the 31<sup>st</sup> meeting of the EAC held during 9<sup>th</sup> June, 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 32<sup>nd</sup> meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on, 30<sup>th</sup> June, 2022 through video conferencing with support NIC team due to Covid-19 lockdown. The EAC considered proposals as per agenda adopted for the meeting. List of participant attended the meeting is annexed. The details of deliberations held & decisions taken in the meeting are as under.

**Agenda No. 32.1**

**Radhikapur (East) Coal Mine of 5.0 MTPA peak capacity with inclusion of Coal washery of 5 MTPA over an area of 1029.925 Ha. of M/s EMIL Mines And Mineral Resources Limited (EMMRL) located at Village Gopinathpur Jungle, Jhintipal, Jhintipal Jungle, Kosala, Nandichod, Tehsil-Chhendipada, District- Angul (Odisha). For Environmental Clearance – reg [Online proposal No. IA/OR/CMIN/240929/2021; F No. J-11015/1073/2007-IA-II(M)]31.1.1**

**31.1.1** The proposal is for Environment Clearance of Radhikapur (East) Coal Mine of 5.0 MTPA peak capacity with inclusion of Coal washery of 5 MTPA in area of 1029.925 Ha of M/s EMIL Mines and Mineral Resources Limited (EMMRL) located at Village Gopinathpur Jungle, Jhintipal, Jhintipal Jungle, Kosala, Nandichod, Tehsil Chhendipada, District Angul (Odisha).

**31.1.2** The details of the proposal, as ascertained from the documents are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No 73 D/13 (R.F.1: 50,000) bounded between the coordinates: Latitudes (N) 20057'30" – 20059'37" N and Longitudes (E): 84053'13" - 84055'47" E
- (ii) Coal linkage of the project is proposed for commercial use after beneficiation at integrated coal washery
- (iii) Joint venture cartel has been formed – No
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance- Yes. Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.
- (v) Employment generation, Direct employment to 178 persons will be provided from the project.

- (vi) The project is reported to be beneficial in terms of Environmental, Social, Financial aspects.
- (vii) Earlier, the Environmental Clearance for the Radhikapur (East) Coal Mine and integrated Coal Washery has been recommended during 37th EAC Meeting held during 28-29.11.2011 after successful completion of Public Hearing at village Gopinathpur Jungle, Tashil Chhendipada, Angul District on 27.02.2009. Competent authority approved this project on 28.03.2012. Subsequently it was communicated through MoEF&CC Letter dated 08.06.2012 that EC shall be issued after submission of Stage-I Forest Clearance. However, no stage-1 FC for the project was submitted.
- (viii) Further after allocation of the same coal block to EMMRL by MoC, Govt. of India, the project was appraised in the 23rd EAC meeting dated 06.12.2021 for the grant of TOR.
- (ix) Terms of Reference (TOR) has been granted on 23.12.2021 vide letter no. J-11015/1073/2007-IA.II (M)
- (x) Total mining lease area as per block allotment is 1029.925 ha. Mining Plan (Including Progressive Mine Closure Plan) has been submitted for approval to the Ministry of Coal on 07.04.2008.
- (xi) The land usage pattern of the project is as follows:

**Pre-mining land use details**

**(Area in Ha)**

Village	Forest (Ha)	Non-Forest Govt. Land (Ha)	Private Land (Ha)	Total Land (Ha)
	(Revenue Forest)			
Kosala	3.0315	23.5635	21.3375	47.9325
Nandichhod	40.9221	5.9823	102.6287	149.5331
Gopinathpur Jungle	70.9505	42.107	160.3190	273.3765
Jhintipal Jungle	67.4008	22.1995	60.7410	150.3413
Jhintipal Village	47.7850	47.3151	313.6415	408.7416
<b>Total Area</b>	<b>230.0899</b>	<b>141.1674</b>	<b>658.6677</b>	<b>1029.9250</b>

**Land use during Mining**

Sl. No.	Purpose	Forest Land (Ha)	Non Forest Govt. land (Ha)	Private land (Ha)	Total (Ha)
1	Mining/Excavation	175.0250	38.4820	288.4930	502.00
2	Magazine with Safety Zone	1.4549	8.8580	7.6447	17.9577
3	Initial OB Dumps	0.0000	5.9800	94.0200	100.00
4	Coal washery, Coal Stack Yard, Settling Pond, etc	0.0000	0.3500	27.0400	27.3900

5	Temporary labour Shed, Temp. Sites, etc	0	2.1500	17.4300	19.5800
6	Top soil Dump	4.3900	0.2300	11.3800	16.0000
7	Undisturbed Area	26.2891	40.0370	110.3400	176.6661
8	Green belt(Indirectly affected)	8.7600	28.5000	76.0630	113.3230
9	<b>Subtotal(I)</b>	<b>215.9190</b>	<b>124.5870</b>	<b>632.4107</b>	<b>972.9167</b>
10	<b>Safety zone</b>				
11	a) 7.5 m along the lease area	2.4700	0.5200	3.3900	6.3800
	b) 10m along the Road	0.0000	0.4400	4.0000	4.4400
	c) 50 m along the nala	11.7009	15.6200	18.8670	46.1879
	<b>Sub Total( II)</b>	<b>14.1709</b>	<b>16.5800</b>	<b>26.2570</b>	<b>57.0079</b>
12	<b>Grand Total</b>	<b>230.0899</b>	<b>141.1670</b>	<b>658.6677</b>	<b>1029.9246</b>

### Post Mining (land Use Details)

Sr. No.	Land Use During Mining	Post-Mining Land Use (Ha)				
		Plantation	Water Body	Public Use	Undisturbed	Total
1	External OB Dump	100.00	---	---	---	100.00
2	Top Soil Dump	16.00	---	---	---	16.00
3	Excavation	402.00	100.00	---	---	502.00
4	Coal Wahery, Coal Stack Yard, Settling Pond, Roads	--	---	----	27.39	27.39
5	Temp. Labour Sheds, Temp. sites, etc	19.58	---	----	---	19.58
6	Green Belt	113.323	---	---	---	113.323
7	Undisturbed area	---	---	---	194.6238	194.6238
8	Safety Zone / Rationalization Area	57.0079	---	---	---	57.0079
	<b>Total Area =</b>	<b>707.9109</b>	<b>100.00</b>	<b>---</b>	<b>222.0138</b>	<b>1029.9247</b>

(xii) Total geological reserve reported in the mine lease area is 183.4291 MT with 105.24 MT mineable reserve for Opencast Mining. Percent of extraction is 71.17 %.

- (xiii) 11 seams with thickness ranging from 0.05 to 33.0 m are workable. Grade of coal is C to G, stripping ratio 5.53 while gradient is 40 to 60. .
- (xiv) Method of mining operations envisages by Opencast method using Surface Miner Technology in Coal and Shovel Dumper Combination in OB along with drilling and blasting.
- (xv) Life of mine is 23 years.
- (xvi) Total overburden generated during initial 6-years will have to be located in 2 nos of surface dumps over 100 Ha, having a height of 120 m in 4 stages of 30 m each. From 7th year onwards OB will partially be used for backfilling and partially kept in the temporary surface dump over the northern portion of the unexcavated quarry area up to 10th year. The concurrent backfilling with mining will be possible only after 10th year and with the advancement of mining benches. The temporary OB dump located over the northern portion of the Mine will be re-handled and accommodated over the excavated and de-coaled area. Thus reclamation of de-coaled area shall be 402.0 ha. The project has initially proposed one external Top Soil dump in an area of 16 Ha and with 6 m height and 2.52 Mm<sup>3</sup> of Top Soil.
- (xvii) Total quarry area is 502 ha out of which backfilling will be done in 402 ha; while final mine void will be created in an area of 100 ha with a depth of 30 m. Backfilled quarry of 402 ha shall be reclaimed with plantation. Final mine void will be converted into a water body.
- (xviii) Transportation of coal has been proposed by 50 T RD Dumpers to Washery and OB shall be transported by 100 T RD Dumpers to the designated sites. The transportation of Coal from Washery to proposed Siding at Jharpada (at a distance of 10.8 Km) shall be done by 50 T Dumpers.
- (xix) Reclamation Plan in an area of 402 ha, comprising of 100 Ha external dump, 16 ha of top soil dump, 286 ha of decoaled area has been proposed. In addition to this, an area of 57.0079 ha, included in the safety zone/rationalization area besides plantation also been proposed for green belt development.
- (xx) Forest land of 230.0899 has been reported to be involved in the project. The necessary application for diversion of this Forest Land has been submitted on 20.10.2008 (Online Reference No FP/OR/MIN/4116/2008) and under process.
- (xxi) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones have been reported with 10 km boundary of the project.
- (xxii) Approved Wildlife Conservation Plan has been vested to EMMRL by Nominated Authority vide their Vesting Order dated 3rd March 2021
- (xxiii) The ground water level has been reported to be varying between 4 m to 11.5 m during pre-monsoon and between 0.6 m to 11.2 m during post-monsoon. Total water requirement for the project is 2365 KLD for Mining and Washery.
- (xxiv) Application for Approval of the CGWA for withdrawal of ground water Shall be submitted.
- (xxv) Public hearing for the project of 5.0 MTPA Capacity in the same area of 1029.925 ha was successfully conducted after complying with the TOR conditions on 27/02/2009 at Gopinathpur Jungle Village. Major issues raised in the public hearing include Employment, Supply of drinking Water, provision of good roads, Environmental Pollution Mitigation measures, etc. Accordingly, appropriate action to address the issues raised in the Public Hearing shall be

addressed in final EIA/EMP. Since the Public Hearing for this Project has been successfully completed, exemption of Public Hearing was allowed with public notices while prescribing the TOR to this Project.

- (xxvi) Consent to Operate shall be obtained from the Odisha State Pollution Control Board.
- (xxvii) Singhada Jhor is flowing adjacent to the Northern Boundary of the lease and Nuabandha Nala is flowing along the western boundary of the Coal Block. Any diversion of Nala is not required.
- (xxviii) Regular monitoring of ambient air quality shall be carried out on fortnightly basis. The documented report shall be submitted to OSPCB and also to MoEF&CC along with half yearly EC compliance report.
- (xxix) No court cases, violation cases are pending against the project of the PP.
- (xxx) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. It is a new project.
- (xxxi) The project involves 1203 project affected families. R&R of the PAPs will be done as per LAAR, 2013.
- (xxxii) Total cost of the project is Rs. 187800 lakhs. Cost of production is Rs.1450/- per tonne., CSR cost is Rs. 939 lakhs, R&R cost is Rs. 122.78 lakhs and will be estimated and disbursed as per the provisions LARR 2013. Environment Management Cost has been provided in EIA/EMP as capital Rs. 7830 lakhs and Rs.585 lakhs as recurring cost.

### **31.1.3 The EAC during deliberations noted the following:**

- Radhikapur East Coal Block (Including Utkal – F) [ Presently it is named as Radhikapur (East) Coal Mine as per the allocation order] was earlier allotted by Ministry of Coal, Govt. of India on 7th February 2006 to M/s TATA Sponge Iron Limited. Ministry of Coal cancelled all allocated coal blocks in the year 2014 following the Hon'ble Supreme Court of India order vide judgment dated 25th August, 2014 read with its order dated 24th September, 2014 and the Central Government in pursuance of the said directions has taken immediate action to implement the said order.
- The Mining Plan for Radhikapur (East) Coal Block was approved by Ministry of Coal, GOI vide letter no. Ni.13016/42/2007-CA-I dated 07.04.2008. The Nominated Authority, Ministry of Coal, Govt. of India has vested Radhikapur (East) Coal Block to M/s EMIL Mines and Minerals Resources Limited (EMMRL) vide order no. NA-104/15/2020-NA dated 03.03.2021.
- The application for Forest Clearance has been submitted for diversion of 230.0899 Ha forest land has been deliberated in FAC on 26th November 2021 for grant of FC Stage –I. The proposal was again considered by FAC in its meeting on 23/12/2021.
- PP informed that no public suggestions came after grant of TOR. Earlier the public hearing was conducted in 2009 and issues in the present circumstance are being incorporated in EIA-EMP report.
- Environmental Baseline data was generated in the Non-monsoon season December, 2021 to March, 2022 (Winter Season) at 12 locations. The result indicates that the maximum and minimum values are 38.7 to 56.1 µg/m<sup>3</sup> for PM<sub>10</sub>, 15.8 to 36.1 µg/m<sup>3</sup> for PM<sub>2.5</sub>. The SO<sub>2</sub>

concentrations are in the range of 7.4 to 21.7 and NO<sub>x</sub> in the range of 10.6 to 31.4 µg/m<sup>3</sup>. The incremental increase is projected to be 9.8 µg/m<sup>3</sup> for PM<sub>10</sub>, 8.2 µg/m<sup>3</sup> for PM<sub>2.5</sub>, 0.28 µg/m<sup>3</sup> for SO<sub>2</sub>, and 0.69 µg/m<sup>3</sup> for NO<sub>x</sub>. The value of total GLC is estimated to be 58.3 µg/m<sup>3</sup> for PM<sub>10</sub>, 37.9 µg/m<sup>3</sup> for PM<sub>2.5</sub>, 21.98 µg/m<sup>3</sup> for SO<sub>2</sub>, and 32.09 µg/m<sup>3</sup> for NO<sub>x</sub>. The observed pollutant levels are compared with CPCB National Ambient Air Quality Standards and found to be within the prescribed standards.

- Surface water Monitoring was done at 5 locations. The result indicates that the pH value in the range of 7.59 and 8.41, 0.9 to 3.5 except SW-5 (Stream Near Dobamaliha Village which is used for human and cattle bath) and its turbidity value is 15.7 NTU, dissolved oxygen in the range of 7.5 to 8.4 mg/l, dissolved solids ranged 290 to 546 mg/l, total hardness in range of 146 to 326 mg/l. Surface water samples have Coliforms ranges between 2 to 4 MPN/100 ml and contaminated due to surface runoff entering these sources.
- The EAC noted that few TOR points are not complied; related to coordinate boundary of the coal washery, signing of MoU for using coal rejects, including characteristics of coal and heavy metals e.g. levels of Hg, As, Pb, Cr etc.
- PP is yet to take Stage –I FC, NOC form CGWA, Electricity agreement, Permission of diversion of road, approval of wild life conservation plan etc as per requirement mentioned in Annex 3 & 4 of the vesting vide order no. NA-104/15/2020-NA dated 03.03.2021.

**31.1.4** *The EAC, after deliberations noted that it is a green field project of coal mine with integrated coal washery. Few important points of TOR are not addressed fully related to the coordinates of the integrated coal washery, its land use along with green belt, MoU of coal rejects utilization, washery specific EMP measures in EIA/ EMP, analysis of coal w.r.t to its characteristics and grade. Actual socio economic survey for primary data base has also not been conducted by the consultant rather; a decade old secondary data used in socio economic study. While presenting the project, the consultant could not bring out clearly the surface plan, progressive evacuation plan & drainage pattern, location of OB dump & forest area. The consultant and PP could not explain properly about catchment area of streams flowing within the mine lease, its drainage pattern, details of embankment. On enquiring about the distance of Nuabandha Nala from the Pit head, PP informed that safety distance of 50 mts will be maintained and also no proper justification on demarcation of OB dump area and forest area was provided by PP. EAC asked PP to leave 100 mts distance with high density plantation. EAC also asked PP to conduct proper analysis regarding the loss of agricultural land too as 60 % of the land use is agricultural based.*

*On enquiring about the transportation, PP informed to proposing by closed conveyor belt and railway siding after 5 years and till first 5 years the coal will be transported through dedicated road to the nearest Jarpada Railway Station, which is located at a distance of about 10.8 Kms from the proposed Coal Block in the South-West direction.*

*EAC also observed that CSR cost incorporated in EMP and therefore, the EMP cost and separate budget involving issues of addressing public hearing must be provided in time bound manner.*

*In view of above, PP shall submit the following details for further compliance: -*

- (i) *PP shall submit reply/compliance of specific ToR conditions with action plan to implement and PP shall comply all the ToR points no. 3, 8, 9, 10, 24, 25, 26 & 35 & Standard ToR point no XVIII.*
- (ii) *A proper surface map indicating forest land in project area, infrastructure, OB dump area, and location of coal washery, other facility, etc. All features need to be prepared with proper base map.*
- (iii) *PP must provide proper drainage map within and outside the mine lease area and propose the protection measures for water bodies including river. EMP measures should include the protection of water bodies due to seepage/runoff from the mine area.*
- (iv) *Protection measures for the Singhada Jhor/river – Adjacent to Northern Boundary and Nuabandha Nala- Adjacent to the western boundary of the Mine lease. PP must provide the detail of the embankment to be constructed all along the stream and lease boundary*
- (v) *PP shall submit the copy of document obtained as mentioned in Annexure 3 & 4 of the vesting vide order no. NA-104/15/2020-NA dated 03.03.2021.*
- (vi) *PP shall propose adequate plan with timeline to install piezometer for monitoring of ground water.*
- (vii) *PP must provide an elaboration of the cost benefit analysis in terms of loss of agricultural land vs mineral benefit and carbon foot print and carbon sink of the existing forest area for next 10 years and with compensatory provisions.*
- (viii) *PP must provide the MoU for utilization of coal rejects of coal washery plant.*
- (ix) *PP must separately provide three tier green belt development plan considering 33 % of the green area all along the boundary of the coal washery along with high density green belt development along the bank of Singhada Jhor & Nuabandha Nala flowing adjacent to the boundary, lease boundary and haul roads with budgetary provision.*
- (x) *PP shall provide adequate EMP budgetary provision including pollution control measures with adequate time bound action plan, which should include installation of CAAQMS. Accordingly, EMP should be revised.*
- (xi) *PP shall submit adequate details with time bound action plan, with fund allocation for addressing the issues raised in public hearing.*
- (xii) *PP shall submit list of species of flora and fauna vetted by DFO based on primary survey with fresh baseline data and prepare Wildlife Conservation Plan based on this primary data.*
- (xiii) *PP shall prepare and submit Mine Closure Plan as per latest guidelines of Ministry of Coal.*

*In view of above, the project was **deferred** for submission of observation.*

### **Agenda No. 32.2**

**Expansion of coal washery from 2.5 MTPA to 5.0 MTPA (wet type) in existing area of 9.93 Ha by M/s Phil Coal Beneficiation Pvt Ltd located at village Ghutku, Tehsil Takhtpur, District Bilaspur, (Chhattisgarh) - For Environmental Clearance – reg**

**[Online Proposal No. IA/CG/CMIN/277577/2015; File No. J-11015/418/2015-IA-II(M)]**

**32.2.1** The proposal is for Environmental clearance to Expansion of coal washery from 2.5 MTPA to 5.0 MTPA (wet type) in existing area of 9.93 Ha by M/s Phil Coal Beneficiation Pvt Ltd located at village Ghutku, Tehsil Takhtpur, district Bilaspur, (Chhattisgarh).

**30.2.3** The details of the proposal, as ascertained from the proposal documents are given as under:

- (i) The project area is covered under Survey of India Topo Sheet No.64 J/4 and is bounded by the geographical coordinates ranging from 22° 9'12.72"N to 22° 9'26.77"N and 82° 5'24.22"E to 82° 5'30.98"E
- (ii) Joint venture cartel has not been formed.
- (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, 50 nos. direct & 150 no. indirect employment will be provided from the project.
- (v) The project is reported to be beneficial in terms of the management commitment to uplift the standards of living of the villagers in consultation with local gram panchayat & a need based study will be carried out to assess the needs of locals.
- (vi) Earlier, the Environment Clearance to the existing plant was obtained under EIA Notification, 2006 & its amendment vide Ministry's letter No. F.No. J-11015/418/2015-IA.II (M) dt. 31st July 2017, 16th April 2018 (EC Amend.) & 21st June 2019 (EC Amend.) for 2.5 MTPA Wet type coal washery in an area of 9.93 Ha.
- (vii) Terms of Reference granted on – 1st November 2021
- (viii) The land usage pattern of the project is as follows:  
Industrial Land (Coal washery Land use)

S.No.	Land Use	Area (in Ha.)
1.	Main Plant Area (Existing & Expansion)	1.65
2.	Raw Coal Storage Yard (Existing & Expansion)	0.81
3.	Washed Coal Storage Yard (Existing & Expansion)	0.61
4.	Rejects storage (Existing & Expansion)	0.40
5.	Water Storage and Rainwater Harvesting	0.32
6.	Internal Roads	0.40
7.	Green Belt	3.34
8.	Railway siding	2.00
9.	Truck parking area	0.40
	<b>TOTAL</b>	<b>9.93</b>



- (ix) Transportation of coal has been proposed as below:
- The ROM coal from SECL mines mainly from Deepka, Gevra, Kusmunda and other SECL mines will be transported by Road / Rail.
  - Washed coal and Washery rejects will be transported to parties through Road / Rail only.
  - Company is having own Railway siding served from Ghutku Railway Station in the existing plant and same will be utilized for proposed expansion also.
  - Transportation of Raw Coal from the SECL mines in the region depends on their rail connectivity, availability of rakes for short distance and permission from SECL to do so.
  - Transportation to the nearby client and those not linked to rail network will be by Road.
  - Washed coal from the plant will be transported by Rail / road in covered trucks directly to the customer. The mode of transport of washed coal will depend on the MoU with the customers who may have either road transport or rail transport.
- (x) No forest land is involved.
- (xi) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones have been reported with 10 km boundary of the project.
- (xii) No schedule – I fauna is present within 10 Km. radius of the plant site
- (xiii) The ground water level has been reported to be varying between 2.26 m to 16.52 m below ground water during pre-monsoon and between 0.11 m bgl to 10.33 m bgl during post-monsoon. Total water requirement after the expansion is 855. KLD.
- (xiv) Application for obtaining the approval of the Central Ground Water Authority for- NOC has been obtained from CGWA for 855 KLD of Ground water abstraction vide letter No.CGWA/NOC/IND/REN/1/2022/6925 was valid upto 25.05.2022. Applied for renewal of the same. Total water requirement after expansion will be 855 KLD only.
- (xv) Public hearing for the project of expansion coal washery from 2.5 MTPA to 5.0 MTPA capacity in an area of 9.93 ha was conducted on 20th April 2022 at premises on Higher Secondary School, Ghutku Village, Takhatpur Tehsil, Bilaspur District, Chhattisgarh under the Chairmanship of Additional Collector. Major issues raised in the public hearing include air pollution, water pollution, fugitive emissions, CSR activities, ground water table depletion.
- (xvi) Renewal of Consent to Operate for the existing 2.5 MTPA coal washery was obtained from the Chhattisgarh Environment Conservation Board (CECB) on 1st June 2022 vide letter no.1406/TS/CECB/2022 and is valid till 30th April 2025.
- (xvii) No River/nalla is flowing through the plant site. Unnamed canal is passing adjacent to the plant site on eastern side, Arpa river – 2.0 Kms., Kurung Right Bank Canal – 6.0 Kms., Ghongha Nadi – 7.5Kms., Gokena Nallah – 2.5Kms. are present within 10 Kms. radius of the plant site.No River / Stream passes through the proposed project site.
- (xviii) Regular monitoring of ambient air quality is being carried out periodically. The documented report is submitted to CECB and also to IRO, MoEF&CC along with half yearly EC compliance report. In general, the results of ambient air quality monitoring data were found within prescribed

limits.

(xix) Corner coordinates of coal Washery plant area

Point No.	Coordinates
1.	22° 9'26.77"N 82° 5'24.22"E
2.	22° 9'27.26"N 82° 5'29.75"E
3.	22° 9'25.29"N 82° 5'31.72"E
4.	22° 9'23.81"N 82° 5'36.40"E
5.	22° 9'22.58"N 82° 5'36.89"E
6.	22° 9'13.96"N 82° 5'35.41"E
7.	22° 9'12.72"N 82° 5'30.98"E
8.	22° 9'17.90"N 82° 5'28.02"E

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

(xxi) No R & R is required, as no habitation exists in the proposed plant site.

(xxii) Total cost of the expansion project is Rs. 20 Crores. Cost of production is Rs. 100 /- per tonne., CSR cost is Rs. 40 Lakhs, Environment Management Cost is Rs. 160 Lakhs

**30.4.3** The EAC during deliberations noted the following:

- The project is expansion of existing coal washery from 2.5 MTPA to 5.0 MTPA.
- Terms of References to this project was granted by MoEf&CC vide no J-11015/418/2015-IA. II (M) dt 1<sup>st</sup> November, 2021.
- Certified Compliance report issued by IRO, MoEF&CC, Raipur vide no. EC-520/RON/2017-NGP/758 dt. 08.06.2022
- NOC for 855 KLD Ground water abstraction has been obtained from CGWA vide letter No. CGWA/NOC/IND/REN/1/2022/6925, which was valid upto 25.05.2022. Renewal of NOC is under process.
- No River / Stream passes through the proposed project site. Unnamed canal is passing adjacent to the plant site on eastern side, Arpa river – 2.0 Kms., Kurung Right Bank Canal – 6.0 Kms., Ghongha Nadi – 7.5Kms., Gokena Nallah – 2.5Kms. are present within 10 Kms. radius of the plant site.
- Coal washery Rejects generated will be linked to power plants of M/s. Godavari Power & Ispat Ltd. (Hira Group) & M/s. Jagdamba Power & Alloys (Hira Group).
- Public Hearing for proposed project was conducted on 20.04.2022, under the Chairmanship of Smt. Jayasri Jain, Additional Collectorate, District Bilaspur Premises on Higher Secondary School, Ghutku Village, Takhatpur Tehsi, Bilaspur District, Chhattisgarh. Major issues raised in the public hearing include air pollution, water pollution, fugitive emissions, CSR activities, ground water table depletion
- Environmental Baseline data was generated in the Non-monsoon season December, 2021 to March, 2022 (Winter Season). Monitoring Parameters. Sampling was done at 8 monitoring locations. The result indicates that maximum and minimum values of PM10 are in the range of 34.4 to 66.5 µg/m<sup>3</sup>, whereas the PM2.5 in range of 18.5 to 38.7 µg/m<sup>3</sup>. The SO<sub>2</sub>

concentrations within the study area are in the range of 7.0 to 19.6 µg/m<sup>3</sup> ; while NO<sub>x</sub> are in range of 7.2 to 28.4 µg/m<sup>3</sup>. The observed pollutant levels have been compared with CPCB National Ambient Air Quality Standards and found to be within the standards.

The incremental increase in values (considering emissions of washery & proposed steel plant adjacent to washery along with vehicular emissions) is found to be 1.40 µg/m<sup>3</sup> for PM<sub>10</sub>, 3.3 µg/m<sup>3</sup> for SO<sub>2</sub>, and 10.56 µg/m<sup>3</sup> for NO<sub>x</sub>. The value of total GLC is for PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub> are 67.9 µg/m<sup>3</sup>, 22.9 µg/m<sup>3</sup> and 38.96 µg/m<sup>3</sup> respectively.

- Surface water quality was measured at 5 locations namely; Arpa river, Ghonga Nadi, Gokena Nallah, Karhipara village pond and results are as following

*32.2.4 The EAC, after deliberations found that present proposal is expansion of coal washery from 2.5 MTPA to 5.0 MTPA wet type coal washery. The committee noted that though the PP had filed application for renewal of water withdrawal but it needs to explore the possibility of fresh water from nearby sources. PP informed that they have explored the same for their new Steel & power plant located adjacent to the washery and in future will use surface water*

*While discussion the public hearing issues, it was noted that some of locals have made adverse remarks on air pollution management and poor housekeeping is also reflected in certified compliance report of IRO with other minor non-compliances of existing EC. EAC mandatorily asked PP to submit the adequate EMP with budgetary provision for air pollution management, alongwith proper green belt development plan, which is provided in due course.*

*EAC finally **recommended** the proposal for Expansion of coal washery from 2.5 MTPA to 5.0 MTPA (wet type) in existing area of 9.93 Ha by M/s Phil Coal Beneficiation Pvt Ltd located at village Ghutku, Tehsil Takhtpur, District Bilaspur, (Chhattisgarh), under the provisions of EIA Notification, 2006 and its amendments therein with following additional specific conditions to be followed:*

- PP to obtain the CTO for 5 MTPA capacity after grant of EC.*
- PP to fulfill all the commitment made to address the public hearing issues in time bound manner as committed in EIA/EMP report and action taken report on non-compliances should be furnished to IRO within 3 months.*
- The technology so chosen for ETP within washery should confirm to 'Zero Liquid Discharge'. No treated & untreated wastewater shall be discharged outside the boundaries of project area.*
- PP to install 1 continuous ambient air quality monitoring stations at suitable locations preferably village side with consultation of SPCB by October, 2022. The real time data so generated shall be uploaded on company website and linked it with website of CPCB & SPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.*
- Heavy metal content in raw coal, and washed coal shall be analyzed once in a year and records maintained thereof and it should be reported in IRO, report.*
- PP to undertake the recruitment of a full-fledged qualified manpower with Environmental Engineer/Env. Science degree background in Environment Management Cell etc at coal washery plant for compliance of EC conditions.*

- (vii) *Thick green belt of 30-45 m width to be provided around the washery to mitigate/check the dust pollution. A 3-tier avenue plantation should also be developed along vacant areas, storage yards, loading/transfer points, and also along internal roads/main approach roads. A detailed action plan with budgetary provision should be submitted within 6 months to IRO. Areal images in this regard needs to be submitted in six monthly reports to IRO.*
- (viii) *Total fresh water requirement shall not exceed 855 KLD proposed to be met through ground water withdrawal. PP must furnish the copy of renewal of NOC from CGWA and must explore possibility to meet the 20 % of water demand from surface water by seeking proper permission from competent authority by December, 2024. Fresh water demand from ground water shall be reduced accordingly.*
- (ix) *The impact of proposed project/activity on hydrological regime of the area shall be assessed and report to be submitted within the six month and recommendation shall be implemented*
- (x) *As committed by PP, 95% of washed coal and washery rejects shall be transported through rail only 5% of capacity for road transportation shall be allowed.*
- (xi) *Effective measure shall be implemented by PP for raw coal transportation through road such as development of green belt tree plantation on either side of road (within 10 km radius of affected villages or project side), use of fixed mist sprayer near village side (not less than 12 no in one route near to village.). The compliance status shall be submitted within 4 months to IRO.*
- (xii) *The ROM coal shall be washed to bring down the ash content to <34%, ensuring more than 7% reduction in ash should be taken care off as committed by PP.*
- (xiii) *A proper housekeeping procedure shall be framed and implemented by PP. Action taken in this regard shall be provided to IRO within 3 months.*
- (xiv) *PP shall develop 3 additional water harvesting pond in nearby villages of suitable area as suggested by EAC in consultation with Gram Panchayat within 1 year. Also desiltation of already existing pond and surface body must also be carried out by the PP i.e The beautification of 2 ponds located nearby by the washery plants must be taken up by PP in consultation of competent authority*
- (xv) *Solar street light to be installed with its proper maintenance along the road of incoming raw coal to avoid accident in nearby villages like Lokhandi, Turkdih, Ghutuku, Nirtu etc within 10 km study area and a record must be furnished to IRO IRO with six monthly compliances*
- (xvi) *The fog cannon must be installed at periphery of the washery located near to the villages like Lokhandi side in order to suppress the dust.*
- (xvii) *No village road shall be used for transportation of coal and no road transport route shall be adopted, which is passing through any sensitive location such as schools, hospitals etc. PP shall take legal undertaking from its consumers accordingly.*
- (xviii) *Proper wages to be provided to the workers with incremental policy & PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.*
- (xix) *PP must also carry out plantation drive (fruit bearing trees, local species etc) with its proper maintenance in nearby villages by seeking consent of gram panchayat and villagers in coming monsoon and a proper record must be furnished to IRO with six monthly compliances*
- (xx) *The PP must provide the workers proper PPE and must also trained them and a record of training must be furnished to IRO*

*(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.*

## **Annexure-I**

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

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

**(a) Statutory compliance**

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

**(b) Air quality monitoring and preservation**

- (i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM10, PM2.5, 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 purpose. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- (x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural



water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surfacewater into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.

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

**(d) Noise and Vibration monitoring and prevention**

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

**(e) Mining Plan**

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

**(f) Land reclamation**

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

- submitted to MOEFCC/Regional Office (RO).
- (ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land shall be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 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 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 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 top soil 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; PM<sub>10</sub>, 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 follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.11 (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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## Annexure-II

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

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

#### **I. Statutory compliance:**

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

#### **II. Air quality monitoring and preservation**

- i. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, 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 purpose. 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 reversion/riparian ecosystem in and around the coal mine upto a distance of 5 km. A reversion /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 greenbelt comprising of a mix of native species shall be developed all along the major approach roads/ coal transportation roads.

#### **VIII. Public hearing and Human health issues**

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

### **III. Water quality monitoring and preservation**

- i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from

time to time by the Central Pollution Control Board.

- ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-1A.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for compliance.
- iii. Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time.
- iv. The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the washery. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front 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 approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of

action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

- v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

## **IX. Miscellaneous**

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

### **Generic ToR for coal washery**

- i. Siting of washery is critical considering to its environmental impacts. Preference should be given to the site located at pit head; in case such a site is not available, the site should be as close to the pit head as possible and coal should be transported from mine to the washer preferably through closed 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-11013/25/2014-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 may also be provided with explanatory note on the land use.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc. should be furnished.
- (vii) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (viii) A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left



undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channeling of the water courses, etc., approach roads, major haul roads, etc should be indicated.

- (ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion /modification of drainage and their realignment, construction of embankment etc. should also be shown on the map as per the approval of Irrigation and flood control Department of the concerned state.
- (x) Similarly, if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown in the map along with the status of the approval of the competent authority.
- (xi) Break up of lease/project area as per different land uses and their stage of acquisition should be provided.

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-season met data coinciding with the same season for AAQ collection period should be provided.
- (xv) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats,

other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.

- (xvi) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (xvii) Details of mineral reserves, geological status of the study area and the seam 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

(xxxix) 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.

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					

- (xxxix) 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.
- (xxxix) 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.
- (xxxix) Risk Assessment and Disaster Preparedness and Management Plan should be provided.
- (xxxix) Integration of the Env. Management Plan with measures for minimizing use of natural resources - water, land, energy, etc. should be carried out.
- (xxxix) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- (xxxix) 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 AND (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			
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**ANNEXURE -VI**

**GENERIC TORs FOR AN UNDERGROUND COALMINEPROJECT**

- (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. Impactsof 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 faunaduly 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 ahabitat 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 (PM<sub>10</sub>, PM<sub>2.5</sub>, 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 land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
- (xxiv) Greenbelt development should be undertaken particularly around the transport route and CHP. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.
- (xxv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- (xxvi) Details of R&R. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of

the R&R Plan should be given.

- (xxvii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
- (xxviii) Corporate Environment Responsibility:
  - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
  - b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
  - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
  - d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
- (xxix) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xxx) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
- (xxxi) Status of any litigations/ court cases filed/pending on the project should be provided.
- (xxxii) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxxiii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept.(if req.), etc. wherever applicable.

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

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

		If more than one provide details of each FC			
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## ANNEXURE-VII

### **GENERIC TORs FOR AN OPENCAST-CUM UNDERGROUND COAL MINE PROJECT**

- (i) An EIA-EMP Report would be prepared for a combined peak capacity of.....MTPA for OC-cum-UG project which consists of... MTPA in anML/project area of ha for OC and ... MTPA for UG in an ML/project area of ha based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for MTPA of coal production based on approved project/Mining Plan for MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) The ToRs prescribed for both opencast and underground mining are applicable for opencast – cum underground mining.

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**LIST OF PARTICIPANTS OF EAC (COAL) IN 32<sup>nd</sup> MEETING OF HELD DURING 30<sup>th</sup> JUNE, 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	P
5.	Shri K.B. Biswas	-	Member	P
6.	Dr. Nandini.N	-	Member	P
7.	Dr. Unmesh Patnaik	-	Member	A
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	A
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	P
14.	Shri Lalit Bokolia, Director, MoEFCC	-	Member Secretary	P