

MINUTES OF 34th MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENT APPRAISAL OF COAL MINING PROJECTS HELD DURING 23rd AUGUST, 2022 THROUGH VIDEO CONFERENCE.

Confirmation of the Minutes of 33rd Meeting of the EAC (Coal) held during 25-26 July, 2022:
The minutes of the 33rd meeting of the EAC held during 25-26 July, 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 34th meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on 23rd August, 2022 through video conferencing with support NIC team due to Covid-19. The EAC considered proposals as per agenda adopted for the meeting. List of participant attended the meeting is annexed. The details of deliberations held & decisions taken in the meeting are as under.

Agenda No. 34.1

Amalgamation with expansion of Gauri - Pauni Open Cast Mining Project for increase of production from 3.40 MTPA (2.50 + 0.90) to 3.50 MTPA with increase in mine lease area from 931.53 ha (676.53 + 255.00) to 1618.0 ha (1613.00 Ha & 5.00 ha) of M/s Western Coalfields Limited located at Villages Gauri & Pauni, Taluka Rajura, District Chandrapur, (Maharashtra) – For Environmental Clearance- reg.

[Online Proposal No. IA/MH/CMIN/284193/2021; File No. J-11015/242/2008-IA. II(M)]

34.1.1 The proposal is for Environment Clearance of Amalgamation with expansion of Gauri - Pauni Open Cast Mining Project for increase of production from 3.40 MTPA (2.50 + 0.90) to 3.50 MTPA with increase in mine lease area from 931.53 ha (676.53 + 255.00) to 1618.0 ha (1613.00 Ha & 5.00 ha) of M/s Western Coalfields Limited located at Villages Gauri & Pauni, Taluka Rajura, District Chandrapur (Maharashtra).

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

- (i) The project area is covered under Survey of India Topo Sheet No. 56 M/1 & 56 M/5 (IAC) E-44B-1 & E-44VB-5 (OSM) and is bounded by the geographical coordinates ranging from Latitudes N 19°47'44" to 19°50'03" and longitudes E 79°14'42" to 79°18'12".
- (ii) Coal linkage of the project is proposed for Thermal power plants of MAHAGENCO & other miscellaneous consumers.
- (iii) No Joint venture cartel has been formed
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 has imposed moratorium on grant of environment clearance.

- (v) Employment generation: employment to 573 nos. (Permanent – 273 nos., Temporary - 200 nos.) Persons will be provided from the project.
- (vi) Standard Terms of Reference issued vide F.No. J-11015/242/2008-IA.II (M) on 20th January, 2021.
- (vii) The project is reported to be beneficial in terms of the following

Sl. No	Type of Project Benefits	Details of Project Benefits
1	Environmental	Conservation of coal. Also it will lead to positive environmental impacts like green cover, mine water utilization, etc. Out of Total 1618.0 ha, 920.0 ha i.e (56.86%) Area will be brought under plantation.
2	Social	The project will lead to development of roads, ancillary industries, Improvement in social & living standards by providing opportunities of direct & indirect employment to local community
3	Financial	A substantial percentage of population is dependent on mining industry directly or indirectly. Because of this mining project some of the local population may take direct employment but a substantial impact will be on creation of indirect job opportunities and employment

- (viii) Total mining lease area as per block allotment is 1613 ha + 5 Ha Outside mine lease area. Mining Plan (Including Progressive Mine Closure Plan) has been approved by the WCL Board in its 333rd meeting held on 29th June, 2021. It was communicated vide letter no WCL/Office of CS / BM-333/ 2021-22 / 238 dated 05.07.2021.
- (ix) The land usage pattern of the project is as follows:
Pre-Mining land Use Details:

Sl. No.	Land use	Other land use	Within ML area (Hectare)	Outside ML area (Hectare)	TOTAL (Hectare)
a.	Agriculture land		1603	5	1608
b.	Forest land		0	0	0
c.	Surface water bodies		0	0	0
d.	Settlements		0	0	0
e.	Waste land		0	0	0
f.	Others(specify)	Govt land	10	0	10
g.	Grazing land		0	0	0
	TOTAL		1613	5	1618

Post Mining Land use Pattern:

Sl. No.	Land Use	Plantation (ha)	Water Body (ha)	Public Use (ha)	Undisturbed (ha)	Total
a.	Virgin area	75	0	0	117.49	192.49
b.	Excavation/ Quarry	0	443	0	0	443
c.	External OB Dumps	504	0	0	0	504
d.	Top-Soil Storage	0	0	0	0	0
e.	Internal OB Dumps	330	0	0	0	330
f.	Built up area (Colony/ Office)	6	0	34	0	40
g.	Other (embankment)	0	0	68.51	0	68.51
h.	Roads	4	0	21	0	25
i.	Green Belt	0	0	0	0	0
j.	Nala Diversion	0	10	0	0	10
k.	Village Rehab	1	0	4	0	5
	Total	920.00	453.00	127.51	117.49	1618

- (x) Total geological reserve reported in the mine lease area is 64.73 MT with 58.26 MT mineable reserve. Out of total mineable reserve of 58.26 MT, 55.34 MT are available for extraction. Percent of extraction is 85 %.
- (xi) One Composite Seam with thickness ranging from 12 m – 14 m are workable. Grade of coal is G-9, stripping ratio 1: 9.44, while gradient is 1 in 7.4 to 1 in 10.5.
- (xii) Method of mining operations: Opencast method with Surface Miner (for Coal extraction) and shovel dumper Combination (for removal of top OB & parting).
- (xiii) Life of mine is 19 years.
- (xiv) The project has one external OB dump in an area of 504 ha with 90 m height and 238.0 Mm³ of OB. One internal OB dump in an area of 330 ha with 309.86 Mm³ of OB is envisaged in the project.
- (xv) Total quarry area is 773.0 ha out of which backfilling will be done in 330 Ha while final mine void will be created in an area of 443.0 Ha with a depth of 230 m. Backfilled quarry area of 330 ha shall be reclaimed with plantation. Final mine void will be converted 443.0 Ha at a depth of 230 m is proposed to be converted into water body.
- (xvi) Transportation of coal has been proposed by dumpers in mine pit head, from surface to railway siding by tippers and at railway sidings by pay loaders to wagons.
- (xvii) Reclamation Plan in an area of 920 ha, comprising of 504 ha of external dump, 330 ha of internal dump and 75 ha of green belt. In addition to this, an area of 11 ha, included in the other areas, has also been proposed for green belt development.

- (xviii) There is no forest land involved in the project.
- (xix) No National Parks and Wildlife Sanctuaries have been reported with 10 km boundary of the project. The project is outside ESZ and the ESZ of the TATR is approx. 15 kms from the project in the Northeast.
- (xx) Wildlife conservation plan for schedule – I species: Not applicable
- (xxi) The ground water level has been reported to be varying between 6.50 m to 8.50 m during pre-monsoon and between 5.15 m to 7.90 m during post-monsoon. Total water requirement for the project is 960 KLD.
- (xxii) NOC for abstraction of groundwater has been secured vide NOC no. CGWA/NOC/MIN/ORIG/2021/12465 valid upto 02.08.2023 for the existing Gauri I & II OC (Amalgamated) Expansion (2.50 MTPA) for 1300 m³/day. NOC for abstraction of groundwater has been secured vide NOC no. CGWA/NOC/MIN/ORIG/2021/12555 valid upto 12.08.2023 for the existing Expansion of Pauni OC (0.90 MTPA) for 1226 m³/day. The same is being secured for the proposed project (Gauri Pauni Expansion OC – 3.50 MTPA).
- (xxiii) Public hearing for the project of 3.50 MTPA capacity in an area of 1618.0 ha was conducted on 05th May 2022 at Manoranjan Kendra, Sasti Colony, village Dhoptala under the Chairmanship of ADM, District Chandrapur. Major issues raised in the public hearing include Land Acquisition, CSR related, Road, Jobs, etc. Appropriate action to address the issues raised in the Public Hearing have already been taken/proposed to be taken are deliberated in the Final EIA EMP report along with financial provisions and timeline.
- (xxiv) This is a proposed mine. Consent to Establish and Consent to Operate will be secured from MPCB after grant of EC.
- (xxv) Diversion of Pauni Nala and Chincholi Nala is involved in project. The nallah will be diverted with due permission from Irrigation Department of the Maharashtra State Government and following design of CDO, Nashik.
- (xxvi) Baseline for Ambient Air Quality has already been generated from Oct'2020 to Dec'2020 (Post Monsoon Season) for the proposed expansion in capacity of mine and have been found to be within permissible limit. The same data has been used for preparation of EIA – EMP.
- (xxvii) No court cases, violation cases are pending against the project of the PP in respect of Environment.
- (xxviii) The project does not involve violation of the EIA Notification, 2006 and amendment issued there under. This is a proposed mine and coal production is yet to start.
- (xxix) The project involves 196 nos project affected families from Pauni village. R&R of the PAPs will be done as per CIL norms.
- (xxx) Total cost of the project is Rs 337.3771 Crores (including WDV of Rs 48.0436). Cost of production is Rs 1708.24 per tonne (85% of target capacity), CSR cost: The fund for the CSR will be allocated based on 2% of the average net profit of the Company for the three immediately preceding financial years or Rs 2.00 per Tonne of Coal Production of the previous year whichever is higher, R&R cost is Rs 47.5156 crores. Environment Management Cost provisioned in Approved Project Report; Capital Rs 7.7739 crores & Revenue cost – Rs 6 per tonne.

34.1.3 The EAC during deliberations noted the following:

- Standard Terms of Reference (ToR) to the project was generated electronically through online mode vide file no. J-11015/242/2008-IA.II (M) dated 20th January, 2021 for expansion of Gauri-Pauni opencast mines by merger of 3 ECs { (i) Gauri I & II Opencast (Amalgamated), ii Pauni opencast, & iii part of existing area of Pauni-II Opencast } for expansion of capacity from 3.4 MTPA to 3.5 MTPA.
- The project has following Environmental Clearance, which were issued earlier:
 - i. Environmental Clearance granted vide letter No. J-11015/242/2008-IA.II (M) dated 17.07.2009 for the expansion of Gauri I & II Opencast (Amalgamated) coal mine from 1.5 to 2.5 MTPA over the mining lease area of 676.53 ha of M/s Western Coalfields limited.
 - ii. Environmental Clearance granted vide letter No. J-11015/118/2013-IA.II(M) dated 24.12.2014 for the expansion of Pauni opencast from 0.72 to 0.90 MTPA in the Mine lease area of 255 ha.
 - iii. Expansion of Pauni-II Opencast Coal mining project from 0.6 to 3.25 MTPA in the Mine lease area of 1095.52 ha of M/s Western Coalfields limited
- PP has submitted the Certified Compliance Report on following ECs:-
 - i. A report submitted for the Environmental Clearance vide letter No. J-11015/242/2008-IA.II (M) dated 17.07.2009 (Gauri I &II) by Integrated Regional Office (IRO), Nagpur vide letter No. 3-38/2014 (ENV)/9752 dated 30.05.2022.
 - ii. A report submitted for the Environmental Clearance vide letter No. J-11015/118/2013-IA.II (M) dated 24.12.2014 (Pauni OCP) by Integrated Regional Office (IRO), Nagpur vide letter No. 3-7/2015 (ENV)/9753 dated 30.05.2022.
- Earlier, project for amendment in ToR was returned to the project proponent as the request of PP was not accepted by EAC on the ground of phasing of project without consolidating the mine area.
- Public hearing for the project of 3.50 MTPA capacity in an area of 1618.0 ha was conducted on 05th May 2022 at Manoranjan Kendra, Sasti Colony, village Dhoptala under the Chairmanship of ADM, District Chandrapur. Following issues were raised:
 - Likely affects on people as no compensation & employment given in the past.
 - Earlier groundwater level was at 16 feet in near project area. Now the level goes upto down upto 80- 90 feet. The Project Proponent should inform the measures taken to maintain the water level in the area.
 - Due to the deposition of the excess silt into the Gobi Nalla, the area affected due to flood and the agriculture severely damaged.
 - Project Proponent have not planted trees in the area in the last 10-12 years.
 - The project proponent allocated the CSR fund to solve problems in the project area. This fund is for the social needs, but being used in the project area only.
 - No road for the farmer to go to the field.
 - There is generation of hazardous air pollution, the pollution control measures are

not in operations.

- The black wastewater generated in the project, being discharged into the nearby nalla, affecting the agriculture.
- There were several issues raised in the meeting, which have not been responded and recorded in minutes of public hearing. Further, in the minutes, there is a factual error that “*the proposed project has been approved by the EAC at its 19th meeting on 23rd September, 2021*”; while this project was returned to the project proponent by the EAC on the said date. This shows that PP has made lackadaisical approach regarding flow of information to authority and also did not approach for correction of minutes at later stage.
- Public hearing was conducted in the name of Gauri-Pauni for 1618.00 ha of area.
- The Mining plan was approved vide letter no. WCL/OFFICE OF CS/BM-333/2021-22/238 dated 05.07.2021 for Gauri Pauni Expansion Open cast project in the area of 1618 ha for targeted capacity of 3.5 MTPA.
- Environmental Baseline data were collected during October to December 2020 as post monsoon season at 7 locations. The result indicates that the maximum and minimum concentration are 82 to 36 µg/m³ for PM₁₀, 34 to 20 µg/m³ for PM_{2.5} and NO_x in the range of 32 to 12 µg/m³. The observed pollutant levels are compared with CPCB National Ambient Air Quality Standards and found to be within the prescribed standards.
- PP during presentation has submitted proposal for amalgamation of Gauri-Pauni OCP consists of 1291.42 ha area (Phase I) and 1618 ha (phase-II) i.e by addition of 380.31 ha from the existing EC which count the area of 1095.52 ha from Pauni II (Quarry I) in phase II. It is inferred that PP intend to merge the 3 ECs wherein 2 ECs are covering with complete areas but third one is taken as broken part of Puani-II.

34.1.4 The EAC, after deliberations noted that instant project is a brown field opencast coal mine project, wherein no forest land is involved as per the Mining plan. PP has obtained the electronically generated TOR for the area of 1618 ha. Later, PP has applied for amendment of TOR wherein phasing of 1618 ha were proposed; however, PP intended to break the part of area sub area i.e area of Pauni-II EC, which was not accepted by EAC; and due to this reason proposal of amendment was returned. Later, PP conducted the public hearing for the project of 3.50 MTPA capacity in an area of 1618.0 ha. It was noted that apart from adding a portion of area from Pauni-II, PP is adding agricultural land in the mine lease area of 1618 ha, on which documents were not submitted on Parivesh in ADS.

It was noted that PP has presented amalgamation of three mines i.e. Gauri I & II, Pauni OCP (in Phase I) and Pauni II (Quarry I) i.e. Phase II. While documents were submitted for merger of two mines i.e Gauri I & II, Pauni OCP. After prolong discussions, it was emerged that PP is lacking in submitting a proper application to the requirement of EIA, Notification, 2006 and also to the observation of the last EAC discussion on this project. Therefore, the project was not technically, discussed as no clarity observed on the project areas vis-a-viz certified compliance report of previous ECs and Mine Plan.

Additionally, Project Proponent has not submitted the past production of each mines in the documents. Also, issues of public hearing were not answered by the project proponent as per the EIA,

Notification, 2006 in the Minutes with respect to the Employment, Groundwater, Plantation, CSR fund, Agricultural land etc. In this regard Committee emphasized to take clarification from the Authority why not answer and reply to concerns/objection of public were recorded. Finally, EAC desired PP should take revised minutes/supplementary note from the Authority regarding answers to concerns/objections. PP needs to submit the detail of authenticated past production of three ECs from the base year as well as the compliance report of all Environmental Clearance from the Integrated regional office. If require, PP may recast the project. EAC advised PP to stick to merger of two ECs i.e Gauri I & II, Pauni OCP; not third EC i.e Pauni II (Quarry I), which proposed to merge in part only. Accordingly recast the proposal.

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

- (i) PP shall submit revised minutes with clarification from Authority, which have conducted public hearing without answers of the objection/concerns of public raised in the meeting alongwith the videography/recording. A proper minute shall be submitted as per the provisions of EIA, Notification, 2006.
- (ii) After revising the minutes, PP to submit the time bound action plan to address the public hearing issues with budgetary provision.
- (iii) PP shall submit the revised mining plan in case the proposal for Gauri-Pauni opencast mine is revised on merger of two ECs. Separately, amendment of third EC shall also be required.
- (iv) PP needs to submit the detail of authenticated past production of ECs from the base year
- (v) PP needs to submit the compliance report of all Environmental Clearance from the Integrated regional office.
- (vi) PP to clarify whether the proposed addition area of ~380 ha is under CBA Act, wherein Mining Lease is not required.

In view of above, the project was **deferred** for submission of observation and further technical discussion on above points for new proposal.

Agenda No. 34.2

Proposed Wet Coal Washery of 1.5 MTPA capacity in project area of 7.5 ha by M/s Vimla Infrastructure (India) Pvt Ltd located at village Tadali, Tehsil & District Chandrapur (Maharashtra) - For Environmental Clearance- reg.

[Online Proposal No. IA/MH/CMIN/287718/2019; File No. IA-J-11015/145/2018 -IA-II(M)]

34.2.1 The proposal is for Environment Clearance for Wet Coal Washery 1.5 MTPA capacity in project area of 7.5 ha by M/s Vimla Infrastructure (India) Pvt Ltd located at village Tadali, Tehsil & District Chandrapur (Maharashtra)

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

- (i) The project area is covered under Survey of India Topo Sheet No 55 P/4 & 55 M/1 and is bounded by the geographical coordinates ranging from 20° 0'22.40"N to 20° 0'59.96"N and longitudes N and 79°10'4.74"E to 79°10'40.28"E.
- (ii) Coal linkage of the project: NA
- (iii) Joint venture cartel has been formed: NA
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January, 2010 but it is within 5 km Tadali, which is critically polluted area
- (v) Employment generation, 45 persons will be provided from the project.
- (vi) The project is reported to be beneficial in terms of Employment Generation, Social and infrastructural development in nearby villages
- (vii) Terms of Reference granted on – (for EC proposals): TOR letter No. IA-J-11015/145/2018-IA-II(M), dated 28th April 2019
- (viii) No forest land has been reported to be involved in the project. Accordingly, No approval under the Forest (Conservation) Act, 1980 for diversion of forest land for non-forestry purposes is required.
- (ix) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones fall within 10 km boundary of the project. Protected areas as per wildlife protection act 1972 (tiger reserves, elephant reserve, biospheres, national parks wildlife sanctuaries, community reserves & conservation reserves) - Boundary of Eco-sensitive zone of Tadoba Andhari Tiger Reserve: 13.5 Km
- (x) A thick green belt will be developed around the proposed coal washery boundary. 2.6 Ha area (33% of the total plot area) is demarcated for the greenbelt/plantation. Apart from that company will developed additional 8 Ha green belt area along the railway siding.
- (xi) No rare, endemic & endangered species (schedule I Species) are reported in the buffer zone and in the project area.
- (xii) Total water requirement for the proposed 1.5 MTPA wet coal washery is estimated to be 6,798 m³ /d. Out of this, 6412m³ /d water will be recycled and reused in the process and only 386 m³ /d make up water will be sourced from groundwater. Total water requirement for the project is 386 KLD.
- (xiii) Base line data were collected for ambient air quality, ambient noise levels, surface and ground water quality, soil quality, etc. was carried out during winter 2019.
- (xiv) Application for obtaining the approval of the Central Ground Water Authority Ground Water permission is obtained vide NOC no. CGWA/NOC/IND/ORIG/2021/12288 valid upto 24-03-2024
- (xv) Public hearing for the project of 1.5 MTPA capacity of coal washery in an area of 7.5 ha was conducted on 15-02-2020 at project site under the Chairmanship of Additional District Magistrate. Major issues raised in the public hearing include employment generation, air pollution and greenbelt development and allocation of CER amount for development of nearby village Appropriate action to address the issues raised in the Public Hearing have already been taken/proposed.
- (xvi) No River/nalla is flowing in the project boundary.
- (xvii) No court cases, violation cases are pending against the project of the PP.
- (xviii) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder.

- (xix) The project does not involve project affected families
- (xx) Total cost of the project is Rs. 22 Crore, CER cost is Rs.88 Lakh, Environment Management Cost is Rs. 231.3 Lakh, Recurring: - Rs. 72.0 Lakh/annum

34.2.3 The EAC during deliberations noted the following:

- Standard Terms of Reference granted by Ministry vide TOR letter No. IA-J-11015/145/2018-IA-II(M) dated 28th April 2019
- No forest land has been reported to be involved in the project.
- It is noted that project lies within 5 km of Critically Polluted Areas (CPAs) of Chandrapur, Maharashtra and as per General Conditions applied of EIA Notifications, 2006 and its amendments therein, the project is being appraised as Category A Project at central level.
- Baseline environmental monitoring was conducted in line with the ToR during winter 2019 i.e. October to December 2019 for determining the status of ambient air quality, ambient noise levels, surface and groundwater quality, soil quality, status of flora, fauna and eco-sensitive areas and socio-economic status of the villages within 10 km radius of study area.
- AERMOD Cloud Model was used for assessing air pollution load from washery operations. The predicted maximum- incremental GLC (24-hour average) of PM10 due to operations at coal washery, as predicted by air modelling was 1.11 µg/m³ at 300 m SW of the coal washery area
- Project Proponent submitted that no ground water shall be used for coal washery operations except for domestic purpose.
- Public hearing for the project of 1.5 MTPA capacity of coal washery in an area of 7.5 ha was conducted on 15-02-2020 at project site. Major issues raised in the public hearing include employment generation, air pollution and greenbelt development and allocation of CER amount for development of nearby village. Appropriate action to address the issues raised in the Public Hearing have already been taken/proposed.

34.2.4 *The EAC, after deliberations observed that instant project is greenfield coal washery project and has been categorized as “A” (as per EIA Notifications) due to its location fall within 5 km from the critically polluted area. PP has shown the existing plantation in the proposed area and outside plantation plan along the road through KML. It was observed that a village pond near the proposed site shall be used for the operation of coal washery, it will make less burden to the Ground Water. Also PP proposed for additional water harvesting/artificial pond for storage of at least 1-month water required for washery operations with available surface body options. EAC advised for use of pond water for the villagers in their agriculture and other needs. EAC emphasised that no Ground water shall be used except for drinking purpose.*

PP during the discussion mentioned that 90% coal including washery rejects shall be transported through rail. EAC opined that PP has to submit MoU for complete washery reject utilisation in Thermal Power Plants.

It was observed that Public Hearing was conducted by State Pollution Control Board in presence of Nayab Tehsildar, Election Department, Collector Office, Chandrapur instead of the rank of ADM/DM/DC, though it is mentioned in Minutes of public hearing that due to untoward reason, Mr.

Ghanshyam Bhugaonkar, Additional District Magistrate, Chandrapur could not remain present. However, there is discrepancy in the date of conduct of public hearing in MoM. It has been mentioned that Maharashtra Pollution Control Board decided to conduct Public Hearing on 14.01.2020 in consultation with District Collector, however it is the date of advertisement; while date of public hearing as given in EIA report is on 15.02.2020. EAC desired that PP should clarify on this and ask MPPCB to get the correction with signature of ADM level rank.

In view of above, EAC desired following observations to be complied by PP.

- (i) PP shall take corrigendum of the Minutes of Public Hearing meeting and get vetted the minutes at least ADM level officer with signature of endorsement.*
- (ii) PP shall address all the issues raised in Public Hearing and reply to each issues with budget and timeline to comply.*
- (iii) PP shall submit MoU/Agreement with Thermal Power Plant for utilization of 100% coal washery rejects.*
- (iv) PP shall submit exact distance of project site from the boundaries of Chandrapur CPA area.*

*Accordingly, the proposal was **deferred** on above lines.*

Agenda No. 34.3

Radhikapur (West) Coal Mine Block with a production capacity of 6.0 MTPA in the project area of 1048 ha of M/s Vedanta Limited located at Villages Barapada, Kusakila, Naupada, Kusakila Jungle Bar, Jhintipal, Putagadia, Balipata, Kosala, Tehsil Chhendipada, District Angul (Odisha) - For Terms of References- reg.

[Online Proposal No. IA/OR/CMIN/288124/2022; File No. J-11015/30/2011-IA-II(M)]

34.3.1 The proposal is for Terms of Reference to Radhikapur (West) Coal Mine Block with a production capacity of 6.0 MTPA in the project area of 1048 ha of M/s Vedanta Limited located at Villages Barapada, Kusakila, Naupada, Kusakila Jungle Bar, Jhintipal, Putagadia, Balipata, Kosala, Tehsil Chhendipada, District Angul (Odisha).

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

- (i) The project area is covered under Survey of India Topo Sheet No. Core zone: F45S13; Buffer zone: F45M16, F45S13, F45N4 & F45T1 and is bounded by the geographical coordinates ranging from latitude 20°57'28"N to 20°59'42"N and longitude 84°51'00"E to 84°54'47"E.
- (ii) Coal from this project will be used for Sale of coal, including sale to Affiliates and related parties, utilization of coal for any purpose including but not limited to captive consumption, coal Gasification, Coal Liquefaction.
- (iii) Company is incorporated as Public Limited Company under Company's Act and no Joint venture cartel is formed.

- (iv) Project does not fall in the Critically Polluted Area (CPA) where the MoEF&CC's vide its OM dated 13.01.2010 has imposed moratorium on grant of environment clearance.
- (v) It is proposed to operate the Radhikapur (West) Coal Mine by opencast method of mining for which there is a potential of direct employment of 1188 persons and underground mining operation will require 514 persons. Therefore, a total of 1702 persons will be employed.
- (vi) Socio-economic conditions of the nearby people will improve due to generation of direct-indirect employment besides opportunities/means as source of income. Infrastructure facilities i.e. Communication, transport etc will be improved. The mine shall be contributing to the State & Central Govt. exchequer by way of mining revenue (Royalty, DMF, NMET etc.)
- (vii) This is an Auction Block, Total Lease Area is 1047.9998 ha, says 1048 ha in which 91.929 ha is Forest land, 226.0408 ha is Govt. Land and 730.030 ha Pvt. Land. Mining Plan (Including Mine Closure Plan) has been approved by the Section Officer, Ministry of Coal, Government of India vide letter no. 13016/77/2006-CA-I(Part) dated 23.06.2011.
- (viii) The land usage pattern of the project is as follows:

a. Pre-Mining Land use details

(Area: In Ha)

S. No.	Particular	Pvt Land	Govt Land	Forest Land	Total Land
1.	Habitation	42.41	22.21	0	64.62
2.	Agricultural Land	502.12	0.70	0	502.82
3.	Non-Agriculture Land	185.11	72.69	0	257.80
4.	Water body (Pond, Nala, Well etc.)	8.60	26.61	0	35.22
5.	Temple / Worship place	0.04	0.71	0	0.75
6.	Gochar	0.03	73.74	0	73.77
7.	Road	0.22	22.33	0	22.55
8.	Community Land	-	1.08	0	1.08
9.	Samsana/ Cremation	-	4.59	0	4.59
10.	Forest	-	-	-	0.00
11.	i. Bada jungle	-	-	8.33	8.33
12.	ii. Chhota jungle	-	-	9.30	9.30
13.	iii. Garmya jungle	-	-	65.46	65.46
14.	iv. Jungle	-	-	1.70	1.70
Total		738.53	224.68	84.79	1048

b. Post Mining Land use details:

(Area: In Ha)

S. No.	Particular	Area	Plantation	Void	Public Use	Bund	Undisturbed
1	Excavated Area	750.92	596.81	154.11	-	-	-

2	OB dump	100.00	100.00	-	-	-	-
3	Top Soil Stack	5.00	5.0	-	-	-	-
5	Raw Coal Stack	7.0	7.0	-	-	-	-
6	Facility Area including inclines and shaft	10.0	7.0	-	3.0	-	-
7	Green belt	16.75	16.75	-	-	-	-
8	Plantation on Un-worked Area	19.0	19.0	-	-	-	-
9	Setting Pond	5.50	5.5	-	-	-	-
10	Road	12.00	8.0	-	4.0	-	-
11	Bund	15.7	-	-	-	15.7	-
12	Magazine	0.20	0.2	-	-	-	-
13	Undisturbed	105.93	-	-	-	-	105.93
Total Block Area		1048.00	765.26	154.11	7	15.7	105.93

Note: The OC Mine exhausts at the end of 25th year and the OC Mine closure concludes at the end of 30th year. The above table shows position at the end of 52nd year when UG Mine closure also includes.

- (ix) Coal mine spreads over an area of 1048 ha. As per the initial exploration carried out, total resources are estimated to be about 312.036 million tonnes, out of which total mineable reserves by OC: 200.254 million tonnes & UG: 50.85 million tonnes; therefore, out of the total mineable reserves, 166.77 million tonnes of the reserves will be extractable (by OC: 140.293 million tonnes & UG: 26.48 million tonnes). Percent of extraction is by OC: 70.06% & by UG: 30.03%.
- (x) There is total 9 no. of coal seams (OC: Seam IX, X, Local 1 & XI & UG: Seam IIIA Top, IIIA Bot, IIID, IIIE, Local 2, IVB, VIIB & VIII Top) with maximum thickness 41.84 m in Seam IX. Grade of coal is E, F & G. Average ratio of OB/Coal is 4.19: 1.0 (Million CuM: Million Tonnes) while seam gradient is 4.5:1.
- (xi) Mining operations will be carried out by adopting opencast & underground both conventional fully mechanized mining methods. Mining will be done by mechanized opencast mining method with the use of surface Miner along with Shovel & Dumper combination and Mechanized Board and Pillar Underground Mining with two Continuous Miner with Shuttle Cars.
- (xii) Life of Mine is 49 years (Opencast: 25 years and Underground 41 years) with proposed production capacity of 6.0 Million TPA. Opencast: 6.0 Million TPA from 5th to 10th year, Underground: Started from 11th year & from 13th year: 0.70 Million TPA, 13th year onwards: (Opencast: 5.30 Million TPA & Underground: 0.70 Million TPA).
- (xiii) There will be no internal dump. External dumping will be done in the southern portion of the block up to a height of 100 m during the mining. Later on, same will be stabilized by plantation. Hence, at conceptual stage there will be no active external dump.

- (xiv) Total quarry area 750.92 ha area will be excavated out of which 596.81 ha will be backfilled & same will be rehabilitated by plantation/regressing; remaining 154.11 ha will be converted into water reservoir.
- (xv) For initial years, transportation to be carried out in Road-cum-Rail mode, with Rail Loading outside mining lease area. In later years, transportation will be through Putagadia Railway Siding which will be developed within the mining lease.
- (xvi) Total area is 1048 ha, of which 750.92 ha will be excavated and out of which 596.81 ha will be backfilled & same will be rehabilitated by plantation/regressing; remaining 154.11 ha will be converted into water reservoir. Total Greenbelt/Plantation will be covered over an area of 765.26 ha (Greenbelt: 16.75 ha, backfilled area: 596.81 ha, stabilization of external OB dump: 100 ha, reclamation of built-up area: 38.7 ha, stabilization of top soil stacking: 5.0 ha). Density of plantation would be 2500 trees / ha & survival rate should be maintained 90 to 95%. Native species will be planted in consultation with the local forest department. About 22.7 ha area is under the public use. Total 105.93 ha area will remain undisturbed.
- (xvii) Stage I forest clearance under the Forest (Conservation) Act, 1980 for diversion of 91.929 ha of Forest Land (including 4.957 ha safety zone) has been obtained vide letter no. 8-07/2014-FC dated 06.01.2022.
- (xviii) There is no National Park, wildlife sanctuaries and Eco-sensitive zones falls within 10 km boundary of the project. Around 11 Reserved Forest, 3 Protected Forest & 15 water bodies viz. 12 Nalla, 1 River, 1 Reservoir & 1 Dam fall within 10 km radius of the study area.
- (xix) There are 2 Schedule I species i.e. Sloth Bear & Indian Elephant found within the 10 km of the study area. Preparation & authentication of wildlife conservation plan is under process.
- (xx) The ground water level has been reported to be varying between 2 to 7 m bgl during pre-monsoon and between 1 to 4 m bgl during post-monsoon. Total water requirement for the project is 1141 KLD.
- (xxi) Total water requirement is estimated as 1141 KLD. During initial stage, total water requirement is 179 KLD, out of which the estimated fresh water requirement for domestic/drinking purpose will be 97 KLD. NOC for 97 KLD of ground water has been obtained vide letter no. CGWA/NOC/MIN/ORG/2022/15183, dated 20.04.2022 from CGWA & same is valid up to 19.04.2024.
- (xxii) Earlier, Public hearing to this project of 6.0 Million TPA was conducted on 30.11.2011 under the chairmanship of Sri Debraj Senapati, O.A.S. (S), Additional District Magistrate and Er. S. K. Sahu, Regional Officer, RO of SPCB. Major issues raised in the public hearing include Employment, Health Facilities, Infrastructure Development, Drinking Water Facilities, Afforestation etc.
- (xxiii) Singhoda Jhor passing adjacent in northeast side of ML boundary, at few points some part of the Singhoda Jhor fall just inside the ML boundary. Nuabanda Nala flows in SE direction of the block area. Same will not to be disturbed at any stage of mining.
- (xxiv) Baseline Monitoring has been carried for Post Monsoon Season (Oct. to Dec., 2021). The results of ambient air quality monitoring data were found within prescribed limits which can be attributed to the specific local conditions during the day of sampling. Regular monitoring of ambient air

quality will be carried out on fortnightly basis. The documented report will be submitted to IRO, CPCB, OSBCB & also to MoEF&CC along with half yearly EC compliance report.

- (xxv) No Court cases, violation cases are pending against the project of the PP.
- (xxvi) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. The coal production will be started after obtaining Environment Clearance and other requisite consents from the concerned authorities.
- (xxvii) The project involves 3714 project affected families. R&R of the PAFs will be done as per the Central & State's policy.
- (xxviii) Total cost of the project is Rs. 1241 Crore. Cost of production is Rs. 1460/tonne. CSR cost will be calculated as per the Company's Act. R& R cost is Rs. 400 Crore. Environment Management Cost is Rs. 30 Crore.

34.3.3 The EAC during deliberations noted the following:

- The proposal is for Terms of Reference to Radhikapur (West) Coal Mine Block with a production capacity of 6.0 MTPA in the project area of 1048 ha of M/s Vedanta Limited located at Villages Barapada, Kusakila, Naupada, Kusakila Jungle Bar, Jhintipal, Putagadia, Balipata, Kosala, Tehsil Chhendipada, District Angul (Odisha).
- This block was previously allotted to M/s. Radhikapur (West) Coal Mine Pvt. Ltd. (Joint venture between M/s Rungta Mines Ltd., M/s OCL, India Ltd. and M/s Ocean Ispat Pvt. Ltd.) & then it was auctioned, in which M/s. Vedanta Limited. Chronological mine transfer with earlier appraisal of this project in MoEF&CC is given below:
 - Radhikapur (West) Coal Block was previously allotted to M/s. Radhikapur (West) Coal Mine Pvt. Ltd. (Joint venture between M/s Rungta Mines Ltd., M/s OCL, India Ltd. and M/s Ocean Ispat Pvt. Ltd.) on 21.12.2009.
 - ToR was granted to this project on 30.05.2011. Public Hearing was held on 30.11.2011.
 - The proposal was considered before 75th EAC held on 3rd - 4th June, 2013 and proposal was recommended for EC. A letter issued by MoEF&CC dated 10.01.2014, Subject to Condition of Stage-I Forestry Clearance.
 - Hence, due to non-availability of Stage - I FC, the formal EC letter was pending to the proposal which was already recommended by the EAC and approved by the competent authority. Subsequently, Hon'ble Supreme Court through its judgement dated 25.08.2014 and 24.09.2014 cancelled allotment of 204 coal blocks including Radhikapur West Coal Block. Thereafter auction of mines was conducted by Ministry of Coal in accordance with provisions of the Coal Mines (Special Provisions) Act, 2015 and the Coal Mines (Special Provisions) Rules 2014.
- Vedanta Limited has been awarded Radhikapur West Coal Block in Angul District in the 1st Tranche of Commercial Coal Block Auction on 28.12.2020 and have also signed the Coal Mine Development & Production Agreement on 11.01.2021 with the Government of India and received Vesting Order on 03.03.2021 from the Nominated Authority, Ministry of Coal, Government of India.

- Presently, Stage I Forest Clearance for 91.929 ha of Forest Land (including 4.957 ha safety zone) was obtained vide File No. FC, dated 06.01.2022 for diversion to non-forestry activity.

33.3.4 The EAC, after deliberation, found that it is a green field project and also found that there is no change in area, and proposed capacity on which earlier EIA/EMP and public hearing was submitted to Ministry. The same has been examined earlier. Therefore, by following the stipulation of OM dated 19th June, 2014, EAC found that no ground change has been undertaken since 2014 as public hearing already conducted and its appraisal done by the then EAC. However, EC could not be issued due to delay of FC-stage and later de-auctioning of mine. Accordingly, EAC, recommended PP to exempt the public hearing but with the issue of certain ToR points in the current context with the issue of public notice only.

*Based on the above, EAC **recommended** the proposal for grant of Terms of Reference to Radhikapur (West) Coal Mine Block with a production capacity of 6.0 MTPA in the project area of 1048 ha of M/s Vedanta Limited located at Villages Barapada, Kusakila, Naupada, Kusakila Jungle Bar, Jhintipal, Putagadia, Balipata, Kosala, Tehsil Chhendipada, District Angul (Odisha) with following specific conditions alongwith standard conditions under the provisions of EIA Notification, 2006 and its amendments with exemption of public hearing;*

Specific condition

- (i) PP shall issue public notice in local media, newspapers (English, Hindi and local language Report through concerned SPCB in the concerned districts for information of the stakeholders about the present coal mining operations inviting comments in writing for their redressal and incorporation in EIA-EMP report.*
- (ii) PP shall make the provision to protect the natural streams with all safety measures. The PP shall prepare plan to check the flow of effluents from the Mine lease area into Singhada Jhor and Nuabandha Nalla.*
- (iii) PP shall prepare the Mining Plan in such a manner that condition prescribed by EAC shall intact from environment point of view. EIA-EMP shall accordingly be prepared on the suggested stipulation with point-wise compliance & in accordance with recommendations of Mining Plan*
- (iv) PP shall submit letter from PCCF that mine does not fall under corridors of any National Park and Wildlife Sanctuary and does not involve any violation of forest area and wild sanctuary with certified map showing distance of nearest sanctuary*
- (v) PP should submit the real time aerial footage and video of the Mining lease area made through drone with a special focus on the area adjacent to the rivers.*
- (vi) PP shall prepare a Plan for implementation of Continuous Automatic Air Quality Monitoring Station (CAAQMS) at mine site or its vicinity.*
- (vii) Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA) only for mining activity.*

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

(ix) PP shall not propose to create overburden dump on any forest land.

Standard conditions

Monitoring

(x) PP shall conduct ecosystem services and biodiversity study of the area and detail report should be submitted.

(xi) Air pollution impact prediction shall be conducted by considering the maximum values

(xii) Wind rose pattern in the area should be reviewed and accordingly location of AAQMS shall be planned by the collection of air quality data. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area.

(xiii) Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted

(xiv) Heavy metals including other parameters in surface water quality shall be analyzed and provided in EIA Report. Further, detailed mineralogical and chemical composition of the mineral and percentage of free silica in Air quality and other parameters Arsenic, Lead shall also be analyzed in ambient air quality & to be furnished in EIA/EMP report

(xv) The PP while carrying out base line monitoring should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should also submit the original Lab reports of air, water, soil and noise quality and NABL/MoEF&CC certificates of the respective laboratory.

(xvi) PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs.

(xvii) A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road. The project will increase the no. of vehicle along the road which will indirectly contribute to carbon emission so what will be the compensatory action plan should be clearly spell out in EIA/ EMP report.

(xviii) The socio-economic study to conducted with actual survey report and a comparative assessment to be provided from the census data of 2011-part B to be provided in EIA/ EMP report also economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data of 2011 part A to be provided and to link it with the initialization and quantification of need based survey for CSR activities to be followed.

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

Infrastructure & Mine Management

(xx) PP should propose strict timeline for Inpit conveyor belt with silo loading and installation of railway siding for transportation of coal. No transportation of coal by trucks/dumpers shall be proposed in EIA/EMP.

(xxi) PP shall submit detailed project report for implementation of railway siding for evacuation of coal with its target date of completion. Target date should be such that railway siding should be operational within 2 years of commissioning of mine operations. Forest Clearance shall be submitted if railway siding land comes under forest land.

(xxii) PP shall provide the details of mining technology/methodology proposed to be adopted for coal mining operations and its associated environmental benefits of using from Climate Change perspective by i.e. the likely emissions of greenhouse gases from the mining operations to be estimated with the modelling for future prediction related to the climate of that study area.

(xxiii) PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total excavation & mineral) and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.

(xxiv) PP shall provide provision of integrated mine plan and mine reclamation cum land form / land scape plan for both underground and open cast coal mining projects. The plan must show the predicted post mining reclaimed and reformed surface by regarding and reshaping to reduce its height as close to the original surface level and proper sloping benching and terracing of external dump should be clearly brought out in the post mine closure plan. This would also include water management strategies such as surface water catchment and drainage paths etc. of post mining land surface. The final mine void shall be reduced and brought as near as ground so that land can be restored and reclaimed

(xxv) Details of toe wall and garland drain to be constructed along the OB dump.

(xxvi) Reclamation to be done using geo-texturing technique of the dumps close to habitation and a cause of visual intrusion. Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted.

(xxvii) PP should bring out the awareness campaign to be carried out on various Environmental issues, practical training facility to be provided to the environmental engineer/diploma holders, mining engineer/diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.

(xxviii) Details of Fog mist sprayer (static water sprinklers) at coal stock yard and along the permanent haul road.

(xxix) PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of coal.

(xxx) No trucks or vehicles used for transportation of Coal to be passed by village roads or roads located near to the villages. PP shall develop a pucca haul road for transportation of coal and washery rejects with proper widening considering its carrying capacity, lightening and three tire plantation along the haul road. Details of black topping of permanent haul roads to be furnished in EIA /EMP report with its measurement and budgetary provision.

Other

(xxxi) The environmental sensitivity mentioning not only about the surface water bodies, Forest areas, Inter -state or country boundary etc but also the nearby other mines, coal washery, power plants and other industries etc located within the 10 km radius buffer zone present with its distance and direction from the periphery of the project boundary must be furnished in EIA/EMP report.

(xxxii) Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report

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

Agenda No. 34.4

Siarmal Opencast coal mining project of 40 MTPA (Normative)/ 50 MTPA (Peak) of M/s Mahanadi Coalfields Limited in mine lease area 2290.45 ha (Project area – 2580.45 ha) located in District Sundargarh (Odisha) – Amendment of Environmental Clearance- reg.

[Online Proposal No. IA/OR/CMIN/273532/2022; File No. J-11015/230/2014-IA-II (M)]

34.4.1 The proposal is for amendment in Environment Clearance to Siarmal Opencast coal mining project of 40 MTPA (Normative)/ 50 MTPA (Peak) of M/s Mahanadi Coalfields Limited in mine lease area 2290.45 ha (Project area – 2580.45 ha) located in District Sundargarh (Odisha).

34.4.2 The EAC, during the deliberations noted the following:

Earlier, the Environment Clearance was granted by Ministry on 5th May, 2022 to Siarmal Opencast coal mining project of 40 MTPA (Normative)/ 50 MTPA (Peak) of M/s Mahanadi Coalfields Limited in mine lease area 2290.45 ha (Project area – 2580.45 ha) located in District Sundargarh (Odisha).

Project Proponent has requested for amendment in EC conditions which inter-alia stipulated as follows:

Condition No.	EC conditions	Reason submitted by PP
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(iii)	<p>PP shall implement in-pit conveyor system with silo loading facility till railway siding within 2 years (March-2024) and no road transportation shall be allowed beyond this time, Accordingly SPCB shall not grant CTO for road transportation.</p>	<p>In proposed project all the coal has been planned to be dispatched through belt after commissioning of Barapalli loop in 2025-26. However, till commissioning of Barapalli loop, as an intermediate arrangement, Coal transportation from Siarmal OCP will be done by nearby Sardega railway siding through dedicated Coal corridor of 4-5 km which will pass through backfilled area of existing quarry Basundhara (W) OCP and there is no transportation of coal outside lease area of MCL. > Apart from above, a 2 km belt along with RLS is also under construction and the same will be commissioned by March 2023 All the additional control measures with latest available technology have also been proposed to be deployed on this CT road to control the air pollution</p>
(vi)	<p>PP shall limit the activities of mining in its mining lease only. No OB dumping and infrastructure activity should be proposed and dumped on forest land. Accordingly, revised, Mine Plan should be submitted (If required) and submitted to Ministry.</p>	<p>OB dumping and infrastructure activities is proposed well within mine lease area and it also involve few patches of forest land which cannot be relocated because of the following reasons: >Mining & other associated activities have been proposed within mine lease area & MCL Block area only. >No outside block & lease area have been proposed for mining, dumping & other associated activities Siarmal OCP is a mega mine with mine capacity of 50.0 Mty, considering high initial depth of lower most quarriable seam of more than 100m, some quantity of external dumping is essential for smooth operation of the mine before enough void is created within mine for backfilling/ internal dumping. > It may be mentioned that Forest land required for Siarmal OCP is 349.709 Ha out of total Mining Lease Area of 2290.449 Ha, thus forest land is about 15.26%. > Out of this 349.709 Ha of forest land, 264.699 Ha is required for quarry excavation and balance 85.010 Ha is required for external OB dump, embankment, blasting safety zone, etc.</p>

		<p>Two number of External OB Dumps have been proposed in the Mine plan mostly over nonforest land and keeping in consideration bare minimum use of forest land, which is less than 5%</p> <p>Two external OB Dumps have been designed of area 185 Ha and 201 Ha respectively in which non-forest and portion is 175.858 and 191.66 Ha respectively and forest land is 9.142 Ha and 9.340 Ha respectively, which is only 4.94% and 4.65% respectively. ➤ Forest patches located in this area is scattered manner and crown density of these degraded forest patches are about 40%.</p> <p>As per the plan submitted with the forest clearance proposal, breakup of requirement of forest land of 85.010 Ha along with justification Considering the technical and safety point of view, the small forest patches of 9.142 ha in Dump no.1 and about 9.340 ha in Dump no.2 are minimum requirement</p>
(xi)	<p>PP shall deploy at least 20% of overall fleet of dumpers/trucks as electrical or CNG/LNG based dumpers/trucks for transportation of Coal/OB etc.</p>	<p>Availability of CNG/LNG based equipment for large scale mining and guaranteed supply in huge quantity is not confirmed. ➤ Present equipment configuration has been provided in view of techno-commercial viability of diesel-based equipment. ➤ As and when techno-economic viability of LNG/CNG based equipment is proved, the new resources will be adopted in proposed mine. ➤ However, Coal India Limited is already in the process of phase wise implementation for conversion to dual Fuel (LNG - Diesel) system in mining equipments to reduce the carbon footprint.</p> <p>A tripartite MoU between CIL, GAIL and BEML for Pilot project at Lakhanpur OCP, MCL for Introduction of LNG for dual fuel application (LNG-Diesel) in Mining Dump truck has been signed on 31.08.2021. ➤ This work is already in progress and if found techno economically viable the same will be</p>

		implemented to other mines of MCL in a phased manner
(xvii)	PP shall deploy only 40-50 tonnes covered trucks/dumpers to reduce fleet size till Rapid loading system and conveyor belt system is commenced (till March,2024)	At present tippers of gross weight 25 T (10% margin allowed i.e., 28 T) are being deployed for coal transportation in nearby running mines. ➤ Deployment of 40-50T trucks may not be possible as higher capacity trucks comes in the form of trailer trucks and these are unsafe to be used within the mine due to higher gradient and DGMS is not permitting use of tractor-trailer trucks within the mine (Face to surface). ➤ In addition, if lower capacity trucks (25-28 T) transport the coal from face to surface and then Surface to surface transportation is taken up by higher capacity i.e. 40-50T trucks, this will involve double loading and unloading. It will create additional fugitive dust emission sources, which may result to more air pollution Apart from above AQIP of the said project was also done considering 25 T trucks and accordingly additional control measures has also been provided to control the air pollution. ➤ Also, as explained above, that after commissioning of Barapalli loop the entire transportation will be dispatched through in-pit conveyor and RLS system. ➤ However, as an interim arrangement till commissioning of Barapalli loop entire coal will be dispatched through nearby Sardega Siding by trucks wherein no public road transportation is involved.

34.4.3 *The EAC, after deliberations noted that Environment Clearance for the said project was granted on 5th May, 2022 itself and in this short time only PP has submitted amendment in EC conditions. It was observed that no effort has been done to comply the EC conditions instead PP is asking for relaxation of conditions. PP submitted that in-pit conveyor belt with silo loading facility and railway siding will be completed by 2025-26 and gave justification of its implementation only by the railways department. Accordingly requesting to be allowed till 2025-26 by giving additional period of two years in existing timeline (as presently given till March 2024). EAC opined that implementation of in-pit conveyor belt and silo loading facility are the independent works, which has to be implemented by project proponent and it has not relevance with railways line. EAC noted that presently no action has been taken on ground except land acquisition. On enquiry about the details tendering process including*

award of for railway siding, PP could not give satisfactory reply. PP was advised to actively pursue with railways to implement the Barpalli loop instead of insisting of road transportation.

The instant area has about 4-5 big mines having total ~80-90 MTPA of production whereon current facility of road needs to be discontinued with additional efforts. PP made justification of Sardega siding, which is under implementation but collectively this facility will cater transportation of 20 MTPA with linkage with other mines. EAC desired that PP should have planned accordingly by virtue of future requirement; rather insisting on vehicular transportation. PP must increase the capacity at sardega siding till Barpalli loop is commissioned. The condition of 2 years to develop the facility of inpit conveyor and silo loading facility is enough. So EAC asked PP to first submit documentary proof which ensure PP intends to implement the work of belt conveyor & railway siding in a time bound manner. It was desired that PP must come up with suitable action plan and stick the timeline leaving the part of work of railways.

Regarding condition of optimising forest land, EAC observed that condition of no OB dumping and infrastructure development are imposed to avoid any unwise use of forest land. In this regard, PP may optimize its Mine Plan and reorient its sequencing of mine (during next revision of mine plan i.e. after 5 years). The area of forest land for two external dumps is about 9.142 Ha and 9.340 Ha, which is merely 4.94% and 4.65% respectively and 12.8 ha for river embankment requirement is understandable and can be considered. However, requirement for infrastructure like approach roads, HT & LT Power lines may be reviewed and in this context, PP shall submit the breakup of forest lands and further review it to limit the usage of forest land (if the area is non-coal bearing areas).

On the condition of using CNG/Electric truck, EAC after detailed discussion observed that PP may deploy at least 20% of overall fleet of dumpers/trucks as electrical or CNG/LNG based dumpers/trucks for transportation of Coal/OB etc. The same are being used internationally for mining activity. It was opined that given the conditions of Climate Change and movement toward green energy, M/s MCL which is one of biggest subsidiaries of M/s Coal India Limited should produce/show benchmark in mining operations.

EAC did not agree with the request of non-implementation of 40-50 tonnes trucks/dumpers and desired that PP must deploy to reduce the fleet size. The development of mine, its slope and width of haul road is all dependent on mining operations and all can be adjusted for such trucks by considering safety factors.

In view of above, EAC desired following observations to be complied by PP.

- i. A time bound action plan with details and documentary proof which ensure PP intends to implement the work of belt conveyor & railway siding. Details of work order and timeline with agreed condition to be produced.
- ii. PP to submit the action plan on using CNG/Electric truck at least 20% of overall fleet of dumpers/trucks as electrical or CNG/LNG based dumpers/trucks for transportation of Coal/OB

etc.

- iii. PP needs to optimize the forest land requirement for infrastructure like approach roads, HT & LT Power lines; and accordingly PP to submit the breakup of forest lands to review and limit the usage of forest land (if the area is non-coal bearing areas).

In view of above, the proposal has been **deferred**.

Agenda No. 34.5

Gayatri Underground Coal Mining Project 0.30 MTPA (in ML area 507.472 ha) of M/s South Eastern Coalfields Limited located at village Getra, Tehsil Ambikapur, District Surguja (Chhattisgarh) – For Reconsidering the Revalidation of Environmental Clearance-reg

[Online proposal IA/MP/CMIN/66198/2001, File. No. J-11015/26/2000-IA. II]

34.5.1 The proposal is for Revalidation of Environmental Clearance dated 27th November, 2002 to Gayatri Underground Coal Mining Project 0.30 MTPA in ML area 507.472 ha M/s South Eastern Coalfields Limited located at village Getra, Tehsil Ambikapur, District Surguja (Chhattisgarh) under the provisions of Ministry's Notification dated 6th April, 2018.

34.5.2 The EAC during deliberations noted the following:

Earlier the proposal was considered by EAC in its 44th EAC meeting held on 25.04.2019 and was deferred for want of additional information. The compliance was submitted by project proponent after a delay of almost 2-3 years i.e. 11.03.2022 and was considered by EAC in its 28th meeting held on 1st April, 2022. Accordingly, EAC noted the submission of project proponent as detailed below:

Sr. No.	Observation of EAC	Reply of Project Proponent
1	PP shall submit latest certified compliance report from IRO	IRO inspection was done on dt. 04/05/2022. Certified Compliance Report issued vide letter no 3-12/2002(ENV)/775 dated 15/6/2022 Compliance / Action taken based on IRO observation was deliberated during the meeting.
2	PP shall submit need based assessment study as desired by EAC earlier for revalidations.	Need based assessment study for CSR activities was carried out in core zone villages of the Gayatri UG.
3	The budgetary provision and time line for action taken or proposed for public hearing to be furnished by the PP.	Public Hearing conducted on 12.11.1999. Compliance status of issue raised during public hearing and its status/action taken (as on 22.07.2022) was noted.
4	PP must furnish the Impact Assessment Report of CSR Activities	Impact Assessment Report of CSR Activities of South Eastern Coalfields Limited, Bilaspur from FY

	of South Eastern Coalfields Limited, Bilaspur from FY 2010-11 to FY 2015-16 and Social Audit of Community Benefit Measures” carried out by NIT Rourkela	2010-11 to FY 2015-16 and Social Audit of Community Benefit Measures” carried out by NIT Rourkela is enclosed
5	PP must take proper follow up from Indira Gandhi National Tribal University Amarkantak and provide Impact Assessment Report of CSR Activities of South Eastern Coalfields Limited, Bilaspur from FY 2016-17 to FY 2020-21	Follow up was done with Indira Gandhi National Tribal University Amaikantak and interim Impact Assessment Report of CSR Activities of South Eastern Coalfields Limited. Bilaspur from FY 2016-17 to FY 2020-21 was submitted.
6	PP must also provide the proposed CSR activities and EMP measure with its proper bifurcation to be taken by PP in coming years with budgetary provision and time bound action plan	The proposed CSR activities and EMP measures to be taken in upcoming years with budgetary provisions are bifurcated and attached. PP has submitted three years plan for conducting CSR Activity i.e. Rs. 384.0 lakhs/- for FY 2022-23, Rs. 41.0/- for FY 2023-2024 and Rs. 54.0/- for FY 2024-2025. EMP measures and allocated budget are Rs. 433.0 lakhs/- in 2022-23, Rs. 284.75 lakhs/- in FY 2023-24, Rs. 285.5 lakhs/- in FY 2024-25, Rs. 311.0 lakhs/- in FY 2025-2026 and Rs. 311.7 lakhs/- in FY 2026-27.

34.5.4 *The EAC, after deliberations observed that instant project is for revalidation of EC dated 27th November, 2002. The compliance of observation of EAC has been submitted by Project Proponent and further submitted the projected expenditure towards CSR and EMP budget. EAC desired that PP shall comply all the conditions of EC within strict timeline and also recommendation of studies shall also be complied for betterment of the people living in the vicinity of the mine. Earlier, PP in compliance of observation of EAC, issued public notice for information/comments to the local people. PP has submitted that no comments have been received. Further, based on the submission of past production figures by PP, it can conclude that no violation has been conducted in terms of exceedance of production capacity from granted EC capacity.*

In view of above, EAC recommends the proposal of revalidation of EC dated 27th November, 2022 to Gayatri Underground Coal Mining Project 0.30 MTPA (in ML area 507.472 ha) of M/s South Eastern Coalfields Limited located at village Getra, Tehsil Ambikapur, District Surguja (Chhattisgarh), under Ministry’s Notification dated 6th April, 2018, under the provisions of Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions for environmental safeguards:

- (i) PP shall comply all the non-compliance and partial compliance highlighted by Ministry’s IRO in its certified compliance report within 1 years and report should be sent to IRO.*

- (ii) *Third party monitoring by reputed institution for air quality (including heavy metal analysis) shall be carried out at identified locations, both ambient and the process area, to arrive at impact of the proposed expansion at regular interval of 3 years*
- (iii) *PP to install solar lights along the road used for transportation of coal to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year.*
- (iv) *Project proponent to plant 150,000 trees with three Tier Green belt developments (of 50 mtrs width) along the periphery of the mine habitation/villages and transportation route (coal stock to siding). After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer. The saplings should be planted with the grant of EC in the initial year so that survival of the plants and trees can be taken care of in future.*
- (v) *PP shall deploy 30-40 tonnes dumpers/trucks with covered tarpaulin till railway siding. PP shall explore to use CNG/LNG/Electrical dumpers/trucks for transportation of coal.*
- (vi) *All approach roads to mine and all other roads which are in regular use should be black topped. The maintenance of road shall be done by PP in collaboration with state government.*
- (vii) *PP shall construct Sewage Treatment Plant in the combined colony of Rehar and Gayatric UG mines and reuse the treated water within one year.*
- (viii) *PP shall implement progressive mine closure plan and submit the status in its six monthly report to Ministry's IRO.*
- (ix) *All other conditions stipulated in EC dated 27th November, 2002 shall remain unchanged.*

Agenda No. 34.6

West Bokaro Coking Coal Washery of 10 MTPA production capacity in an area 61.54 ha of M/s Tata Steel Ltd. (West Bokaro Division) Located in village Duni, Sarubera, Atna, Bhadwa & Sondiha, Tehsil Mandu, District Ramgarh (Jharkhand) - For Reconsideration of Terms of Reference-reg.

[Online Proposal No. IA/JH/CMIN/255746/2022; File No. IA-J-11015/10/2022-IA-II(M)]

34.6.1 The proposal is for Terms of Reference to West Bokaro Coking Coal Washery of 10 MTPA production capacity in an area 61.54 ha of M/s Tata Steel Ltd. (West Bokaro Division) Located in village Duni, Sarubera, Atna, Bhadwa & Sondiha, Tehsil Mandu, District Ramgarh (Jharkhand).

34.6.2 The EAC during deliberations noted the following:

Earlier, the proposal was considered by Expert Appraisal Committee in its 28th meeting held on 1st April, 2022. After deliberation, EAC desired compliance of observation raised during the meeting. Accordingly, PP has submitted the reply of observation on PARIVESH and therefore being deliberated by EAC.

Sr. No.	Observation of EAC	Reply of Project Proponent
1	An alternate site analysis study to be conducted by PP by taking into consideration the non -forest area in adjoining areas and or on OB dump site of the West Bokaro Coal mine. Proper feasibility report shall be prepared in this regard	<ul style="list-style-type: none"> • Alternate Site analysis conducted in adjoining area. • Feasibility study for washery construction on OB dump was conducted by IIT ISM Dhanbad. <p>The study concluded that, “It is imperative that such permanent structures with significant static and dynamic loading and generating a considerable bearing pressure be placed on firm ground, if feasible, to meet the safety and serviceability requirements”</p>
2	Land use break up to be revised by considering the green belt to be 33% of the total project area	Green belt area increased from 12% to 33%
3	PP shall propose the layout of washery such that number of trees to be axed is reduced and accordingly reduce the area of washery	<p>Washery layout has been revised to reduce the washery battery area in order to reduce the no. of trees to be axed.</p> <p>Washery battery area reduced by moving some washery infrastructure within the washery battery area in order to reduce the no. of trees to be axed</p>

It was further submitted by PP that, proposed site (46.83 ha Forest land + 14.71 ha Non Forest land) is suitable because of the following reasons:

1. Total 36.94 ha forest land is broken prior to 1980 and is under use. Rest 9.89 ha forest land is under final approval from MoEF&CC.
2. Remaining 14.71 ha land is acquired by Tata Steel Ltd.

34.5.3 The EAC, after deliberations observed that PP had analysed six sites for implementation of washery. It has been concluded by PP, among all this six sites, only one site is suitable, which covered with complete forest. Further, a study was conducted by IIT-ISM Dhanbad regarding feasibility of overburden site for construction of washery, is simply based on theoretical modelling, assumptions and older data of slope stability. It was desired that PP should conduct study based on field visit and collect samples to study the soil bearing capacity, geotechnical features etc and check the feasibility of OB dumpsite. The actual study based on ground reality has not been done by PP. EAC also observed the instant OB dump is about 120 mtrs above ground level and accordingly; suitable path to convey coal for washery site road width etc. could be proposed with proper design.

Further, it was observed that in the overall area of project, infrastructure such as ropeway for conveying coal, railway siding, storage facilities, silos, water body and coal washery have been

included. The ropeway is currently in operation based on consent to operate from SPCB and used for transportation of coal from its mine to ropeway. EAC observed that PP has reduced the area of project of washery and increased the plantation from 12% to 33%; thereby reducing the number of trees to be axed/cut. EAC suggested PP to further present the layout of washery plant and re-organize the site to increase the plantation/greenbelt upto 40% with a view of reducing the cutting of trees.

*The proposal was **deferred** for compliance of followings;*

- i. Comprehensive study of mine area with actual sampling needs to conducted by reputed institute / recognized laboratory to ascertain the location of washery within the mine as has been operated in the past. Accordingly, option analysis needs to redo.*
- ii. Alternatively, PP may further submit the layout of proposed washery plant with details of infrastructure & the plantation/greenbelt upto 40% with other auxiliary items.*

The meeting with vote of thanks

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, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

- (ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
 - (iii) Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM10/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 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.
 - (ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J- 20012/1/2006-1A.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
 - (iii) Regular monitoring of ground water level and quality shall be carried out in and

around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

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

water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of 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 27th August, 2009 and subsequent amendments.
 - (iii) The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the “during mining”/“post mining” land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.
 - (iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
 - (v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.
 - (vi) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.
 - (g) Green Belt**
 - (i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
 - (ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be

developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.

(h) Public hearing and Human health issues

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

(i) Corporate Environment Responsibility

- (i) The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No.22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- (ii) The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.
- (iii) A separate Environmental Cell both at the project and company head quarter

level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

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

(j) Miscellaneous

- (i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- (ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- (iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- (iv) The project proponent shall monitor the criteria pollutants level namely; PM₁₀, SO₂, NO_x(ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- (v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- (vi) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.11 (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.
- (vii) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

- (viii) The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- (ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- (x) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- (xi) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.
- (xii) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- (xiii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- (xiv) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- (xv) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- (xvi) The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

Annexure-II

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

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

I. Statutory compliance:

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

II. Air quality monitoring and preservation

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

station/stations may also be installed in addition to the regular air monitoring stations as per the requirement and/or in consultation with the
SPCB

- ii. The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- iii. Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water sprinkling/rain gun/ mist sprinkling etc., shall be carried out in critical areas prone to air pollution with higher level of particulate matter all through the coal transport roads, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
- iv. Major approach roads shall be black topped and properly maintained.
- v. The transportation of coal shall be carried out as per the provisions and route proposed in the approved mining plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed that the impact of sound, dust and accidents could be appropriately mitigated.
- vi. Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
- vii. Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid airborne dust. Side cladding all along the conveyor gantry should be made to avoid 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 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling or stowing of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- v. A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.
- vi. Thorough inspection of the mine lease area for any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.
- vii. Native tree species shall be selected and planted over areas affected by subsidence.
- viii. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Green Belt

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

prepared and implemented in consultation with the State Forest and Wildlife Department.

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

VIII. Public hearing and Human health issues

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

IX. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard

operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation/ violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.

- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated 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.

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

environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

- 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 m³/tonne of raw coal.
- xi. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

- 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 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

VIII. Corporate Environment Responsibility

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

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

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

IX. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall monitor the criteria pollutants level namely; PM10, SO₂, NO_x (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- vi. The project proponent shall 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.

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 11th August, 2014 to be followed with regard to CSR activities.
- xv. Details of Public Hearing, Notice(s) issued in newspapers, proceedings/minutes of Public Hearing, points raised by the general public and response/commitments made by the proponent along with the Action Plan and budgetary provisions be submitted in tabular form. If the Public Hearing is in the regional language, an authenticated English translation of the same should be provided. Status of any litigations/ court cases filed/pending, if any, against the project should be mentioned in EIA.
- xvi. Analysis of samples indicating the following be submitted:
 - Characteristics of coal prior to washing (this includes grade of coal, other characteristics of ash, S and heavy levels of metals such as Hg, As, Pb, Cr etc).
 - Characteristics and quantum of coal after washing.
 - Characteristics and quantum of coal rejects.
- xvii. Details of management/disposal/use of coal rejects should be provided. The rejects should be used in TPP located close to the washery as far as possible. If TPP is within a reasonable distance (10 km), transportation should be by 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.

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_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xv) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats,

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

- (xvi) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (xvii) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (xviii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xix) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xx) Detailed water balance should be provided. The break-up of water requirement for the various mine operations should be given separately.
- (xxi) Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users in the upstream and downstream of the project site. should be given.

- (xxii) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xxiii) Impact of blasting, noise and vibrations should be given.
- (xxiv) Impacts of mining on the AAQ and predictions based on modeling using the ISCST-3 (Revised) or latest model should be provided.
- (xxv) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xxvi) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xxvii) Details of waste OB and topsoil generated as per the approved calendar programme, and their management shown in figures as well explanatory notes tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use should be given. OB dump heights and terracing based on slope stability studies with a max of 28° angle as the ultimate slope should be given. Sections of final dumps (both longitudinal and cross section) with relation to the adjacent area should be shown.
- (xxviii) Efforts be made for maximizing progressive internal dumping of O.B., sequential mining, external dump on coal bearing area and later rehandling into the mine void. --to reduce land degradation.
- (xxix) Impact of change in land use due to mining operations and plan for restoration of the mined area to its original land use should be provided.
- (xxx) Progressive Green belt and ecological restoration /afforestation plan (both in text, figures and in the tabular form as per the format of MOEFCC given below) and selection of species (native) based on original survey/land-use should be given.

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

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

* As a representative example

Table 2 : Stage Wise Cumulative Plantation

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

* As a representative example

(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 (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xiii) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.
- (xiv) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xv) Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
- (xvi) Detailed water balance should be provided. The breakup of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.

- (xvii) Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
- (xviii) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xix) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xx) Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
- (xxi) The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
- (xxii) Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
- (xxiii) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
- (xxiv) Greenbelt development should be undertaken particularly around the transport route and CHP. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.
- (xxv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- (xxvi) Details of R&R. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of

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

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

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

		If more than one provide details of each FC			
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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.

**LIST OF PARTICIPANTS OF EAC (COAL) IN 33st MEETING OF
HELD DURING 25-26 July, 2022 THROUGH VIDEO
CONFERENCING**

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