

MINUTES OF 24th MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENT APPRAISAL OF COAL MINING PROJECTS HELD ON 30th DECEMBER, 2021 THROUGH VIDEO CONFERENCE.

Thursday 30th December, 2021

Confirmation of the Minutes of 23rd Meeting of the EAC (Coal) held on 06th December, 2021:
The minutes of the 23rd meeting of the EAC held during 06th December, 2021 was 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 24th meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on 30th December, 2021 through video conferencing with support NIC team due to Covid-19 lockdown. The EAC considered proposals as per agenda adopted for the meeting. List of participant attended the meeting is annexed. The details of deliberations held & decisions taken in the meeting are as under.

Agenda No. 24.1

Expansion of Makardhokra- I OC mine (Phase-I) for increase of production capacity from 3.50 MTPA to 4.90 MTPA in land area of 614.69 ha of M/s Western Coalfields Limited located near village Shirpur, Tehsil Umrer, District Nagpur (Maharashtra)- For Environmental Clearance - under MoEF&CC O.M. dated 15.09.2017

[Online proposal No. IA/MH/CMIN/240491/2021; F No. J-11015/54/2006-IA.II(M)]

24.1.1 The proposal is for Environment Clearance of Expansion of Makardhokra- I OC mine (Phase-I) for increase of production capacity from 3.50 MTPA to 4.90 MTPA in land area of 614.69 ha of M/s Western Coalfields Limited located near village Shirpur, Tehsil Umrer, District Nagpur (Maharashtra)

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

- (i) The project area is covered under Survey of India Topo Sheet No 55 P/1 and 55 P/5 is bounded by the geographical coordinates ranging from latitude N 20°50'33" to 20°52'14" and Longitude E 79°14'7.8" to 79°16'24".
- (ii) Coal linkage of the project is from Thermal power plants of MAHAGENCO & Miscellaneous consumers. There is no Joint venture involved.
- (iii) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM

dated 13th January, 2010 wherein moratorium is imposed on grant of environment clearance.

- (iv) Employment generation: Required Manpower for the project is 275 Nos. Approximately 300 contractual workers will get employment through outsourcing agencies.
- (v) The project is beneficial in terms of the following
 Environmental - Increase in green belt area (green cover over an area of 95.80 ha), Mine water utilization for adjoining areas and conservation of coal.
 Financial - Increase in green belt area (green cover over an area of 95.80 ha), Mine water utilization for adjoining areas and conservation of coal.
- (vi) The existing Makardhokra –I Expansion OC has been granted environmental clearance vide ref no. J-11015/54/2006-IA. II (M) dated 20.05.2021 for Production capacity of 3.50 MTPA within ML area of 614.69 Ha.
- (vii) Total land involved in present proposal is 614.69 ha. Project Report for Makardhokra I Opencast Mine was approved by WCL Board in its 257th meeting held on 27th September, 2014 and circulated vide Board resolution no. WCL / BD/ SECTT/ BM-257/2014/1590 dated 02.10.2014. Mining Plan (including Mine Closure Plan) for enhancement in production capacity from 3.50 to 4.90 MTPA has been approved by WCL Board in its meeting held on 337th meeting held on 02nd November 2021 and communicated vide resolution no. WCL / Office of CS/ BM-337/ 2021-22/ 569 dated 09.11.2021
- (viii) The land usage pattern of the project is as follows:

Pre-mining land use details

Sl. No.	Type of land	Land (Ha) Proposed in Mining Plan
1	Tenancy Land	589.97
2	Govt. Land	24.72
3	Forest land	0.00
	Total	614.69

Post-Mining: Area in Ha

Sl. No.	Land Use during Mining	Land use (ha)				
		Plantation	Water Body	Public use	Undis-turbed	Total
1	Excavated Area	0	252.96	0	0	252.96
2	Road	2	0	8	0	10
3	External OB dump	15	0	0	117.8	132.8
4	Infrastructure	1	0	4	0	5
5	Nala diversion Land	0	0	20	0	20
6	Miscellaneous (300m blasting zone,	77.8	0	0	116.13	193.93

	rationalization)					
	Total	95.8	252.96	32	233.93	614.69

- (ix) Total geological reserve reported within the quarry limits is 52.863 MT. Balance Mineable reserve as on 1.04.2021 is 12.95 Mt (for Phase-I only). Out of 12.95 Mt of balance mineable reserves, 12.30 Mt are extractable reserves (for Phase-I only). Percent of Extraction is 95%.
- (x) Six coal seam of thickness varying from 1.18 m to 4.69m. Grade of Coal GCV – 4997 Kcal/kg, G-8, stripping ratio 1: 7.45 m³/t. Average Gradient is 1 in 9. Details of seam are placed below:

S. No	Seam	Thickness (m)	
		Min	Max
1	Seam V	2.65	6.27
2	Seam IV	2.52	8.85
3	Seam III	1.19	4.37
4	Seam IIT	1.21	4.97
5	Seam II B	0.10	1.86
6.	Seam I	1.23	4.60

- (xi) Mining operations presently being done by opencast method with shovel dumper combination and same method will continue in the expansion also.
- (xii) Life of mine: 3 years.
- (xiii) Details of O.B: External Dump Details: The project has 5 (Five) nos. of External Dump (2 nos. in MKD- I OC + 3 nos. External Dump in MKD – II OC) in an area of 132.80 ha (in MKD – I) and 40.80 ha (in MKD – II) with 65 m (max.) height and Quantity of OB is 76.37 Mm³ (Existing 12.88 Mm³+ Additional 63.49 Mm³); Internal Dump Details: One nos. in in MKD- II OC void in an area of 96.98 ha of MKD – II OC with height up to 60m in MKD – II OC and quantity of OB is 30.20 Mm³ in MKD – II OC.
- (xiv) Total quarry area is 252.96 Ha. As per approved Mining Plan, backfilled quarry area is not reaching ground level (will remain as a water body at reduced depth) as such reclamation with plantation has not been envisaged. Backfilling has been envisaged in void of MKD – II OC only. Final mine void of 252.96 Ha at a depth of 150 m will be converted into water body.
- (xv) Transportation of coal in pits by dumpers, from surface to Railway sidings by tippers. Coal will be transported in tarpaulin covered trucks to Umrer Railway siding.
- (xvi) Reclamation Plan/afforestation plan is for 95.80 Ha, at the end of mining. It includes 15.0 Ha of external OB dump, 77.80 Ha of Green belt comprises of Miscellaneous (300m blasting zone, rationalization) and Others in 3.0 Ha (such as road – 02 ha & infrastructure- 1.0 ha) will be reclaimed through plantation.
- (xvii) No forest land involved in the project.

Environmental Sensitivity

- (xviii) Clarification regarding location of the project w.r.t Umred Karhandla Wildlife Sanctuary,

Tadoba Andhari Tiger Reserve, Navegaon Nagzira Tiger Reserve, Melghat Tiger Reserve, Bor Wildlife Sanctuary and Tipesawar Wildlife Sanctuary and wildlife corridor (Tiger/elephant) has been received from Office of Principal Chief Conservator of Forest (Wildlife), Maharashtra State vide letter no. Desk -23 (2)/WL/ Survey/ CR. No.81/ 2784/ 2020-21 dated 11.02.2021. The relevant portion of the same is re-produced below:

- The proposed mining project is not in any protected area.
- The proposed mining project is not within 10km radius of any protected area
- The proposed mining project is not within Eco-sensitive zone of any protected area
- The proposed mining project do not fall within the corridor area as per “Tiger Corridor of Eastern Vidarbha Landscape” published by Wildlife Institute of India, Dehradun

- (xix) The ground water level has been reported to be varying between 3.55 to 6.75 m during pre-monsoon and between 2.0 to 5.06 m during post-monsoon (core zone). Total water requirement for the project is 1090 KLD.
- (xx) NOC has been secured from CGWA for abstraction/ dewatering of mine discharge in respect of subject mine vide NOC no. CGWA/NOC/MIN/ORIG/2020/8139 valid upto 08/06/2022.
- (xxi) Present proposal is for increase in production capacity from 3.50 MTPA to 4.90 MTPA within land area of 614.69 ha, as per clause 7 (ii) of EIA notification 2006 and MoEF & CC O.M. dated 15.09.2017 with the exemption of Public Hearing. No further land is proposed to be involved.
- (xxii) **Consent to Establish** : Consent to Establish for enhancement in production capacity by 1.50 MTPA (from 2.0 MTPA to 3.50 MTPA) has been obtained vide MPCB letter no. Format1.0/ CAC/UAN No. 0000114733/CE-2112000480 dated 08.12.2021, against the application vide dated 27.05.2021
- Consent to Operate:** First Consent to Operate for production capacity of 3.50 MTPA has been secured from MPCB vide letter no. Format1.0/ CAC/ UAN No. 0000114951/CO-2112000479 dated 08.12.2021, with validity upto 31.03.2022.
- (xxiii) Nala No-2 (Shirpur nala) flowing in the eastern direction passing through the central part of the block is a seasonal nala and it ultimately discharges into the Amb river further east near Kanwa village outside the block. Amb River meets the Wainganga River near its confluence with Kanhan River about 40 km ENE of the coalfield.
- (xxiv) Baseline data is generated from 15th Oct’2019 to 15th Jan’2020 for Makardhokra –I expansion OC at 8 locations within the Core and Buffer area. The results were found to be within permissible limits.
- (xxv) No court cases, violation cases are pending against the project of the PP pertaining to environment.
- (xxvi) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder. No excess production of coal from the sanctioned capacity has been realized in the project. Details are as under:

Year	EC sanctioned capacity (MTPA)	Actual Production (MTPA)	Excess production beyond the EC sanctioned capacity
2014-15	1.00	0.069	Nil
2015-16	2.00	0.962	Nil
2016-17	2.00	1.809	Nil
2017-18	2.00	1.60	Nil
2018-19	2.00	2.00	Nil
2019-20	2.00	2.00	Nil
2020-21	2.00	2.00	Nil

(xxvii) Total cost of the project is Rs 266.2308 Crores (As per approved PR, March 2014). Cost of Production is Rs 1230.83/t per tonne (at 85%). Sale Price is Rs. 1513.50/t. R&R Cost involved is Nil. Environmental Management Cost is Capital: - Rs 97.09 lakhs Revenue @ Rs 6.00 per tonne

(xxviii) No rehabilitation of village is envisaged in Phase-I of the project.

(xxix) Compliance of the requirements of Ministry's OM dated 15th September, 2017 for 40% expansion without conducting Public Hearing is detailed as below :

Sr. No.	Requirements as per OM dated 15.09.2017	Compliance submitted by PP
1	Predicted air quality parameter are within the prescribed norms	Air Quality impact prediction modelling has been carried out by AERMOD model 16216r utilising AERMOD view Software V9.4.0. This Air Quality Impact Prediction Modelling has been carried out for incremental 2.90 MTPA (Proposed production capacity of 4.90 MTPA – earlier EC Capacity of 2.00 MTPA). The meteorological data generated from 15 Oct, 2019 to 15 Jan, 2020 has been utilized for the purpose of modelling The resultant predicted air quality parameters for proposed enhancement up to 4.90 MTPA are within prescribed limits and close to NAAQS value at certain villages)

2	Coal Transportation is through conveyor system up to the silo and then loading to railway wagon, involving no transportation throughroads.	<ul style="list-style-type: none"> •The coal transportation from the existing Makardhokra – I Expansion OC is through road from the pit head to Umrer Railway siding which is entirely within the mine lease area of Makardhokra - I OC, Makardhokra - II OC & Umrer OC. •In this regard, it may be mentioned here that Umrer OC with an EC capacity of 4.90 MTPA is on the verge of exhaustion (this FY likely production is 3.50 MT) and it will be exhausted by 2022-23. As such, there will be spare capacity of about 1.40 MT at present (which will further increase in 2022-23) at Umrer Railway Siding. So, any additional production from Makardhokra - I OC will get easily accommodated there and from the railway siding source the total load of coal handling is not going to increase because of proposed enhancement in Makardhokra - I Expansion OC. •Thereafter, i.e. from 2024-25, it is proposed that 4.90 MTPA coal from Makardhokra-I Expansion OC will be transported through a belt conveyor system from pithead to a new railway siding with CHP & Silo arrangement located within Dinesh OC leasehold boundary which is adjacent to Makardhokra - I OC. •The new railway siding with CHP & Silo arrangement is proposed in the approved PR of Dinesh (Makardhokra – III) OC which can handle 8.00 MTPA capacity of Coal. •Coal from Makardhokra – I Expansion OC will be fed to the proposed belt conveyor system of 4.00 km length which will connect to the belt conveyor system of Dinesh OC and discharge coal to the Silo of 4000 t capacity located at the new siding. •Thus after 2024-25, no road transportation of Coal will be there from Makardhokra – I Expansion OC
3	The Coal mining is done through deployment of surface miner, replacing three dust generating operations of conventional mining system namely drilling, blasting and crushing in one go	<p>As per the paragraph 6.2 of mining plan approved by WCL board in its 337th meeting held on 02.11.2021 vide letter WCL/Office of CS/ BM-337/2021-22/569 dated 09.11.2021, alternatives in terms of technology have been deliberated.</p> <p>This has been reproduced below: - “The proposed area of Expansion of Makardhokra-I</p>

		<p>OC mine is traversed by 10 faults. Considering the production from multiple seams having average seam thickness ranging from 1.18m to 4.69 m and number of faults encountering in the property, Shovel Dumper System of mining was proposed in approved PR of Makardhokra-I OC mine. Accordingly, the existing mine is being worked by Shovel Dumper method of mining through out-sourcing agency.</p> <p>In addition to the above geo-technical constraints, surface miner introduction would lead to eliminating Drilling, Blasting and Crushing activities for coal only. Drilling and blasting for OB benches and parting will still have to be carried out.</p> <p>With existing system of shovel dumper Combination, Drilling and Blasting of Coal is only 7.9% of total quantity of coal (3.50 MTPA) and OB (25.50 Mm³).</p> <p>With the same system of shovel dumper Combination as proposed in Expansion of Makardhokra – I OC, Drilling and Blasting of Coal will be 8.20% of total quantity of coal (4.90 MTPA) and OB (37.25 Mm³). Thus, the percentage increase of coal is marginal (only 0.3 %) and the impact of Drilling and Blasting on ambient air quality as per Air quality modelling exercise, percentage contribution of drilling and blasting in total particulate emission is generally 2 - 5 % only. To counter this increase of 0.3% in Drilling & Blasting all the mining excavation will be performed as per the statutory guidelines of DGMS with regular monitoring.</p>
4	Public hearing already conducted for the total mine lease area involved and no more area is required for the proposed expansion.	Public hearing has been completed for 3.50 MTPA production capacity within 614.69 ha area on 16.01.2020 at Community Hall, WCL Colony, Tehsil Umrer, District Nagpur, Maharashtra at 11.00 AM on 16.01.2020 for local affected persons. Proposed expansion is limited to existing area only. Thus, there is no requirement of additional area and the upto date status of detailed issue-wise compliance of public hearing is furnished by PP.

5	Compliance Status of EC conditions monitored by the concerned Regional Office of this ministry is found to be satisfactory	<p>The certified compliance report for existing Environmental Clearance of Makardhokra- I OC has been obtained from Integrated Regional Office, MoEF&CC, Nagpur. Field visit for ascertaining status of compliance of EC conditions was made from IRO, MoEF&CC, Nagpur on 23.10.2021. Thereafter, the Certified Compliance Report was issued by the Regional Office of MoEF&CC, Nagpur vide letter no. EC-1031/RON/2019-NGP/8842 dated 05.11.2021.</p> <p>The project proponent has submitted action taken report for the partially complied conditions as noted in the certified compliance report by IRO, MoEF&CC. The ATR was submitted from Project Proponent vide letter WCL/SAM/USA/ENVT/2021/1026 dated 09.11.2021 to IRO, MoEF&CC, Nagpur</p>
6	Other statutory requirements like Consent to Establish/Operate, Clearance from CGWA, approval of Mining Plan and the Mine Closure Plan, Mine Closure Status Report as	<ul style="list-style-type: none"> • The mining plan along-with mine closure plan was approved by WCL board in its 337th meeting held on 02.11.2021 vide letter WCL/Office of CS/BM-337/2021-22/569 dated 09.11.2021 • NOC for groundwater abstraction has been obtained vide CGWA/NOC/MIN/ORIG/2020/8139 valid upto 08.06.2022 • First Consent to Operate for production capacity of 3.50 MTPA has been secured from MPCB vide letter no. Format1.0/ CAC/ UAN No. 0000114951/CO-2112000479 dated 08.12.2021, with consent validity upto 31.03.2022

24.1.3 The EAC during deliberations broadly noted the followings:

- PP has applied Environment Clearance for Expansion of production capacity of Makardhokra- I OC mine (Phase-I) from 3.50 MTPA to 4.90 MTPA in existing land area of 614.69 ha.
- Earlier Environment Clearance to this project was granted for expansion of Makardhokra –I OC vide ref no. J-11015/54/2006-IA. II (M) dated 20.05.2021 with Production capacity of 3.50 MTPA within mine lease area of 614.69 Ha.
- The last EC was granted on 20th May 2021 for production capacity of 3.5 MTPA but PP obtained the corresponding CTO for its operation in December 2021 after gap of 6 months. However, PP has not able to achieve the production against sanctioned capacity i.e. 3.50 MTPA.
- Project Report for Makardhokra I Opencast Mine was approved by WCL Board in its 257th meeting held on 27th September, 2014 and circulated vide Board resolution no. WCL / BD/

SECTT/ BM-257/2014/1590 dated 02.10.2014.

- Mining Plan (including Mine Closure Plan) for enhancement in production capacity from 3.50 to 4.90 MTPA has been approved by WCL Board in its meeting held on 337th meeting held on 2nd November 2021 and communicated vide resolution no. WCL / Office of CS/ BM-337/ 2021-22/ 569 dated 09.11.2021
- As per Ministry's O.M 15.09.2017, two important conditions related to dust management specified as condition no 2 i.e *Coal transportation is through conveyor system up to the silo and then loading to railway wagons, involving no transportation through roads* and condition no 3 i.e *Coal mining is done through deployment of surface miner*. Both of major conditions have not been fulfilled by the PP despite these specific conditions were part of last EC.
- As per pp submission project site do not fall in any environmental sensitivity/National Park/WL sanctuary /ESZ within 10 km radius.

24.1.4 The EAC, after deliberations observed that the instant proposal for expansion has been submitted under Ministry's OM dated 15th September, 2017. This OM has stipulated certain requirements which need to be complied by PP to any expansion with clause of exemption in public hearing. In the instant project, it has been found that PP is not fulfilling the requirements of said OM in terms of two major conditions i.e by not using surface miner for mining operations and also no facility of coal transportation through conveyor system up to the silo and then loading to railway wagon. It was noted that the life of mine is only 3 years proposing such facility by 2024-25. The futuristic proposal of PP for implementation of these two important conditions appears not inspiring and inadequate despite that this condition is already available in last EC. Earlier Environment Clearance dated 20th May, 2021 also stipulated usage of surface miner, but PP still has not implemented it and also no amendment was sought from Ministry in case of non-feasibility. EAC also observed that reclamation of the OB dump and other progressive mine closure activities initiated by PP is far from satisfactory level, which is responsible of high dust emission to the nearby villages.

EAC also observed the Certified Compliance Report of IRO Nagpur wherein some conditions are partial complied however the conditions are mentioned as complied found to be non-complied hence misinterpreted. Surface miner conditions is non-compliance however; it is mentioned as complied. Also, no plantation of 50 mts width along the final boundary or along the transportation route has been found. A condition at (vii) regarding sal forest implementation is not applicable as submitted by PP however no amendment was sought by PP, though in CCR report it is reported as partially complied. Conditions no (x), it was stipulated to install 10 long ranging fog cannon system for reduce the impact of air pollution but, PP has issued work order for only 1 fog cannon. Active OB dump are being kept barren as seen from picture and kml file submitted by PP. No details of tree plantation along the route of hewati to makardhokra alternative road has been provided by PP.

It was also observed that the issues rose in public hearing like providing drinking water

facility to the nearby vicinity, Shirpur villages etc, Air pollution, dust suppression, employment, raising health issues etc are still not addressed properly and no action plan was furnished to comply the issues. Ambient air quality data at pump house/colony, shirpur village, kanwa village is close to 24hr average NAAQS value. If compared to annual average then it would be very high, PP has to work more promptly on air pollution reduction near the villages.

Further EAC inquired about the star rating of the mine as per the guidelines issued by MoC, PP replied that they have not yet applied for star rating. EAC when enquired about the current production as the PP had obtained CTO after gap of 6 months i.e in the month of December, 2021 for 3.50 MTPA, while EC for this production capacity was granted in May 2021. It was found that PP had not yet achieved the already sanctioned production and the air monitoring & prediction modelling is based on the old data and not current scenario for further expansion; rather prediction is made without reaching the base level. EAC opined that PP to at least achieve current sanctioned capacity of 3.50 MTPA for consecutive three months and then go for prediction by air modelling. PP further justify that due to multi seam surface miner is not suitable for the mine site. However, amendment to this condition in existing EC has not been taken by PP in past. EAC also asked about the Environment Officer responsible for Environment Management specific to the Makardhokra –I mine site, PP told that one Environment Engineer is appointed for the mines located in Umred area. EAC suggested to recruit Environmental officer atleast one for individual mines so that gap in compliance of EC can be monitored properly with the compliance of 5 star rating.

EAC also expressed its concern regarding the application of PP for 40 % expansion directly though Ministry's O.M 15.09.2017 specifies expansion in two stages of 20 % each. EAC finally opined that PP has applied this application without fully complying the major environmental condition for dust mitigation, and without any concrete action plan for public redressal issues. It is too early to file application as the current sanctioned production of 3.50 MTPA has not yet achieved.

Based on above observation, EAC sought additional information and asked to PP to comply the previous conditions and follow the above observation before coming to EAC for further expansion:

- i. PP must apply for amendment if not able to fulfil any condition with justification like as the EC condition No. viii of EC vide letter no J-11015/54/2006-IA. II (M) dated 20.05.2021 wrt to deployment of surface miner and transportation silo loading till railway siding through in pit conveyor belt is neither complied by PP nor amendment regarding it is filed*
- ii. Justification regarding the commencement of coal transportation by belt conveyor and railway siding located at Dinesh OC after 2024-25 once the life of Makardhokra – I Mine which is estimated to be 3 years.*
- iii. PP to comply all the non-compliances and partially complied EC conditions*
- iv. PP to take need base survey of the study area regarding the issue raised in public hearing and must come out with practical approach to fulfil the demands of the public.*
- v. PP must apply for star rating as per the guidelines of MoC wherein environmental concerns*

- have been given high weightage and must furnish the rating points obtained before EAC*
- vi. *PP shall deposit an amount of Rs. 14 lakhs for conservation plan for Schedule I species i.e. Indian Monitor Lizard which prepared for earlier expansion to state forest/wildlife department*
 - vii. *Predicted Air quality to be carried out after achieving around 3 MTPA out of current sanctioned production of 3.50 MTPA*
 - viii. *PP shall submit compliance to activities being done with respect to progressive mine closure as per already approved mine closure plan as part of approved mine plan.*
 - ix. *PP shall submit the plan of action for compliance of issues raised during public hearing with remaining work to be completed*
 - x. *PP shall submit plan of action (year wise and with budget) for plantation of 50 mts width final boundary, alternate road from hewati to makardhokra and other plantation at OB Dump*
 - xi. *PP shall submit plan of action with time and budget for implementing 10 long range fog cannon system.*

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

Agenda No. 24.2

Tadkeshwar Opencast lignite mine Project of 2.50 MTPA capacity of Lignite and 1 MTPA of Limestone in an ML area 964.44 ha of M/s Gujarat Mineral Development Corporation located in village Tadkeshwar, Tehsil Mandvi, District Surat (Gujarat) – For Reconsideration Amendment in Environment Clearance -reg

[Online Proposal No. IA/GJ/CMIN/159262/2020; F.No. J-11015/144/2020-IA. II(M)]

24.2.1 The proposal is for amendment in Environmental Clearance of Tadkeshwar Opencast lignite mine Project of 2.50 MTPA capacity of Lignite and 1 MTPA of Limestone in an ML area 964.44 ha of M/s Gujarat Mineral Development Corporation located in village Tadkeshwar, Tehsil Mandvi, District Surat (Gujarat).

PP is requesting for an amendment to be made regarding the written ultimate depth of the mine in the preamble of EC letter as 94 m to 135 m.

24.2.2 The EAC during deliberations noted the following:

- Earlier, the environment clearance to the project was obtained under EIA Notification, 2006 vide Ministry's letter No. J-11015/144/08-IA.II (M) dated 27.08.2010 for expansion from 1 MTPA to 2.50 MTPA of Lignite and 1 MTPA of Lime stone.
- It is noted that as per EC dated 27th August 2010, the ultimate depth of the mine is mentioned as 94 m in the third line of second paragraph.
- PP has requested for amendment as per EIA Notification, 2006 in the above mentioned depth

to be 135 m instead in EC.

- The project was deliberated on 1st EAC meeting held during 17-18 August, 2020 for Amendment in Environmental Clearance wherein EAC desired certain information from the PP and deferred the proposal. PP has now submitted the compliance of observation of EAC and provided additional information which are enlisted below:

S. No.	Observation of EAC	Reply by PP						
1	Provide further detail about difference of production, OB generation and life of the mine with respect to 94mt to and 135 mt	Parameter	Mine d out till Oct 2021	Remainin g quantity considerin g 94 m ultimate working depth	Total consider ing 94 mtr working depth	Remaining quantity considering 94 m ultimate working depth	Total conside ring 94 mtr workin g depth	Total reserv e as per ToR/ EC
		Lignite quantity (MT)	18.83	9.37	28.2	14.07	32.9	32.9
		OB quantity (Million cmt)	167.33	97.37	264.7	154.37	321.7	321.7
		Mine life (Year)		5		7		
2	Bring earlier record of EAC deliberations, EIA report (Including all annexures questionnaire to substantiate its claim)	<ul style="list-style-type: none"> PP had provided the copy of Earlier ToR dated 25.08.2008 MoM of 2nd EAC held on 9th July 2010 MoM of 65th EAC held on 24th -25th Februray 2010, and respective EIA report 						
3.	NoC from CGWA	The copy of NoC from CGWA dated 13.08.2021 valid till 12.08.2023 is also provided by PP						

- In addition to the above PP had also provided the copy of Plate no. 3/III/A (Geological section with floor contour and Plate no 4/ VII (proposed ultimate pit with floor contour) dated 03.12.2008 of the mine plan approved by Ministry of Coal)
- The details provided in the documents like EIA & mine plan submitted for the grant of EC clearly*

shows that the ultimate depth on mine will be 135 m. These details are summarised as below:

Sr. No.	Document reference	Justification for 135 m ultimate working depth
1	EIA report December 2009, Chapter 1, Topic no. 1.4, Page no. 1-5, Sr. No. 9 in Table 1.2	Depth of working: 50-135 m
2	Plate no. 3/III/A (Geological section with ultimate pit boundary dated 03.12.2008) of the mine plan approved by Ministry of Coal	The cross section of ultimate mine pit shows that ultimate working depth is 135 m.
3	Plate no. 4/VII (Proposed ultimate pit with floor contour dated 03.12.2008) of the mine plan approved by Ministry of Coal	The difference between surface contour & lignite bottom contour shows that ultimate working depth is 135 m.

24.2.3 The EAC, after deliberations observed based on documentary reference submitted by Project Proponent, that ultimate depth of 94 mtrs mentioned in preamble of EC letter might be type error since all other details are based on 135 mts depth. In view of this, EAC recommends the proposal for amendment details of Environmental Clearance Tadkeshwar Opencast lignite mine Project of 2.50 MTPA capacity of Lignite and 1 MTPA of Limestone in an ML area 964.44 ha of M/s Gujarat Mineral Development Corporation located in village Tadkeshwar, Tehsil Mandvi, District Surat (Gujarat) for ultimate depth from 94 mtrs to 135 mtrs, under the provisions of EIA Notification, 2006 and its amendments therein. All other conditions stipulated in EC. J-11015/144/08-IA. II (M) dated 27.08.2010 shall remain unchanged with following additional specific conditions to be followed:

- (i) PP to install 1 more continuous ambient air quality monitoring stations at suitable locations preferably village side with consultation of SPCB. The real time data so generated shall be uploaded on company website and linked it with website of CPCB/SPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.*
- (ii) PP shall seek Certified Compliance Report from Ministry IRO for checking the status of compliance of EC conditions by May, 2022.*
- (iii) PP shall develop 2 water harvesting pond near the villages of suitable area as suggested by Gram Panchayat within 1 year*
- (iv) PP to maintain the topped haul road properly to minimized the dust emission. PP to also develop pucca roads by seeking consent from the panchayat with widening of roads especially roads inter linking the villages within the study area of 10 km radius buffer zone.*
- (v) PP to plant 100,000 plants with three tier plantation along the haul Roads and identified areas with consent to the gram panchayat within one year and take care for rest of the 3 years for their proper growth.*
- (vi) PP to install solar lights along the road used for transportation of minerals to avoid the accidents*

at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year

- (vii) Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.*
- (viii) Persons of nearby villages shall be given training on livelihood and skill development to make them employable with its proper records.*
- (ix) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours*
- (x) PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms*
- (xi) PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis. Any non- compliance or infringement should be reported to the concerned authority.*
- (xii) Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEF&CC.*

Agenda No. 24.3

Vastan Lignite Mine of 1.20 MTPA capacity in mine lease area of 1536 Ha, by M/s Gujarat Industries Power Company Ltd located at Village Nani Naroli, Taluka Mangrol District Surat

(Gujarat)- For Amendment/Revalidation of Environment Clearance -reg

[Online proposal No. IA/GJ/MIN/26807/1996; F No. J-11015/40/95-IA.II (M)]

24.3.1 The EAC during deliberations noted the following:

The proposal is for revalidation of Environmental Clearance of Vastan Lignite Mine of 1.20 MTPA capacity in mine lease area of 1536 Ha, by Gujarat Industries Power Company Ltd located at Village Nani Naroli, Taluka Mangrol District Surat (Gujarat) under Ministry's Notification dated 6th April, 2018.

Earlier, the environment clearance to the project was obtained under EIA Notification, 2006 vide Ministry's letter No. J-11015/40/95-IA.II (M) dated 19.06.1996.

The project was earlier deliberated on 1st EAC meeting held during 17-18 August, 2020 for amendment/revalidation in Environmental Clearance under Ministry's Notification dated 6th April, 2018, wherein EAC desired certain information from the PP and deferred the proposal. PP has now submitted the compliance of observation of EAC and provided additional information which are enlisted below:

S. No.	Observation of EAC	Reply by PP
1	Public notice shall be issued through concerned SPCB for information of the stakeholders about the present coal/Lignite mining operations inviting comments and their redressal,	In this context the Public Notice was issued through concerned SPCB viz. GPCB on 15/10/2020 in English and vernacular language.

2	Mining Plan and Progressive Mine Closure Plan duly approved by the competent authority,	The Mining Plan for Vastan lignite mine @ 1.20 MTPA had been approved by the Ministry of Coal vide letter No. 48024/1/94-CML dated 15/12/95. The Progressive Mine Closure Plan for this Project had been approved by the Ministry of Coal vide letter No. 48024/3/1998-Lig.(Part)/CA.I dated 08/07/2014. Subsequently GIPCL has submitted a revised Mine Closure Plan to the Ministry of Coal vide letter No. GIPCL/Mines/Mining Closure Plan/2018- 19/2562 dated 11/07/2018 modifying the use of reclaimed mining land & external OB Dump area for installation of Solar PV Power Plant. Approval for this modification has been accorded by the Ministry of Coal vide their letter No. CPAM-43011/1/2018-CPAM, dated 29/10/2020 'w.r.t. Installation of Solar power plant in the reclaimed mid of backfilled area and on the external dump area
3.	Compliance status of the conditions stipulated in the environmental clearance from the concerned Regional Office of the Ministry	The Regional Office of the MoEF&CC, Western Zone , Bhopal conducted their site visit on 21/08/2019 and submitted monitoring report thereof in respect of the compliance status of the conditions stipulated in the Environmental Clearance accorded for this Project vide their letter No. 3-5/96(ENV)/260 dated 12/05/2020.
4	Valid Consent to operate from the State Pollution Control Board for the present mining operations	The copy of the Consent to Operate for the present Mining operation issued by GPCB , Gandhinagar indicating validity till 01/11/2023.
5	Redressal of issues raised during the public hearing conducted by the SPCB.	It is worthwhile to mention here that GPCB vide their letter No. GPCB/PH/20- 21/SRT-67/580833 dated 11/01/21 have clearly indicated that not a single comment or representation (Orally or written) was received in this regard within the stipulated period of 30 days of publication of the said notice, as such the necessity of redressal did not arise (and this inter-alia suggests the appreciation by the stakeholders of the existing Project activities being done by the Proponent).
6	Coal production realized from the mine from 1993-94 vis-à-vis capacity stipulated in the	The details of the Coal Production vis-à-vis capacity stipulated in environment clearance /CC&A, realized from the mine since inception viz 1998-99 onwards

	environment clearance	was provided and it was found that as per the record provided, the production exceeded in 2009-2010 and 2010-2011. As per EC letter, there is no capacity mentioned in it.
7	Need assessment survey for the activities proposed under the CSR and the comprehensive plan to be prepared accordingly for implementation by the project proponent. Also, impact of the CSR activities undertaken at an interval of 5 years to be evaluated and a report to be submitted.	Need assessment survey for the activities proposed under the CSR and the comprehensive plan prepared for implementation and Evaluation of the Impact of the CSR activities undertaken at an interval of 5 years which clearly indicatethat these activities have had a positive impact in the area.
8	Forest clearance for diversion of forest land as required under the Forest (Conservation) Act, 1980.	There is no Forest Land involved in the Project
9	Details of court cases and the compliance of the orders, if any.	There were around 15 court cases and are related to land and are still pending
10	Compliance of the Ministry's OM dated 30th May, 2018	The affidavit vide Certificate No. IN-GJ25475205302838T dated 23rd September, 2021 from PP w.r.t to the OM dated 30 th May 2018 has provided by the PP. Stating that they accept the entire statutory requirement and the guidelines of Hon'ble Supreme court, The company undertakes that company will not repeat any violation etc

Further, PP is planning for change in Land Use by installation of Solar PV Plant of 75 MW over the reclaimed land and non-mineralized land of about total 140 Ha area within the Mining Lease i.e 100 ha of Backfilled area and 40 ha of dump area, considering the advantages of power generation through Solar Energy. Accordingly, Mine plan has been revised and approved by Ministry of coal.

24.3.2 The EAC, after detailed deliberations observed that instant proposal is for revalidation of EC which was granted under EIA 1994, and to remove the legal infirmity on such projects, Ministry has granted six months window period for revalidation of all such ECs. PP had applied during that period but the compliance to observation of EAC has now submitted very late. EAC advised PP not to repeat in other cases (if any) of revalidations and asked to submit the revalidation proposal as early as possible.

EAC observed that production capacity in the year 2009-2010 and 2010-2011 has been exceeded by PP with respect to capacity mentioned in CTO, though there is no production capacity mentioned in EC. Ministry may take cognizance of this.

EAC further observed that PP has proposed for installation of Solar Power plant on reclaimed land of OB, it was suggested that no greenery should be damaged for installing this plant. PP had already installed 5 MW PV solar plant in Vastan lignite mine and is proposing to install 75 MW plant of estimated annual power generation 144540 Mwh in an area of 140 Ha over reclaimed area and OB dump. It is a good initiative in the field of renewable energy with a view of reducing carbon emission. EAC finally recommended the proposal for revalidation of Environmental Clearance Vastan Lignite Mine of 1.20 MTPA capacity in mine lease area of 1536 Ha, by Gujarat Industries Power Company Ltd located at Village Nani Naroli, Taluka Mangrol District Surat (Gujarat) as per Ministry's Notification dated 6th April, 2018, under the provisions of EIA Notification, 2006 and its amendments therein. All other conditions stipulated in EC. J-11015/40/95-IA.II (M) dated 19.06.1996 shall remain unchanged with following additional specific conditions to be followed:

- (i) PP to monitor the water quality of the ground water and surface water bodied located within the core zone and 5 km radius from the periphery of the mine boundary as per procedure laid down by CPCB.*
- (ii) PP to install 1 more continuous ambient air quality monitoring stations at suitable locations preferably village side with consultation of SPCB. The real time data so generated shall be uploaded on company website and linked it with website of CPCB & SPCB. In addition, data should also be displayed digitally at entry and exit gate of mine lease area for public display.*
- (iii) PP shall comply with all the EC condition whichever is non-complied or partially complied as per the certified compliance report, like monitoring of the effluents, recruitment of a full-fledged qualified manpower with Environmental Engineer/Env. Science degree background in Environment Management Cell etc within six months.*
- (iv) Proper management of slurry to be executed and report to be submitted to the IRO with six monthly compliances.*
- (v) PP shall develop 2 water harvesting pond near the villages of suitable area as suggested by Gram Panchayat within 1 year*
- (vi) PP to maintain the topped haul road properly to minimized the dust emission. PP to also develop pucca roads by seeking consent from the panchayat with widening of roads especially roads inter linking the villages within the study area of 10 km radius buffer zone.*
- (vii) PP to plant 100,000 plants with three tier plantation along the haul Roads and identified areas with consent to the gram panchayat within one year and take care for rest of the 3 years for their proper growth.*
- (viii) PP to install solar lights along the road used for transportation of minerals to avoid the accidents at night and also seek its maintenance. PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year*
- (ix) Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and maintain records accordingly; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual*

smoking, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. The Recommendations of National Institute for ensuring good occupational environment for mine workers shall be implemented; The prevention measure for burns, malaria and provision of anti-snake venom including all other paramedical safeguards may be ensured before initiating the mining activities.

- (x) Persons of nearby villages shall be given training on livelihood and skill development to make them employable with its proper records.*
- (xi) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours*
- (xii) PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms*
- (xiii) PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis. Any non- compliance or infringement should be reported to the concerned authority.*
- (xiv) Hon 'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEF&CC.*

Agenda No. 24.4

Kasnau -Matasukh Lignite Mining project of 1 MTPA capacity in Mine lease area 1063.35 ha by M/s Rajasthan State Mines and Minerals Limited located at villages Kasnau, Iglar, Matasukh, Arwar, tehsil Jayal, District Nagaur (Rajasthan) – For Revalidation of Environmental Clearance - reg

[Online proposal No.IA/RJ/CMIN/240621/2018; F No. J-11015/21/99-IA.II(M)]

24.4.1 The proposal is for Revalidation of Environmental Clearance to Kanau -Matasukh Lignite

Mining project of 1 MTPA capacity in Mine lease area 1063.35 ha by M/s State Mines and Minerals Limited located at villages Kasnau, Iglar, Matasukh, Arwar, tehsil Jayal, District Nagaur (Rajasthan), under Ministry's Notification dated 6th April, 2018.

Earlier, the Environment Clearance to the project was obtained under EIA Notification, 2006 vide Ministry's letter No. J-11015/21/199-IA.II (M) dated July 19, 2000

24.4.2 The project was last deliberated in 41st EAC meeting held during 13-14 December, 2018 for issuance of ToR in respect to the revalidation of Environmental Clearance wherein, EAC desired certain information from the PP and deferred the proposal. PP has now submitted the compliance of observation of EAC and provided additional information which are enlisted below:

S. No.	Observation of EAC	Reply by PP
1	Public Consultation, including public hearing shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal.	Public Consultation, including public hearing was conducted on dated 30.09.2020 through concerned SPCB as per the provisions/ procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal was provided by PP.
2	Valid Mine Plan and the progressive Mine closure Plan duly approved by the competent authority	Approved Mining Plan dated 9 th January, 1998 was provided by PP. However, Mining Plan (1st Modification) is under submission process in line with latest Guidelines of Ministry of Coal, Govt. of India.
3.	Compliance status of the conditions stipulated in the environmental from the concerned regional office of the Ministry	Latest six monthly compliance report has been provided by PP .(Applied for Certified Compliance report of earlier EC to IRO, MoEF&CC, Jaipur on dated 21.10.21)
4.	Consent to operate from State Pollution Control Board for the present Mining Operation	Environmental Clearance was obtained in year of 2000 and Consent to Operate for the existing capacity was granted from the State PCB on 01.12.2016 and was valid till dated 31.08.2017. Renewal of CTO was applied on 27.04.2017 for renewal, which is under renewal process.
5.	Redressal of issue raised during the last public hearing conducted by the SPCB	Issues rose during last public hearing has been readdressed and is provided in chapter 7 of EIA-EMP report

6.	Coal production realized from the mine from 1993-94 vis-à-vis capacity stipulated in the environment clearance.	<p>This mine is existing lignite mine and production commenced from year 2003-04.</p> <table border="1" data-bbox="743 239 1370 1234"> <thead> <tr> <th>Year</th> <th>Production(In MT)</th> </tr> </thead> <tbody> <tr><td>2003-04</td><td>109594.18</td></tr> <tr><td>2004-05</td><td>0.00</td></tr> <tr><td>2005-06</td><td>86846.96</td></tr> <tr><td>2006-07</td><td>165443.46</td></tr> <tr><td>2007-08</td><td>79730.35</td></tr> <tr><td>2008-09</td><td>0.00</td></tr> <tr><td>2009-10</td><td>206808.00</td></tr> <tr><td>2010-11</td><td>0.00</td></tr> <tr><td>2011-12</td><td>95444.00</td></tr> <tr><td>2012-13</td><td>278845.36</td></tr> <tr><td>2013-14</td><td>213492.84</td></tr> <tr><td>2014-15</td><td>305021.05</td></tr> <tr><td>2015-16</td><td>107188.01</td></tr> <tr><td>2016-17</td><td>126296.07</td></tr> <tr><td>2017-18</td><td>426551.72</td></tr> <tr><td>2018-2019</td><td>588499.41</td></tr> <tr><td>2019-2020</td><td>319357.31</td></tr> <tr><td>2020-2021</td><td>264526.2</td></tr> </tbody> </table>	Year	Production(In MT)	2003-04	109594.18	2004-05	0.00	2005-06	86846.96	2006-07	165443.46	2007-08	79730.35	2008-09	0.00	2009-10	206808.00	2010-11	0.00	2011-12	95444.00	2012-13	278845.36	2013-14	213492.84	2014-15	305021.05	2015-16	107188.01	2016-17	126296.07	2017-18	426551.72	2018-2019	588499.41	2019-2020	319357.31	2020-2021	264526.2
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8.	Stage-I/ Renewal of forest clearance under forest (conservation) Act 1980, as the case may be of the forest land involved in the project	Not required as the forest land not involved in the mine lease area.																																						
	Detail of Court Cases	Not required																																						

24.4.3 *The EAC, after deliberations observed that proposal of revalidation of EC has been submitted by PP when State Pollution Control Board is not issuing CTO. It has been 3 years after appraisal of EAC and now PP has submitted the proposal of revalidation. It is observed that PP is operating mine without valid CTO since 2017 which is in complete violation of Air and Water Act. Further, it was found that PP had not yet obtained the Certified compliance report from the IRO and as per the information provided by the PP they had filed the application for it in October,2021. Also proper need based survey its outcome with budgetary provisions in tabular form for proposed activities to be carried out and the record of already spent amount was not furnished by PP. Even in case of addressing the public hearing issues a time bound action plan with its separate budgetary provision was not provided by PP. PP had also not provided approved revised mining plan as it is under process. The dump in the KML file shown by PP seems not to be managed properly as few portion was sliding out of the lease boundary.*

In the EIA /EMP report a detailed capital and recurring cost of the project as EMP is also not provided. In Baseline monitoring adequate no. of monitoring station for air, noise, soil and water quality is not sampled as per the cpcb guidelines. In view of above, EAC desired certain information from PP for further consideration of proposal of revalidation.

- (i) Certified Compliance status of the existing EC conditions from the concerned regional office of the Ministry*
- (ii) Need based survey its outcome with budgetary provisions in tabular form for proposed activities*
- (iii) A detailed of capital and recurring cost of the project, as EMP to be provided*
- (iv) A time bound action plan with its separate budgetary provision for addressing the public hearing issues*
- (v) PP shall submit justification on production without CTO and action taken by State Pollution Control Board due to this.*

*In view of above lines, the proposal is **deferred** for further compliance.*

Agenda No. 24.5

Bhaskarapara Open cast cum Underground coal mine with production capacity of 1.0 MTPA within ML area of 932 ha by M/s Prakash Industries Ltd located at villages Ammakhokha and Dallabhahara, Tehsil Bhaiyathan, District Surajpur (Chhattisgarh) - For Terms of Reference-reg

[Online proposal No. IA/CG/CMIN/241710/2021; F No. IA-J-11015/90/2021-IA-II(M)]

24.5.1 The proposal is for Terms of Reference to Bhaskarapara Open cast cum Underground coal mine with production capacity of 1.0 MTPA within ML area of 932 ha by M/s Prakash Industries Ltd located

at villages Ammakhokha and Dallabhahara, Tehsil Bhaiyathan, District Surajpur (Chhattisgarh).

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

- (i) The project area is covered under Survey of India Topo Sheet No: F44E11 & F44E15 (64 I/11 & 64 I/15) and is bounded by the geographical coordinates. The geographical co-ordinates lies between latitude 23°20'50" to 23°22'30" N & longitude 82°45'00" to 82°48'50" E.
- (ii) New mine with a rated capacity of 1.0 MTPA (Open cast cum Underground) spread over an area of 932 ha.
- (iii) The project site does not fall in the Critically Polluted Area (CPA), where MoEF&CC has imposed moratorium on grant of environment clearance vide its OM dated 13th January, 2010.
- (iv) The project will provide total employment of 479 (Direct Employment – 79; Indirect Employment – 400)
- (v) The project will improve the socio-economic status of the society in the region by generating direct and indirect employment opportunities. The project will contribute additional revenue to the State & Central exchequers in the form of taxes, cess, etc
- (vi) Total mining lease area as per block allotment is 932 ha. Draft mining plan submitted to MOC, observations made by Ministry of Coal (MoC) on the proposed modified plan were compiled and presentation before Internal Committee of MoC was made on 3.1.2022. and process in progress
- (vii) The land usage pattern of the project is as under

Pre Mining land Use

Sr. No.	Quarry/Dump	Govt. Land	Forest Land		Pvt. Land	Total
			Revenue	Protected		
1	Q-NW	3.060	47.416	63.490	6.790	120.756
2	Q-NE	1.680	23.678	0	41.162	66.52
3	Q-A	10.107	61.137	0	108.756	180
4	Q-B	4.250	13.120	0.330	61.540	79.24
5	External Dump	0	65.766	28.480	0.810	95.056
6	Nalla Diversion	0	0	1.940	0	1.94
7	Road Diversion	0	0.828	0	0.422	1.25
8	Mine Infra	2.200	1.620	0	2.443	6.263
9	Settling Pond	0	1.120	0	0	1.12
10	Safety Zone	1.371	4.871	4.184	2.900	13.326
11	Barrier & Others Area	0.119	3.217	1.219	0.929	5.484
12	Underground	19.302	144.013	49.152	148.578	361.045
Total (ha)		42.089	366.786	148.795	374.330	932.0

Land Use during Mining (Area in Ha)

Sr.No.	Land use during Mining	Land Use (Ha)				
		Plantation	Water body	Public use	Undisturbed	Total
1	External OB dump	95.05	-	-	-	95.05
2	Excavation	368.55	77.97		-	446.52
3	Roads / Nala	-	-	3.19	-	3.19
4	Built up areas	-	-	6.29	-	6.29
5	Greenbelt	-	-	1.12	-	1.12
6	Safety zone	-	-	-	13.33	13.33
7	Undisturbed area	-	-	-	366.50	366.50

Land Use Break Up- Post-Mining

Sr.No.	Type	Total Area	Reclaimed Area	Un-Reclaimed Area
1	Internal OB dump	446.52	446.52	-
a	Backfilled Areas	368.55	368.55	-
b	Excavated Void	77.97		77.97
2	External dump	95.05	95.05	-
3	Safety Zone	13.33	-	13.33
4	Road and infrastructure	10.60	-	10.60
5	Others	366.50	-	366.50

- (viii) 5 seams with thickness ranging from 0.9 m to 4.1 m are workable. Grade of coal is G7, stripping ratio 1:8.41 (Avg), while gradient is 2 to 3 degrees in southern / western central part and 9-10 degrees in Eastern and Central part.
- (ix) Method of mining - Opencast Mine – With Shovel dumper combination and Underground Mine – With LHD conveyor combination.
- (x) Life of mine is 31 years
- (xi) The project has an external OB dump over an area of 95.05 ha with 90 m height accommodating 50.39 Mcm of OB. All the four quarries shall have internal dumps in respective areas: 120.756 ha, 66.52 ha, 180.00 ha, 79.24 ha with height of each dump as 90 m and total quantity of OB in the internal dump filled shall be 107.38 (Mcum).
- (xii) Total quarry area: 446.516 ha and backfilled quarry area of 368.52 ha will be reclaimed with plantation. A void of 77.97 ha at a depth of 110 m which is proposed to be converted into a water body. And transportation of coal - In pit: 18.77 Mt, surface to siding: 5.40 Mt, siding at loading:

5.40 Mt and quantity transported by Road/rail will be about 24.17 Mt.

- (xiii) Reclamation Plan in an area of 476.93 ha, comprising of 95.05 ha of external dump, 368.55 ha of internal dump and 13.33 ha of green belt.
- (xiv) Total forest area is 515.581 ha. Online application filed with Forest department for Stage-I forest Clearance on 26th November, 2021 vide proposal no: FP/CG/MIN/149564/2021.
- (xv) There are no national parks, wild life sanctuaries and eco-sensitive zones in 10 km study area.
- (xvi) Mine has been allocated by Ministry of Coal, Government of India to M/s Prakash Industries Limited vide Vesting order No. NA-104/5/2021-NA dated 18.11.2021
- (xvii) Total water requirement for the project is 490 kLD which will be sourced from met from the bore wells initially and in later stages from harvested water from the pits.
- (xviii) Application for obtaining the approval of the Central Ground Water Authority has been submitted and in progress.
- (xix) Water bodies: Manik Nala (within ML Area), Tank Near Chhemuhani (0.3 km, ESE), Kuluha Nala (2.2 km, SW), Gobri Nala (2.9 km, ESE, Bargi/Burhi Nala (5.9 km, NW), Rehar River (6.3 km, E), Injani Nala (6.7 km, ENE), Ghokhanai Nadi/River (10.1 km, NNW). Manik nala will be diverted.
- (xx) Baseline environment monitoring is under progress for a period of post monsoon season 2021 covering the period: 1st October 2021 to 31st December, 2021.
- (xxi) Any Court case or violation case is not pending against the project.
- (xxii) The estimated cost of the proposed project is about Rs. 284 crores. Average Mine closure cost is Rs. 307 Lakh per year with a recurring cost of Rs. 100 Lakhs per year. Cost on CSR and R&R will be determined after completing Socio Economic Impact Assessment (due to the presence of 7 villages within lease area – Badsara, Bhaskarpara, Kurridih, Khandapara, Dhanauli, Kevara and Kusmusi).

24.5.3 The EAC during deliberations noted the following:

- i. Bhaskarpara Coal Mine was previously allotted to Bhaskarpara Coal Company Ltd (BCCL), a joint venture company formed by M/s Electrotherm (India) Ltd and M/s Ultratech Cement Ltd as a captive mine for use of coal in their end-use plant. Erstwhile allottee had got the Mining Plan for the mine approved in the year 2010. Application for obtaining Environment Clearance was also moved. Subsequently, ToR was issued on 09.04.2010, Public Hearing completed on 19.12.2011 and EAC meeting held. Final grant of EC was kept pending for mandatory Stage-I clearance.
- ii. Ministry of Coal, Government of India vide their vesting order no NA-104/5/2021-NA, dated November 18, 2021 has allotted the Bhaskarpara Coal Mine in favour of M/s Prakash Industries Limited as a successful bidder under clause (b) of sub-rule (2) of rule 7 and sub-rule (1) of rule 13 of the Coal Mines (Special Provisions) Rules 2014 read with clause (b) of sub-section (3) of Section 6 and sub-section (3) of Section 8 of the Coal Mines (Special Provisions).
- iii. Tamor Pingla Wildlife Sanctuary is located at distance of 15.3 km, NE
- iv. Total water requirement is about 490 m³ /day and will be met from the borewells initially and in

- later stages from harvested water from the pits.
- v. Power requirement will be about 2 MVA which will be arranged from the State Electricity Distribution Company.
- vi. Manik Nala diversion and SH-12 Diversion is proposed by the PP

23.4.4. *The EAC observed that there are four quarry and though the forest land is available in all quarry but most of forest land is located towards North west boundary & Quarry A. The PP is proposing to divert Manik Nala flowing in the North West. It was noted that about 40 ha of forest land to be used for OB dump in north west side. It was advised that no forest land shall be utilized for OB dump and proposed diversion shall take place after 5 year of mine commencement. EAC enquired about the quarry wise and year wise excavation plan and also clarity regarding the mode of excavation in each quarry i.e. uptill which year opencast mining will be practiced and in which year underground will be commenced. As per the reply submitted by the PP it was found that PP is commencing its opencast mining operation from quarry NW and Quarry B though EAC suggested that PP shall go for revision in Mine plan and should commence the mining operation in quarry NE and Q-A in order to save the forest and stream/ nala to the best extent and also mandatorily asked PP not to dump Overburden over the forest area as so was proposed by PP. There are two earthen reservoirs near the mine boundary, Kursidhi located at South and Brijeshwar located at North so EAC ask PP to take consent from the respective irrigation department for any stream or Nala diversion as it may affect the catchment area of the reservoir used for domestic purpose. The Manik nala and the Kaul nala both are the sub tributaries of Rihar River*

*The EAC after deliberation, found that it is a green field project and **recommended** for grant of Terms of Reference Open cast cum Underground Bhaskarapara Coal Mine with production capacity of 1.0 MTPA within ML area of 932 ha by M/s Prakash Industries Ltd located at villages Ammakhokha and Dallabhahara, Tehsil Bhaiyathan, District Surajpur (Chhattisgarh) under the provisions of EIA Notification, 2006 and its amendments therein with specific conditions mentioned below:*

Specific condition

- (i) *Public Consultation, shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal. All the issues outstretched and PP reply should be incorporated in EIA along with its time bound action plan and budgetary provision. Also the issue raised in public hearing held during 2009 should also be addressed with time line action plan and budgetary provision in EIA/EMP report*
- (ii) *PP to seek permission for stream diversion from the competent authority after 5 year from the day of mine commencement and mine plan shall be drawn accordingly.*
- (iii) *No forest land shall be used for OB dump towards North west side of mine.*
- (iv) *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*

- (v) *PP shall revise Mine Plan and propose to commence mining from Q-NE side and then start mining operations in Q-NW to avoid initial and deforestation.*
- (vi) *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*
- (vii) *Stage-I Forest Clearance for diversion for non-forestry activity shall be submitted.*
- (viii) *PP to evaluate the green house emission gases from the mine operation and corresponding carbon absorption plan.*
- (ix) *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.*
- (x) *PP shall prepare a Plan for implementation of Continuous Automatic Air Quality Monitoring Station (CAAQMS) at mine site or its vicinity.*
- (xi) *Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA).*
- (xii) *Three Tier Green belt developments all along the boundary of the lease, haul road and in the suitable area with time bound action plan in EIA/EMP report.*
- (xiii) *PP to prepare water augmentation plan with its budgetary provision in respect to the water withdrawal in nearby location and PP shall propose to develop two water harvesting pond*
- (xiv) *PP should submit the complete water balance cycle, in addition to this PP should submit a detailed plan for rain water harvesting measures to be taken. The PP should submit the year wise target for reduction in consumption of the ground water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.*
- (xv) *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.*
- (xvi) *Permission from the respective NHAI is mandatory for any diversion of road like SH-12 as proposed by PP and a approved DPR in this regard to be furnished with time bound action plan in order to prior facilitate with alternate highway or road to minimize the inconveniences for the travelers.*

Monitoring

- (xvii) *In addition to existing data already collected (if any), PP to carry out source apportion study of polluting units in buffer zone of mines w.r.t ecosystem services and biodiversity of the area. PP shall collect one season baseline data of all environmental parameters and shall compare with the data of earlier data collected for cumulative assessment of area.*
- (xviii) *Air pollution impact predication shall be conducted by considering the maximum values*
- (xix) *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.*

(xx) 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

(xxi) The impact of mine operation on the river bodies flowing within the boundary of the mine with its mitigation measures adopted should be clearly spell in the EIA/EMP report with flood plain protection measures. Hydr

(xxii) 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

(xxiii) 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.

(xxiv) 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.

(xxv) 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.

(xxvi) 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.

(xxvii) 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.

(xxviii) Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out and should be furnished with risk assessment and prediction analysis in EIA/EMP report

Infrastructure & Mine Management

(xxix) Details of Land use quarry wise – for OC and UG should be presented separately for the various activities and where ever it is combined it should be specifically indicated with progressive time line of excavation.

(xxx) Forest diversion shall be only proposed for coal bearing areas and no OB dump, non-essential

infrastructure, office or workshop shall be planned in forest area.

(xxxix) Inpit conveyor belt with silo loading should be proposed and installed for transportation of coal till railway siding. No transportation of coal by trucks/dumpers shall be proposed in EIA/EMP.

(xxxii) 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 3 years of commissioning of mine operations. Forest Clearance shall be submitted if railway siding land comes under forest land.

(xxxiii) 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

(xxxiv) 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.

(xxxv) 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

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

(xxxvii) 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.

(xxxviii) 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.

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

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

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

Other

(xlii) 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.

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

(xliv) 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. 24.6

Subhadra Open Cast Mine for production capacity of 25 MTPA in mine lease area of 1111.85 ha of M/s Mahanadi Coal field Limited located at Village Gopal Prasad, Kumuda, Nisha, Kankarei, Raijharan, Nisha P.S Angul, Tehsil Tachler and Chhendipada, District Angul (Odisha) - For Amendment in Terms of Reference- reg

[Online proposal No. IA/OR/CMIN/244489/2021; F No. IA-J-11015/72/2021- IA-II(M)]

24.6.1 The EAC during deliberations noted the following:

The proposal is for amendment in Terms of Reference to Subhadra Open Cast Mine for production capacity of 25 MTPA in mine lease area of 1111.85 ha of M/s Mahanadi Coal field Limited located at Village Gopal Prasad, Kumuda, Nisha, Kankarei, Raijharan, Nisha P.S Angul, Tehsil Tachler and Chhendipada, District Angul (Odisha)

Earlier, the Terms of Reference to the project was obtained under EIA Notification, 2006 vide Ministry's letter No. J-11015/72/2021-IA.II (M) dated 22nd November, 2021.

PP has requested for amendment in the ToR specific condition nos. 4(iv), 4 (vii), 4 (xiii) and 4 (xxvii) for Subhadra OCP of MCL as mentioned below:

Condition No. as per ToR issued	Description as per Approved ToR

4 (iv)	PP shall not divert the Singhada Jhor stream and will not disturbed the forest area or green patch located towards North eastern boundary for next 20 years of the mine life. Adequate protection measures shall be proposed in EIA Report. Accordingly, a distance of about 60 mts along Singhada stream shall be left to avoid any pollution, thus the Mine plan shall be revisited/relocked.
4 (vii)	PP shall clarify the area of the project with allotment of block from MoC and Mine Plan. Further, PP shall reduce the area of project implementation by excluding the green patch towards the North eastern boundary
4 (xiii)	Inpit conveyor belt with silo loading should be proposed and installed for transportation of coal till railway siding. No transportation of coal by trucks/dumpers shall be proposed in EIA/EMP
4 (xxvii)	PP shall propose to use LNG/CNG based mining machine and trucks for mining operation and transportation of coal

24.6.2 The committee on the proposed was of the view that these conditions were prescribed after proper examination of proposal. However, the EAC, after deliberations observed that the PP was not able to justify properly the proposed amendment in ToR. However, EAC deliberated the requirement for maintaining green patch in north eastern with respect to mine plan and desired that PP shall not cut the greenery for 10 years after operations of mine. Regarding LNG /CNG based mining machinery PP told that it is not successful due techno -economic viability to the availability of fuel. EAC suggested them to explore nearby refineries and also told that LNG/ CNG based trucks area already used for transportation. As per the diversion of Singhada Jhor stream is concerned PP told that it will require revision in Mining plan which may delayed the procedural step forward. EAC state that a minor change in order to safe guard the environment is always appreciable. PP is ready to install Inpit conveyor belt with silo loading for transportation of coal till railway siding but told that they still required transportation of road via trucks at haul road to be built face to in pit, thus it cannot be avoided altogether. EAC recommended a pucca haul road within the mine lease with proper widening and adequate plantations, up till receiving at in pit. PP must follow all the mitigative measure to avoid dust pollution.

*EAC finally **recommended** the amendment on selective ToR conditions by replacing those conditions to Subhadra Open Cast Mine for production capacity of 25 MTPA in mine lease area of 1111.85 ha of M/s Mahanadi Coal field Limited located at Village Gopal Prasad, Kumuda, Nisha, Kankarei, Raijharan, Nisha P.S Angul, Tehsil Tachler and Chhendipada, District Angul (Odisha), under the provisions of EIA Notifications, 2006 and its amendments therein with below points wise amendments:*

- (i) PP shall not divert the Singhada Jhor stream and will not disturbed the forest area or green patch located towards North eastern boundary for 10 years of the mine life. PP shall propose list of activities in EIA/EMP to protect this greenery*
- (ii) PP shall reduce the area of project implementation by excluding the green patch towards*

- the North eastern boundary*
- (iii) *PP shall install inpit conveyor system with silo loading facilities for transportation of coal till railway siding. PP shall propose air pollution mitigation measures along the haul road till Inpit conveyor system.*
 - (iv) *PP shall prepare feasibility report for implementation of LNG/CNG dumpers and explore to use it for its mining operations*
 - (v) *PP shall revise the mine plan accordingly on the above amendments.*

Agenda No. 24.7

Jaganathpur-B Underground Coal Mine with a production capacity of 0.8 MTPA/1.20 MTPA (Normative/Peak) in mine area of 869.40 ha by M/s Powerplus Traders Private Limited (PTPL) located at Villages Sandipur, Basudevpur, Binodpur, Raj Hat, Sashipur, Dubrajpur, Majhidanga, Dandeswarpur, Ranipur, Shyamsunderpur, Jot Balarampur, Shrikrishnapur, Amdahi, Jagannathpur, Kalinagar, District Paschim Bardhaman (West Bengal). For Amendment of Existing Terms of Reference dated 02.06.2021- reg [Online proposal No. IA/WB/CMIN/210433/2021; F No. IA-J-11015/27/2021-IA-II(M)]

24.7.1 The proposal is for amendment in Terms of Reference to Jaganathpur-B Underground Coal Mine with a production capacity of 0.8 MTPA/1.20 MTPA (Normative/Peak) in mine area of 869.40 ha by M/s Powerplus Traders Private Limited (PTPL) located at Villages Sandipur, Basudevpur, Binodpur, Raj Hat, Sashipur, Dubrajpur, Majhidanga, Dandeswarpur, Ranipur, Shyamsunderpur, Jot Balarampur, Shrikrishnapur, Amdahi, Jagannathpur, Kalinagar, District Paschim Bardhaman (West Bengal).

24.7.2 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 Toposheet No 73M/6 and is bounded by the geographical coordinates ranging from latitude 23°38'39" to 23°40'15"N and longitudes 87°21'56" to 87°24'53"E.
- (ii) Coal linkage of the project is only captive Consumption.
- (iii) Joint venture cartel has been formed between Orissa Metaliks Private Limited, Rashmi Cement Limited and Shyam Steel Manufacturing Limited.
- (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, The Project is providing employment to local persons directly and indirectly. Manpower of this project has been estimated as 1956.
- (vi) The project is reported to be beneficial in terms of boost to local and regional economy, direct contribution to the state exchequer.
- (vii) Standard Terms of Reference granted by Ministry on dated 02.07.2021
- (viii) The land usage pattern of the project is as follows:

Pre-mining land use details (Area in ha)

S. No.	Land Use	Within ML Area (ha)	Outside ML Area (ha)	Total (Ha)
1	Agricultural Land	630.64		630.64
2	Forest Land	0		0
3	Wasteland			
4	Grazing Land	25.84		25.84
5	Surface Water Bodies	70.09		70.09
6	Settlements			
7	Others (Barren)	96.12		96.12
8	Road & infrastructure	18.39		18.39
10	Community/others	15.60		15.60
11	Old Excavation Area (East Quarry)	0		0
12	Old Excavation Area (West Quarry)	0		0
13	Old OB Dumps	0		0
14	R & R Colony	0		0
15	Staff Colony	0		0
16	Green Belt	0		0
17	Balance Area	0		0
	Total Project Area =	856.68		856.68

Post Mining Land Use Details (Area in ha)

S. No.	Land use	Land use (ha)				Total
		Plantation	Water Body	Public Use	Undisturbed	
1	External OB Dump					
2	Top Soil Dump					
3	Excavation					
4	Roads & Built-up Area			22.91		22.91
5	Green Belt	8.49				8.49
6	Undisturbed Area				381.20	381.20

7	Safety Zone / Rationalization Area	442.85				442.85
8	Diversion / Below River / Nala / Canal					
9	Water Body settling pond		0.20			0.20
10	Staff Colony					
11	UG Entry			1.03		1.03
	Total Area =					856.68

- (ix) Total geological reserve reported in the mine lease area is 191.020 MT with 65.784 MT mineable reserve. Out of total mineable reserve of 65.784MT, 50.023 MT are available for extraction. Percent of extraction is 29.99%.
- (x) Ten(10) seams with thickness ranging from 0.6 m – 8.80 m are workable. Grade of coal is G4 to G15, stripping ratio is NA while gradient is 4° to 5°.
- (xi) Method of mining operations envisages by Mechanised bord and pillar underground mining method.
- (xii) Life of mine is 66 years.
- (xiii) Reclamation Plan in an area of 475.48 ha, comprising of 0 ha of external dump, 0 ha of internal dump and 8.49 ha of green belt.
- (xiv) No forest land has been reported to be involved in the project
- (xv) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones fall within 10 km boundary of the project
- (xvi) The ground water level has been reported to be varying between 5.0 m to 6.0 m during pre-monsoon and between 2.5 m to 4 m during post-monsoon. Total water requirement for the project is 615 KLD.
- (xvii) Application for obtaining the approval of the Central Ground Water Authority for Permit for sinking of new well from Member Secretary, District Level Ground Water Resource Development Authority, Paschim Burdwan, West Bengal has been obtained on 30th November, 2021.
- (xviii) Ajay River/nalla is flowing from (from north to south) along eastern boundary of the block. There is seasonal nala aligned from north to south flowing almost along and in between the roads. There is another seasonal nala (Tumni), also N-S aligned, flowing almost parallel to the western boundary for most of the span but finally touching the western boundary and exiting the southern boundary. Additionally, there are a number of shallow depth ponds in almost all the villages. The nallah will be/not be diverted in consultation with the Water Resource Department of the State Government.
- (xix) No court cases, violation cases are pending against the project of the PP.

- (xx) The project does not involve violation of the EIA Notification, 2006 and amendment issued thereunder
- (xxi) Total cost of the project is Rs. 35072 lakhs. Cost of production is Rs 2,000 /- per tonne., CSR cost is Rs. 526 lakhs. This will be distributed in 5 years, R&R cost is Rs 0 crores. Environment Management Cost is Rs 3 crores.
- (xxii) No rehabilitation is proposed.

24.7.3 The EAC during deliberations noted the following:

- i. The proposal is for amendment in Terms of Reference to Jaganathpur-B Underground Coal Mine with a production capacity of 0.8 MTPA/1.20 MTPA (Normative/Peak) in mine area of 869.40 ha by M/s Powerplus Traders Private Limited (PTPL) located at Villages Sandipur, Basudevpur, Binodpur, Raj Hat, Sashipur, Dubrajpur, Majhidanga, Dandeswarpur, Ranipur, Shyamsunderpur, Jot Balarampur, Shrikrishnapur, Amdahi, Jagannathpur, Kalinagar, District Paschim Bardhaman (West Bengal).
- ii. Earlier, the instant project was granted Standard Terms of Reference by Ministry on 2nd June, 2021 vide letter no. J-11015/27/2021-IA-II(M) for capacity of 0.8 MTPA/1.20 MTPA (Normative/Peak) in mine area of 869.40 ha
- iii. Now, PP has submitted that there is change in mine and forest area due to overlap of area of Raniganj East CBM block, accordingly the instant project area is reduced.
- iv. Ministry of Coal vide letter no. F.No. NA-104/4/2019-NA dt/ 23.06.2021 excluded the area of 12.72 ha from the required mining lease and project area due to overlapping of the project.

24.7.4 *The EAC after observed that the proposal is an underground mine in which the change area of mine lease is due to decrease overlap of Raniganj East CBM as such the area is reduced and also no disturbance in the current existing land use at the surface will exist due to the mining activity as suggested by the PP. After deliberation, EAC considered the area of the mine as 856.68 Ha and **recommended** the proposal for grant of Amendment in Terms of Reference to Jaganathpur-B Underground Coal Mine with a production capacity of 0.8 MTPA/1.20 MTPA (Normative/Peak) in mine area of 869.40 ha by M/s Powerplus Traders Private Limited (PTPL) located at Villages Sandipur, Basudevpur, Binodpur, Raj Hat, Sashipur, Dubrajpur, Majhidanga, Dandeswarpur, Ranipur, Shyamsunderpur, Jot Balarampur, Shrikrishnapur, Amdahi, Jagannathpur, Kalinagar, District Paschim Bardhaman (West Bengal) under EIA Notification, 2006 and subsequent amendments/circulars thereto subject with additional specific conditions for environmental safeguards as given below:*

Specific condition

- (i) *Public Consultation, shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal. All the issues outstretched and PP reply should be incorporated in EIA along with its time bound action plan*

and budgetary provision. Also the issue raised in public hearing held during 2009 should also be addressed with time line action plan and budgetary provision in EIA/EMP report.

- (ii) PP shall not divert nala or stream for the instant project since it is Underground project.*
- (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) Stage-I Forest Clearance for diversion for non-forestry activity shall be submitted, if applicable.*
- (vi) PP to evaluate the green house emission gases from the mine operation and corresponding carbon absorption plan.*
- (vii) 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.*
- (viii) PP shall prepare a Plan for implementation of Continuous Automatic Air Quality Monitoring Station (CAAQMS) at mine site or its vicinity.*
- (ix) Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA).*
- (x) Three Tier Green belt developments all along the boundary of the lease, haul road and in the suitable area with time bound action plan in EIA/EMP report*
- (xi) PP to prepare water augmentation plan with its budgetary provision in respect to the water withdrawal in nearby location and PP shall propose to develop two water harvesting pond*
- (xii) PP should submit the complete water balance cycle, in addition to this PP should submit a detailed plan for rain water harvesting measures to be taken. The PP should submit the year wise target for reduction in consumption of the ground water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.*

Monitoring

- (xiii) In addition to existing data already collected (if any), PP to carry out source apportionate study of polluting units in buffer zone of mines w.r.t ecosystem services and biodiversity of the area. PP shall collect one season baseline data of all environmental parameters and shall compare with the data of earlier data collected for cumulative assessment of area.*
- (xiv) Air pollution impact predication shall be conducted by considering the maximum values.*
- (xv) 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.*
- (xvi) 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*

- (xvii) *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*
- (xviii) *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.*
- (xix) *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.*
- (xx) *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.*
- (xxi) *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.*
- (xxii) *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.*
- (xxiii) *Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out and should be furnished with risk assessment and prediction analysis in EIA/EMP report*

Infrastructure & Mine Management

- (xxiv) *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.*
- (xxv) *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.*

- (xxvi) 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.
- (xxvii) 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.
- (xxviii) 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.
- (xxix) Details of Fog mist sprayer (static water sprinklers) at coal stock yard and along the permanent haul road.
- (xxx) PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of coal.
- (xxxi) No trucks or vehicles used for transportation of Coal to be passed by village roads or roads located near to the villages. PP shall develop a pucca haul road for transportation of coal proper widening considering its carrying capacity, lightening and three tire plantation along the haul road. Details of black topping of permanent haul roads to be furnished in EIA /EMP report with its measurement and budgetary provision.

Other

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

The meeting ended with thanks to the Chair.

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

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

- (a) Statutory compliance**
- (i) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
 - (ii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
 - (iii) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of Schedule-I species in the study area).
 - (iv) The project proponent shall obtain Consent to Establish/Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
 - (v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
 - (vi) Solid/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.
- (b) Air quality monitoring and preservation**
- (i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per their 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-IA.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 purposive. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
 - (x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the

- presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.
- (xi) The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.
- (d) Noise and Vibration monitoring and prevention**
- (i) Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.
- (ii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
- (i) The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.
- (e) Mining Plan**
- (i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
- (ii) Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- (iii) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.
- (ii) Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.
- (f) Land reclamation**
- (i) Digital Survey of entire lease hold area/core zone using Satellite Remote

- Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- (ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land 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, NOx (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
 - (v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
 - (vi) The project proponent shall follow the mitigation measures provided in this Ministry's 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.

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-IA.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.

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

considering the presence of any river/rivulet/pond/lake etc., with impact of mining activities on it, and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the provisions of the approved Mining Plan/ EIA-EMP submitted to this Ministry and the same should be done with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved mining plan and as per the permission of DGMS.

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

IV. Noise and Vibration monitoring and prevention

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

V. Mining Plan

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

conservation, efficiency improvements and use of renewable energy.

VI. Land reclamation

- i. Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- ii. Post-mining land be rendered usable for agricultural/forestry purposes and shall be handed over to the respective State Government, as specified in the Guidelines for Preparation of Mine Closure Plan, issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.
- iii. Regular monitoring of subsidence movement on the surface over and around the working areas and its impact on natural drainage pattern, water bodies, vegetation, structure, roads and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence beyond the limit prescribed, appropriate effective mitigation measures shall be taken to avoid loss of life and materials. Cracks should be effectively plugged in with ballast and clay soil/suitable material.
- iv. Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling or stowing of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- v. A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.
- vi. Thorough inspection of the mine lease area for any cracks developed at the surface due to mining activities below ground shall be carried out to prevent inrush of water in the mine.
- vii. Native tree species shall be selected and planted over areas affected by subsidence.
- viii. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Green Belt

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

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

VIII. Public hearing and Human health issues

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

IX. Corporate Environment Responsibility

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

- into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation/ violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
 - iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
 - v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated 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. (in case of the presence of schedule-I species in the study area)
- (iv) The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
- (v) The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- (vi) Solid waste/hazardous waste generated in the washery needs to be addressed in accordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules, 2016.
- (vii) Coal beneficiation practices shall be carried out under strict adherence to provisions of the Factories Act, 1957 and subordinate legislations made there under.

II. Air quality monitoring and preservation

- i. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, 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 be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the

- State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
- 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-IA.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for compliance.
 - iii. Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time.
 - iv. The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the washery. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the riverfront side stabilised with plantation so as to withstand the peak water pressure preventing any chance of inundation.
 - v. Heavy metal content in raw coal and washed coal shall be analysed once in a year and records maintained thereof.
 - vi. The rejects should preferably be utilized in FBC power plant or disposed off through sale for its gainful utilization. If the coal washery rejects are to be disposed off, it should be done in a safe and sustainable manner with adequate compaction and post closure arrangement to avoid water pollution due to leachate from rejects and surface run off from reject dumping sites.
 - vii. An Integrated Surface Water Management Plan for the washery area up to its buffer zone considering the presence of any river/rivulet/pond/lake etc. with impact of coal washing activities on it, shall be prepared, submitted to MoEFCC and implemented.
 - viii. Waste Water shall be effectively treated and recycled completely either for washery operations or maintenance of green belt around the plant.
 - ix. Rainwater harvesting in the washery premises shall be implemented for conservation and augmentation of ground water resources in consultation with Central Ground Water Board.
 - x. No ground water shall be used for coal washing unless otherwise permitted in writing by competent authority (CGWA) or MoEFCC. The make-up water requirement of washery should not exceed 1.5 m³/tonne of raw coal.
 - xi. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

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

- Competent Authority for its drawl.
- xi. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with specific points where fugitive emissions can arise and specific pollution control/mitigative measures proposed to be put in place. The washed coal and rejects should be transported by train as far as possible. Road transport of washed coal and rejects should generally be avoided. In case, the TPP is within 10km radius, it should be through conveyor belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road should be examined in detail and its impacts along with the mitigation measures should be clearly brought out in EIA/EMP report.
 - xii. Details of various facilities proposed to be provided in terms of parking, rest areas, canteen etc. to the personnel involved in mineral transportation, workshop and effluents/pollution load from these activities should be provided.
 - xiii. Impacts of CHP, if any, on air and water quality should also be spelt out along with Action Plan.
 - xiv. O.M.no.J-II013/25/2014-IA.I dated 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.

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

Sl. No.	Land use	Within ML area (ha)	Outside ML area (ha)	Total
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

- (xii) Break-up of lease/project area as per mining plan should be provided.
- (xiii) Impact of changes in the land use due to the project if the land is predominantly agricultural land/forestland/grazing land, should be provided.
- (xiv) One-season (other than monsoon) primary baseline data on environmental quality - air (PM10, 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

(xxxii) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological

restoration of the mined out area and post mining 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					

- (xxxii) Flow chart of water balance should be provided. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. should be provided. Details of STP in colony and ETP in mine should be given. Recycling of water to the max. possible extent should be done.
- (xxxiii) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower in the mine should be given.
- (xxxiv) Risk Assessment and Disaster Preparedness and Management Plan should be provided.
- (xxxv) Integration of the Env. Management Plan with measures for minimizing use of natural resources - water, land, energy, etc. should be carried out.
- (xxxvi) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- (xxxvii) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.
- (xxxviii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
- (xxxix) Corporate Environment Responsibility:
 - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.

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

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

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

GENERIC TORs FOR AN UNDERGROUND COAL MINE PROJECT

- (i) An EIA-EMP Report shall be prepared for MTPA rated capacity in an ML/project area of ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
- (ii) An EIA-EMP Report would be prepared for MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for MTPA of coal production based on approved project/Mining Plan for MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given.
- (iv) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (v) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (vi) A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of

- embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.
- (vii) Original land use (agricultural land/forestland/grazing land/wasteland/waterbodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified.

S. N	ML/Project Land use	Area under Surface Rights(ha)	Area Under Mining Rights(ha)	Area under Both (ha)
1.	Agricultural land			
2.	Forest Land			
3.	Grazing Land			
4.	Settlements			
5.	Others (specify)			

Area under Surface Rights

S.N.	Details	Area (ha)
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Others (specify)	
	TOTAL	

- (viii) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (ix) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (x) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.

- (xi) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xii) One-season (other than monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xiii) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.
- (xiv) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xv) Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
- (xvi) Detailed water balance should be provided. The breakup of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
- (xvii) Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
- (xviii) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xix) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xx) Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
- (xxi) The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding,

- and also the frequency of their use in impacting air quality should be provided.
- (xxii) Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
 - (xxiii) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre-mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
 - (xxiv) Greenbelt development should be undertaken particularly around the transport route and CHP. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.
 - (xxv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
 - (xxvi) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.
 - (xxvii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
 - (xxviii) Corporate Environment Responsibility:
 - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
 - d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
 - (xxix) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
 - (xxx) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
 - (xxxi) Status of any litigations/ court cases filed/pending on the project should be provided.

- (xxxii) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
- (xxxiii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

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

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

ANNEXURE-VII

GENERIC TORs FOR AN OPENCAST -CUM UNDERGROUND COAL MINE PROJECT

- (i) An EIA-EMP Report would be prepared for a combined peak capacity of....MTPA for OC-cum-UG project which consists of... MTPA in anML/project area of ha for OC and MTPA for UG in an ML/project area of ha based on the generic structure specified in Appendix III of the EIA Notification 2006.

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

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

LIST OF PARTICIPANTS OF EAC (COAL) IN 24th MEETING OF HELD DURING 30th DECEMBER, 2021 THROUGH VIDEO CONFERENCING

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