

**MINUTES OF 5<sup>th</sup> MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENTAL APPRAISAL OF COAL MINING PROJECTS HELD ON 23<sup>rd</sup> DECEMBER, 2020.**

**Thursday, 23<sup>rd</sup> December, 2020**

**Confirmation of the Minutes of 4<sup>th</sup> Meeting of the EAC (Coal) held on 27<sup>th</sup> November, 2020:**

No comment was made from members of the committee on the minutes of the 4<sup>th</sup> meeting of the EAC held during 27<sup>th</sup> November, 2020, therefore the Minutes of the Meeting (MoM) of 4<sup>th</sup> EAC meeting was confirmed.

**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 5<sup>th</sup> meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on 23<sup>rd</sup> December, 2020 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. 4.1**

**Ramagundam Opencast-III Expansion-II Coal Mine Project from 6.30 (Peak 6.80) MTPA to 8.82 (Peak 9.52) MTPA in mine lease area of 2070.10 ha M/s Singareni Collieries Company Limited located near Jallaram Village Mandal Kamanpur District Peddapalli (Telangana) - Environmental clearance under the provision of clause 7(ii) of EIA Notification, 2006 - reg.**

**[Proposal No. IA/TG/CMIN/120211/2019;F.No.J-11015/43/2014-IA.II (M)]**

**4.1.1** The proposal is for grant of Environment Clearance to Ramagundam Opencast-III Expansion-II Coal Mine Project from 6.30 (Peak 6.80) MTPA to 8.82 (Peak 9.52) MTPA in an ML area of 2070.10 ha M/s Singareni Collieries Company Limited located near Jallaram Village Mandal Kamanpur District Peddapalli (Telangana), under the provision of clause 7(ii) of EIA Notification, 2006

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

The proposal was earlier considered by the sectoral EAC in its 53<sup>rd</sup> meeting held on 20<sup>th</sup> February, 2020, wherein EAC after detailed deliberation agreed the proposal for 20% expansion and Committee deferred the proposal for want of additional information. Now, the PP has submitted the replies/compliance to observations of EAC, which is tabulated below:

<b>Sr. No.</b>	<b>Observations of EAC</b>	<b>Compliance / Submission of Project Proponent</b>
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1	<p>Permission for diversion of Jallaram nallah at two different places and road diversions.</p>	<p>PP has submitted the permission and explains in detail to the EAC.</p> <p>Permission has been obtained from I&amp;CAD Department vide Ir. No.EE/IB/PDPL/DB/HD/D3/37/M, dated 04.06.2020, for diversion of Jallaram nallah at two different places.</p> <p>Jallaram nallah will be diverted within the project area in two phases.</p> <p><i>Phase-I:</i> (after 10<sup>th</sup> year of the project), it will be diverted further South through the undisturbed area along the project boundary and the diversion length is about 1.7 km.</p> <p><i>Phase-II:</i> (after 13<sup>th</sup> year), existing nallah will be straightened away from the quarry on East side of the project and the diversion length is about 1km.</p> <p>The SCCL internal road which is being used for transportation to the mine and SCCL colonies will be diverted at two locations to facilitate progress of the mine.</p> <p>The existing roads will be diverted after establishing the alternate roads along the boundary.</p> <p>NOC for diversion of roads was obtained from R&amp;B Department vide Ir. No.95/ HD/DB/EEP/2020-21/209, dated 30.04.2020</p>
	<p>Effect of diversion of Jallaram vagu on River Godavari at Siripuram village.</p>	<p>I&amp;CAD department, Telangana, carried out inspection of the site where Jallaram nallah was proposed for diversion and certified that there will not be any effect of diversion of Jallaram nallah on River Godavari at Siripuram Village.</p> <p>In addition, Environment Protection Training &amp; Research Institute (EPTRI), Hyderabad, a NABET Accredited institute also carried out a study to know the effect of diversion of Jallaram nallah on River Godavari at Siripuram village and it was found that there will be no effect of the diversion of Jallaram nallah within the project area on River Godavari at Siripuram village.</p> <p>The salient points of the EPTRI, study report:</p> <ul style="list-style-type: none"> <li>• Jallaram nallah is a Seasonal Nallah and is an</li> </ul>

		<p>ephemeral nallah of Godavari River.</p> <ul style="list-style-type: none"> <li>• Jallaram nallah has been earlier diverted within the project area for a length of 4.5 km in the year 2014 after obtaining NoC from I&amp;CAD Dept.</li> <li>• The feeder channels and the local drainage network have been restored and maintained after the earlier diversion.</li> <li>• Now, it is proposed to divert the Jallaram vagu in two phases (10<sup>th</sup> year and 13<sup>th</sup> year) and NOC from I&amp;CAD Departmentt obtained.</li> <li>• A protection bund of 3.0 m to 6.0 m height and 6 m to 15 m width at the top has been already constructed against the earlier diverted portion of Jallaram nallah and a similar bund shall also be constructed for the present proposal as per the approved Mining Plan.</li> <li>• Stone pitching was carried out at vulnerable points in the diverted portion of the nallah to strengthen the bund and same shall be done for proposed diversion.</li> <li>• A safety zone of 50m from quarry limit line to the nallah was left against the earlier diverted portion and plantation with native species was taken up in the safety zone (including on bund) to protect the nallah which shall be done for the proposed diversion.</li> <li>• A safe zone of 100m is left from toe of external dump to the bund of the nallah and plantation with native species was taken up in the safety zone which shall be done for the proposed diversion also.</li> <li>• The surface runoff rain water from dump area is being collected through deck drains, garland drains, rock toe walls into settling ponds provided for dumps to protect the nallah from siltation.</li> <li>• The settling pond outlet is being monitored as per CPCB guidelines and meeting the stipulated norms. The monitoring will be continued till the mine closure as per the CPCB / MoEF&amp;CC guidelines.</li> <li>• As the proposed diversion will not affect the</li> </ul>
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		<p>gradient or velocity of the flow in the downstream side, there will be no impact on hydrology of the area and to the existing beneficiaries in surrounding villages.</p> <ul style="list-style-type: none"> <li>• The excess mine discharge water will be discharged into nearby irrigation tanks after treatment for irrigation which helps downstream users for raising two crops in a year.</li> <li>• The quality of Jallaram nallah, Godavari River and mine discharge water are being monitored at regular intervals and found within the stipulated standards, Further periodically monitoring will be carried in future also in order to assess the quality and to take necessary pollution prevention measures in the project.</li> <li>• It is concluded that there will be no impact of the diversion of Jallaram nallah within the project area on River Godavari at Sirpiuram village.</li> </ul>
	DGMS permission for permitting OB dump height up to 120m.	<p>Height of OB dump is proposed to be about 120m above ground level, necessary permission is desired from DGMS for this.</p> <p>A scientific study for the stability of slopes, high walls and OB dumps was carried out by National Institute of Technology Karnataka (NITK), Surathkal and submitted that the height of internal and external dumps can be up to 120 m. Accordingly, application for permission of dump height up to 120 m was submitted to DGMS along with the study report.</p> <p>DGMS stated that OB dumps shall be formed and maintained as per the provisions laid down in Regulation No.108 of The Coal Mines Regulations, 2017 and no specific permission is required from DGMS.</p>
	The Committee also noted that there are schedule –I species present in the study area. PP shall take the approval of the Wildlife conservation plan. The PP is operating the mine without the said approval.	<p>Wild life conservation plan for schedule-I species was prepared by the forest department and approved by PCCF&amp;CWW for an amount of Rs.388.214 lakhs for a period of 4 years vide Lr. No.779/2007/WL-1,dated 21.09.2020</p>

Earlier Environmental Clearance was granted by Ministry vide Lr. No J-11015/43/2013-1A.II(M), dated 11<sup>th</sup> May, 2015 for a rated capacity of 6.30 MT( 6.8 MT peak) in mine lease area of 2070.10 ha

Mining Plan (II Revision) including Mine Closure Plan for the project (8.82 MTPA (N) / 9.52 MTPA (P) in mine area of 2070.10 ha has been approved by Ministry of Coal vide its letter dated 17<sup>th</sup> June, 2019.

No Forest Land is involved in this project.

Compliance of EC conditions are verified by Regional Office (RO), Chennai vide its Letter dated 23<sup>rd</sup> August, 2019. The compliance of observations has been submitted by Project proponent to RO on 16<sup>th</sup> July, 2019. During the 53<sup>rd</sup> EAC appraisal, PP had submitted the corrective measures taken after non-compliance highlighted by Ministry's Regional Office. EAC further deliberated on non-compliances and asked PP to ensure compliance of conditions.

The non-compliance highlighted by Regional Office shall be completed by project proponent within certain time line. Non-compliances such incomplete construction of embankment along the Jallaram stream/vagu, high efficiency Bag filters have not been provided in crusher area as stipulated, green belt development shall use mix of native species all along the major approach roads for 3-tier green belt development, No restoration and reclamation plan prepared for the degraded area after the grant of EC, R&R has not been implemented, No details for any consultation held with the Panchayats of the local villages and administration to identify socio-economic and welfare measures under CSR. Environment Audit Cell with responsibility and accountability has not been set-up, ETP has not been provided for CHP waste water. The Committee observed that these major non compliances which should have been attended by PP and finally opined that Ministry may take regulatory action or issue show cause separately.

Based on the suggestions of EAC regarding 120m dump height in the internal void and external over burden dumps, the matter was examined to optimize the height of dump for the 20% increased production But it is to submit that the dump height could not be reduced for the following reasons:

- This project was commissioned in the year 1988-89 with a production capacity of 2.75 MTPA and the expansion project started from 2014-15 with enhanced production of 6.80 MTPA. Backfilling of overburden in the internal voids started in the year 1994 and is being continued.
- In the present proposal, due to 20% production enhancement, the coal production and over burden removal during initial 5 years (from 2020-21) will increase from 30 to 38.42 MT and 195 to 285Mm<sup>3</sup> respectively. The excess over burden of 90 Mm<sup>3</sup> can not be completely accommodated in internal dump/back filling area. The excess over burden has to be either accommodated in the additional land or in the existing external & internal dumps by increasing the dump height. Hence, in order to avoid additional land acquisition, it is proposed to increase the height of existing internal as well as external dumps up to 120m by dumping of excess OB in a safe manner.

- Further, in the present proposal, the excavation area has increased from 1113.70 ha to 1229.41 ha within the project area of 2070.10 ha, to facilitate conservation of 21.12 MT of coal within the project area. Due to increase in quarry area to an extent of 115.71 ha., additional quantity of 195.93 Mm<sup>3</sup> of over burden also to be excavated and accommodated either in an additional land or by increasing the dumps height to 120m.
- Also, safe distance needs to be maintained from the toe of the dump to the working face which increases proportionately with the depth of the quarry and height of the dump. This will also restrict the quantity of over burden being accommodated in the internal dump/back filling area.
- The stage plans prepared for 20% production enhancement also indicate that the additional over burden generated due to enhanced rated capacity can only be accommodated in the proposed 120m deck.

4.1.3 *The EAC, after detailed deliberation was satisfied on submission of project proponents and since it was agreed in previous meeting for 20% expansion which is without any increase in area, EAC opined Ministry may take necessary action or issue show cause on non-compliances and further asked PP to comply the conditions within stipulated time period. EAC **recommends** the expansion proposal for grant of Environment Clearance to Ramagundam Opencast-III Expansion-II Coal Mine Project from 6.30 (Peak 6.80) MTPA to 8.16 MTPA (Peak) in mine lease area of 2070.10 ha M/s Singareni Collieries Company Limited located near Jallaram Village Mandal Kamanpur District Peddapalli (Telangana) under the provision of clause 7(ii) of EIA Notification, 2006 and under the provisions of Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions for environmental safeguards:*

- PP shall strengthen the embankments of Jallaram Stream/Vagu with proper flood protection measures including construction of check dams, stone pitching at vulnerable points, safe bund, embankment, etc and that maintenance of the diverted portion of Jallaram nallah within the project area will be taken up by SCCL in consultation with I&CAD Department.*
- Engineered design for diversion of Jallaram Stream/Vagu shall be such that no water shortage shall happen to downstreams users.*
- PP shall plant only native fruit bearing/medicinal value trees, exotic species such as Eucalyptus shall not be planted now.*
- The Environmental Clearances issued vide letter nos vide letter No. J-11015/43/2013-IA.II(M) dated 11/5/2015 dated shall be applicable along with this conditions.*
- The project proponent shall obtain Consent to Establish/Operate from the State Pollution Control Boards for the proposed capacity of 8.16 MTPA prior to commencement*
- Third party monitoring (by NEERI/CIMFR/IIT/NITs) for air quality shall be carried out at identified locations, both ambient and the process area, to arrive at impact of the proposed expansion at regular interval of 3 years.*
- Progressive backfilling of mine and progressive reclamation of OB dump shall be done*
- Mitigating measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient fixed type water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range*

- misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at loading and unloading points, etc.
- (ix) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.
  - (x) Toe wall of atleast 15 mts to 20 mts height should be constructed along the OB dump.
  - (xi) 5 nos. of Fog canon (mist sprayer) shall be installed to reduce the impact of air pollution
  - (xii) Fund allocated in Approved Wildlife conservation plan for schedule I species shall be deposited within six months of issue of EC letter.
  - (xiii) Green belt along the mine boundary should be developed on priority basis preferably within first 3 years
  - (xiv) The recommendation of Scientific Study for stability of slopes, high walls and OB dumps carried out by National Institute of Technology Karnataka (NITK), Surathkal shall be complied
  - (xv) Mining shall be carried out only by surface miners for the project (as proposed) and silo loading till railway siding through in-pit conveyor should be installed to avoid road
  - (xvi) Project proponent to plant 150,000 nos. of native trees with broad leaves along the periphery of habitation/villages to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.
  - (xvii) Project Proponent shall obtain blasting permission from DGMS for conducting mining operation near villages and also explore deployment of rock breakers of suitable capacity in the project to avoid blasting very near to villages. There shall be no damages caused to habitation/structures due to blasting activity.
  - (xviii) The Project Proponent shall complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors. State Government shall ensure that the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department in strict compliance of judgment of Hon'ble Supreme Court dated the 2<sup>nd</sup> August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.
  - (xix) Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table.
  - (xx) 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.
  - (xxi) Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-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".

- (xxii) *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.*
- (xxiii) *The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.*
- (xxiv) *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 MoEFCC.*

## **Agenda No. 4.2**

**Batura Opencast Coal mining Project with production capacity of 2 MTPA in area 942.873 Ha of M/s South Eastern Coalfields located in Village Khanda, Rampur & Beliya, Tahsil-Anuppur & Jaitahari, District Shahdol and Anuppur, (Madhya Pradesh) – For Environmental Clearance – reg.**

**[Proposal No. IA/MP/CMIN/60381/2016; F.No. J-11015/65/2016-IA.II(M)]**

4.2.1 The proposal is for grant of Environmental Clearance to Batura Opencast Coal mining Project with production capacity of 2 MTPA in area 942.873 Ha of M/s South Eastern Coalfields located in Village Khanda, Rampur & Beliya, Tahsil- Anuppur & Jaitahari, District Shahdol and Anuppur, (Madhya Pradesh).

4.2.2 The EAC during deliberations noted the following:

The proposal was earlier considered by the sectoral EAC in its meeting held on 42<sup>nd</sup> EAC meeting held on 24<sup>th</sup> January, 2019, 49<sup>th</sup> meeting held on 22<sup>nd</sup> October, 2019, 52<sup>nd</sup> EAC meeting held on 24<sup>th</sup> January, 2020 and 1<sup>st</sup> meeting held on 16-17 August, 2020 wherein the committee desired for information. EAC noted following details with respect to compliance of above observations

Sr. No.	Observations of EAC	Compliance / Submission of Project Proponent
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1	Project proponent shall submit a clarification from Ministry's FC division about requirement of FC for forestland of 26.40 ha in safety zone.	<ul style="list-style-type: none"> <li>• It is submitted that the Forest land 24.60 Ha is not required for any mining activity hence is to be excluded from the total land quantum i.e. 967.473 Ha. Accordingly, with effective project area for EC remaining as 942.873 Ha.</li> <li>• In the Approved Project Report, it is clearly mentioned that 24.60 Ha forest land is not to be acquired. Accordingly, while acquisition under CBA (A&amp;D) Act 1957 Forest land was notified leaving 24.60 Ha.</li> <li>• This land falls on eastern boundary of the project and is not required for actual working or for Non-Forestry use.</li> </ul>
2	Mine Closure plan should be as per Ministry of Coal latest guidelines of 2019.	<ul style="list-style-type: none"> <li>• The Project Report of Batura 2 MTPA was approved on 09.09.2008. MCP has come into force after notification of 27.08.2009.</li> <li>• CIL board in its 387th meeting held on 22-07-19 approved PR of Rampur Batura Opencast Project (4.0 MTPY). This PR dovetailed all the activities and financial provisions of earlier PR of Batura OC (2 MTY). This PR contains Mine Closure Plan (MCP) for 1829.40 Ha which also includes the total project area of earlier Batura OC (2.0 MTPY).</li> <li>• Approval has been obtained from competent authority for opening of ESCROW account and subsequent depositions as specified in the PR.</li> <li>• MCP based on the recent OM of MoC, GoI dated 29.05.2020 with closure cost of Rs 144.67 crores for 2 MTY has been prepared.</li> </ul>
3.	Project proponent shall submit substantive plan for tree transplantation	<p>The matter of Tree transplantation has been discussed with MP Rajya Van Vikas Nigam, expert agency for plantation in Madhya Pradesh. The agency expressed their inability for Tree transplantation.</p> <p>As the expertise and SOPs on the subject are not well established and are not readily available, we are facing difficulties in preparing a substantive plan.</p>

4.	Project proponent shall provide year wise production and OB removal plan along with details of land reclaimed and restored. The plan shall contain the year-wise details of land disturbed on account of excavation, internal and external dumping, and land reclaimed and restored.	Year-wise production and OB removal plan along with details of land reclamation and restoration, including details of year- wise land distributed on the account of excavation, internal and external dumping, and land reclaimed and restored has been
5.	Drainage map of the area shall be shown in topo sheet and further zero liquid discharge with water balance should be presented	Drainage map of 10 Km Buffer Zone on topo-sheet is enclosed. With regard to zero liquid discharge and water balance a note has been given.

Mines require water for both domestic and industrial uses (i.e. mine operation, workshop, dust suppression, CHP, greenbelt development and fire-fighting). The projected domestic and industrial water demand of Batura OCP was estimated as 135 m<sup>3</sup>/day and 360 m<sup>3</sup>/day respectively

There is no ecologically sensitive areas such as Biosphere reserves, National parks/Wild life sanctuaries/elephant reserves available within 10 km radius of the project. No schedule I species is found in the area for preparation of wildlife conservation plan.

Considering geo-mining parameters of the quarry, Surface Miner has been proposed to work for coal winning.

The total volume of external dumps has been estimated as 5.08 Mcum, which will be placed in safety zone and some additional land of 32 Ha. adjoining to safety zone will be acquired for that. It is estimated that upto 5th year OB will be placed in external as well as internal dump. From 6th year onwards all the OB will be accommodated in internal dumps only. OB dumps will be properly benched and the maximum height of the bench will be kept not more than 30m.

Installation of conveyor of Inpit will start from 2nd year onwards. v. In initial period of Inpit conveyors will be laid along the haul road directly from the surface after getting the proper gradient. OB external in safety zone of 30 mtr height. Inpit conveyor will be connected with the main CHP

A rail line will be drawn up to Batura Open Cast project from Anuppur junction which is about 20 km. This will be extended upto a suitable location near the project for loading of coal through a coal handling plant.

The baseline data for ambient air, water, noise level and soil was generated for the period April 2019 to June 2019.

Drinking Water Sample from Rampur Village, Khanda Village, Papariya Village and Harridih Village and Surface Water Sample from Katna Nala Upstream and Downstream during the

monitoring period. After the analysis it was found that all the above tested parameters are within tolerance limits of Indian standard 2296-1982 except BOD at Katna Nala.

Detailed hydrogeological investigations were carried out by CGWB & CMPDI in Jamuna coalfield under S&T project: "Studies on Groundwater Flow into Coal Mines".

Socio economic study including demographic, economic, workforce, basic civic amenities within 10 km radius from the project periphery & project area is based on 2011 census data

The Air Quality Impact Prediction (AQIP) for mining operation during peak production from Batura OC has been carried out by FDM software (Model version 90121). The reasons for selection of FDM. AAQ modelling based on FDM, USEPA has been used for assessment of impact on ambient air quality at 9 control locations termed as air quality monitoring stations.

Garland drains will be made around the periphery of the quarry. These drains will be connected to the local nalla (Katna) which is not likely to be disturbed by mining operation Garland drains will be constructed on all side of quarries and external dumps. All the garland drains should be routed through adequately sized catch pits or settling pits to remove suspended solids from flowing into storm water.

Domestic effluent from the colony will be treated in a conventional septic tank and soak pit arrangement. –

The villages i.e. Rampur, Belia, Tagratola, Khanra and Gidhatola, are falling within this radius of influence zone and the water levels in this village will be lowered marginally. Project authorities shall implement adequate amelioration measures to restore/improve the water availability to these affected villages. The zone of influence in the Batura OCP may extend to about 272.59 m or 609.54 m from the mine edge

Controlled blasting techniques will be implemented near the built up structure in the vicinity of active face.

The number of project affected persons has been estimated to 1870 and the number of land oustees 825 from three villages namely Belia, Khada and Rampur falling within the quarry area. The PAF's and PAP's will be rehabilitated and paid economic compensation / employment as per State Govt. R&R package of M.P / Coal India R&R Policy.

The surface runoff from external OB dumps will be guided through sedimentation ponds and garland drains to Katna Nalla.

Public Hearing was conducted at Anuppur- near Gram Panchayat Bhavan, village Khanda on 24<sup>th</sup> July, 2018, under the chairmanship of Additional Collector, (ADM), Shahdol and Anuppur and in village Rampur of Shahdol District on 29<sup>th</sup> October, 2018. Major issues raised during Public Hearing were compensation for land, employment, issue of Rehabilitation and resettlement, environment of adjoining villages will be affected, effect on water levels & land losers effect

The EAC, constituted under the provision of the EIA Notification, 2006 and comprising of Experts Members/domain experts in various fields, have examined the proposal submitted in desired form along with report prepared and submitted by consultant accredited by the QCI/NABET on behalf of the project proponent.

The EAC noted that the Project Proponent has given undertaking that the data and information given in the application and enclosures are true to the best of his/her knowledge and belief and no information has been suppressed in the report. If any part of data/information submitted is found to be false/misleading at any stage, the project proposal will be rejected and the Environmental Clearance, if granted, will be revoked at the risk and cost of the project proponent. The EAC has deliberated the proposal and has made due diligence in the process as notified under the provisions of the EIA Notification, 2006, as amended from time to time and accordingly made the recommendations for the grant of Environmental Clearance (EC) with conditions.

*4.2.4 The EAC, after deliberations found responses given by PP are satisfactory and reduced the project area by excluding forest land of 24.60 ha EAC **recommends** the proposal for grant of Environment Clearance to Batura Opencast Coal mining Project with production capacity of 2 MTPA in area 942.873 Ha of M/s South Eastern Coalfields located in Village Khanda, Rampur & Beliya, Tahsil- Anuppur & Jaitahari, District Shahdol and Anuppur, (Madhya Pradesh), under the provisions of Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto subject to the compliance of the following terms & conditions / specific conditions for environmental safeguards:-*

- (i) The project proponent shall obtain Consent to Establish/Operate from the State Pollution Control Boards for the proposed capacity of 2.0 MTPA prior to commencement.*
- (ii) Third party monitoring (by NEERI/CIMFR/IIT/NITs) for air quality shall be carried out at identified locations, both ambient and the process area, to arrive at impact of the proposed expansion at regular interval of 3 years.*
- (iii) Top soil should be stored separately at marked area and necessary vegetation shall be maintained to avoid any entrainment of dust.*
- (iv) PP should implement Metaled wire fencing along the excluded forest area (24.60 ha) with mine boundary before commencement of mining activity.*
- (v) Transportation of coal from Coal Handling Plant shall be through mechanized covered trucks for 3 years. Conveyor system till railway siding shall be implemented within 3 years.*
- (vi) All the villages i.e. Rampur, Belia, Tagratola, Khanra and Gidhatola, are falling within this radius of influence zone as in hydrology study shall be provided with suitable domestic water supply alongwith sanitation facility*
- (vii) Commitment made during public consultation process shall be adhere to. As proposed, Rs. 3.053 Crore is earmarked for CER activities shall be considered as part of Environment Management Plan, which shall be accomplished within period of 5 years.*
- (viii) Water quality and Bioassay test of Son River shall be monitored quarterly and submitted to State Pollution Control Board. No water shall be discharged in river without treatment.*
- (ix) Permission of diversion of Katna stream should be taken from State Water Resources Department. Diversion should be based on engineered design and stonepitching shall be done all along diverted katna stream with tree plantation.*
- (x) Garland drain along quarry and OB dump shall be stone pitched and desilting shall be done*

*before every monsoon season*

- (xi) Quarterly monitoring of quality of water from bore hole used for drinking purpose shall be conducted and report thereof shall be submitted to SPCB*
- (xii) Progressive backfilling of mine and progressive reclamation of OB dump shall be done*
- (xiii) To control the production of dust at source, the crusher and in-pit belt conveyors shall be provided with mist type sprinklers*
- (xiv) Mitigating measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient fixed type water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at loading and unloading points, etc.*
- (xv) Continuous monitoring of occupational safety and other health hazards, and the corrective actions need to be ensured.*
- (xvi) The total industrial water demand (peak) in operation phase shall be met by utilizing treated mine discharge water. If require, necessary arrangement shall be made to reuse treated water from STP & ETP to nearby TPP or coal washery /or future coal washery by entering suitable agreement.*
- (xvii) STP for proposed colony (domestic effluent-135 m<sup>3</sup>/day) shall be constructed within one year of implementation of colony*
- (xviii) Toe wall of atleast 10 mts height should be constructed along the OB dump.*
- (xix) 5 Fog canon shall be installed to reduce the impact of air pollution on haul road, OB dump and mining areas*
- (xx) Water storage ponds shall be constructed of appropriate depth in nearby village (Rampur, Belia, Tagratola, Khanra, Gidhatola and other nearby villages) in collaboration with Gram Panchayats within 3 years.*
- (xxi) Peripheral tree plantation of local fruit bearing species in nearby village (Rampur, Belia, Tagratola, Khanra, Gidhatola and other nearby villages) in collaboration with Gram Panchayats.*
- (xxii) Green belt along the mine boundary should be developed on priority basis preferably within first 3 years*
- (xxiii) 3- tier tree plantation with wired fencing shall be done by project proponent for clearly demarcating adjacent forest land.*
- (xxiv) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.*
- (xxv) Mining shall be carried out only by surface miners for the project (as proposed) and silo loading till railway siding through in-pit conveyor should be installed to avoid road transportation in 3 years.*
- (xxvi) Active OB Dump should not be kept barren/open and should be covered by temporary grass to avoid air born of particles*
- (xxvii) Project proponent to plant 150,000 nos. of native trees with broad leaves along the transportation route in three years to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.*
- (xxviii) Project Proponent shall obtain blasting permission from DGMS for conducting mining operation near villages and also explore deployment of rock breakers of suitable capacity in the project to avoid blasting very near to villages. There shall be no damages caused to*

*habitation/structures due to blasting activity.*

- (xxix) The Project Proponent shall comply with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors. State Government shall ensure that the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department in strict compliance of judgment of Hon'ble Supreme Court dated the 2<sup>nd</sup> August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.*
- (xxx) Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table.*
- (xxxi) 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.*
- (xxxii) Project Proponent shall follow the mitigation measures provided in Office Memorandum No. Z-11013/57/2014-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".*
- (xxxiii) 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.*
- (xxxiv) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna, if any, spotted in the study area. Action plan for conservation of flora and fauna shall be implemented in consultation with the State Forest and Wildlife Department. A copy of action plan shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.*
- (xxxv) 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 MoEFCC.*

### **Agenda No.4.3**

#### **Pichri Opencast Mining of 1.20/1.50 MTPA (Normative/Peak) in a project Area of 151.47 ha of M/s Central Coalfields Limited Village Pichri, District Bokaro (Jharkhand) – Terms of Reference- reg.**

**[Proposal No. IA/JH/CMIN/188264/2020; IA-J-11015/02/2020-IA-II(M)]**

4.3.1 The proposal is for Pichri Opencast Mining of 1.20/1.50 MTPA (Normative/Peak) in a project Area of 151.47 ha of M/s Central Coalfields Limited Village Pichri, District Bokaro (Jharkhand).

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

- (i) Pichri Opencast Project lies in the East Bokaro Coalfields in Bokaro District of Jharkhand, administratively falls within Dhori area of Central Coalfields limited, Jharkhand.
- (ii) The project area is covered under Survey of India Topo Sheet No: 73 E/1 and is bounded by the geographical coordinates ranging from 23° 45' 0.65'' to 23° 45' 52.42''N and longitudes of 86° 00' 52.5'' & 86° 02' 5.90'' E.
- (iii) This project obtained Environment Clearance for capacity (1.20/1.50 MTPA & 151.47 Ha) vide no. J-11015/02/2015-IA.IIM dated 13.10.2015.
- (iv) The coal produced from the proposed opencast mine will be sent to existing Dhori Railway Siding through truck transport. The approximate distance of Dhori siding from the proposed project may be around 3.0km.
- (v) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC vide its OM dated 13th January 2010 has imposed moratorium on grant of environment clearance.
- (vi) Employment generation: The project has given a boost to the economy of the area by providing primary and secondary employment to local people. It will provide employment to about 600 persons (Both direct and indirect employment).
- (vii) The project is reported to be beneficial in terms of improvements in Physical Infrastructure; Improvements in Social Infrastructure; Increase in Employment Potential; Contribution to the Exchequer; Meet energy and steel sector requirement; Productive utilization of existing manpower of project.
- (viii) Project Report of Pichri OCP approved by CCL Board on 27.11.2010 & the revised Mining Plan of Pichri OCP was approved by CCL Board on 21.12.2014.
- (ix) The land usage pattern of the project is as follows:

Pre-mining land use details:

<b>Particulars</b>	<b>Area (Ha)</b>
Agriculture	100.63
Scrub	14.16
Waste Land	12.15

Land	Grazing	0.00	use
	Surface Water Bodies	12.76	
	Others (Settlement)	11.77	
	Total	151.47	

during mining-

SN	Particulars	Land Requirement (Ha)		
		Forest	Non Forest	Total
1	Quarry	0	14.97	14.97
2	Ext. OB dump	0	15.89	15.89
3	Infrastructure	0	6.00	6.00
4	Embankment	0	1.73	1.73
5	Green Belt	0	23.35	23.35
6	Colony	0	6.00	6.00
7	Safety zone	0	5.35	5.35
8	Vacant land/ Land for Future Use	0	78.18	78.17
	<b>Total Area</b>	<b>0</b>	<b>151.47</b>	<b>151.47</b>

- (x) Total net geological reserve within the proposed project area is 55.28MTe. The mineable reserve is 1.50 MT, extractable reserve is 1.50MT. The per cent of extraction would be 100 %.
- (xi) Area of Excavation is 14.97 ha, mineable reserves are 1.50 MT and peak capacity is 1.50 MT.
- (xii) 02 seams (Kargali & Bermo seam) with thickness ranging from 7-10 m are workable. Grade of coal is W-IV, while gradient is 15-20deg.
- (xiii) The method of mining would be opencast method of mining with shovel-dumper combination.
- (xiv) The balance life of mine is 3 years.
- (xv) One external dump of 15.89 ha with OB quantity of 2.46 Mcum will be created.
- (xvi) Transportation of coal: In pit : By Dumpers; Surface to siding: By trucks about 3.0 KM from project; Siding to loading : By Pay loader
- (xvii) No forest land is involved
- (xviii) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones have been reported with 10 km boundary of the project.
- (xix) The ground water level has been reported to be varying between 1.75 m to 9.95 m during pre-monsoon and between 1.06 m to 7.80 m during post-monsoon.
- (xx) Application for obtaining the approval of the Central Ground Water Authority Applied vide 21-4/419/JH/MIN/2019 dated 31.03.2019
- (xxi) The drainage of the area is mainly controlled by the Damodar River. The northern boundary of the project is bounded by Damodar River.
- (xxii) Regular monitoring of ambient air quality of buffer zone of proposed project is being carried out on fortnightly basis. In general, the results of ambient air quality monitoring data were



found within prescribed limits except few aberrations, which can be attributed to the specific local conditions during the day of sampling.

- (xxiii) Court Case- NGT order dated 23.09.2020 vide original application No. 164/2019. Reply has been submitted to JSPCB by CCL.
- (xxiv) 200 PAFs are to be rehabilitated.
- (xxv) Total cost of the project is Rs. 228.90 crore. Environment Management Cost is Approximately Rs. 4001.16lakhs.

#### 4.3.3 The EAC during deliberations noted the following:

The proposal is for Pichri Opencast Mining of 1.20/1.50 MTPA (Normative/Peak) in a project Area of 151.47 ha of M/s Central Coalfields Limited Village Pichri, District Bokaro (Jharkhand).

Earlier Environment Clearance was granted by Ministry for capacity (1.20/1.50 MTPA & 151.47 Ha) vide no. J-11015/02/2015-IA.IIM dated 13.10.2015 wherein the life of mine was 3 years. Since the validity of EC has expired, PP has applied for fresh ToR. Due to non-authentication of tenancy land of Pichri OCP, its possession could not be obtained; as such mining operations could not start

PP submitted that no production has been done after grant of EC and there is no violation of EIA Notifications.

Damodar River is adjacent to the mine boundary.

Location of OB dump proposed near Damodar River should be shifted and accordingly Mining Plan should be revised.

No Forest land is involved in the project area for non-forestry activity.

**4.3.2** *The EAC, after detailed deliberation **recommends** the proposal for grant of Terms of Reference to Pichri Opencast Mining of 1.20/1.50 MTPA (Normative/Peak) in a project Area of 151.47 ha of M/s Central Coalfields Limited Village Pichri, District Bokaro (Jharkhand) with specific conditions as below and as defined in the Standard ToR under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto.*

- (i) *PP shall abide by the Judgment of Hon'ble NGT, New Delhi for O.A. No. 164/2019 on 15.04.2019 regarding old overburden dumping on the riverbed.*
- (ii) *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.*
- (iii) *Cumulative Impact Assessment Study of the area shall be carried over by project proponent*
- (iv) *Clarification from District Forest Officer that mine does not fall under corridors of any National Park and Wildlife Sanctuary.*

- (v) *PP shall prepare Mine Plan including Mine Closure Plan for Peak production capacity as per latest guidelines of Ministry of Coal and location of OB dump shall be shifted away from river Damodar.*
- (vi) *PP shall submit an Affidavit stating that no Production has been done after grant of EC and there is no violation of EIA Notifications.*
- (vii) *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 programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government.*
- (viii) *Description of water conservation measures proposed to be adopted in the Project should be given.*
- (ix) *PP shall conduct mining activity leaving 100 mtrs away from HFL of river and the same shall be taken prior approval from DGMS based on scientific study by reputed institutes Proper drainage system shall be prepared to avoid seepage of mining water to water bodies and seepage to ground water.*
- (x) *No OB dumping shall be undertaken in the forest land, near the river and villages.*
- (xi) *Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ 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*
- (xii) *Inpit conveyor belt with silo loading should be proposed and installed for transportation of coal till railway siding.*
- (xiii) *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*
- (xiv) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (xv) *Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA), if applicable.*
- (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.*
- (xviii) *The parameters Arsenic, Lead and Silica shall also be analyzed in ambient air quality*
- (xix) *PP shall provide an integrated mine production and mine reclamation plan of which the systematic and post mining land form management / land scape management of mining area, internal, and external dump area will be integral. Both internal and external dumps shall be regraded and reshaped to reduce its height as close to the original surface level as possible for better land use post mining activities.*
- (xx) *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.*

#### **Agenda No.4.4**

**Tirap Opencast Coal Mine Project of capacity 0.6/0.75 MTPA (Normative/Peak) in mine project area of 586.91 ha of M/s North Eastern Coalfields located in Tehsil Margherita, District Tinsukia (Assam) – Reconsideration of Terms of Reference – reg.**

**[Online Proposal No. IA/AS/CMIN/81278/2018; J-11015/134/2018-IA-II (M)]**

4.4.1 The proposal is for Terms of Reference for Tirap Opencast Coal Mine Project of capacity 0.75 MTPA of M/s North Eastern Coalfields in mine project area of 586.91 ha located in Tehsil Margherita, District Tinsukia (Assam).

4.4.2 The EAC during deliberations noted the following:

The instant proposal was recommended by EAC in its meeting held on 3-4 October, 2019. However, during processing of files, violation of EIA notification was found with respect to over production from the base year of 1993-94 which is 0.59 MTPA. There is also no previous Environment Clearance for this project.

The proposal was again deliberated by EAC in its 55<sup>th</sup> meeting held on 29<sup>th</sup> May, 2020 wherein EAC observed that as the production capacity submitted in the presentation (physically in file) shows overproduction from the base year of 1993-94, it can be considered as violation of EIA Notification, 2006 and therefore earlier recommendation of EAC may be changed accordingly and set aside. Ministry may consider the proposal as per violation procedures.

While processing the file in the Ministry, it has been decided that such violation cases shall be assessed by sectoral EAC now. Accordingly, proposal is being considered on violation perspective.

PP has submitted that earlier it was informed that Forest land involved in the project area is 289 ha however recently there has been survey by forest department and quantum of forest land will be decided only after the completion of the survey by state forest, Digboi Division. Earlier application for forest clearance has to be revised and resubmitted accordingly.

Public Road at a distance of 50 m

Cantonment area for army and paramilitary is located by the side of national highway No 38 which is about 3.5 km away from the quarry.

Upon raising the queries, EAC noted that consultant of this project M/s CMPDI was not prepared fully with the details of project and environmental implications involved to proceed with proposed ambient air quality monitoring and installation of stations based on windrose and monitoring of other environmental parameters were not presented during the meeting. It is understood that consultants have not seen monitoring site or project site. Committee expressed displeasure on weak information on the project.

**4.4.3** *The EAC after deliberation observed that since the mine is not operational and if coal seams are open then fire incident is likely to happen. EAC desired that PP shall install fire hydrant*

system as early as possible. EAC **recommends** the proposal for grant of Terms of Reference to Tirap Opencast Coal Mine Project of capacity 0.6/0.75 MTPA (Normative/Peak) in mine project area of 586.91 ha of M/s North Eastern Coalfields located in Tehsil Margherita, District Tinsukia (Assam), with specific conditions as below and as defined in the Standard ToR under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto.

- (i) Public Consultation, including public hearing, shall be conducted through concerned SPCB as per the provisions/procedure contained in the EIA Notification, 2006 for information of the stakeholders about the present coal mining operations inviting comments and their redressal.
- (ii) Site Visit of EAC subcommittee shall be conducted to assess the environmental damage and violation.
- (iii) PP shall assess the damage assessment of environment against the excess production against the quantities for not taking EC.
- (iv) Cumulative Impact Assessment Study of the area shall be carried over by project proponent
- (v) PP shall submit Stage-I FC of forest land involved in project (presently 289 ha) for non-forestry activity.
- (vi) Clarification 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.
- (vii) PP shall submit Audited production figures from Geology department or certificate from Coal Controller for production capacity since 1993-94.
- (viii) Permission from carrying out mining activity from Defense installation which is sensitive areas (Defense Cantonment)
- (ix) PP shall prepare Mine Plan including Mine Closure Plan for Peak production capacity as per latest guidelines of Ministry of Coal.
- (x) PP shall submit previous coal firing incident and fire safety measures.
- (xi) PP shall conduct mining activity leaving 100 mtrs away from HFL of river and the same shall be taken prior approval from DGMS based on scientific study by reputed institutes. Proper drainage system shall be prepared to avoid seepage of mining water to water bodies and seepage to ground water.
- (xii) No OB dumping shall be undertaken in the forest land, near the river and villages.
- (xiii) Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ 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
- (xiv) Inpit conveyor belt with silo loading should be proposed and installed for transportation of coal till railway siding.
- (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) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (xvii) *Permission for ground water withdrawal shall be obtained from Central Ground Water Authority (CGWA).*
- (xviii) *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*
- (xix) *Heavy metals including other parameters in surface water quality (also of Tirap river) shall be analyzed and provided in EIA Report.*
- (xx) *The parameters Arsenic, Lead and Silica shall also be analyzed in ambient air quality*
- (xxi) *PP shall provide an integrated mine production and mine reclamation plan of which the systematic and post mining land form management / land scape management of mining area, internal, and external dump area will be integral. Both internal and external dumps shall be regraded and reshaped to reduce its height as close to the original surface level as possible for better land use post mining activities.*
- (xxii) *PP shall provide the details of mining technology/methodology proposed to be adopted for coal mining operations and its associated environmental benefits of using from Climate Change perspective.*
- (xxiii) *The State Government/SPCB to take action against the project proponent under the provisions of section 19 of the Environment (Protection) Act, 1986, and further no consent to operate for project to be issued till the project is granted EC.*
- (xxiv) *The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of EC. The quantum shall be recommended by the EAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the EAC and approval of the regulatory authority.*
- (xxv) *Assessment of ecological damage with respect to air, water, land and other environmental attributes. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment.*
- (xxvi) *Preparation of EMP comprising remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation.*
- (xxvii) *The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter (13) in the EIA report by the accredited consultants.*
- (xxviii) *Details of Plantation already done/proposed to take up as per statutory requirement along with photographs and Budgetary provisions (year wise) to be provided.*

- (xxix) *In case of violation of undertaking by way of affidavit to comply with all the statutory requirements and judgment of Hon'ble Supreme Court dated, the ToR/Environmental Clearance shall be liable to be terminated forthwith.*
- (xxx) *Budget of remediation plan and natural and community resource augmentation plan corresponding to the ecological damage shall be completed within three years and to prepare accordingly.*
- (xxxi) *The Action Plan on the compliance of the recommendations of the CAG as per Ministry's Circular No. J-11013/71/2016-IA.I (M), dated 25.10.2017 needs to be submitted at the time of appraisal of the project and included in the EIA/EMP Report.*
- (xxxii) *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 programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government.*
- (xxxiii) *Description of water conservation measures proposed to be adopted in the Project should be given.*
- (xxxiv) *Details of toe wall and garland drain to be constructed along the OB dump.*
- (xxxv) *Reclamation to be done using geo-texturing technique of the dumps close to habitation and a cause of visual intrusion.*
- (xxxvi) *Details of Water spraying (static water sprinklers) at coal stock yard and along the permanent haul road.*
- (xxxvii) *Details of black topping of permanent haul roads.*
- (xxxviii) *Minimum 100 m distance to be maintained from dumps to habitation and three tier green belt to be developed.*

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

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

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

**(a) Statutory compliance**

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

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

- (i) Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
- (ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25<sup>th</sup> September, 2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- (iii) Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM<sub>10</sub>/PM<sub>2.5</sub>) 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 air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
- (vii) Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

**(c) Water quality monitoring and preservation**

- (i) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25<sup>th</sup> September, 2000 and as amended from time to time by the Central Pollution Control Board.
- (ii) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-IA.11 (M) dated 27<sup>th</sup> May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
- (iii) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
- (iv) Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
- (v) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- (vi) Catch and/or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow



proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.

- (vii) Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).
- (viii) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP /STP needs to be provided.
- (ix) The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- (x) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.
- (xi) The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

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

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

**(e) Mining Plan**

- (i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.

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

**(f) Land reclamation**

- (i) Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- (ii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27<sup>th</sup> August, 2009 and subsequent amendments.
- (iii) The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the “during mining”/”post mining” land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.
- (iv) Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- (v) Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.
- (vi) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

**(g) Green Belt**

- (i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
- (ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.

**(h) Public hearing and Human health issues**

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

**(i) Corporate Environment Responsibility**

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

- (iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- (v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
- (j) Miscellaneous**
- (i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- (ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- (iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- (iv) The project proponent shall monitor the criteria pollutants level namely; PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- (v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- (vi) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29<sup>th</sup> October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.
- (vii) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- (viii) The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- (ix) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- (x) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- (xi) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.

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

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

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

**I. Statutory compliance:**

- (i) The Environmental clearance shall be subject to orders of Hon'ble Supreme Court of India, Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project
- (ii) The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- (iii) The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- (iv) The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (incase 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 addressed in accordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules, 2016

**II. Air quality monitoring and preservation**

- i. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO<sub>2</sub> and NO<sub>x</sub>. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc. to be carried out at least once in six months. Online ambient air quality monitoring station/stations may also be installed in addition to the regular air monitoring stations as per the requirement and/or in consultation with the SPCB
- ii. The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- iii. Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water sprinkling/rain gun/mist sprinkling etc., shall be carried out in critical areas prone to air pollution with higher

level of particulate matter all through the coal transport roads, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.

- iv. Major approach roads shall be black topped and properly maintained.
- v. The transportation of coal shall be carried out as per the provisions and route proposed in the approved mining plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed that the impact of sound, dust and accidents could be appropriately mitigated.
- vi. Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
- vii. Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne 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 purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- ix. Industrial waste water from coal handling plant and mine water shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made thereunder, and as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluent. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste water.
- x. Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
- xi. The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations shall be prepared, considering the presence of any river/rivulet/pond/lake etc., with impact of mining activities on it, and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the provisions of the approved Mining Plan/ EIA-EMP submitted to this Ministry and the same should be done with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved mining plan and as per the permission of DGMS.
- xii. The project proponent shall take all precautionary measures to ensure reverian/ riparian ecosystem in and around the coal mine upto a distance of 5 km. A revarian /riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

#### **IV. Noise and Vibration monitoring and prevention**

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

#### **V. Mining Plan**

- i. Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.



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

#### **VI. Land reclamation**

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

## **VII. Green Belt**

- i. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted/reported in the study area. Action plan, in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
- ii. Greenbelt, consisting of three-tier plantation, of width not less than 7.5 m, shall be developed all along the mine lease area in a phased manner. The green belt comprising of a mix of native species shall be developed all along the major approach roads/ coal transportation roads.

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

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

## **IX. Corporate Environment Responsibility**

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

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

**X. Miscellaneous**

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vi. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xi. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

- xii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- xiv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

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**Standard EC Conditions for Coal Washery Project**

**I. Statutory compliance:**

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

**II. Air quality monitoring and preservation**

- i. Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO<sub>2</sub> and NO<sub>x</sub>. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc. carried out at least once in six months.
- ii. Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub>. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.
- iii. Transportation of coal by road shall be carried out by covered trucks/conveyors. The transportation of clean coal and rejects shall be by rail with wagon loading through silo. Effective measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulates such as roads, belt conveyors,

loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled at source. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board

- iv. All approach roads shall be black topped and internal roads shall be concreted. The roads shall be regularly cleaned. Coal transportation shall be carried out by covered trucks.
- v. Covered trucks shall be engaged for mineral transportation outside the washery upto the railway siding, shall be optimally loaded to avoid spillage en-route. Trucks shall be adequately maintained and emissions shall be below notified limits.
- vi. Facilities for parking of trucks carrying raw material from linked mine shall be created within the unit.
- vii. Vehicular emissions shall be kept under control and regularly monitored. The vehicles having 'PUC' certificate from authorized pollution testing centres shall be deployed for washery operations.
- viii. Hoppers of the coal crushing unit and other washery units shall be fitted with high efficiency bag filters/mist spray water sprinkling system shall be installed and operated effectively at all times of operation to check fugitive emissions from crushing operations, transfer points of closed belt conveyor systems and from transportation roads.
- ix. The raw coal, washed coal and coal wastes (rejects) shall be stacked properly at earmarked site (s) within stockyards fitted with wind breakers/shields. Adequate measures shall be taken to ensure that the stored mineral does not catch fire.
- x. The temporary reject sites should appropriate planned and designed to avoid air and water pollution from such sites.

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

- i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.
- ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-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 river front side stabilised with plantation so as to withstand the peak water pressure preventing any chance of inundation.
- v. Heavy metal content in raw coal and washed coal shall be analysed once in a year and records maintained thereof.
- vi. The rejects should preferably be utilized in FBC power plant or disposed off through sale for its gainful utilization. If the coal washery rejects are to be disposed off, it should be done in a safe and sustainable manner with adequate compaction and post closure

arrangement to avoid water pollution due to leachate from rejects and surface run off from reject dumping sites.

- vii. An Integrated Surface Water Management Plan for the washery area up to its buffer zone considering the presence of any river/rivulet/pond/lake etc. with impact of coal washing activities on it, shall be prepared, submitted to MoEFCC and implemented.
- viii. Waste Water shall be effectively treated and recycled completely either for washery operations or maintenance of green belt around the plant.
- ix. Rainwater harvesting in the washery premises shall be implemented for conservation and augmentation of ground water resources in consultation with Central Ground Water Board.
- x. No ground water shall be used for coal washing unless otherwise permitted in writing by competent authority (CGWA) or MoEFCC. The make-up water requirement of washery should not exceed 1.5 m<sup>3</sup>/tonne of raw coal.
- xi. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
- xii. Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
- xiii. The project proponent shall take all precautionary measures to ensure riverine/ riparian ecosystem in and around the coal mine up to a distance of 5 km. A riverine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government

#### **IV. Noise and Vibration monitoring and prevention**

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

#### **V. Coal beneficiation**

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

#### **VI. Green Belt**

- i. Three tier greenbelt comprising of a mix of native species, of minimum 30 m width shall be developed all along the washery area to check fugitive dust emissions and to render aesthetic to neighbouring stakeholders. A 3-tier green belt comprising of a mix of native species or tree species with thick leaves shall be developed along vacant areas, storage yards, loading/transfer points and also along internal roads/main approach roads.

- ii. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

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

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

## **VIII. Corporate Environment Responsibility**

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



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

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

## **IX. Miscellaneous**

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall monitor the criteria pollutants level namely; PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- vi. The project proponent shall 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
- xi. 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.
- xii. 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 a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

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**Generic ToR for coal washery**

- i. Siting of washery is critical considering to its environmental impacts. Preference should be given to the site located at pit head; in case such a site is not available, the site should be as close to the pit head as possible and coal should be transported from mine to the washery 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 alongwith a layout, the specific technology used and the source of coal should be provided.
- vi. The EIA-EMP Repot 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. alongwith 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 (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub> and NO<sub>x</sub>, 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 transport by train as far as possible. Road transport of washed coal and rejects should generally be avoided. In case, the TPP is within 10km radius, it should be through conveyer belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road be examined in detail and its impacts along with the mitigation

measures should be clearly brought out in EIA/EMP report.

- xii. Details of various facilities proposed to be provided in terms of parking, rest areas, canteen etc. to the personnel involved in mineral transportation, workshop and effluents/pollution load from these activities should be provided.
- xiii. Impacts of CHP, if any, on air and water quality should also be spelt out alongwith Action Plan.
- xiv. O.M.no.J-11013/25/2014-IA.I dated 11<sup>th</sup> August, 2014 to be followed with regard to CSR activities.
- xv. Details of Public Hearing, Notice(s) issued in newspapers, proceedings/minutes of Public Hearing, points raised by the general public and response/commitments made by the proponent along with the Action Plan and budgetary provisions be submitted in tabular form. If the Public Hearing is in the regional language, an authenticated English translation of the same should be provided. Status of any litigations/ court cases filed/pending, if any, against the project should be mentioned in EIA.
- xvi. Analysis of samples indicating the following be submitted:
  - Characteristics of coal prior to washing (this includes grade of coal, other characteristics of ash, S and heavy levels of metals such as Hg, As, Pb, Cr etc).
  - Characteristics and quantum of coal after washing.
  - Characteristics and quantum of coal rejects.
- xvii. Details of management/disposal/use of coal rejects should be provided. The rejects should be used in TPP located close to the washery as far as possible. If TPP is within a reasonable distance (10 km), transportation should be by conveyor belt. If it is far away, the transportation should be by rail as far as possible.
- xviii. Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC is being sought should be submitted.
- xix. Corporate Environment Responsibility:
  - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
  - b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
  - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
  - d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
- xx. A detailed action Plan for Corporate Social Responsibility for the project affected people and people living in and around the project area should be provided.
- xxi. Permission of drawl of water shall be pre-requisite for consideration of EC.
- xxii. Wastewater /effluent should conform to the effluent standards as prescribed under Environment (Protection) Act, 1986
- xxiii. Details of washed coal, middling and rejects along with the MoU with the end-users should be submitted.

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## **ANNEXURE-V**

### **GENERIC TOR FOR AN OPENCAST COALMINE PROJECT for EC**

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

ML/project area, the proposed route of diversion and its realignment should be shown in the map along with the status of the approval of the competent authority.

- (xi) Break up of lease/project area as per different land uses and their stage of acquisition should be provided.

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

Sl. No.	Landuse	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 (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, NO<sub>x</sub> and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (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 maximising 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 Landuse and Reclamation Area (ha)

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

\* As a representative example

Table 2 : Stage Wise Cumulative Plantation

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



\* As a representative example

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

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

S.N.	Land use during Mining	Land Use (ha)				
		Plantation	Water Body	Public Use	Undisturbed	TOTAL
1.	External OB Dump					
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
5.	Built up area					
6.	Green Belt					
7.	Undisturbed Area					
	TOTAL					

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

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

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

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

**GENERIC TORs FOR AN UNDERGROUND COALMINE PROJECT**

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

S.N	ML/Project Land use	Area under Surface Rights(ha)	Area Under Mining Rights (ha)	Area under Both (ha)

1.	Agricultural land			
2.	Forest Land			
3.	Grazing Land			
4.	Settlements			
5.	Others (specify)			

#### Area under Surface Rights

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

- (viii) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (ix) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (x) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xi) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xii) One-season (other than monsoon) primary baseline data on environmental quality - air (PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>x</sub>, NO<sub>x</sub> and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xiii) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in

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

- (xiv) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xv) Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
- (xvi) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
- (xvii) Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
- (xviii) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xix) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xx) Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
- (xxi) The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
- (xxii) Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
- (xxiii) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
- (xxiv) Greenbelt development should be undertaken particularly around the transport route and CHP. Baseline data on the health of the population in the impact zone and measures for

occupational health and safety of the personnel and manpower for the mine should be submitted.

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

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

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

		If more than one provide details of each FC			
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**GENERIC TORs FOR AN OPENCAST-CUM-UNDERGROUND COALMINE 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 an ML/project area of ..... ha for OC and .... MTPA for UG in an ML/project area of ..... ha based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for..... MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) The ToRs prescribed for both opencast and underground mining are applicable for opencast – cum-underground mining.

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1/4/2021

Email

**Email**

**Munna Kumar Shah**

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**Fwd: Re: Draft MoM of 5th EAC meeting held on 23rd December, 2020**

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**From :** Munna Kumar Shah <munna.shah@gov.in> Sun, Jan 03, 2021 10:02 PM  
**Subject :** Fwd: Re: Draft MoM of 5th EAC meeting held on 23rd December, 2020  
**To :** lk.bokolia <lk.bokolia@nic.in>

----- Forwarded Message -----

From: shuklanp55@gmail.com  
To: Munna Kumar Shah <munna.shah@gov.in>  
Sent: Sun, 03 Jan 2021 21:07:02 +0530 (IST)  
Subject: Re: Draft MoM of 5th EAC meeting held on 23rd December, 2020

Dear Munna ji  
Please refer to our telephonic discussion,  
I have gone through draft MoM and found  
contents appropriate hence approved as proposed.  
Regards  
S. N. D. S. L. J.

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**LIST OF PARTICIPANTS OF EAC (COAL) IN 5<sup>th</sup> MEETING OF HELD DURING 23<sup>rd</sup> DECEMBER, 2020 THROUGH VIDEO CONFERENCING**

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