

**MINUTES OF 6<sup>th</sup> MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR ENVIRONMENTAL APPRAISAL OF COAL MINING PROJECTS HELD ON 13<sup>th</sup> JANUARY, 2021.**

**Wednesday, 13<sup>th</sup> January, 2021**

**Confirmation of the Minutes of 5<sup>th</sup> Meeting of the EAC (Coal) held on 23<sup>rd</sup> December, 2020:** No comment was made from members of the committee on the minutes of the 5<sup>th</sup> meeting of the EAC held during 23<sup>rd</sup> December, 2020, therefore the Minutes of the Meeting (MoM) of 5<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 6<sup>th</sup> meeting of the Expert Appraisal Committee (EAC) for coal mining projects was held on 13<sup>th</sup> January, 2021 through video conferencing with support NIC team due to Covid-19 lockdown. The EAC considered proposals as per agenda adopted for the meeting. List of participant attended the meeting is annexed. The details of deliberations held & decisions taken in the meeting are as under.

**Agenda No. 6.1**

**Gourangdih ABC Coal Mine Project of 2.5 MTPA capacity in mine lease area of 356.575 ha of M/s West Bengal Mineral Development and Trading Corporation Limited (WBMDTCL) located in District Paschim Bardhaman, (West Bengal)- Environment Clearance- reg.**

**[Proposal No. IA/WB/CMIN/65801/2017; F.No-J-11015/80/2017-IA-II(M)]**

**6.1.1** The proposal is for grant of Environment Clearance (EC) to Gourangdih ABC Coal Mine Project of 2.5 MTPA capacity in mine lease area of 356.575 ha of M/s West Bengal Mineral Development and Trading Corporation Limited (WBMDTCL) located in villages Panuria, Kantapahari, Jamgram, Shibdhawra, Banddhawra, Lalbandh, Gourangdih and Bhuiapara in Barabani CD Block of Tehsil Barabani, District Paschim Bardhaman, (West Bengal) as per EIA Notification, 2006

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

The proposal for EC was earlier considered during 2<sup>nd</sup> EAC (reconstituted) held on 28-29 September 2020, wherein, certain queries were raised. Now, the PP has submitted the replies/compliance to observations of EAC, which is tabulated below:

| Sr. No. | Observations of EAC | Compliance / Submission of Project Proponent |
|---------|---------------------|----------------------------------------------|
|---------|---------------------|----------------------------------------------|

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| 1  | PP shall submit the Stage-I FC for diversion of 109.459 ha of forest land for non-forestry purposes                                                                      | <p>FC proposal for diversion of 109.459 ha forest land was submitted vide proposal No. FP/WB/MIN/26869/2017 on 12.07.2017 and the same is under process. The current status is as follows:</p> <ul style="list-style-type: none"> <li>• Forwarded by the State Government to H.O, MoEF&amp;CC on 16.01.2019.</li> <li>• HO, MoEFCC forwarded to Addl. PCCF (Central), Regional Office (EZ), Bhubaneswar for Site Inspection Report (SIR) on 21.02.2019.</li> <li>• DIGF (Central), GoI Eastern Regional Office, MoEFCC inspected the Forest Site &amp; Proposed CA Site from 28.05.2019 to 30.05.2019.</li> <li>• SIR was uploaded by RO, MoEFCC on 19.06.2019.</li> <li>• In the interim the MOEF&amp;CC's guideline dated 22.05.2019 came wherein patches less than 5 ha in size were not permissible for CA site.</li> </ul> <p>Thereafter, the HO, MoEFCC, New Delhi, through its letter F. No. 8-3/ 2019/FC dated 15.07.2019 addressed to the Principal Secretary, GoWB, has made some observations and sought some clarifications/information/documents, which are in the process of being complied with.</p> |
| 2. | Since area B is not intended to be mine and No OB dump and CHP should be located outside Mine Lease area, PP shall submit Revised Mine Plan including Mine Closure Plan. | <p>PP has requested to Government of West Bengal for an additional 354.136 Acre (~143.314 Ha) Mine Lease land vide WBMDTCL's letter dated 18.01.2020. This will result in the Mine Lease area becoming equivalent to project area and will encompass the OB dump and CHP as well.</p> <p>Hence, the revision of the Mining Plan for the aforementioned reason is not envisaged.</p> <p>Furthermore, as per Clause-14 of Allotment Agreement dt. 23.08.2016, Mine Plan approved in relation to the Prior Allottee shall be applicable to WBMDTCL &amp; it can be revised for extraction of more coal, which is not being proposed by WBMDTCL</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3  | Progressive reclamation mine closure plan/backfilling shall be prepared to reduce the requirement of land.                                                               | <p>In Approved Mine Plan-2011, concurrent backfilling from 5th year onwards has been planned.</p> <p>The mining plan has been prepared by the previous allottee and their RQP and has been reviewed by WBMDTCL.</p> <p>It was found that the earliest possible backfilling could be started by 5th year only, as suggested in the mining plan. However, till such time, external dumping on 62.97 ha would be required and is essential.</p> <p>In order to minimize the impact of the mine on land, the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|    |                                                                                                                                                                                                                   | entire external dump over 62.97 ha will be rehandled and backfilled during mine closure period.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 4  | Consequential impact of ground water in B -Block area to be carried due to mining activity out in A & C Blocks.                                                                                                   | <p>The depth to water table (observed from 48 wells) - varies from 0.61 to 9.14 m bgl with an average of 4 m bgl.</p> <p>Ultimate working depth- 120 m bgl in Gourangdih-A and 210 m bgl in Gourangdih-C.</p> <p>Thus, water table will be intersected and resulting mine seepage will cause decline in water table in the radius of influence, in which the Gourangdih B falls.</p> <p>Radius of influence has been worked out as 160 m for the seepage due to initial intersection with water table and it will progress with time, with change in mining face as well as backfilling during the life of mine.</p> <p>WBMDTCL is committed to ensure potable water supply in the villages falling within the zone of influence.</p> <p>It may be noted that Piped Water Supply System (PWSS) with overhead tank by PHED already exists in Gourangdih Bazar, Hakim Para, Hat-tola, Panuria Gram, Chata Danga, which are partly or fully within the radius of influence. The water source of PHED is Ajay river.</p> <p>Government is continuously expanding its area coverage for supplying water to every household; hence, additional intervention from WBMDTCL is not required currently.</p> <p>Although, water is being supplied by government in the area, WBMDTCL will consult the Public Health Engineering Department, GoWB for supply of water from its surface reservoir to the PWSS, after treatment.</p> <p><b>Monitoring plan:</b> Shallow and deep piezometers will be constructed around the mine area for monitoring the water levels in the aquifer every month.</p> |
| 5. | PP shall provide details of water harvesting for fulfilling the need of area B since it comes under the zone influence of mining activity and primarily ground water is source of water for settlement on area B. | <p>Water harvesting shall be carried out in (I) mine area, (II) buildings within mine lease and (III) Public buildings in Gourangdih B &amp; nearby as follows:</p> <p>i. <b>Mine Area:</b></p> <p>Rain falling on quarry area will flow into the mine sump on the quarry floor under gravity and pumped to the surface and stored in a surface reservoir.</p> <p>Thus, the total water available from mine sump will be 4.44 Mcum/year.</p> <p>Water demand of the mine is 984 KLD and is proposed to be met from mine sump water. Annually it will be</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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|    |                                                                                                                     | <p>0.34 Mcum/annum.</p> <p>Hence, surplus water to the tune of <math>4.44 - 0.34 = 4.10</math> Mcum/annum or 11232.877 m<sup>3</sup>/ day, say, 11233 m<sup>3</sup>/day will be available in surface reservoir utilization for Gourangdih B (whose requirement is 2336 M<sup>3</sup>/day) as well as irrigation of agricultural land in surrounding areas.</p> <p>Building within ML area: Rain water harvesting potential through rainwater harvesting structures at project site:</p> <p>Rain water harvesting potential through rainwater harvesting structures at selected location in nearby settlements</p>                                                                                                                                                                                                                                                                                                                                                                     |
| 6. | Consequential impact of OB dump by reducing the fleet size shall be prepared after change in rearranging the areas. | <p>As discussed in ADS ii &amp; iii, there will not be any change in the planned mine, hence, no rearranging of OB dump area will occur.</p> <p>WBMDTCL shall put best efforts towards minimization of increment in pollution load by promoting use of higher capacity dumpers and consequently reducing fleet size, which will result in less number of dumpers movement for the same quantity of OB.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 7. | Proper response of public consultation with regard to pollution mitigation measures and demands of local people     | 10 people raised questions/ doubts/ comments/ suggestions during Public Hearing. Response was discussed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8. | Details of control blasting with adequate safeguard for nearby people particularly locals residing in block B.      | <p>Following precaution and mitigation measures will be adopted during blasting:</p> <p>Controlled blasting techniques including muffled blasting will be adopted.</p> <p>Blasting design will be done through CIMFR after scientific study.</p> <p>Explosives to be detonated at a time will be regulated so that ground vibration which may affect the nearby surface structures, are kept within the stipulated limit.</p> <p>Precise and accurate timing delay, optimum oxygen balance in explosives, etc. will be maintained to reduced the Fly rock and dust emission.</p> <p>Dust generation will be mitigated by water spraying before and after blasting.</p> <p>Blasting will be done within 500 m zone as per CMR, 2017 but beyond 100 m from the village, dwellings, surface structures, road etc after obtaining approvals from the Chief Inspector.</p> <p>Other safety provisions of mining operation shall be carried out/ implemented as per CMR 2017 and as per</p> |

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|    |                                                                                                                                                           | <p>safety regulations mandated by Director General of Mines Safety (DGMS).</p> <p>Distance of 100 m from the village boundary with a maximum charge per round 2 te, maximum charge per delay 200 kg and maximum depth of hole 12 m.</p> <p>Further, in view of the densely populated habitation of Panuria and Gourangdih B, Ripper Dozer will be used wherever necessary in combination with loader and dumpers for excavation of OB and its transportation to the dumps maximum peak particle velocity of 0.3 mm/sec, mining operation is planned upto a distance of 100 m.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9. | <p>Comprehensive Plan for supplying water to the nearby habitation in villages/ settlements (zone of influence) as pointed out in the public hearing.</p> | <p>The project will have surplus water (11,233 KLD) in its surface reservoir which can be utilised for domestic purposes after treatment and for agriculture by nearby farmers.</p> <p>WBMDTCL is committed to ensure potable water supply in the villages falling within the zone of influence through following proposals:</p> <p>WBMDTCL will consult the Public Health Engineering Department, GoWB for supply of water from its surface reservoir to the PWSS, after treatment.</p> <p>Supply of water to nearby villages/ settlements other than Gourangdih B through piped water supply system in consultation with PHED</p> <p>Provision to be kept for construction and maintenance of deep tubewells, if required at later stage.</p> <p>Company will also make arrangement for supply of water to nearby village pond during non-monsoon period so that water from the pond can also be used by farmers for irrigation.</p> <p>Directly supply to farmers through pipeline/ tankers for irrigation on a pre-determined rotation system</p> <p>Estimation of water demand in settlements within 1 km periphery (Panuria, Chotkara, Baradang, Alipur, Kanta Pahari, Daskiari, Aliganja and Jamgram)</p> <p>After supplying water to Gourangdih B block as discussed earlier in ADS point iv, the proposed surface reservoir will have <math>(11232.87-2336.4) = 8896.47</math> KLD surplus water.</p> <p>Using this balance surplus water, the domestic water demand in the villages lying within 1 km radius of the project can easily be met.</p> <p>However, it may be noted that the domestic water is</p> |

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|     |                                                                                               | <p>already being supplied to the tune of 560 KLD in some of the settlements of Panuria under surface water based PWSS scheme by PHED, GoWB.</p> <p>PHED is sourcing water from Ajay river.</p> <p>Remaining settlements will also get covered under the same scheme soon.</p> <p>WBPDCCL will consult PHED, GoWB for supplying its mine sump water brought to its surface reservoir, after treatment.</p> <p>Thus, it is expected in due course mine will have <math>8896.47 - 7896.8 = 999.67</math>, say, 1000 KLD for supplying to the nearby ponds and fields for irrigation uses.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 10. | Propose the measures to be taken for reduction of air pollution by transportation of OB dump. | <p>Various mitigation measures for reduction of pollution from transportation of OB are as follows:</p> <p>Maintenance of HEMM, dumpers/ tippers used in mine and must have Pollution Under Control Certificate (PUC).</p> <p>Wetting the OB prior to loading.</p> <p>Dust suppression system like water sprinkling at working faces, haul roads, dumps, loading and unloading points, haul roads to minimize fugitive dust.</p> <p>Paved haul road shall be used as much as possible.</p> <p>Provision of automatic nozzle mounted fixed sprinklers having a trajectory of 50 m on haul road at an interval of 50 m. Total 100 nos. of such automatic sprinklers will be installed.</p> <p>Mobile water sprinkling on other portions of the haul road within mine (where automatic sprinklers not installed), two to four times a day according to season.</p> <p>Overloading of dumpers will not be permitted</p> <p>Plantation in peripheral greenbelt (7.5 m), in safety zone (45 m wide) between Panuria &amp; Gourangdih village and the quarries (A &amp; C) (45 m) along the sides of haul roads (outside quarry area or working dumps) and other vacant areas.</p> <p>Dust mask will be provided to the workers, engaged at dust generating sources such as excavation, loading etc.</p> <p>Reduction in vehicular emissions and airborne tyre dust by increasing size of dumpers and reducing trips</p> |
| 11. | Project Proponent should submit approved R&R plan from District Collector.                    | <p>The Government of West Bengal, in its 60th Cabinet Meeting held on 16.08.2019 has accorded approval, inter alia, for finalisation of the Compensation towards Rehabilitation &amp; Resettlement through the District Level Land Purchase Committee (DLLPC) headed by the District Magistrate.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|         |                                                                                                                                                                                | <p>WBMDTCL has prepared the draft R&amp;R Policy through the Government Approved Transaction Advisor M/s KPMG Advisory Services after detailed Socio-Economic Survey.</p> <p>The R&amp;R Action Plan fixing the compensation payable to PAPs will be finalised by the DLLPC within the framework of the R&amp;R Policy.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |                       |                                             |                       |                       |                                             |                   |    |                                             |      |      |       |       |        |    |                                      |      |      |       |       |   |    |                                             |      |       |       |       |       |    |                         |    |       |       |       |       |    |            |      |      |      |      |      |  |  |  |  |  |
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| 12.     | <p>Certification of PCCF about absence of Schedule-I species in the project and buffer area. Further certifying that no wildlife/National Sanctuary in 10 km project area.</p> | <p>There are no National parks, Wildlife Sanctuary, Biospheres reserves within 10 km radius. No endangered or endemic species of plant or animal is present in the study area as per the recommendation in Memo No. 2277/8-25 dated 31.10.2018 issued by the DFO, Durgapur Division and also as per the list authenticated by Range Forest Officer, Asansol (T) Range.</p> <p>For certification of PCCF in this regard, WBMDTCL has written an application vide letter dated 25.11.2020 to PCCF, Directorate of Forest, Government of West Bengal. As soon as certificate is issued the same shall be submitted to MoEF&amp;CC.</p>                                                                                                                                                                                                                                                                                                                                                                |                       |                       |                                             |                       |                       |                                             |                   |    |                                             |      |      |       |       |        |    |                                      |      |      |       |       |   |    |                                             |      |       |       |       |       |    |                         |    |       |       |       |       |    |            |      |      |      |      |      |  |  |  |  |  |
| 13.     | <p>Details of ecological restoration as per Terms of reference shall be submitted</p>                                                                                          | <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Landuse category</th> <th>5<sup>th</sup> year</th> <th>10<sup>th</sup> year</th> <th>15<sup>th</sup> year</th> <th>27<sup>th</sup> year (End of Life of Mine)</th> <th>Post Mine closure</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Backfilled Area (Reclaimed with plantation)</td> <td>16.8</td> <td>60.5</td> <td>85.45</td> <td>132.5</td> <td>213.27</td> </tr> <tr> <td>2.</td> <td>Excavated Area (not reclaimed)/ void</td> <td>71.2</td> <td>94.8</td> <td>92.55</td> <td>80.77</td> <td>0</td> </tr> <tr> <td>3.</td> <td>External OB dump Reclaimed with plantation)</td> <td>60.5</td> <td>62.57</td> <td>62.97</td> <td>62.97</td> <td>62.97</td> </tr> <tr> <td>4.</td> <td>Reclaimed top soil dump</td> <td>11</td> <td>13.73</td> <td>13.73</td> <td>13.73</td> <td>13.73</td> </tr> <tr> <td>5.</td> <td>Green belt</td> <td>7.52</td> <td>7.52</td> <td>7.52</td> <td>7.52</td> <td>7.52</td> </tr> </tbody> </table> | Sl. No.               | Landuse category      | 5 <sup>th</sup> year                        | 10 <sup>th</sup> year | 15 <sup>th</sup> year | 27 <sup>th</sup> year (End of Life of Mine) | Post Mine closure | 1. | Backfilled Area (Reclaimed with plantation) | 16.8 | 60.5 | 85.45 | 132.5 | 213.27 | 2. | Excavated Area (not reclaimed)/ void | 71.2 | 94.8 | 92.55 | 80.77 | 0 | 3. | External OB dump Reclaimed with plantation) | 60.5 | 62.57 | 62.97 | 62.97 | 62.97 | 4. | Reclaimed top soil dump | 11 | 13.73 | 13.73 | 13.73 | 13.73 | 5. | Green belt | 7.52 | 7.52 | 7.52 | 7.52 | 7.52 |  |  |  |  |  |
| Sl. No. | Landuse category                                                                                                                                                               | 5 <sup>th</sup> year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10 <sup>th</sup> year | 15 <sup>th</sup> year | 27 <sup>th</sup> year (End of Life of Mine) | Post Mine closure     |                       |                                             |                   |    |                                             |      |      |       |       |        |    |                                      |      |      |       |       |   |    |                                             |      |       |       |       |       |    |                         |    |       |       |       |       |    |            |      |      |      |      |      |  |  |  |  |  |
| 1.      | Backfilled Area (Reclaimed with plantation)                                                                                                                                    | 16.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 60.5                  | 85.45                 | 132.5                                       | 213.27                |                       |                                             |                   |    |                                             |      |      |       |       |        |    |                                      |      |      |       |       |   |    |                                             |      |       |       |       |       |    |                         |    |       |       |       |       |    |            |      |      |      |      |      |  |  |  |  |  |
| 2.      | Excavated Area (not reclaimed)/ void                                                                                                                                           | 71.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 94.8                  | 92.55                 | 80.77                                       | 0                     |                       |                                             |                   |    |                                             |      |      |       |       |        |    |                                      |      |      |       |       |   |    |                                             |      |       |       |       |       |    |                         |    |       |       |       |       |    |            |      |      |      |      |      |  |  |  |  |  |
| 3.      | External OB dump Reclaimed with plantation)                                                                                                                                    | 60.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 62.57                 | 62.97                 | 62.97                                       | 62.97                 |                       |                                             |                   |    |                                             |      |      |       |       |        |    |                                      |      |      |       |       |   |    |                                             |      |       |       |       |       |    |                         |    |       |       |       |       |    |            |      |      |      |      |      |  |  |  |  |  |
| 4.      | Reclaimed top soil dump                                                                                                                                                        | 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 13.73                 | 13.73                 | 13.73                                       | 13.73                 |                       |                                             |                   |    |                                             |      |      |       |       |        |    |                                      |      |      |       |       |   |    |                                             |      |       |       |       |       |    |                         |    |       |       |       |       |    |            |      |      |      |      |      |  |  |  |  |  |
| 5.      | Green belt                                                                                                                                                                     | 7.52                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7.52                  | 7.52                  | 7.52                                        | 7.52                  |                       |                                             |                   |    |                                             |      |      |       |       |        |    |                                      |      |      |       |       |   |    |                                             |      |       |       |       |       |    |                         |    |       |       |       |       |    |            |      |      |      |      |      |  |  |  |  |  |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | area (in 7.5 m safety zone)                                                                                        |               |               |               |               |               |
| 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Undisturbed area (brought under plantation)                                                                        | 23.85         | 23.85         | 23.85         | 23.85         | 23.85         |
| 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Undisturbed area within project area without plantation                                                            | 130.47        | 58.37         | 35.27         | 0             | 0             |
| 8.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Roads (Avenue plantation)                                                                                          | 8             | 8             | 8             | 8             | 4             |
| 9.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Area around building and infrastructure (10.23 ha) (including workers colony 5 ha and 12 ha rehabilitation colony) | 27.23         | 27.23         | 27.23         | 27.23         | 17            |
| 10.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Disturbed area (reclaimed from roads 4 ha and built up area 10.23 ha)                                              |               |               |               |               | 14.23         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Total</b>                                                                                                       | <b>356.57</b> | <b>356.57</b> | <b>356.57</b> | <b>356.57</b> | <b>356.57</b> |
| <p>The post mine closure land use of project area shows that all the disturbed areas will be reclaimed before abandoning the mine including two voids of 80.77 ha having depth 120 m in Gourangdih-A and 210 m in Gourangdih-C.</p> <p>For management of ecology following provisions has been made:</p> <p><b>Green Belt&amp; other plantation:</b></p> <p><i>i. Establishment of greenbelt (7.5 m wide) and plantation along various facilities and periphery.</i></p> <p><i>ii. Plantation on 45 m wide safety zone between Quarry A and settlements of Panuria and</i></p> |                                                                                                                    |               |               |               |               |               |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|  | <p><i>Gourandih as well as between Quarry C and these settlements.</i></p> <p><i>iii. Plantation shall also be carried out along roadside and around administrative buildings, facilities and in vacant undisturbed areas as well.</i></p> <p><b>Reclamation plantation:</b></p> <p><i>i. Once the simultaneous backfilling of mine void commences from 5th year, the reclamation process over the backfilled area will also commence.</i></p> <p><i>ii. Reclamation of external OB dumps as well as top soil dump will also eventually take place.</i></p> <p><i>iii. Total afforested area will be 304.2 ha comprising 62.97 ha external OB dump, 13.73 top soil dump, 213.27 ha excavation, 4 ha roads and 10.23 ha built up area.</i></p> <p>About twenty-seven thousand trees shall be planted considering density of plantation 2500 trees/ ha.</p> <p>The total plantation till the end of life of mine, shall be done on 226.84 ha, out of which 132.5 ha will be backfilled area, 62.97 ha. external dump area, 7.52 ha greenbelt and 23.85 ha will be others i.e. undisturbed area.</p> <p>Selection of plant species: For greenbelt, other plantations, etc. the species recommended based of the survey are Kadam (Anthocephalus cadamba), Neem (Azadirachta indica), Jamun (Syzygium cumini), Sal (Shorea robusta), Mango (Mangifera indica), Asan (Terminalia tomentosa), Sonajhuri (Acacia auriculiformis), Arjun (Terminalia arjuna) etc</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

PP explained that the project area of 356.575 ha is excluding the block B and earlier mine lease was of reduced area hence PP has applied to buy ~143.314 Ha land for including in mine lease.

109.459 ha of forest land has been reported to be involved in the project. Stage- I FC is still awaited.

PP has proposed to rehandle the OB dump and start backfilling (internal in mine void) in 27<sup>th</sup> year in its year/stagewise OB generation and dumping. However, it can be reduced to 15<sup>th</sup> year and the proposed three external dump as per approved Mine Plan can be handled in two external dumps only. Therefore, the schedule of external dumping and number of external dump shall be improved in Mine Plan and thereby minimize the degradation of land.

Presence of large habitation near the proposed mine area i.e. in between quarry A and C has been noted. Mitigation measures are required for safety of habitation.

Surplus mine water is proposed to be distributed in nearby areas and habitation in block B. however specific activities such water distribution network and treatment technology before distribution has not been given.

PP during response in Public Hearing has agreed that to some extent, noise may increase marginally and temporarily during drilling, blasting and transportation. Blasting can also lead to cracks in buildings. However, no action plan on monitoring of such activities has been submitted by PP.

*6.1.3 The EAC after detailed deliberation was of the view that proposal needs proper responses and preparedness. No fleet size assessment has been made even emphasizing this point in the last meeting. The Committee opined that the proposal is not in order as of now since there is scope of reduction of land degradation and safety of habitation in between the two quarries. The Committee expressed displeasure on quality of reply submitted by consultant named Min Mec Consultancy Pvt Ltd wherein the reply is not backed with specific action plan/activities. Further EAC desired that the pointwise compliance submitted by PP should be answered with specific activities and firmed plan. PP shall further submit the details on the following points.*

- (i) PP shall review the Mine Plan and Mine Closure Plan to optimize external and internal dumping schedule, and avoid its proximity to any habitation (2<sup>nd</sup> external OB dump). The PP shall ensure faster reclamation of land disturbed by both mining and dumping on a concurrent basis as soon as the external and internal dumping operation of an area gets over. It was observed, even in the existing mine plan that reclamation of land can start much quicker than what has been envisaged to begin only at the end of the mine life. Reclamation must include regradation of land on a concurrent basis before plantation or any other land use such as rain harvesting etc.*
- (ii) PP shall bring clarity on the area of coal block since it is 370 ha as per Mine Plan and as per PP, area of project is 356.57 ha. Also, forest land is 92.53 ha in approved Mine Plan however PP has applied for 109.459 ha.*
- (iii) PP should submit budget provision/estimate for developing rain water harvesting structures in (i) mine area, (ii) buildings within the mine lease, (iii) Public buildings in Gourangdih B & nearby villages (buffer zone).*
- (iv) PP should develop/adopt pond, lake & reservoir and submit the details of distribution of potable water supply in the villages and for agricultural purpose falling within the zone of influence and plan of distribution of water to the local people to the tune 560 KLD through PHED, Govt. of WB.*
- (i) PP should provide consequential impact of OB dump by reducing the fleet size after change in rearranging the areas and schedule*
- (ii) Mechanism or Action proposed for controlling any cracks in building located in B Block since PP has accepted that there are chances of crack in building due to blasting in Public Hearing.*
- (iii) Since, two mine quarries are at certain distance, PP shall clarify the technique adopted/method adopted for Air Quality Impact modelling.*
- (iv) PP should submit year wise breakup and timeline with specific activity based Action Plan regarding the queries raised during the public hearing.*

- (v) PP should submit the details the breakup of R&R budget and should submit the details of families having land only and families having land and house within the ML.
- (vi) PP shall submit the detailed plan of action for numbers and location of air pollution monitoring stations, noise monitoring and vibration monitoring (based on blast vibration study) all along the A & C quarries towards B block for regular monitoring during mining operations.
- (vii) PP should present the scheme of plantation along the haul roads and toward block B to reduce air pollution with emphasis on local and native species and the species which are tolerant to pollution.
- (viii) PP should submit certification of PCCF about absence of Schedule-I species in the project and buffer area. Further certifying that no wildlife/National Sanctuary in 10 km project area.

The proposal was **deferred** on above lines for compliance by project proponent.

## **Agenda No. 6.2**

**Cluster No. 1 (Group of mines of ECL in Raniganj Coalfield) Project of 3.30 MTPA capacity in mine lease area of 3692 ha of M/s Eastern Coalfields LTD located in Mugma Area, Nirsa Block, Dhanbad, (Jharkhand) – For amendment in Environment Clearance - reg**

**[Proposal No. IA/JH/CMIN/135718/2020; File J-11015/78/2011-IA.II(M)]**

**6.2.1** The proposal is for amendment in Environmental Clearance to Cluster No. 01 (Group of mines of ECL in Raniganj Coalfield) Project of 3.30 MTPA capacity in mine lease area of 3692 ha of M/s Eastern Coalfields LTD located in Mugma Area, Nirsa Block, Dhanbad, (Jharkhand).

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

Earlier the proposal was considered by EAC in its 55<sup>th</sup> meeting held on 29<sup>th</sup> May, 2020. The EAC after deliberations deferred the proposal for further studies / information regarding the cluster. PP has submitted the compliance of observation of EAC with respect to following points :

| <b>Sr. No.</b> | <b>Observations of EAC</b>                                                    | <b>Compliance / Submission of Project Proponent</b>                                                                                                                                                                                                    |
|----------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1              | Permission from Central Ground Water Authority for extraction of ground water | Application has been made to CGWB, Patna vide letter no. ECL/GM/MA/2018/27/82 dated 29.06.2018. This is regularly being followed for the grant of NOC. It has been confirmed on 27.08.2020 that the application is under consideration at CGWB, Patna. |
| 2              | Socio-economic studies need to be conducted for proposed R&R Villages         | Socio-economic study has been conducted by CMPDI, RI-I, Asansol and the study report is part of the Addendum EIA & EMP,                                                                                                                                |

|   |                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                      |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | One-month baseline data and impact assessment shall be conducted and addendum EIA/EMP should be submitted                                                                   | One-month baseline data for PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>x</sub> and NO <sub>x</sub> has been generated by CMPDI, RI-I, Asansol during the period from 01.10.2020 to 28.10.2020 at 6 stations. Impact assessment is part of the Addendum EIA & EMP Concentration levels at all the receptors are within the limits |
| 4 | Water Quality characteristics of accumulated water in Patch – A of Badjna UG & OC Patch and any other areas (if any). Specify the location of disposal of accumulated water | Water Quality characteristics of water accumulated in 4 nos. of old quarries including Patch – A of Badjna OC have been sampled and analyzed by CMPDI, RI-I, Asansol and the analysis is part of the Addendum EIA & EMP and Concentration levels of all the parameters at all the sampling points are within the limits.             |
| 5 | Permission for diversion of DB road/village road, HT line and drain/nallah (flowing on eastern side of the patch)                                                           | Permission for diversion of DB road/village road has been given<br>Permission for diversion of HT line: Application made<br>Permission for diversion of drain/nallah: The diversion is needed at the later stage of mining. However, intimation in this regard has been made to EE, RDD Works, Dhanbad.                              |
| 6 | Permission for development of Embankment along Pusai River                                                                                                                  | Granted by DGMS vide letter no. Region II/2067 dated 21.09.2001.                                                                                                                                                                                                                                                                     |
| 7 | Reason for cutting 2500 nos. of trees, whether transplantation or the same area can be avoided for mining activity                                                          | It has been decided to leave out the planted area from the area proposed for mining                                                                                                                                                                                                                                                  |

Environment Clearance to the Cluster No. 01 was granted by Ministry under EIA Notification, 2006 vide letter No J-11015/78/2011-IA-II (M) dated 16<sup>th</sup> January, 2015 and amendment in EC 18<sup>th</sup> December, 2017 for 3.30 MTPA in mine lease area of 3692.00 Ha. Further amendment has been sought by re-assessment/restructuring the production capacity and mining methods of individual mines with overall production capacity and mine lease area will remain same.

The proposed changes for amendment are given table below:-

| Sl. No. | As per EC Amendment dated 18.12.2017 |                 |                      |                | Sl. No. | As per Revised Mining Plan |                 |                      |                |
|---------|--------------------------------------|-----------------|----------------------|----------------|---------|----------------------------|-----------------|----------------------|----------------|
|         | Name of the Mine                     | Lease Area (Ha) | Prodn Capacity (MTY) | Mine Life (Yr) |         | Name of the Mine           | Lease Area (Ha) | Prodn Capacity (MTY) | Mine Life (Yr) |
| 1       | Hariajam UG                          | 316.0           | 0.10                 | >25            | 1       | Hariajam UG                | 316.0           | 0.08                 | >25            |
| 2       | <b>Badjna UG</b>                     | 676.0           | 0.15                 | >25            | 2       | <b>Badjna UG &amp; OC</b>  | 676.0           | 0.45                 | >25            |
| 3       | Chapapur – II UG                     | 480.0           | 0.75                 | >25            | 3       | Chapapur – II UG & OC      | 480.0           | 0.68                 | >25            |
|         | Chapapur-II                          |                 |                      |                |         |                            |                 |                      |                |

|       |                                   |        |                               |     |       |                                                                |        |       |     |
|-------|-----------------------------------|--------|-------------------------------|-----|-------|----------------------------------------------------------------|--------|-------|-----|
|       | OC Patch                          |        |                               |     |       |                                                                |        |       |     |
| 4     | Khoodia UG                        | 186.0  | 0.05                          | >25 | 4     | Khoodia UG & OC                                                | 186.0  | 0.035 | 10  |
|       | Khoodia OC Patch                  |        |                               |     |       |                                                                |        |       |     |
| 5     | Lakhimata UG                      | 217.0  | 0.95                          | 20  | 5     | Amalgamated Lakhimata, Shampur B, Mandman and Kapasara UG & OC | 1239.0 | 2.30  | >25 |
|       | Lakhimata OC Patch                |        |                               |     |       |                                                                |        |       |     |
| 6     | Shampur – B UG                    | 368.0  | 0.10                          | >25 | 5     | Amalgamated Lakhimata, Shampur B, Mandman and Kapasara UG & OC | 1239.0 | 2.30  | >25 |
|       | Shampur – B (Sangamahal) OC Patch |        |                               |     |       |                                                                |        |       |     |
|       | Mandman UG                        | 345.0  | Amalgamated with Lakhimata OC | -   |       |                                                                |        |       |     |
| 7     | Nirsa OC Patch                    | 147.0  | 0.40                          | 8   | 6     | Nirsa OC Patch                                                 | 147.0  | 0.40  | 8   |
| 8     | Shampur – A UG                    | 491.0  | 0.20                          | 8   | 7     | Shampur – A UG & OC                                            | 491.0  | 0.20  | 8   |
|       | Shampur – A OC Patch              |        |                               |     |       |                                                                |        |       |     |
| 9     | Gopinathpur UG                    | 157.0  | 0.20                          | >25 | 8     | Gopinathpur UG & OC                                            | 157.0  | 0.20  | >25 |
|       | Gopinathpur OC Patch              |        |                               |     |       |                                                                |        |       |     |
| 10    | Kapasara UG                       | 309.0  | 0.40                          | >25 |       | Merged with Sl. No. 5                                          |        |       |     |
|       | Kapasara OC Patch                 |        |                               |     |       |                                                                |        |       |     |
| Total |                                   | 3692.0 | 3.30                          |     | Total | 3692.0                                                         | 3.30*  |       |     |

\*Maximum production from the cluster in any year will not exceed 3.30 MTPA.

\* As per the production schedule of the individual mines within the cluster for the next 10 years, maximum production from the cluster in any year will not exceed 3.30 MTY.

Based on the Socioeconomic study submitted by the PP, the distribution of populations suggests that a majority belong to the active workforce (18 to 50 years), skill development / enhancement programs need to be undertaken. The programs can be run either through a vocational mode or a regular mode (requires formulating a training schedule based on inputs from the villages).

It reveals that a large majority of households belong to the below poverty line (BPL) group. Therefore, the focus of the activities planned under CSR initiatives should be based on the sustainable livelihoods approach whereby the focus should be on developing all forms of capital namely: natural capital, physical capital, social capital, financial capital and human capital.

A good share of households (~35 %) depend on coal as a primary source of fuel.

It was noted that incremental concentration of PM10 at Manager's Office at Gopalpura, Prabhat Stadium-Mugma and ESI Hospital-Maithon is almost about 100. Further conversion of UG to OCP is likely to increase the air pollution in the area

*6.2.4 The EAC after deliberation observed the non-compliance of EC conditions regarding permission of Central Ground Water Authority for extraction of ground water. EAC desired that Ministry may take necessary action since PP has been continuously mining without necessary permission. Further, EAC **recommends** the amendment in EC of Cluster No. 01 (Group of mines of ECL in Raniganj Coalfield) Project of 3.30 MTPA capacity in mine lease area of 3692 ha of M/s Eastern Coalfields Limited located in Mugma Area, Nirsa Block, Dhanbad, (Jharkhand), with specific conditions as below under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto for environment safeguard:*

- (i) Project Proponent shall obtain the necessary prior permission from the Central Ground Water Authority (CGWA) in case of intersecting the Ground water table.*
- (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 restructuring in one year. PP shall submit to Ministry's Regional Office the recommendation in report and shall be strictly implementation with stringent time line*
- (iii) Progressive reclamation of OB dump shall be conducted and Active OB Dump should not be kept barren/open and should be covered by temporary grass to avoid air born of particles*
- (iv) 10 Fog canon shall be installed to reduce the impact of air pollution on haul road, OB dump and mining areas*
- (v) Project proponent to plant 200,000 nos. of native trees with broad leaves along the transportation route in two years to prevent the effect of air pollution near Manager's Office at Gopalpura, Prabhat Stadium-Mugma and ESI Hospital-Maithon. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer*
- (vi) 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.*
- (vii) The permanent haul/internal roads shall be constructed of cement concrete and fixed type water sprinkler shall be installed.*
- (viii) Recommendation of mitigation measures in R&R report shall be implemented within certain timelines.*

- (ix) *PP shall undertake a needs-assessment (need based skill development and identification of indigenous skill base) in the local region and conduct either through a vocational mode or a regular mode for skill development/enhancement programs.*
- (x) *PP shall identify livelihood opportunities based on discussion with residents and accordingly capacity building interventions to be undertaken including a focus on building financial and supply-chain linkages.*
- (xi) *PP shall focus on the activities planned under CSR initiatives based on the sustainable livelihoods approach whereby the emphasis should be on developing all forms of capital namely: natural capital, physical capital, social capital, financial capital and human capital.*
- (xii) *PP shall provide smokeless chulahs to the households as part of local engagement commitment*

### **Agenda No.6.3**

**Sirka Opencast mine project of 1 MTPA with project area of 277.09 ha of M/s Central Coalfields Limited, located in District Ramgarh (Jharkhand) - For Term of Reference-reg.**

**[Proposal No. IA/JH/CMIN/189610/2020; File No J-11015/30/2020-IA-II(M)]**

**6.3.1** The proposal is for Terms of Reference (ToR) for Sirka OCP Project of 1 MTPA capacity in project area of 277.09 Ha of M/s Central Coalfields Limited located in village Sirka & Argada in Tehsil Ramgarh District Ramgarh, (Jharkhand).

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

- (i) The project area is covered under Survey of India Toposheet No 73E/6 and is bounded by the geographical coordinates ranging from latitudes 23° 38' 18" to 23° 39'10.76" North and longitudes 85° 24'57" to 85026' 47" East.
- (ii) Coal linkage of the project is proposed through Basket Linkage for various power plants & other industries.
- (iii) Joint Venture: No Joint Venture
- (iv) Project does not fall in the Critically Polluted Area (CPA), where the MoEF&CC's vide its OM dated 13th January 2010 has imposed moratorium on grant of environment clearance.
- (v) Employment generation: The project has created employment opportunities both for skilled and semi- skilled persons in the area. Total direct number of employment from the project is approximately 792.
- (vi) Benefits of the project: 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.
- (vii) Earlier, The project Argada-Sirka Group Mixed Mines with mine lease area of 907.74 Ha and capacity (1.125/1.293 MTPA) was given EC vide: J-11015/462/2008-IA.II(M) on 25.09.2014, as per EIA Notification 2006 for Sirka OCP(1.0/1.15 MTPA) with a life of 4

Years, Sirka UGP(0.040/0.046) with life of >30 years, Argada UG(0.085/0.097 MTPA) with a life of >30 Years.

(viii) Total project area as per block allotment is 277.09 Ha. Mining Plan has been approved by CCL Board on 24.10.1978. Progressive Mine Closure Plan was approved by CCL Board on 23.03.2013.

(ix) The land usage of the project is as follows:

| <b>Land Use During Mining</b> |                                        |                    |
|-------------------------------|----------------------------------------|--------------------|
| <b>SN</b>                     | <b>Details of land use</b>             | <b>Area in Ha.</b> |
| <b>1</b>                      | Quarry                                 | 92.52              |
| <b>2</b>                      | OB Dump                                | 36                 |
| <b>3</b>                      | Colony                                 | 21.13              |
| <b>4</b>                      | Road                                   | 3.15               |
| <b>5</b>                      | Water bodies                           | 7.24               |
| <b>6</b>                      | Infrastructures (W/S, CHP, Office etc) | 1.5                |
| <b>7</b>                      | Agricultural (irrigated)               | 80                 |
| <b>8</b>                      | Safety Zone/ green belt & Vacant Land  | 35.55              |
| <b>TOTAL Area in Ha.</b>      |                                        | <b>277.09</b>      |

The post mining land use plan is given below:

| <b>Post-Mining Landuse</b>             |                    |
|----------------------------------------|--------------------|
| <b>Details of land use</b>             | <b>Area in Ha.</b> |
| Plantation on backfilled area          | 90.02              |
| Mine Void filled with Water            | 2.50               |
| Plantation on External Dump            | 36.00              |
| Colony For Future Use                  | 21.13              |
| Road for Future Use                    | 3.15               |
| Water bodies                           | 7.24               |
| Infrastructures (W/S, CHP, Office etc) | 1.50               |
| Agricultural (irrigated)               | 80.00              |
| Plantation on Safety zone/ Green belt  | 16.55              |
| Undisturbed Vacant Land                | 19.00              |
| <b>Total Area in Ha.</b>               | <b>277.09</b>      |

(x) Total geological reserve is 41.34 MTe. The remaining mineable reserve is 2.43 MT, extractable reserve is 2.43 MT. The percent of extraction would be 100 %.

(xi) There will be 01 seams (Argada A) with seam thickness from 7.56 to 33 m. The coal grade is G-5. The stripping ratio is 3.44 Cum/tonne. The average Gradient is 1 in 2.5.

(xii) The Method of mining would be opencast method of mining with shovel-dumper combination.

(xiii) Balance life of mine is 5 years as on 01.04.2020.

(xiv) The total balance overburden quantity estimated is 8.36 M.cum. It is proposed to accommodate a part of OB in the external dump and remaining in the internal dump. At the post mining stage, external dump shall be maintained at a height of +40 m AGL and 2.5 Ha. of left out mine void shall be converted into water body of depth 20 m B.G.L.

(xv) The total Quarry area is 92.52 Ha. At the final stage, total excavation area of 90.02 Ha. It will be backfilled with OB and reclaimed with plantation.

- (xvi) Transportation: Coal transportation in pit by Rear dumpers; Surface to Siding by Trucks; siding at loading by pay loader.
- (xvii) At the post mining stage, 90.02 Ha. of internal dump, 36 Ha of external dump, 16.55 Ha of safety zone/ green belt shall be converted into plantation.
- (xviii) The project area consists of 50.80 Ha of forestland against which the Stage-II FC was obtained vide No.-8-78/2003-FC Dated 08.08.2008.
- (xix) Wildlife issues: There are no national Parks, wildlife sanctuary, biosphere reserves found in the 10 km buffer zone.
- (xx) The ground water level has been reported to be varying between 1.95 m to 12.38 m during pre-monsoon and between 0.90 m to 10.30 m during post-monsoon. Total water requirement for the project is 2,430 KLD.
- (xxi) Application for ground water clearance vide application no: 21-4/407/JH/MIN/2019 dated 29.03.2019
- (xxii) Last Consent to Operate for the existing capacity was obtained from the Jharkhand State Pollution Control Board on 18.03.2018 and is valid till 31.03.2019. The project is not operational since 01.04.2019.
- (xxiii) An ephemeral stream, called Pararu nalla flows in the east of the property, along N-S alignment, discharging water in the Damodar River. The Damodar River flows along the western and southern boundary of Sirka block.
- (xxiv) Regular monitoring of ambient air quality is being carried out on fortnightly basis. The documented report is submitted to JSPCB and also to MoEF&CC along with half yearly EC compliance report. 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.
- (xxv) No court cases, violation cases are pending against the project of the PP.
- (xxvi) The coal production from the mine was started since before the year 1993-94. The coal production, realized from the project, from 1993-94 onwards, is as under:

| <b>Year</b> | <b>Coal (in MT)</b> | <b>Year</b> | <b>Coal (in MT)</b> |
|-------------|---------------------|-------------|---------------------|
| 1993-94     | 0.611               | 2007-08     | 0.225               |
| 1994-95     | 0.535               | 2008-09     | 0.212               |
| 1995-96     | 0.310               | 2009-10     | 0.242               |
| 1996-97     | 0.300               | 2010-11     | 0.213               |
| 1997-98     | 0.363               | 2011-12     | 0.169               |
| 1998-99     | 0.369               | 2012-13     | 0.170               |
| 1999-2000   | 0.327               | 2013-14     | 0.111               |
| 2000-2001   | 0.379               | 2014-15     | 0.047               |
| 2001-2002   | 0.238               | 2015-16     | 0.088               |
| 2002-03     | 0.221               | 2016-17     | 0.059               |
| 2003-04     | 0.163               | 2017-18     | 0.061               |
| 2004-05     | 0.211               | 2018-19     | 0.085               |
| 2005-06     | 0.113               | 2019-20     | Nil                 |
| 2006-07     | 0.256               | 2020-21     | Nil                 |

- (xxvii) There was no R & R involved for the proposed project area.

(xxviii) Cost: Total capital cost of the project was Rs. 38.18 Crores as per granted EC. CSR Cost As per CSR policy & Companies Act, 2013. The Environmental Management Cost Rs 18.30 Crore.

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

Earlier, the project Argada-Sirka Group Mixed Mines with mine lease area of 907.74 Ha and capacity (1.125/1.293 MTPA) was granted EC vide J-11015/462/2008-IA.II(M) on 25.09.2014, as per EIA Notification 2006 for Sirka OCP(1.0/1.15 MTPA) with a life of 4 Years, Sirka UGP(0.040/0.046) with life of >30 years, Argada UG(0.085/0.097 MTPA) with a life of >30 Years.

This proposal was put up before EAC on 25.06.2019 where it was deferred. The proposal was again considered on 24.01.2020 where EAC observed the following:

“The EAC, after deliberations, observed that in view of the mine life earlier estimated to be of 4 years for one of the mine, environmental clearance dated 25th September, 2014 was valid till 25th September, 2018 only. There being no amendment so far in the said environmental clearance and the same no more valid as of now ongoing/continuing mining would be seen as violation of the EIA Notification, 2006.”

The project area consists of 50.80 Ha of forestland against which the Stage-II FC was obtained vide No.-8-78/2003-FC Dated 08.08.2008

The balance life of the mine is 5 years as stated by project proponent.

**6.3.4** *The EAC, after detailed deliberation **recommends** the proposal for grant of Terms of Reference to Sirka Opencast mine project of 1 MTPA with project area of 277.09 ha of M/s Central Coalfields Limited located in District Ramgarh, (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 should submit the supporting documents regarding the closure of the mine along with the DGMS permission.*
- (ii) *PP should submit the certified authenticated/Audited production figures from the revenue department or department of mining and geology of State Government or certificate from Coal Controller for production capacity since inception of the mine.*
- (iii) *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.*
- (iv) *PP shall be assessing the damage assessment of environment against the excess production against the quantities for not taking EC.*
- (v) *Cumulative Impact Assessment Study of the area shall be carried over by project proponent*
- (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) *Wind rose pattern in the area should be reviewed and accordingly location of AAQMS shall be planned by the collection of air quality data. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. **dispersed in 10 km buffer area***
- (viii) *PP shall explore the possibilities of utilization of OB material for different purposes (in construction of roads, manufacture of artificial sand, aggregates, use for farmers etc.) and accordingly Plan shall be included in EIA/EMP Report*
- (ix) *Project proponent to prepare Environmental Cost Benefit Analysis for the project in EIA/EMP Report.*
- (x) *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.*
- (xi) *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.*
- (xii) *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.*
- (xiii) *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.*
- (xiv) *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.*
- (xv) *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.*
- (xvi) *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.*
- (xvii) *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.*
- (xviii) *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.*
- (xix) *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.*
- (xx) *Description of water conservation measures proposed to be adopted in the Project should be given and Details of toe wall and garland drain to be constructed along the OB dump.*

- (xxi) Reclamation to be done using geo-texturing technique of the dumps close to habitation and a cause of visual intrusion.
- (xxii) The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location.
- (xxiii) PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total excavation & mineral) and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.
- (xxiv) PP should submit the detailed mineralogical and chemical composition of the mineral and percentage of free silica from a NABL/MoEF&CC accredited laboratory.
- (xxv) Plantation carried out and details should be provided by clearly mentioning latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditure to be incurred needs to be submitted. Plantation plan should be prepared in such a way that 80% of the plantation to be carried out in first 5 years and for the remaining years the proposal for gap filling.

#### **Agenda No.6.4**

#### **Semaria Open Cast Project of 2.0 MTPA (Normative) and 2.5 MTPA (Peak) in ML area of 419.155 Ha of M/s Northern Coalfields Limited in Harraiya, Chokra village, District Singauli (Madhya Pradesh) – For Amendment in Term of Reference (ToR)**

**[Proposal No. IA/MP/CMIN/180703/2020; File No J-11015/12/2020-IA-II(M)**

**6.4.1** The proposal is for amendment in Terms of Reference (ToR) to Semaria Open Cast Project of 2.0 MTPA (Normative) and 2.5 MTPA (Peak) in ML area of 419.155 Ha of M/s Northern Coalfields Limited in Harraiya, Chokra village, District Singauli (Madhya Pradesh)

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

The TOR for the proposal was granted by Ministry vide letter no.-IA-J-11015/12/2020-IA.II (M) dated 28<sup>th</sup> August, 2020

PP has submitted the proposal for amendment in ToR conditions with necessary clarification as mentioned below:

| <b>TOR Ref. No.</b> | <b>Detail of TOR Conditions requiring amendments</b>                                                                                                                                   | <b>Proposed amendment</b>                                                      | <b>Remarks</b>                                                      |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------|
| (i)                 | EAC sub-committee shall visit the site and submit its recommendations for the additional conditions to PP for protecting river Damodar and overall environment management of the mine. | Damodar River does not fall in the Study area/ even near Singrauli Coalfields. | Not relevant to this project, hence may be considered for deletion. |

|        |                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| (iv)   | PP shall submit the compliance of Mine Closure Plan and further reclamation status/process conducted in Mine Closure Report.                                                             | Not relevant as this is a new project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | May be considered for deletion. |
| (x)    | Mitigation plan to avoid Human-Wildlife Conflict should be prepared scientifically with the help of Wildlife Experts.                                                                    | There is no National park, ESZ, wildlife sanctuary within 15 Km of Buffer zone of study area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | May be considered for deletion. |
| (ix)   | Inpit conveyor belt with silo loading should be proposed and installed for transportation of coal till railway siding. No road transportation will be allowed in SPAs area of Singrauli. | Project is having mineable reserve of only 12.82 MT.<br>Life of the mine is only 11 years out of which 2.5 MTPA - peak production will be for only 3-4 years. Remaining period is for pre-production building and tapering production.<br>Construction of CHP will take at least 4 to 5 years with huge infrastructural investments. (Approx. Rs 200 Crores.). Coal will be dispatched through CHP/RLS of adjacent mine, i.e. Amlohri Project.<br>In view of the above points, installation of CHP with silo is not economically viable for the project.<br>It has been planned to transport coal from mine to Amlohri Coal stock yard through internal transport road and then through RLS to Amlohri Wharfwall. Therefrom coal will be despatched through rail network. | May be considered for deletion. |
| (xiii) | Permission for diversion of nallah/ water bodies lying in the project area from State Water Resource Department. Study the impact of diversion of nallah on nearby area and villages.    | No nallah/ water body is lying in the project lease area which is proposed for diversion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | May be considered for deletion. |

|      |                                                                                                                                                                                                                                                                                          |                                                                                                        |                                 |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------|
| (xv) | Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1 <sup>st</sup> May, 2018 for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report. | The mentioned OM has been superseded by OM No. 22-65/2017-IA.II dated 30 <sup>th</sup> September, 2020 | May be considered for deletion. |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------|

ToR reference no. (i), (iv), (x), (xv), & (xiii) to be excluded as it seems that it has been mentioned inadvertently, however site visit by EAC sub-committee shall be conducted to assess and further stipulate the conditions (if any) for environmental safeguards since the project comes under CPAs area.

Regarding condition (ix), PP has submitted the necessary justification that the project will not economically viable and also PP is proposing to transport internal road (about 7 km) till Rail siding

Regarding condition (x), - No National park, ESZ, wildlife sanctuary within 15 Km of Buffer zone of study area.

**6.4.3** *The EAC after deliberations **recommends** to modify the above condition as desired by project proponent and thereby amendment in Terms of Reference (ToR) to Semaria Open Cast Project of 2.0 MTPA (Normative) and 2.5 MTPA (Peak) in ML area of 419.155 Ha of M/s Northern Coalfields Limited in Harraiya, Chokra village, District Singauli (Madhya Pradesh) subject to following modified/additional conditions:*

- (i) *EAC subcommittee shall conduct the site visit for further additional conditions in view of area being in CPA (i.e. Singrauli)*
- (ii) *Study on traffic impact assessment shall be conducted considering 50 tonnes dumpers only for internal transportation of coal (as proposed by PP) till railway siding.*
- (iii) *Certification from PCCF shall be submitted by PP that there is no National park, ESZ, wildlife sanctuary within 15 Km of Buffer zone of study area.*
- (iv) *Amount to be allotted for CER shall be part of EIA/EMP for addressing issues raised during Public Hearing and detail plan along with timeline submitted in EIA/EMP report.*

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

**\*\*\*\*\***

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

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

**(a) Statutory compliance**

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

**II. Air quality monitoring and preservation**

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

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

- iv. All approach roads shall be black topped and internal roads shall be concreted. The roads shall be regularly cleaned. Coal transportation shall be carried out by covered trucks.
- v. Covered trucks shall be engaged for mineral transportation outside the washery 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 confirm to the effluent standards as prescribed under Environment (Protection) Act, 1986
- xxiii. Details of washed coal, middling and rejects along with the MoU with the end-users should be submitted.

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## **ANNEXURE-V**

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

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

(xxxix) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining 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 Rights | 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 /Project (ha) | ML Area | 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<br>provide details of<br>each FC |  |  |  |
|--|--|---------------------------------------------------|--|--|--|

**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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1/21/2021

Email

**Email**

**Munna Kumar Shah**

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**Re: Draft MoM of 6th EAC meeting held on 13th January, 2021**

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**From :** gpkundargi@gmail.com

Thu, Jan 21, 2021 02:04 PM

**Subject :** Re: Draft MoM of 6th EAC meeting held on 13th January, 2021

**To :** Munna Kumar Shah <munna.shah@gov.in>

Dear Munna Kumar ji

I have gone through the revised draft after incorporating comments/ observations from the members.

Finalised draft minutes are approved & you may go ahead with further needful action

Thank you

Gururaj P Kundargi

On Thu, 21 Jan, 2021, 1:29 pm Munna Kumar Shah, <[munna.shah@gov.in](mailto:munna.shah@gov.in)> wrote:

Sorry sir, missed the attachment. pls find enclosed in this email

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**From:** "Munna Kumar Shah" <[munna.shah@gov.in](mailto:munna.shah@gov.in)>

**To:** [gpkundargi@gmail.com](mailto:gpkundargi@gmail.com)

**Cc:** "lk.bokolia" <[lk.bokolia@nic.in](mailto:lk.bokolia@nic.in)>

**Sent:** Thursday, January 21, 2021 11:55:45 AM

**Subject:** Re: Draft MoM of 6th EAC meeting held on 13th January, 2021

Dear sir

As discussed, the comments of Dr. Unmesh Patnaik and other correction desired has been done. Further inputs provided by Dr. Umesh and Prof. Rai has been incorporated in the Draft Minutes.

The undersigned is directed to request to kindly approve the MoM of 6th EAC meeting for further uploading it on PARIVESH Portal.

For your kind approval please

Thank you

Regards

Munna Kumar Shah  
Scientist D

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**LIST OF PARTICIPANTS OF EAC (COAL) IN 6<sup>th</sup> MEETING OF HELD DURING 13<sup>th</sup> JANUARY, 2021 THROUGH VIDEO CONFERENCING**

|     |                                                                       |   |                  |                          |
|-----|-----------------------------------------------------------------------|---|------------------|--------------------------|
| 1.  | <b>Shri G.P Kundargi</b>                                              | - | <b>Chairman</b>  | <b>DAY-1</b><br><b>P</b> |
| 2.  | Dr. N. P. Shukla                                                      | - | Member           | A                        |
| 3.  | Shri Suramya Dolarray Vora, IFS (Retd)                                | - | Member           | P                        |
| 4.  | Dr. Umesh Jagannathrao Kahalekar                                      | - | Member           | P                        |
| 5.  | Shri K.B. Biswas                                                      | - | Member           | P                        |
| 6.  | Dr. Nandini.N                                                         | - | Member           | P                        |
| 7.  | Dr. Unmesh Patnaik                                                    | - | Member           | P                        |
| 8.  | Shri Prasant Kumar Mohapatra                                          | - | Member           | P                        |
| 9.  | Professor S S Rai, Representative of IIT/ISM Dhanbad                  | - | Member           | P                        |
| 10. | Shri M.P Singh, Representative of CEA                                 | - | Member           | A                        |
| 11. | Dr. Santosh Kumar Hampannavar                                         | - | Member           | A                        |
| 12. | Prof R.K. Giri Representative of IMD                                  | - | Member           | A                        |
| 13. | Dr. S.K. Paliwal<br>Representative of Central Pollution Control Board | - | Member           | A                        |
| 14. | Shri Lalit Bokolia, Director, MoEFCC                                  | - | Member Secretary | A                        |
| 15. | Munna Kumar Shah (Scientist D, MoEFCC)                                | - | Assisted EAC     | P                        |