**Government of India**
**Ministry of Environment, Forest and Climate Change**
**IA Division**
**(Thermal Projects)**
*******

सत्यमेव जयते

**Minutes of AGENDA FOR 15TH MEETING OF THE EXPERT APPRAISAL CO MMITTEE (EAC) (THERMAL POWER PROJECTS) TO BE HELD ON 28TH N OVEMBER, 2024 meeting Thermal Projects held from 28/11/2024 to 28/11/2024** **Date:** 04/12/2024

**MoM ID:** EC/MOM/EAC/598737/11/2024

**Agenda ID:** EC/AGENDA/EAC/598737/11/2024

**Meeting Venue:** N/A

**Meeting Mode:** Virtual

**Date & Time:**

| | | |
|---|---|---|
| 28/11/2024 | 10:30 AM | 05:30 PM |

**1. Opening remarks**

At the outset, the Chairman welcomed the Expert members & other participants and requested to start the proceeding as per the agenda listed for this meeting. The list of members who participated in the meeting is at **Annexure – I**. The Standard/Generic ToR conditions shall be system generated through the PARIVESH Portal.

**[Note: Please see the PDF of MoM of the 15th EAC Meeting (Thermal) at page no. 73-149]**

**2. Confirmation of the minutes of previous meeting**

Confirmation of the Minutes of the 14th Meeting of the EAC (Thermal): The minutes of the 14th meeting of the EAC (Thermal) held during 4-5th November, 2024 has been confirmed by the EAC as already uploaded on PARIVESH along with following corrections:

| Minutes uploaded on PARIVESH | To be read as |
|---|---|
| **Para No. 14.1.24 A. Specific conditions**<br>**[A] Environmental Management**<br>2. Project proponent shall achieve stack emission level of 600 mg/Nm$^3$ and **300 mg/Nm$^3$** for sulphur di-oxide ($SO_2$) and Oxides of Nitrogen (NOx) for the existing Unit –I (350 MW) by December, 2024. | **Para No. 14.1.24 A. Specific conditions**<br>**[A] Environmental Management**<br>2. Project proponent shall achieve stack emission level of 600 mg/Nm$^3$ and **450 mg/Nm$^3$** for sulphur di-oxide ($SO_2$) and Oxides of Nitrogen (NOx) for the existing Unit –I (350 MW) by December, 2024 |

| Minutes uploaded on PARIVESH | To be read as |
|---|---|
| **Para No. 14.7.25 A. Specific conditions**<br>**[A] Environmental Management**<br>6. PP shall implement the protective | **Para No. 14.7.25 A. Specific conditions**<br>**[A] Environmental Management**<br>6. PP shall implement the protective measure |

| Minutes uploaded on PARIVESH | To be read as |
|---|---|
| measure proposed in Environment Management Plan (EMP) in a time-bound manner. The budget earmarked for the same is Rs 880 Crores (Capital) and Rs 88 crores (recurring) and should be kept in separate accounts and audited annually. The implementation status along with the amount spent with documentary proof shall be submitted to the concerned Regional Office for the activities carried out during the previous year. In addition to this existing 1 CAAQMS, PP shall install four continuous ambient air quality monitoring station near ash pond area at suitable locations preferably the village side in consultation of **OSPCB** within 6 months from the date of grant of EC. | proposed in Environment Management Plan (EMP) in a time-bound manner. The budget earmarked for the same is Rs 880 Crores (Capital) and Rs 88 crores (recurring) and should be kept in separate accounts and audited annually. The implementation status along with the amount spent with documentary proof shall be submitted to the concerned Regional Office for the activities carried out during the previous year. In addition to the existing 1 CAAQMS, PP shall install four continuous ambient air quality monitoring station near ash pond area at suitable locations preferably the village side in consultation of **JSPCB** within 6 months from the date of grant of EC. |

**3. Details of proposals considered by the committee**

**Day 1 -28/11/2024**

**3.1. Agenda Item No 1:**

**3.1.1. Details of the proposal**

**Proposed expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Criti cal Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amli Bhanun a, Tehsil Pussore, District Raigarh, Chhattisgarh by Adani Power Limited.** by **Adani Power Limited** located at **R AIGARH,CHHATTISGARH**

| **Proposal For** | | Fresh EC | |
|---|---|---|---|
| **Proposal No** | **File No** | **Submission Date** | **Activity (Schedule Item)** |
| IA/CG/THE/494913/2024 | J-13012/57/2008.IA.II (T) | 18/10/2024 | Thermal Power Plants (1(d)) |

**3.1.2. Project Salient Features**

**Agenda No 15.1**

**15.1** Proposed expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW **by M/s. Adani Power Limited** located at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amli Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh - **Reconsideration for Environmental Clearance based on ADS reply.**

**[Proposal No. IA/CG/THE/494913/2024; F. No. J-13012/57/2008.IA.II (T)]**

**15.1.1:** M/s. Adani Power Limited has made an online application vide proposal no. IA/CG/THE/494913/2024 dated 18/10/2024 along with copy of EIA/EMP report, Forms (CAF, Part A, B and C), certified compliance report and subsequent reply to the additional information submitted on 18/11/2024 and sought for environmental clearance under the provisions of EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at item No. 1(d) – Thermal Power Plants under Category 'A' of the schedule of the EIA Notification, 2006 and appraised at the Central

Level.

Name of the EIA consultant: M/s. GreenC India Consulting Private Limited Ghaziabad. [List of ACOs with their Certificate / Extension Letter no.: NABET/EIA/2326/RA 0297, valid up to 22.02.2026].

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

**15.1.2:** The project of M/s. Adani Power Limited located in Chhote Bhandar, Bade Bhandar, Sarvani, & Amli Bhanuna Villages, Tehsil Pussore, District Raigarh, State Chhattisgarh is for enhancement/expansion of capacity from 600 (1x600) MW to 2200 MW [Proposed 1600 (2x800) MW based on Ultra Super Critical Technology].

**15.1.3:** The detail of the ToR is furnished below:

| | **Consideration** | **Details** | **Date of Accord** | **ToR Validity** |
|---|---|---|---|---|
| | 45th EAC Meeting held on 16th August 2023 | Terms of Reference | 23rd September 2023 | 22nd September 2027 |

**15.1.4:** The existing project was accorded environmental clearance vide letter no. J-13012/57/2008-IA. II (T) dated 20/05/2010 and subsequent amendment to EC was accorded on 16.04.2015, 26.11.2019 and 30.07.2020, Thereafter, EC was transferred vide letter dated 22.10.2019 (from KWPCL to REGL) and 24.04.2023 (REGL to APL) by MoEF&CC. Consent to Operate renewal for the existing unit was accorded by Chhattisgarh Environment Conservation Board (CECB) vide Consent Order No. 9122/TS/CECB/2022, Nava Raipur Atal Nagar, Raipur on 11/03/2022. The validity of CTO is up to 31/03/2025.

**15.1.5:** Certified compliance report from Regional Office

The status of compliance to the conditions was obtained from Regional office, Chhattisgarh Environment Conservation Board (CECB) *vide* letter dated 20.09.2024 in the name of M/s. Adani Power Limited, Raigarh. The Action taken report regarding the partially complied conditions as observed in the said report was submitted to CECB Office, vide letter no. APL/Raigarh TPP/ENV/2024-25/311 dated 02.10.2024. CECB, evaluated the same and has issued letter on 30.10.2024. The details of the observations made by CECB in the report dated 30.10.2024 along with its present status as furnished by the PP are given below.

| **S No.** | **EC Conditions** | **Observation of RO, CECB (abridged)** | **Condition no.** | | | **Re-assessment by RO,CECB / Response by PP** |
|---|---|---|---|---|---|---|
| | | | **EC date** | **Specific** | **General** | |
| 1 | Further an amount of Rs 15.0 Crores shall be earmarked as one-time capital cost for CSR program as committed by the project proponent vide its letter dated 23.03.2010. Subsequently a recurring expenditure of Rs 3.0 Crores per annum shall be earmarked as recurring expenditure for CS | Industry agreed upon. Industry has not provided details about one-time capital cost 15.0 Cr. For CSR Program as committed by the project proponent vide its letter dated 23.03.2010. | 20.5.2010 | 22 | -- | **Industry complied upon.** Industry informed that INR 16.05 Crores was spent during the period of FY 2010- 2012 in CSR activities.<br><br>Industry via it's letter dated 30.10.2024 informed that in FY 22-23 amount Rs. 1.2 Cr. and in FY 23-24 amount Rs. 1.69 Cr. Recurring expenditure has been done on CSR programme. Also in FY 24-25 amount Rs. 3.07 Cr. And additional Rs. 2 Cr. has been planned to spend on additional CSR activities utilizing previous unutilized amount. |

| S No. | EC Conditions | Observation of RO, CECB (abridged) | Condition no. | | | Re-assessment by RO,CECB / Response by PP |
|---|---|---|---|---|---|---|
| | | | EC date | Specific | General | |
| | R activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation. | | | | | |
| 2 | The project proponent shall formulate a well laid Corporate Environmental Policy and identify and designate responsible officers at all levels of its hierarchy to ensure adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations. | **Industry agreed upon.** | 20.5.2010 | 31 | -- | |
| 3 | Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry | **Industry agreed upon.** | 20.5.2010 | -- | 4 | **Industry complied upon.**<br>Industry has provided following system for prevention of spontaneous fires in coal yard, especially during summer season.<br>1. For Easy access 3m gap is give on either side of coal heaps in case of vehicle or personnel movement, whenever required.<br>2. Thirty yard sprinkler are operational covering all heaps from both side. During dry season, all yard sprinklers are being operated twice in every shift, even if system is stopped.<br>3. During stacking. Dozer compaction is being done every 1.5 m of height of coal heap to mitigate air pockets in heaps preventing spontaneous combustion.<br>4. Continuous & whenever req |

| S No. | EC Conditions | Observation of RO, CECB (abridged) | Condition no. | | | Re-assessment by RO,CECB / Response by PP |
|---|---|---|---|---|---|---|
| | | | EC date | Specific | General | |
| | | | | | | uired, HEMM (Dozer, excavator etc) is deployed for heap compaction & shaping & heap toe shaping.<br>5. Heap is covered via green aerated net to prevent any foreign VM, during dry season.<br>6. Pile age is strictly maintained below 45 days per our in-house SOP.<br>7. Thermography is being cloned in biweekly basis to spot any internal hot spot & if spotted immediate reclaiming is done as a precaution. |
| 4 | Avenue plantation of 2/3 rows all along the road for transportation of coal shall be carried out by the project proponent at its own expenses in consultation with the State Government Authorities. | It was informed that the joint inspection of the coal transportation route has been carried out by Van Vikas Nigam (Govt. of Chhattisgarh). The Proposal is under process. | 16.4.2015 | -- | 2 | It was informed that plantation will be carried out along NH-153 from Chhatamuda village upto Plant premises by Van Vikas Nigam (Govt. of Chhattisgarh). The Proposal is under process. |
| 5 | Compliance status to the MoEFCC Notification dated 21/05/2020. | Industry agreed upon. | 16.4.2015 | -- | -- | Industry agreed upon. |

**15.1.6:** Environmental Site Settings

| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | **Facilities** / **Existing Area (In Hectares)** / **Proposed Area (In Hectares)**<br>Main Plant: 10.11 / 22.25<br>Coal Handling System: 23.47 / 24.28<br>Water System: 7.28 / 11.33<br>Switch Yard: - / -<br>Green belt: 67.58 / 49.82 | |

| Facilities | Existing Area (In Hectares) | Proposed Area (In Hectares) |
|---|---|---|
| Roads | - | - |
| Ash pond | 72.84 | - |
| Railway siding | - | - |
| Water supply pipeline | - | - |
| Ash transport pipeline | - | - |
| Others (including plant Road, boundary road, Misc. etc.) | 25.49 | 41.26 |
| Total | **355.71 Ha.** | |

| Point | Latitude | Longitude |
|---|---|---|
| A | 21°45'07.92"N | 83°16'25.37"E |
| B | 21°45'05.19"N | 83°16'42.40"E |
| C | 21°45'04.59"N | 83°16'46.64"E |
| D | 21°44'59.76"N | 83°16'54.97"E |
| E | 21°44'47.67"N | 83°17'08.40"E |
| F | 21°44'40.52"N | 83°17'06.11"E |
| G | 21°44'29.86"N | 83°17'02.82"E |
| H | 21°44'17.40"N | 83°16'59.75"E |
| I | 21°44'09.42"N | 83°17'10.55"E |
| J | 21°44'02.09"N | 83°17'03.93"E |
| K | 21°44'03.99"N | 83°16'53.96"E |
| L | 21°43'50.43"N | 83°16'49.33"E |
| M | 21°43'44.19"N | 83°16'46.05"E |
| N | 21°43'37.64"N | 83°16'38.27"E |
| O | 21°43'50.1"N | 83°16'22.98"E |
| P | 21°43'41.32"N | 83°16'20.53"E |
| Q | 21°43'49.15"N | 83°16'02.52"E |
| R | 21°44'02.77"N | 83°15'54.55"E |
| S | 21°44'21.75"N | 83°15'55.35"E |
| T | 21°44'29.30"N | 83°15'59.48"E |
| U | 21°44'46.69"N | 83°16'5.021"E |
| V | 21°44'52.46"N | 83°16'21.52"E |

| Point | Latitude | Longitude |
|---|---|---|
| A | 21°44'24.37" | 83°16'5.40"E |

| | | | |
|---|---|---|---|
| | | N | |
| | | B | 21°44'22.32" N | 83°16'28.20" E |
| | | C | 21°43'51.30" N | 83°16'25.26" E |
| | | D | 21°43'52.93" N | 83°16'1.74"E |
| | | 230 m above MSL | |
| | | | |
| | | Mahanadi River | 3.5 | S |
| | | Mand River | 1.4 | SW |
| | | Kutari Nala | 3.3 | SW |
| | | Lath Nala | 5.4 | SW |
| | | Kantang Nala | 5.6 | S |
| | | Gayasagar Nala | 8.7 | SE |
| | | Nala | 2.8 | NW |
| | | Kamrel Nala | 8 | NNW |
| | | **List of Reserved and protected forests:** | | |
| | | **Particulars** | **Distance (in km)** | **Direction** |
| | | Damka PF | 5.4 | SW |
| | | Devtongri PF | 8 | SSW |
| | | Kandola RF | 9.7 | SSE |
| | | | | |
| | | | | |

**15.1.7:** The unit configuration and capacity of existing and proposed project is given as below:

| | | | | |
|---|---|---|---|---|
| | 600 (1x600) MW | 1600 (2x800) MW | | |

**15.1.8**: The details of the fuel (coal/gas/LDO) requirement for the proposed project/ expansion cum proposed project along with its source and mode of transportation is given as below:

| **Details** | **Fuel requirement (MTPA)** | **Source** | **Distance from site (Kms)** | **Mode of Transportation** | **Coal Characteristics (Worst case scenario)** | **Linkage document** |
|---|---|---|---|---|---|---|
| Existing TPP | 3.25 Million TPA | SECL, MCL | About 110 (Rail 85 KM & Road 25 KM) | Rail & Road | Ash – < 40 (%)<br>Sulphur - <0.5 (%)<br>Moisture – 13 (%)<br>GCV- 3065 Kcal/ Kg | Through e-auction. |
| Propo | 6.6 | Bijaha | Refer belo | Rail | Ash- < 40 (%) | Fuel Suppl |

| Details | Fuel requirement (MTPA) | Source | Distance from site (Kms) | Mode of Transportation | Coal Characteristics (Worst case scenario) | Linkage document |
|---|---|---|---|---|---|---|
| sed TPP | Million TPA | n coal mine | w table | | Sulphur- <0.5 (%)<br>Moisture- 13 (%)<br>GCV – 3700 Kcal/ Kg | y Agreement (FSA) & e-auction. |

Transportation Rail Route with distance for expansion project:

| Rail Route | Route Length (approx..) | Status |
|---|---|---|
| Sardega Station to Bhalumuda & Ghargoda Station | 37 Km | Under Development by CIL & Indian Railways |
| Ghargoda Station to Bhupdeopur station | 51.2 Km | Existing Rail Route |
| Bhupdeopur station to Raigarh TPP through Kirodimal station route | 28.3 Km | Under Construction by APL |

**15.1.9:** Existing Water requirement is 41095 $m^3$/day, water allocation is obtained from Mahanadi River and permission for the same has been obtained from WRD Raipur, Chhattisgarh vide agreement certificate No. IN-CG20016765166330T dated 23.02.2021. The water requirement for the proposed project is estimated as 95996 $m^3$ /day which will be met from Surface Water from River Mahanadi at 05 km. The permission for drawl of surface water is obtained from Rajya Nivesh Prothsahan Board (Chhattisgarh Govt.) vide letter No./ 299/SIPB/2021/239 dated 15.03.2024 The water will be transported to the plant site through existing pipeline. The specific water consumption for the power plant is 2.5 $m^3$/MWhr.

**15.1.10:** Existing power requirement of about 50 MWh from own TPP, i.e. AUX consumption. The power requirement for the proposed project is estimated as about 144 MWh, and will be met with own generation, i.e. AUX consumption.

**15.1.11:** Baseline environmental studies

| | | |
|---|---|---|
| AAQ parameters at 15 locations (Summer 2022 and Winter 2020) | $PM_{10}$ (µg/$m^3$) 31 – 72.6<br>$PM_{2.5}$ (µg/$m^3$) 18.6 – 48.5<br>$SO_2$ (µg/$m^3$) 10.2 – 32.6<br>$NO_2$ (µg/$m^3$) 8.8 – 20<br>CO (mg/$m^3$) 0.35 – 0.78 | |
| Incremental GLC Level | $PM_{10}$ = 0.4 µg/$m^3$ (Level at 06 km in SW Direction)<br>$SO_2$ = 3.3 µg/$m^3$ (Level at 06 km in SW Direction) | |
| Surface Water samples (10 locations) | | |

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>Ground Water samples at 10 locations</td><td>pH value of ground water samples varied from 7.33 to 7.54. The water samples are slightly alkaline. The maximum total hardness of ground water was found to be 328 mg/l in sample at GW5 and the minimum was observed as 190 mg/l in the sample at GW8. The minimum alkalinity of ground water was found to be 140 mg/l in sample at GW2 and GW10 and the maximum was observed as 220 mg/l in the sample at GW5. The maximum chloride concentration (75 mg/l) was found at GW5 and the minimum (45 mg/l) was recorded at GW9 and GW 10. The maximum average level of fluoride (0.45 mg/l) was found in GW 5 and the minimum value (0.25 mg/l) was found at GW9 and GW10.</td><td></td></tr>
<tr><td>Effluent generation details and its treatment</td><td>Effluent generation from TPP - 3000 KLD<br>Mode of treatment & reuse – Neutralization treatment will be provided for DM water reject. Wastewater wiutilized within the plant to achieve Zero Liquid discharge.<br>Domestic wastewater generation – 120 KLD<br>Domestic wastewater will be treated through latest MBBR Technology.<br>Mode of treatment & reuse - Treated water will be utilized for greenbelt and plantation purpose.</td><td></td></tr>
<tr><td>Noise levels Leq (Day & Night) at 10 locations</td><td>
<table>
<tr><th>Category</th><th>Location</th><th>Time</th><th>$L_{eq}$ dB A</th></tr>
<tr><td rowspan="4">Industrial Area</td><td rowspan="2">Project Site</td><td>Day</td><td>66.8</td></tr>
<tr><td>Night</td><td>41.6</td></tr>
<tr><td rowspan="2">Inside the Project Boundary</td><td>Day</td><td>64.3</td></tr>
<tr><td>Night</td><td>41.9</td></tr>
<tr><td rowspan="2">Commercial Area</td><td rowspan="2">Timarlaga petrol pump</td><td>Day</td><td>58.7</td></tr>
<tr><td>Night</td><td>43.4</td></tr>
<tr><td rowspan="14">Residential Area</td><td rowspan="2">Bunga Village</td><td>Day</td><td>51.4</td></tr>
<tr><td>Night</td><td>44.3</td></tr>
<tr><td rowspan="2">Ruchida Village</td><td>Day</td><td>50.5</td></tr>
<tr><td>Night</td><td>42.2</td></tr>
<tr><td rowspan="2">Kalma Village</td><td>Day</td><td>53.2</td></tr>
<tr><td>Night</td><td>40.2</td></tr>
<tr><td rowspan="2">Amalibhuan Village</td><td>Day</td><td>58.3</td></tr>
<tr><td>Night</td><td>43.9</td></tr>
<tr><td rowspan="2">Near Maa Mangla College (Surri Village)</td><td>Day</td><td>52.3</td></tr>
<tr><td>Night</td><td>42.6</td></tr>
<tr><td rowspan="2">Amalibhuana Village</td><td>Day</td><td>58.3</td></tr>
<tr><td>Night</td><td>43.9</td></tr>
<tr><td rowspan="2">Tilgai Village</td><td>Day</td><td>52.9</td></tr>
<tr><td>Night</td><td>43.6</td></tr>
<tr><td>Silent Zone</td><td colspan="3">There is no silent zone</td></tr>
</table>
</td><td></td></tr>
<tr><td>Soil Quality at</td><td></td><td></td></tr>
</table>

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>5 Locations</td><td></td><td></td></tr>
<tr><td>Flora & Fauna</td><td>Schedule-I species observed in the study area: Indian grey mon goose or Asian grey mongoose (Urva edwardsii), Indian fox ( Vulpes bengalensis), Indian Giant Squirrel (Ratufa indica), Ind ian Python (Python molurus), Indian Star Tortoise (Geochelon e elegans)<br>APL, Raigarh has already submitted the wildlife conservation plan along with requisite documents to PCCF & DFO and furt her, PP will adhere & comply with all the conditions, suggestio ns/recommendations by PCCF office towards wildlife conserv ation plan.</td><td></td></tr>
<tr><td>Hydrogeology s tudy</td><td>Recommendations of Hydrogeology study:
<table>
<tr><th>Sl. No.</th><th>Recommendations</th><th>Action Plan</th></tr>
<tr><td>1.</td><td>The maximum hardness level (680.0 mg/l) excee ds both the acceptable li mit (200 mg/l) and the permissible limit (600 mg/l) set by IS 10500:2 012. This may indicate potential issues for wate r usability, especially in WS-12. Elevated hardn ess levels and water trea tment may be required i n coming future. A nee d for ongoing monitorin g and potential remediat ion efforts in areas with hardness levels, particul arly WS-12 can be sugg ested.</td><td>•Water quality monitoring sh all be done once a month through NABL accredite d laboratory to track Har dness Level in WS-12 lo cation.<br>•Further, PP shall engage rep uted government institute s to closely monitoring th e hardness levels for furt her course of action as w ell to take preventive acti on within the next 8 to 1 0 months.<br>•Noughata village (WS-12) l ocated at a distance of 6.5 km w.r.t plant site i n North direction.</td></tr>
<tr><td>2.</td><td>By reviewing the report it was found that the val ues of Chloride content, Magnesium and Calciu m were found to be abo ve acceptable limit but within permissible limit s. The plant may take so me preventive measures accordingly</td><td>Raigarh TPP has already im plemented ZLD and not usin g Ground water.<br>Water quality monitoring sh all be done once in a month engaging NABL accredited l aboratory to track parameter s like Chloride content, Mag nesium and Calcium and cor rective/preventive actions w ill be taken based on finding s in the report.</td></tr>
<tr><td>3.</td><td>As the topography of th e study area is undulatin g with varied drainage n etwork, slope map and</td><td>For the present project site S lope and elevation details ar e provided in EIA report. Re commendation duly noted fo</td></tr>
</table></td><td>Consultant Con sultant details:<br>The hydrogeolo gy study report has been prepar ed by M/s. Aks har Geo Servic es Pvt. Ltd & V etted by NIT D elhi and the Vet ted report is sub mitted with AD S response.</td></tr>
</table>

| | | |
|---|---|---|
| | | |
| | | |
| | Digital Elevation Model (DEM) map of the study area can be incorporated in future study report for better understanding. | r future study. |
| | 4. It is recommended to mention the method used for determining stream order of the study area once in three years. | Raigarh TPP will engage reputed government institute for future study as recommended once in 3 years. |
| Impact on aquatic ecology | Mitigation measures<br>• Plant is based on ZLD.<br>• Suitable screens (1.0-3.0 mm mesh size) at the water intake structures provided to prevent entrainment and impingement of fish and other aquatic organisms and can significantly reduce harm.<br>• Implementing comprehensive monitoring systems for water temperature, quality, and aquatic life health allows for early detection of negative impacts and timely mitigation. | |

**15.1.12:** The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below:

| Sr No | Type of Waste | Source | Quantity generated (TPA) | Disposal to | Remarks |
|---|---|---|---|---|---|
| 1 | Municipal Solid waste | Plant Canteen & Admin Building | 5.3 TPA | Collected; segregated using color coded waste bin, Organic waste converters ( OWC) | -- |
| 2 | E-Waste | IT, Telecom, Used tubes & bulbs | 2.5 TPA | Collected; segregated | -- |
| 3 | Battery Waste from UPS | Automotive & Industrial | 5.4 TPA | Collected; segregated | -- |
| 4 | Bio-medical Waste | First Aid Centre | 0.025 TPA | Collected; segregated | -- |
| 5 | Hazardous Waste | Plant Operation | Used/Spent Oil – 60 TPA Spent ion Exch | Collected; segregated | -- |

| Sr No | Type of Waste | Source | Quantity generated (TPA) | Disposal to | Remarks |
|---|---|---|---|---|---|
| | | | ange resin containing toxic Metals – 5 TPA<br>Waste or residue containing Oil – 8 TPA Empty/ Barrels/ Contaminated Containers 15 TPA | | |

**15.1.13:** Public Consultation

| | |
|---|---|
| Details of advertisement given | The Times of India, Haribhoomi, Krantikari Sanket |
| Date of public consultation | 12.07.2024, Time 11.00 AM onward |
| Venue | Playground/field near the Government Higher Secondary School, Supa |
| Presiding Officer | Smt. Santan Devi Jangde, Additional District Magistrate, Raigarh |
| Major issues raised | Employment to Local People, Community Rural Infrastructure Development, Dust generation issue, Education, Community Health & infrastructure, Job to locals. |
| No. of people attended | Approx. 400 |

Action plan as per MoEF&CC O.M. dated 30/09/2020 to address the concerns of public consultation:

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| **A** | **Educational Initiatives** | | | | | | | |
| | Modernization & necessary construction of identified Primary / Higher Secondary School of core zone village of the project site in consultation with Local Government Authorities. Identifie | 3.0 | 1.6 | - | Actual recurring cost will be borne by APL Raigarh | | **4.6** | School of 1858 sq meters area is proposed to be constructed in Bade Bhandar **within 2 years** with classrooms and other basic facilities viz. princ |

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| | d aadarsh school shall be developed by APL with full support of local administration. | | | | | | | ipal room, staff room, library, assembly hall, computer room, administrative room, toilets, storeroom, playground etc. |
| | Distribution of drinking water filter/Drinking water coolers in schools. | 0.1 | 0.2 | 0.2 | - | - | **0.5** | APL will provide drinking water facility in more than 20-25 nearby villages Bade Bhandar, Chhote Bhandar, Amli bhanuna, Sarvani etc. |
| | Basic teaching and learning infrastructure support to Govt. Schools, Supporting in creation of assembly halls, prayer halls, classrooms and **Smart class**, computer room, space for mid-day meals, playground, school boundary walls etc. for government school. | 2.0 | 1.5 | 1.0 | - | - | **4.5** | APL will provide infrastructure support to Govt. School in about 20 Villages Bade Bhandar, Sarvani, Amli Bhanuna, Jevridih, Supa, Kathli. |
| | Educational Vocational Guidance fair (EVGF) for career talk. Conducting Quiz competition and awareness programs for Students, Provide assistance for coaching Classes. | 0.15 | 0.30 | 0.30 | - | - | **0.75** | APL will provide Scholarship to promote education for girls in the nearby 20-25 villages and Extracurricular activities like 'Yoga", events' etc. will be supported. |
| | Community provides awareness about education, health, hygiene, and good practices. | 0.10 | 0.20 | 0.20 | - | - | **0.5** | Functional literacy in Chhattisgarh state is 71% & 75% in 20 villages where APL is working. Further APL aims to meet 80% functional literacy within the next 2 years. |
| | Program for skill improvements of teaching staffs in govt. school. | 0.10 | 0.20 | 0.20 | - | - | **0.5** | Program for skill improvement of teaching staff is being conducted in about 8 government schools of the nearby villages. |
| | | **5.45** | **4.00** | **1.90** | - | - | **11.35** | |
| **B** | **Community Health Initiatives** | | | | | | | |

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| | Providing assistance for the construction & operation of Primary Health Centre equipped with necessary facilities within core village of TPP (Bade Bhandar) in consultation with local government authorities. | 4.25 | 3.25 | Actual recurring cost will be borne by APL Raigarh | | | **7.5** | **Hospital in an area of 3200 sq meter to be constructed within 2 years with 40 beds**, doctors' cabin, nurses/staff rooms, emergency room, dispensary, pathology, patients' waiting area, toilets (M & F), parking area, equipment etc. |
| | Rural Medical Camps through Medical Team of Primary Health Centre @ 4 Nos. of camps per month (@ 60 patients per camp), Safe Menstrual Hygiene Management Awareness, Mega Health Camp, Cataract Screening & Operation. | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | **1.5** | Mobile Health Care Unit services is being provided in about 28 villages.<br>Medical camps will be periodically organized in about 10-15 villages Bade Bhandar, Chhote Bhandar, Amli Bhanuna Sarvani, Barpali, Jevridih, Kathli, Tupakdhar, Bunga, Ranbhatha, Taparda, Supa, Kotmara. |
| | Promotion of awareness of malnutrition and anemia. | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | **0.75** | Awareness on Mother & child health and knowledge enhancement on preventive health care being promoted in about 18-20 Villages Bade Bhandar, Chhote Bhandar, Amli Bhanuna Sarvani, Kalma, Chandli, Amlipali, Shankarpali, Pusalda, Jatri and Tilgi. |
| | Promotion of Poshan Vatika at backyard of villagers & Project Suposhan. | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | **1.0** | In about 25-30 nearby Villages Jevridih, Kathli, Bunga, Ranbhatha, Taparda, Supa. |
| | | **4.9** | **3.9** | **0.65** | **0.65** | **0.65** | **10.75** | |
| **C** | **Sustainable Livelihood and Women Empowerment** | | | | | | | |
| | Skill Development Centre (SDC) to make the youth for achieving their Goals in life by becoming Skilled Professionals. | 0.55 | 0.55 | 0.55 | 0.55 | 0.3 | **2.5** | APL is providing ITI Training & Skill Development Program in the nearby villages. |

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| | Development & Support for Drip irrigation, assistance for mushroom, vegetable cultivation and livestock management in core zone villages | 0.35 | 0.35 | 0.35 | 0.35 | 0.1 | **1.5** | Support being provided in Villages Bade Bhandar, Chhote Bhandar, Amli Bhanuna and Sarvani. |
| | | **0.9** | **0.9** | **0.9** | **0.9** | **0.4** | **4.0** | |
| **D** | **Community Rural Infrastructure Development** | | | | | | | |
| | Repairing, strengthening & Maintenance of Existing roads in consultation with Gram Panchayats. | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | **3.5** | Cement Concrete Road (about 6000 meters length) will be constructed near Sarvani & Amli Bhanuna and will be extended to other villages. |
| | To provide facility for potable drinking water, RO Plants and water supply system through overhead tanks | 1.05 | 1.05 | 0.30 | 0.20 | 0.15 | **2.75** | Portable drinking water facility being provided to Bade Bhandar, Chhote Bhandar, Amli Bhanuna Sarvani etc. |
| | Creation of clean and hygienic environment by proper drainage systems, community sanitation campaign, waste management awareness etc. implementation of Swachchh Bharat Initiative. | 0.6 | 0.6 | 0.25 | 0.20 | 0.10 | **1.75** | Strengthening of drainage facility in the nearby villages is under progress and further will be continued. |
| | Upgradation & Renovation of sanitation facilities such as toilets etc. | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | **2.0** | Upgradation & renovation of sanitation facility is being provided and will be provided on need based in Villages Sarvani, Bade Bhandar and Amli Bhanuna and other villages. |
| | Provision of solar street lighting, green nurturing programs, plantation drives etc. in | 0.7 | 0.7 | 0.7 | 0.25 | 0.35 | **2.7** | Solar street lighting is provided in Villages Barpali, Supa, Bunga & Tarda and other neaby villages shall be provided.<br>Plantation drive will be conducted in consultation with forest office. |
| | | **3.45** | **3.4** | **2.35** | **1.7** | **1.7** | **12.7** | |

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| | | | **5** | | **5** | | | |
| **E** | **Development of Playgrounds for Sports** | | | | | | | |
| | Development of playgrounds and promotion of sports and training for school children. | 0.1 | 0.1 | 0.1 | 0.05 | 0.05 | **0.4** | Playground shall be developed In Villages Bade Bhandar & Amli Bhanuna. |
| | Cultural activities for villagers & provide sports equipment such as swing sets etc. | 0.1 | 0.1 | 0.1 | 0.05 | 0.05 | **0.4** | Renovation work will be done in nearby temples & cultural/assembly halls for Bhajan Kirtaan. |
| | | **0.2** | **0.2** | **0.2** | **0.1** | **0.1** | **0.8** | |
| **F** | **Development of local youth & women for various activities at village level** | | | | | | | |
| | Team/ Leaders development & capacity building activities at village level for various programme and activities. | 0.45 | 0.45 | 0.45 | 0.20 | 0.20 | **1.75** | The program is already in progress and further strengthening will be done for more youths. |
| | Vehicles for emergency purpose for local villagers including private ambulances as per requirement | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.5** | Vehicles are already made available to all. |
| | | **0.55** | **0.55** | **0.55** | **0.30** | **0.30** | **2.25** | |
| | **Total (A+B+C+D+E+F)** | **15.45** | **13.0** | **6.55** | **3.70** | **3.15** | **41.85** | |

**15.1.14:** Existing capital cost of project was Rs. 2,900 Cr. The capital cost of the proposed expansion project is Rs 13,600 Crores and the capital cost for environmental protection measures is proposed as Rs. 2110.33 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 21.85 Crores. The employment generation from the proposed project / expansion is 396 Nos. The details of cost for environmental protection measures as follows:

| S.No. | Description of Item | Existing (Rs. In Crores) | | Proposed (Rs. In Crores) | |
|---|---|---|---|---|---|
| | | Capital Cost | Recurring Cost | Capital Cost (updated) | Recurring Cost |
| (i). | Air Pollution Control | 81.20 | 3.23 | 1692.48 | 15.95 |
| (ii). | Noise control | 2.15 | 0.15 | 30.0 | 0.25 |
| (iii). | Water Pollution Control | 25.50 | 0.86 | 193.03 | 2.95 |
| (iv). | Ash management | 15.45 | 6.86 | 170 | 1.6 |
| (v). | Environmental Monitoring and Management | 0.15 | 0.06 | 16.82 | 0.50 |
| (vi). | Green Belt Development | 1.05 | 0.06 | 8.0 | 0.60 |
| (vii). | Addressal of Public Consultation issues | 1.7 | 0.1 | 41.85 | 4.57 |

**15.1.15:** Existing green belt has been developed in 67.58 ha area which is about 34.3% of the total project area of 197 ha with total sapling of 3,10,000 Trees. Proposed greenbelt will be developed in 49.82 ha which is about 33% of the total project area. Thus, total of **117.4 ha** area (33% of total project area) will be developed as greenbelt. Around 30 m wide greenbelt, consisting of at least around plant boundary will be developed as greenbelt and green cover as per CPCB guidelines. Local and native species will be planted with a density of 2500 trees per hectare. Total no. of 4,34,425 saplings will be planted and nurtured in 117.4 hectares and available area in 5 years.

**Updated Action Plan for Greenbelt and Plantation**

| S No. | Area (Ha) | Description | **Proposed** (Gap/Casualty replacement) | Year wise Action Plan (FY) | Budget Cost in (Rs.) |
|---|---|---|---|---|---|
| 1 | 67.58 | Already Plantation done | Gap filling by planting additional **(Casualty replacement will be completed with in two years)** | 2024-2025<br>2025-2026<br>2026-2027 | **0.316 Cr.**<br>**0.388 Cr.**<br>**0.295 Cr.** |
| 2 | 49.82 | Greenbelt will be developed | Details action as below. (Five-year Plan) | | **9.21 Crores** |

**Five Year Action Plan for Proposed Greenbelt Development (Expansion)**

| Year | Plantation on safety zone (7.5 Meter) & Un-worked Area | | Cost of sapling along with maintenance Rs.600/Plant | | Name of species |
|---|---|---|---|---|---|
| | Area (Ha.) | No. of Trees | Capital cost | Recurring cost/Annum | |
| 2024-25 | 16.6 | 41,500 | Plant Purchase Cost- 7.47 Cr | Maintenance/Watering/Manuring Cost (@ Rs.100/Plant) – Rs. 1.24 Cr | Sal (Shorea robusta) Teak (Tectona grandis) Mahua (Madhuca indica), Neem (Azadirachta indica) Bamboo (Bambusa), Amaltas (Cassia fistula), Sissoo (Dalbergia sissoo), Peepal (Ficus religiosa), Khamar (Gmelina arborea), Melia azederach ( Mahaneem), Neolamarckia cadamba (Kadam) and other local species as per CPCB/CECB Guidelines. |
| 2025-26 | 16.6 | 41,500 | | | |
| 2026-27 | 16.6 | 41,500 | | | |
| 2027-28 | Manpower & Manure for maintenance | | | Rs. 0.25 (Lumpsum) | |
| 2028-29 | Manpower & Manure for maintenance | | | Rs. 0.25 (Lumpsum) | |
| **Total** | **49.8** | **1,24,500** | **7.47 Crores** | **1.74 Crores** | |
| | | | **Total 9.21 Crores** | | |

**Status and Proposed Greenbelt Plantation**

| Sl. No. | Type | Area (Ha) | Percentage |
|---|---|---|---|
| 1 | **Existing Greenbelt** | **67.58** | 34.% |
| 2 | Proposed Greenbelt | 49.82 | -- |
| | Total Greenbelt Area | **117.4** | **33 %** |

**Plantation Methodology:**

Plantation will be implemented through Miyawaki plantation technique to provide dense with native species and the approach is supposed to ensure that plant growth is 10 times faster and the resulting plantation is 30 times denser than usual. It involves planting dozens of native species in the same area and becomes maintenance-free after the first three years.

- The native trees of the region are identified and divided into four layers — Canopy Trees, Trees, Sub-trees & Shrubs.
- The quality of soil is analyzed and biomass, which would help enhance the perforation capacity, water retention capacity, and nutrients in it, is mixed with it.
- A mound is built with the soil and the seeds are planted at a very high density — three to five saplings per square meter. The ground is covered with a thick layer of mulch.

**15.1.16: Ash management for the last three years (Existing):**

| Year | Quantity generated ( MTPA) | Quantity utilized ( MTPA) | % of utilization | Balance quantity (MTPA) | No. of storage silos with capacity |
|---|---|---|---|---|---|
| 2021-22 | 1.095 | 0.410 | 37.4 | 0.685 | Silo 1- 1000 MT Silo 2- 2500 MT |
| 2022-23 | 1.246 | 1.198 | 96.1 | 0.048 | |

| | | | | | |
|---|---|---|---|---|---|
| 2023-24 | 1.282 | 1.122 | 87.5 | 0.160 | |

**Fly ash Utilization details for the last three years = 2.12548 MTPA**

| S. No. | Activity (as applicable) | Quantity (MTPA) | Percentage (%) | Remarks (Prior approval of SPCB details to be mentioned) |
|---|---|---|---|---|
| 1 | Fly ash-based products (bricks or blocks or tiles or fiber cement sheets or pipes or boards or panels) | 0.006 | 0.28 | As per MoEFCC Notification for Fly Ash Notification |
| 2 | Cement manufacturing | 0.0148 | 0.70 | |
| 3 | Ready mix concrete | 0 | … | |
| 4 | Ash and Geo-polymer based construction materials | 0 | … | |
| 5 | Manufacturing of sintered or cold bonded ash aggregate | 0 | … | |
| 6 | Construction of roads, road and fly over embankment | 0 | …. | |
| 7 | Construction of dams | 0 | … | |
| 8 | Filling up of low lying area | 2.1046 (Abandoned Mines/ Stone Quarry) | 99.0 | Yes, NOC granted by SPCB. |
| 9 | Filling of mine voids: | 0 | …. | |
| 10 | Use in overburden dumps | 0 | …. | |
| 11 | Agriculture | 0 | …. | |
| 12 | Construction of shoreline protection structures in coastal districts | 0 | …. | |
| 13 | Export of ash to other countries | 0 | …. | |
| 14 | Others (please specify) | 0 | …. | |
| | **Total** | 2.1254 | 100 | |

**Bottom ash Utilization for last three years = 0.60443 MTPA**

| S.No. | Activity (as applicable) | Quantity (MTPA) | Percentage (%) | Remarks (Prior approval of SPCB details to be mentioned) |
|---|---|---|---|---|
| 1 | Fly ash based products (bricks or blocks or tiles or fiber cement sheets or pipes or boards or panels) | 0.01 | 1.65 | As per MoEFCC, Fly Ash Notification |
| 2 | Cement manufacturing | 0 | …. | As per MoEFCC, Fly Ash Notification |
| 3 | Ready mix concrete | 0 | …. | |
| 4 | Ash and Geo-polymer-based construction materials | …. | …. | …. |
| 5 | Manufacturing of sintered or cold bonded ash aggregate | …. | …. | …. |
| 6 | Construction of roads, road and fly over embankment | …. | …. | …. |
| 7 | Construction of dams | | …. | |
| 8 | Filling up of low lying area | 0.594432 (Abandoned Mines, Stone Quarry) | 98.34 | Yes, NOC granted by SPCB. |
| 9 | Filling of mine voids | 0 | …. | …. |
| 10 | Use in overburden dumps | 0 | …. | …. |
| 11 | Agriculture | 0 | …. | …. |
| 12 | Construction of shoreline protection structures in coastal districts | 0 | …. | …. |
| 13 | Export of ash to other countries | 0 | …. | …. |
| 14 | Others (please specify) | 0 | …. | …. |
| | **Total** | **0.60443** | **100** | |

**Legacy ash details =** No Legacy Ash as per Fly Ash notification S.O. 6169 (E) dated 30.12.2022

**C. Ash Stock in Operational Ash Pond- 2.355 MTPA**

**D. Ash Pond details: -**

| S.No. | Details of Ash pond | Ash pond 1 |
|---|---|---|
| 1 | Status of ash pond (Active / Exhausted (yet to be reclaimed)/ Reclaimed) | Active |
| 2 | Area (Ha) | 70.43 |
| 3 | Dyke height (m) | 12.0 |
| 4 | Volume ($m^3$) | 84.51 Lakh $m^3$ |
| 5 | Quantity of ash disposed (Million Tons) | 2.355 |
| 6 | Available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons) | About 70% (60 Lakh $m^3$) |
| 7 | Expected life of ash pond (number of years and months) | 15 yrs. Considering October'2024 (Capacity/life of ash dyke calculated in worst scenario for 25 years) |
| 8 | Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No lining | HDPE |
| 9 | Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD) | HCSD |
| 10 | Ratio of ash: water in slurry mix (1:_): | 65:35 |
| 11 | Ash water recycling system (AWRS) installed and functioning: Yes or No | Yes |
| 12 | Quantity of wastewater from ash pond discharged into land or water body ($m^3$) | 0 |
| 13 | Last date when the dyke stability study was conducted and name of the organization who conducted the study: | 19th June 2024, NIT, Rourkela |
| 14 | Last date when the audit was conducted and name of the organization who conducted the audit: | 01.10.2023, NIT Delhi |

**E. Proposed ash utilization plan for expansion project**

| Details | Existing generation (Phase-1) (MT | Proposed generation (Phase-II) | Total | Utilization (MTPA) | % of utilization | Balance quantity (MTPA) | No. of storage silos with capacity |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **PA)** | **(MTPA)** | | | | | |
| Ash (Fly & Bottom) | 1.282 | 2.356* | 3.638 | 3.638 | 100 | Nil | Existing TPP: Silo 1- 1000 MT Silo 2- 2500 MT Proposed TPP: Silo 4x2500 MT |

**15.1.17**: Summary of violation under EIA, 2006/court case/show cause/direction if any.

| **Sl. No** | **Case no.** | **Court Details** | **Brief Summary of the Case** | **Last date of hearing** | **Next date/ Order Passed** | **Action taken by PP** |
|---|---|---|---|---|---|---|
| 1 | 3044/2010 | Civil Court, Raigarh | A complaint is filed to recover the deficit of "Stamp duty & Registration fees" on R&R amount. | 03.02.2011 | Awaited | Matter is pending before Secretary-Revenue for guidelines on the matter since 3-Feb-2011. Neither party is pushing the matter. And no hearing is taking place. To be kept on hold. |
| 2 | E.C. 181/2014 | Labour court, Allahabad | Petitioners filed a compensation claim for a fatal road accident involving an employee of M/s Roots Cooling System Pvt. Ltd (Party) alleging it to be employment-related injury. | - | Awaited | No liability of APL as the compensation is to be paid by Contractor. |
| 3 | WP (C) No. 6003/2010 | Civil (High Court, Bilaspur) | The Case is between Govt of Chhattisgarh & petitioners - challenging land acquisition proceedings no. 21/ A-82/ 2009- 10 of Village Chhote Bhandar. we are as Party. | 07.01.2022 | Awaited | The hearing was held on 07.01.2022 as the court opinion that Weit Petition is pending since 2010.<br>Opportunity has been given to Petitioners to make their representations. |
| 4 | WP (C) No. 5918/2010 | Civil (High Court, Bilaspur) | The Cases is between Govt of Chhattisgarh & petitioners are challenging the notification issued under Sec-4 & Sec-6/ land acquisition proceeding no. 22/ A-82/ 2009- 10 of village Bade Bhandar. and we are as Party. | 07.01.2022 | Awaited | The hearing was held on 07.01.2022 as per the court opinion that Weit Petition is pending since 2010.<br>Opportunity has been given to Petitioners to make their representations. |
| 5 | Criminal Case/ 759/ 2016 | Criminal (JMFC Court, | Calming forged registry - FIR no. 205/2016 was filed for forged registry in name of Ghansiram & Harichand- Ucchbhitti (Railw | -- | Awaited | Police submitted the charge sheet on 03.11.16. Scheduled for registration of charges.<br>Bail granted by High court, Bil |

| Sl. No | Case no. | Court Details | Brief Summary of the Case | Last date of hearing | Next date/ Order Passed | Action taken by PP |
|---|---|---|---|---|---|---|
| | | Raigarh) | ay land). | | | aspur for all accused. Also scheduled for argument on accused application. |
| 6 | 6/ B-105(3)/ 2016-17 | Civil (District Registrar court, Raigarh) | A case has been filed for the loss of stamp duty and registration fee alleging suppression of the facts by KWPCL. | -- | Awaited | Scheduled for submission of patwari prativedan.<br>Application to be filed for restoration of case and name change on next hearing date.<br>Case has been refiled in the Commissioner Court. |
| 7 | A.P./A-6/2017-18 | Civil (Additional Commissioner, Bilaspur) | An appeal has been filed by Kulkitdas against an order in favor of his daughter Lata and KWPCL, wherein the ownership of land is disputed. | -- | Awaited | Scheduled for record call. Restoration applications are not needed, however application to be filed for name change. |
| 8 | A21 09/2016 (Not Registered Yet) | Civil (Commissioner Court, Bilaspur) | The case is filed through villager for getting land purchasing approval from land Commissioner as the village comes under the tribal area. | -- | Awaited | Scheduled for record call.<br>APL is not in array of parties. |
| 9 | 72-A/2020 | Declaration and Possession ($2^{nd}$ CJ II) | Appeal Filed by Arjun Nishad for possession of land purchased by Company. | -- | Awaited | -- |
| 10 | OMP(I) COMM. NO.348 OF 2016 & AA 107 of 2017/OMP (I) COMM. NO.349 OF 2016 & AA 108 of 2017 | Arbitration (Tribunal court, New Delhi) | Agency had filed the case in Tribunal Court for extra claim.<br>Although Final Contract Closure MOM dated 12 Jun 2015 mutually agreed & signed. | -- | Awaited | In view of the resolution plan getting approved without giving any right to Prem co. to claim the amount under dispute. The same gets extinguished and as such the arbitration is now infructuous. |
| 11 | ARB.P111/17 & 112/7 | Arbitration (Tribun | Although Final Contract Closure MOM dated 12 Jun 2015 mutually agreed & signed. Agency had | -- | - | In view of the resolution plan getting approved without giving any right to Premco to claim th |

| Sl. No | Case no. | Court Details | Brief Summary of the Case | Last date of hearing | Next date/ Order Passed | Action taken by PP |
|---|---|---|---|---|---|---|
| | | al court, New Delhi) | filed the case in Tribunal Court for extra claim. | | | e amount under dispute. The same gets extinguished and as such the arbitration is now infructuous. |
| 12 | Writ Petition All Orders Civil [Related To Other Matter] (WPC) (Filing Number) 1248/2022 | High Court, Bilaspur | The petition challenges the order by the Regional Officer, directing the petitioner to pay INR 18,90,000 without demonstrating the determination method. It also contests the cancellation of the NOC by the Sub-Divisional Officer, Sarangarh District, on 08.10.2021. | 10.03.2022 | Awaited | The matter was heard on 10.03.2022 wherein the Hon'ble Court granted an interim order staying the effect and operation of RO, order dated 04.12.2021 (levy of Rs. 18.9 lakhs).<br>Further, the Respondent authorities are restrained from taking any coercive steps against APL Raigarh. |
| 13 | Appeal No. 446 of 2022 | APTEL, New Delhi | Appeal against the Order Dated 08.08.2022 passed by CSERC in Petition No. 67 of 2020 (T)<br>Carrying Cost to be allowed from the date the amounts were due to REGL instead of date of filing of Petition | -- | Awaited | Pending for hearing.<br>IA for name change from REGL to APL was allowed by APTEL on 02.06.2023. |
| 14 | Appeal No. 437 of 2019 | APTEL, New Delhi | Appeal against levy of Relinquishment Charges for surrender of LTA | 23.11.2020 | Awaited | 23.11.2020 – PGCIL not to raise invoice during pendency of Appeal, except for cases under IBC.<br>To be Included in List of Finals<br>IA for name change from REGL to APL was allowed by APTEL on 02.06.2023. |
| 15 | WPC 835 of 2023 filed by REGL challenging CECB's Direction under Section 31A of Air Act | Chhattisgarh High court | Appeal against levy of Relinquishment Charges for surrender of LTA | 23.11.2020 | Awaited | 23.11.2020 – PGCIL not to raise invoice during pendency of Appeal, except for cases under IBC. To be Included in List of Finals<br>IA for name change from REGL to APL was allowed by APTEL on 02.06.2023. |
| 16 | Civil Suit Class B (DJADJ)/0000001/2022 | District court, New Delhi (Non-Regulatory) | A suit has been filed against REGL/APL for the refund of INR 19,60,437, which includes the EMD amount of Rs. 4,60,438 and a Bank Guarantee of Rs. 15,00,000, along with interest. The plaintiffs claim that all obligations h | -- | Awaited | For hearing. |

| Sl. No | Case no. | Court Details | Brief Summary of the Case | Last date of hearing | Next date/ Order Passed | Action taken by PP |
|---|---|---|---|---|---|---|
| | | | ave been discharged, but the amounts have not been returned. | | | |
| 17 | OA No. 70/2023_Suo Moto Application by NGT against various Thermal Power Plants | Central Zone Bench of NGT, Bhopal (Non-Regulatory) | Imposition of Compensation [provisional Rs. 6.1689 Crores (Rs. 2.120 Crore for impact + Rs. 4.0489 Crore, towards cost of Road construction)], as road is being used by different/various TPPs & Industries due to impact and damage of road by transportation of Coal by road from Kulda Mine to destination. | 17.10.2024 | disposed off | Last hearing of NGT was held on 17.10.2024.<br>NGT order OA no. 70/2023 stands disposed off and imposed compensation (penalty) is nullified to TPP's & Industries. |
| 18 | MSEFC-CASE-No.MH/20/S/NGR/02811- EM Services (India) Pvt Ltd Vs Adani Infra | MSEFC Court Nagpur (Non-Regulatory) | A Party was hired for plant maintenance during Shutdown. During the maintenance, an accident happened by the party with a Govt Ambulance coming to Plant on the subject matter District Collector had directed Raigarh TPP to compensate for the same and same was executed. The party had laid a complaint in MSEFC Court Nagpur. | -- | Awaited | A Party was hired for plant maintenance during Shutdown. During the maintenance, an accident happened by the party with a Govt Ambulance coming to Plant on the subject matter District Collector had directed Raigarh TPP to compensate for the same and same was executed. The party had laid a complaint in MSEFC Court Nagpur.<br>The hearing date is awaited. |
| 19 | 90/2023 | Appellant Court Regulatory | Petition for determination of Energy Charge Rate for FY 20-21, FY 21-22, FY 22-23 towards supply of 5% power to CSPDCL. | -- | Awaited | The hearing date is awaited. |

| S. No | Issuing authority | Date | Reasons for the issuance of SCN | Status of reply to submission | Present status |
|---|---|---|---|---|---|

There is no Show cause notices issued either by MoEFCC or CECB for APL, Raigarh TPP.

| | |
|---|---|
| Any violation case pertaining to the project on following:<br>i. The Environment Protection Act, 1986<br>ii. Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980.<br>iii. The Wildlife (Protection) Act, 1972 | |

**15.1.18**: Name of the EIA consultant: M/s. GreenC India Consulting Private Limited Ghaziabad. [List of ACOs with their Certificate / Extension Letter no.: NABET/EIA/2326/RA 0297, valid up to 22.02.2026].

**ADS Information in chronology [Only for ADS cases]**

**15.1.19:** The proposal was initially considered in 14th EAC meeting of Reconstituted EAC (Thermal) held on 4-5th November 2024. Proposal was deferred for want of following additional information. Proponent uploaded the additional information on 18/11/2024 and the proposal was placed before the EAC for consideration in its 15th meeting held on 28/11/2024.

**15.1.20:** Proponent uploaded the additional information on 18/11/2024 and the proposal was placed before the EAC for consideration in its 15th meeting held on 28/11/2024. Point-wise reply of ADS is given as below:

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| | Proceedings of the public hearing held for the existing project shall be submitted along with the action taken to address these issues. | Public Hearing was conducted by previous organization M/s Korba West Power Company Limited in the year **2009** for 600 (1x600) MW. Further, KWPCL again conducted Public Hearing in the year 2012 for proposed expansion for which EC was not granted.<br>Later, Adani Power Ltd. acquired Korba West Power Company Ltd. (KWPCL) through NCLT **on 20th July'2019**.<br>Based on concerns raised by the Public during the Public Hearing, the activities were executed / implemented in consultation with local authority (Panchayats).<br>In compliance of EC Conditions as well Public Hearing obligations, company has already spent **INR 16.05 Crores** during the period of FY 2010-2014 and has certified by reputed Government Institute "Indian Institute of Social Welfare & Business Management, Kolkata (Calcutta University)"<br>**Based on previous Public Hearing the following activities have already been implemented (for Existing Unit):**<br>**Expenditures details for activities already implemented for Existing Plant Unit based on previous PH is uploaded with ADS response.** |
| | Project proponent shall submit a comprehensive action plan with detailed activity wise outlay to address the issues raised during the public hearing held for the existing project as well as for the expansion project by explicitly stating the physical targets in accordance with the Ministry's OM dated 30/09/2020 and its subsequent amendments.<br>The action plan inter-alia include scheme for supporting schools and hospitals in surrounding area for mitigating the effects of air pollution on the local population. | The action plan is prepared based on concerns raised during the Public Hearing for existing project address in Point/reply no 1 and for the **Proposed Expansion 1600 MW (12th July 2024**) the budget allocation for construction of School and Community Hospital and fulfilment of public needs as focused area with explicit physical targets in detail (Five years CER Plan) are as follows.:<br>Detailed course of action along with proposed activities and physical target for proposed TPP are uploaded with ADS response and the same is furnished at para no. 15.1.13.<br>Additionally, Adani Power Ltd. Raigarh is continuously engaged in various activities under the CSR through Adani Foundation in 20 Villages (4 core +16 buffer villages). |

<table>
<tr><th>S. No.</th><th>ADS Point</th><th>Reply/Response of PP</th></tr>
<tr><td></td><td>Hydrogeology study report submitted by the proponent shall be vetted by the reputed government institute. The vetted report along with the recommendations and action plan to comply with the recommendations shall be submitted to the Ministry.</td><td>The hydrogeology study report has been vetted by NIT Delhi and the report is uploaded along with ADS response. The action plan to address the recommendation of NIT is as follows:
<table>
<tr><th>S. No.</th><th>Recommendation</th><th>Action Plan</th></tr>
<tr><td>1.</td><td>The maximum hardness level (680.0 mg/l) exceeds both the acceptable limit (200 mg/l) and the permissible limit (600 mg/l) set by IS 10500:2012. This may indicate potential issues for water usability, especially in WS-12. Elevated hardness levels and water treatment may be required in coming future. A need for ongoing monitoring and potential remediation efforts in areas with hardness levels, particularly WS-12 can be suggested.</td><td>Water quality monitoring shall be done once a month through NABL accredited laboratory to track Hardness Level in WS-12 location.<br>Further, we shall engage reputed government institutes to closely monitor the hardness levels for further course of action as well as to take preventive action within the next 8 to 10 months.<br>Noughata village (WS 12) is about 6.5 Km w.r.t. Plant Site in North direction.</td></tr>
<tr><td>2</td><td>By reviewing the report it was found that the values of Chloride content, Magnesium and Calcium were found to be above acceptable limit but within permissible limits. The plant may take some preventive measures accordingly</td><td>Raigarh TPP has already implemented ZLD and not using Ground Water<br>However, Water quality monitoring shall be done once in a month through engaging NABL accredited laboratory to track parameters like Chloride content, Magnesium and Calcium and corrective/preventive actions will be taken based on findings in the report.</td></tr>
<tr><td>3</td><td>As the topography of the study area is undulating with varied drainage network, slope map and Digital Elevation</td><td>For the present project site Slope and elevation details are provided in the EIA report. Recommendation duly noted and reputed institute will be engaged f</td></tr>
</table></td></tr>
</table>

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| | | <table><tr><td></td><td>Model (DEM) map of the study area can be incorporated in future study report for better understanding.</td><td>or future study.</td></tr><tr><td>4</td><td>It is recommended to mention the method used for determining stream order of the study area once in three years.</td><td>Raigarh TPP will engage reputed government institute for future study as recommended once in 3 years.</td></tr></table> |
| | Action taken report submitted by the proponent against the observations of certified compliance report shall be submitted along with the comments/views of the CECB. | Updated (Second) Certified Compliance Report (CCR) received vide letter dated 30.10.2024 based on the Action Taken Report (ATR) dated 08.10.2024 and first CCR report was received on 20.09.2024.<br>The Action taken report and updated CCR is uploaded with ADS response and also furnished at para no. 15.1.5 |
| | Ash pond calculation needs to be revisited as life of the ash pond is mentioned as only 15 years. | **Existing** Ash Pond calculations have been revisited considering capacity of ash storage for 15 years from the current year'2024.<br>Annual Ash generation from existing unit is about **1.28 Million Ton** and minimum yearly ash utilization of **80% (1.02 Million Ton**), balance (20%) 0.26 Million Ton ash may be disposed off in the ash dyke.<br>The total capacity of ash pond is 8.5 Million Ton.<br>As on date ash stored in dyke is about 2.35 Million Ton. The available space is **6.15 Million Ton** which will be sufficient for future purpose and 2.3 Million Ton stored ash in dyke shall be utilized as per Fly Ash Notification & subsequent Amendments.<br>**Expansion** Project considering 100% ash utilization from 1st year (COD). |
| | Project proponent shall submit revised ash management plan for improving ash pond management. The plan shall inter-alia include ash pond details, infrastructure facilities, ash generation and utilization as per the ash utilization notification dated 31/12/2021 and its subsequent amendments as well as legacy ash utilization and plan for reduction in existing ash pond area etc., | APL Raigarh has **Not envisaged additional / new** Ash Pond for proposed expansion, ash pond stock will be utilized, and the same space shall be used for unutilized ash in case of any emergency (Pandemic or non-availability of transportation) & during rainy season.<br>The Action plan for ash generation and utilization as well as legacy ash utilization as per notification dated 31.12.2021 and its subsequent amendments is uploaded with ADS response and also furnished at para no 15.1.16. |

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| | Revised action plan for green bel t development covering 33% of t he project area shall be submitte d giving details of native species and cost outlay. | Revised green belt development plan covering 33% of the project area including details of native species with budget provision (Rs. 9.21 Crores). |
| | Action plan for installation of dr y ash collection system and ash disposal by HCSD shall be subm itted. | The Dry Ash management system is proposed to provide a long with Integrated fly ash silo system with pneumatic va cuum conveying facility at single location for better and m ore effective fly ash handling system.<br>The fly ash will be removed from ESP hoppers and APH h oppers to transport fly ash to silos via transfer piping syste m which utilizes vacuum conveying up-to intermediate sur ge hopper and pressurized conveying up to main fly ash sil os (**3 no. of capacity 2500 Tons**). From the fly ash silos, f ly ash shall be transported in dry form through rail / road f or possible utilization.<br>Fly ash and bottom ash shall be disposed via High Concen tration Slurry disposal (HCSD) system to Ash dyke in **cas e of emergency.** |
| | Project proponent shall explore t he feasibility for installation of a ir-cooled condenser system for t he expansion project and the sam e shall be submitted. | APL Raigarh has already completed a feasibility study for expansion project and WRD, Govt of Chhattisgarh has ens ured sufficient water availability therefore Water-Cooling Condenser (WCC) has been proposed.<br>Feasibility for installing of air-cooling condenser (ACC) h as been evaluated and observed that there is space/area co nstraint for the installation of ACC as the expansion projec t is accommodated in the existing plant premises and effici ency of the plant will reduce as heat rate will be high whic h will lead to higher coal consumption. Also, auxiliary po wer consumption will be higher. Addition to above, install ing ACC will further increase the CAPEX and OPEX for t he project which will make it techno economically non-via ble. |
| | Proponent shall submit action pl an for installation of solar power generation on roof top and also r oadside poles within the project site. A time bound plan for instal lation of minimum 1 MW solar p ower generation facility be subm itted. | APL Raigarh is proposed to install roof top Solar Panels (7 181 sqm), roadside streetlights (no.80-100) and Ground m ounted Solar panels, which will be total capacity of **1.0 M W** (<1000KVA) (as suggested by Hon'ble EAC members during the meeting) |
| | Traffic assessment study report s ubmitted shall be revisited by inc orporating the mitigation measur es to be adopted for coal transpo | Traffic assessment study has been revisited and the revised assessment outcome along with mitigation measures has b een uploaded with ADS response.<br>The High Flood Level (HFL) at Kalma Barrage is RL 200. |

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| | rtation by road. Project proponent shall submit the flood plain map of Mand river (1.4km distance) vis-à-vis with the project site, impact of project on aquatic ecology along with the mitigation measures to be adopted for the protection of the Mand river. Certificate from concerned District Magistrate/Executive Engineer from the State Water Resources department (or) any officer authorized by the State Government in this regard shall be submitted stating that project site is not located within Mand river flood plain corresponding to one in 25 years of flood as per Ministry's O.M. dated 14/02/2022. | 43m. The HFL of the Mand River which meets into the Mahanadi River can also considered as the same. Mand River passes at the west side of the plant boundary at an approximate distance is about 1.4 km. HFL Certificate from WRD Raigarh has been submitted. |
| | Project proponent shall submit the details of case no OA 70 of 2023 pending before the Hon'ble NGT with specific reference to the existing 600 MW by mentioning the details of non-compliance of conditions observed by the Hon'ble NGT and action taken by the proponent to comply with the directions of Hon'ble NGT. In this regard, RO of MoEF&CC may also give observations with regard to the coal transportation issues raised before the Hon'ble NGT and action if any taken by the PP. | NGT Central Zone Bench at Bhopal via Suo Moto Application (OA 70 of 2023) had Imposition of Compensation [provisional Rs. 6.1689 Crores] (Rs. 2.120 Crore for impact + Rs. 4.0489 Crore, towards cost of Road construction),<br>The penalties were imposed for various TPPs & Industries (12% of 100) for damage of road due to transportation of Coal by road from Kulda Mine to destination.<br>Last hearing of NGT was held on **17.10.2024** stated that " APL Raigarh TPP had taken firm steps and stopped the transportation of Coal by road from Kulda Mine on immediate and Rail line construction up to the TPP" is under progress.<br>**NGT order OA no. 70/2023 stands disposed off and imposed compensation (penalty) is nullified to TPP's & Industries.**<br>The NGT order dated **08/11/2024** is uploaded with ADS response.<br>APL Raigarh has already started the construction of the railway line which will be completed by June 2026 and thereafter no road transportation will be involved. |
| | Project proponent shall clarify the stack height proposed under the expansion project is in consonance with prescribed norms of Central Electricity Authority. | The stack height of 120m for proposed expansion is as per the MoEFCC Notification dated 28.06.2018.<br>Minimum height of stack 100m with FGD and APL Raigarh has proposed to install **120m** stack with **FGD.** |
| | PP shall submit plan to ensure that diesel operated vehicles will b | APL Raigarh is agreed and already initiated the use of the e-vehicles as mode of transportation within plant premises |

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| | e switched over to E-Vehicles/ CNG vehicles in a time bound manner, replace the passenger vehicles to E-Vehicle in phased manner. | and the same will be implemented in **phase manner.** |
| | Time bound action plan to mitigate the impact of the project on the health of villagers of surrounding area be submitted. | APL has already prepared the action plan to address the issues raised during the public hearing which inter-alia provide health care facilities to the villagers and budget allocated is **Rs 10.75 Crores** and details activities are as below**.**<br>Budget includes Community Hospital (construction of 40 beds in Bade Bhandar Village) & operation of Primary Health Centre, improving of infrastructure in govt health and wellness centers, Ambulance / mobile health care unit, health camps (Eye checkup, orthopedic, obstetrics, gynecology etc.), nutrition, and as per their requirements and in consultation with panchayats/local feedback.<br>**Pollution control measures proposed to mitigate air and water impact are as below**:<br>Raigarh TPP has already proposed adequate mitigation measures under EMP as installation of ESP (99.99% efficient), FGD, SCR, Dust suppression system & dust extraction systems to minimize the air pollution well within the prescribed standard/ limit of MoEFCC, CPCB & CECB. The Plant is based on ZLD. Budget allocation of **Rs 2110.33 Cro res** has been kept for implementation of Environmental Management Plan (EMP). |

**15.1.21** Written submissions

Project proponent has submitted the following written submissions during the meeting:

| Sl. No. | Comments | Response |
|---|---|---|
| 1 | At the outset, we would like to request the committee members to direct the project proponent to submit the Need assessment and cost-benefit analysis for the power plant, its anc | Raigarh TPP will follow the Government of India rules & regulation and direction all time.<br>As per the National Electricity Plan (NEP) published by the Central Electricity Authority, MoP in March-2023, India's Peak Electricity Demand is likely to increase to around 366 GW in FY 2031-32 from the current Peak Demand of around 216 GW in FY 2022-23. The Base Demand is also expected to increase to 2473 BU by FY 2031-32. CEA also predicts that India's likely Installed Capacity by the end of FY 2031-32 will be around 900 GW, up by around 484 GW as compared to the present Installed Capacity.<br>Similarly, the current installed capacity of Chhattisgarh State is around 25,424 MW. Over 90% of the capacity is through coal-based sources. The proposed project can help in meeting the growing power demand and requirement of the country & improve Gross State Domestic Product (GSDP). It not only ensures a reliable power supply for the region but also supports economic growth, thereby strengthening the overall energy landscape in Chhattisgarh.<br>Need based assessment study is already conducted through govt reputed institute. |

| Sl. No. | Comments | Response |
|---|---|---|
| | illary activities, and their expansion. Our Hon'ble Prime Minister announced at COP26 that, the Ministry of New and Renewable Energy is committed to achieving 500 GW of installed electricity capacity from non-fossil fuel sources by 2030. After which many of the existing coal-fired thermal power plants may not be required. | |
| 2 | We request the authority to direct the project proponent to submit all the details of the proposed ancillary activities including details of sources of coal for the proposed power plant for the expansion, proposed road and rail network and transmission lines. | Details of all components for the project, along with all ancillary activities is already provided along with EC Application (refer EIA-EMP Report). |

| Sl. No. | Comments | Response |
|---|---|---|
| 3 | We would also like to draw your attention to the Load Generation Balance Report 2023-2024. As per this report, by Central Electricity Authority, Ministry of Power, GoI, *'It is observed that Himachal Pradesh, Rajasthan, Chhattisgarh, Tamil Nadu, Arunachal Pradesh, Meghalaya, Nagaland and Tripura are likely to be surplus both in terms of Peak and Energy on annual basis for the year 2023-24'* | As per the Central Electricity Authority (CEA), MoP, the Peak Demand is likely to increase to around 340 GW from the current Peak Demand of around 190 GW. The Base Demand is also expected to increase to 2325 BU by 2030. CEA also predicts that India's likely Installed Capacity by the end of FY'2030 will be around 817 GW, up by around 450 GW as compared to the present Installed Capacity. In terms of Coal based capacity, CEA estimates a capacity addition of over 60 GW (60,000 MW) till 2030 and the proposed project will only add 1.6 GW to the mammoth requirement of 60 GW. It is also pertinent to note that as per the National Electricity Plan (NEP), further 840 MW of capacity from State Genco is slated to retire by FY 2022. Further, as estimated by CEA, new thermal capacity of 60 GW will be required to meet India's power demand. Thus, the proposed expansion project to be set up by Adani Power Limited Raigarh will help in meeting the nation's as well as the state's requirement as Ministry of Power and CEA direction / guidelines. |
| 4 | Therefore, the need of this expansion needs to be considered, especially in view of the commitment by our Hon'ble Prime Minister. | |
| 5 | The location of the proposed power plant falls in the wildlife corridor of Gomardha WLS, Debrigarh WLS, Barnawapara WL | **No National Park or Wildlife Sanctuary are present within 15 km radius of the project site**.<br>A site-specific wildlife conservation plan has been prepared and submitted to concerned authority.<br>The distance of the mentioned WLS with respect to TPP as follows: |

| Sl No | Wildlife Santuary | Distance w.r.t TPP (Km) | Direction w.r.t TPP |
|---|---|---|---|
| 1 | Gormardha WLS | 16.5 | SW |
| 2 | Debrigarh WLS | 30 | ESE |
| 3 | Barnawapara WLS | 59.13 | WSW |

<table>
<tr><th>Sl. No.</th><th>Comments</th><th>Response</th></tr>
<tr><td></td><td>S, Bhoramdev WLS, Achanakmar WLS, Badalkhol WLS from Chhattisgarh, and Sunabeda WLS from Orissa and Kanha National Park, Phen WLS in Madhya Pradesh.</td><td>
<table>
<tr><td>4</td><td>Bhoramdev WLS</td><td>220.7</td><td>W</td></tr>
<tr><td>5</td><td>Achanakmak WLS</td><td>116.88</td><td>NW</td></tr>
<tr><td>6</td><td>Badalkhol WLS (Chhattisgarh)</td><td>80</td><td>SWW</td></tr>
<tr><td>7</td><td>Sunabeda WLS (Orissa)</td><td>126.92</td><td>SW</td></tr>
<tr><td>8</td><td>Kanha National Park</td><td>263.22</td><td>WNW</td></tr>
<tr><td>9</td><td>Phen WLS</td><td>231.18</td><td>WNW</td></tr>
<tr><td>10</td><td>Badrama WLS</td><td>91.5</td><td>SE</td></tr>
</table>
</td></tr>
<tr><td>6</td><td>These are important habitats and corridor areas for tigers, elephants, leopards, sloth bears, and other diverse fauna and flora.</td><td>Not Applicable.<br>No important habitats/ corridor areas for tigers, elephants, leopards, sloth bears are present within 10 km radius of the project site.</td></tr>
<tr><td>7</td><td>The wildlife corridor needs to be protected for the free movement of Tigers and other large mammals to establish a healthy population.</td><td>Not Applicable.</td></tr>
<tr><td>8</td><td>Tiger population in Chhattisgarh is already declining. The Tiger population of Chhattisgarh has declined to 19 tigers (as per 2018) from 4</td><td>Not Applicable.<br>No Tiger Reserve present within 15 km radius of the project site.</td></tr>
</table>

| Sl. No. | Comments | Response |
|---|---|---|
| | 6 tigers (as per 2014). | |
| 9 | Section 38-O (g) of the Wildlife Protection Act, 1972 will be applicable to the proposed project. Section 38-O (g) states that '*Ensure that tiger reserves and areas linking one PA or Tiger Reserve with another PA or Tiger Reserve are not diverted for ecologically unsustainable uses, except in public interest and the approval of the NBWL and on the advice of the NTCA*'. | Not Applicable.<br>No PA/Tiger Reserve present within 15 km radius of the project site. |
| 10 | We request the committee to direct the project proponent to submit the proposal to National Tiger Conservation Authority (NTCA) and National Board for Wildlife for obtaining wildlife clearances. | Not Applicable. |
| 11 | The proposed project if allowed will | Not Applicable. |

| Sl. No. | Comments | Response |
|---|---|---|
| | have a negative impact on the wildlife corridor impacting the movement of wildlife. It may also lead to an increase in Human-Wildlife Conflict in the area. | |
| 12 | We urge the committee to kindly consider the importance of wildlife corridors and above-mentioned points. The proposal, if permitted, will disturb the already fragmented wildlife corridor. Efforts should be undertaken by the respective authorities to restore the fragmented corridor as it will help in creating a diverse gene pool. | Not Applicable.<br>The expansion project is within the existing plant premises. No National Park, Sanctuary, Tiger Reserve, or migratory routes/wildlife corridor exists within 15 km of the power station. |
| 13 | The project proponent should be directed to conduct a Cumulative Impact Assessment of all the existi | A Cumulative Impact Assessment that Valued Environmental and Social Components (VECs) as receptors of impacts from proposed & existing projects in the 15 km radius, has been carried out and is already provided along with EC Application (refer EIA-EMP Report). |

| Sl. No. | Comments | Response |
|---|---|---|
| | ng and proposed projects in the 15-km radius and Carrying capacity study of the region. | |
| 14 | We would also like to draw your attention to the fact that the average PLF of all the coal-based thermal power plants in India has been in the range of 55-65% in summer over the past 3 years. It is not clear why new power plants are required when existing ones are not operational at 100% capacity for lack of demand. | As per the National Electricity Plan (NEP) published by the Central Electricity Authority, MoP in March-2023, India's Peak Electricity Demand is likely to increase to around 366 GW in FY 2031-32 from the current Peak Demand of around 216 GW in FY 2022-23. The Base Demand is also expected to increase to 2473 BU by FY 2031-32. CEA also predicts that India's likely Installed Capacity by the end of FY 2031-32 will be around 900 GW, up by around 484 GW as compared to the present Installed Capacity.<br>The proposed project can help in meeting the growing power demand and requirement of the country & improve Gross State Domestic Product (GSDP). It not only ensures a reliable power supply for the region but also supports economic growth, thereby strengthening the overall energy landscape in Chhattisgarh. |
| 15 | The impact of this project on India's commitment to the Paris Climate Change Accord should also be examined. | Adani Power Ltd will follow the MoP & CEA direction & guidelines.<br>APL at Business level is committed is committed towards Sustainable Development Goals (SDGs) and exploring net zero target in line with national commitments. |
| 16 | The project is being submitted in a piecemeal ma | The Final EIA & EMP Report has been prepared as the ToR granted and provided along with all annexures/supporting which has been uploaded on MoEFCC Parivesh portal with EC application. Any Essential/additional information sought by the honourable EAC, was also submitted on portal. |

| Sl. No. | Comments | Response |
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| | nner. We request the Committee Members to ensure that piece-mealing of any project is not allowed, as it does not allow to consider the overall impact of the proposal on the environment. | |
| 17 | Need assessment and cost-benefit analysis for the new thermal power plant, transmission lines, coal mines, washeries, and their expansion needs to be studied; given the Hon'ble Prime Minister's announcement at COP26 that, the Ministry of New and Renewable Energy is committed to achieving 500 GW of installed electricity capacity from non-fossil fuel sources by 2030. Pursuant to this, many of the | As per the National Electricity Plan (NEP) published by the Central Electricity Authority, MoP in March-2023, India's Peak Electricity Demand is likely to increase to around 366 GW in FY 2031-32 from the current Peak Demand of around 216 GW in FY 2022-23. The Base Demand is also expected to increase to 2473 BU by FY 2031-32. CEA also predicts that India's likely Installed Capacity by the end of FY 2031-32 will be around 900 GW, up by around 484 GW as compared to the present Installed Capacity.<br>Similarly, the current installed capacity of Chhattisgarh State is around 25,424 MW. Over 90% of the capacity is through coal-based sources. The proposed project can help in meeting the growing power demand and requirement of the country & improve Gross State Domestic Product (GSDP). It not only ensures a reliable power supply for the region but also supports economic growth, thereby strengthening the overall energy landscape in Chhattisgarh. |

| Sl. No. | Comments | Response |
|---|---|---|
| | existing coal-fired thermal power plants may not be required. | |
| 18 | The cost-benefit analysis of the ecological costs involved in the coal-based thermal power plant, transmission lines, coal mining, washery, and coal-based industries should be undertaken. | The Cost benefit analysis has been prepared and provided along with EC Application (refer EI A-EMP Report). |
| 19 | A table on 'Summary of violation under EIA, 2006/ court case/show cause/direction if any, related to the project under consideration shall be furnished.' shows that there are at least 19 pending court cases, as shared by the Project proponent. It is clear that the project area issue is sub-judice, hence any decision regarding the proposed project should | The List of Court Cases are provided along with EC Application and there are no pending Co urt Cases related to Environment and Forest. |

| Sl. No. | Comments | Response |
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| | be taken only after the cases are decided. | |
| 20 | As per the Monitoring report uploaded under Parivesh, it has been mentioned that the fly ash utilisation for the period April 2021 to March 2022 is 37.48%. Details of 100% fly ash utilization plan as per latest fly ash Utilization Notification along with firm agreements / MoU with contracting parties including other usages etc. should be submitted by the project proponent. The plan for disposal method / mechanism of bottom ash also needs to be furnished. | As per Fly Ash Notification 2021, the Ash utilization of Raigarh TPP for FY 2021-22 was <60%. Therefore, the first compliance cycle to meet 100% ash utilization is 5 Years The ash utilization plan has been prepared & furnished along with EC Application to MoEFCC.<br>Efforts are being made to achieve 100% ash utilization within the stipulated timeline.<br>APL will adhere Fly Ash Notification 2021 and subsequent amendments. |
| 21 | The surrounding area is agricultural land. A research study was undertaken in the year 2 | APL Raigarh is proposed to provide Electrostatic Precipitator (ESP with 99.99% efficiency) FGD, Low Nox Burners, SCR, Bag filters and Dust suppression & extraction system to ensure capture of fine particulate matter, emissions to the meet the standards of MoEFCC & CPCB SPCB.<br>Efforts are being made to achieve 100% ash utilization within the stipulated timeline.<br>Regularly coal analysis, ash, and emissions for radioactive content will be carried out to ensure compliance of EC & consent order with safety standards. |

| Sl. No. | Comments | Response |
|---|---|---|
| | 014 titled “Distribution of natural radio activity in coal and combustion residues of thermal power plants “. The study stated that coal contains naturally occurring radionuclides and on burning it results in enrichment of these radionuclides in the ashes. Even despite the implementation of the best possible mechanism to restrict the release of fly ash from the stack, huge amounts of it gets released into the environment. | |
| 22 | The fly ash and bottom ash generated from coal-fired thermal power plants are significant sources of exposure to the naturally occurring radionuclides that will affect the population in the vicin | |

| Sl. No. | Comments | Response |
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| | ity of the plant. | |
| 23 | From the public hearing proceedings, it can be observed that many have vehemently opposed the proposed expansion for various reasons, one of them being pollution in the area due to coal and its transportation, and impact on the local water bodies. The locals have also shown apprehensions for the proposed expansion as it will lead to an increase in further pollution and traffic. This will lead to severe health hazards in the population residing in the study area, as well as negatively impact the agriculture in the area. | Public hearing for the proposed project was conducted on 12.07.2024 and the main issues raised during the public hearing were related to Education, Community health, Sustainable Livelihood, Women Empowerment, Community Rural Infrastructure Development, Development of Playground for Sports etc.<br>The action plan to address these issues has been prepared in accordance with the Ministry's CM dated 30.09.2020 and its subsequent amendments with explicit physicals targets.<br>A total of Rs. 41.85 Cr. has been earmarked to address the issue raised during public hearing for proposed expansion.<br>Additionally, Pollution Control measures proposed to mitigate air and water impact are as below.<br>Plantation in nearby villages.<br>Raigarh TPP has already proposed adequate mitigation measures under EMP as installation of ESP (99.99% efficient), FGD, SCR, Dust suppression system & dust extraction systems to minimize the air pollution well within the prescribed standard/ limit of MoEFCC, CPCB & CEC B. The Plant is based on ZLD.<br>A state-of-the-art roof top rainwater harvesting system will be provided to collect the run -off for ground water recharging.<br>Budget allocation of Rs 2110.33 Crores has been kept for implementation of Environmental Management Plan (EMP). |
| 24 | The water for the proposed expansion will be draw | Suitable mesh size will be provided at the intake point of the barrage for preventing the entrapment of algae and fish.<br>Mesh size of 5-10 mm is used at intake point thereby preventing entrapment of macro algae, small fish, crustaceans and large fish into the water intake system. |

| Sl. No. | Comments | Response |
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| | n from Kalma barrage, on the Mahanadi River. The project proponent has not provided any details of the existing information regarding the quantity of fish/organisms that have been entrapped in the intake channels and the species composition and sizes at different times of the year. | |
| 25 | The impact of proposed projects on the ecology and biodiversity of the region should be carried out for a minimum of three seasons and not less than 12 months. A mitigation plan for the same is to be developed. | An extensive ecological survey was carried out during the Oct-Dec 2023 within 10 km radius of the project site as per the EIA Notification 2006 & subsequent amendments which is submitted along with EC application (refer EIA & EMP Report).<br>Wildlife conservation plan is under approval with concern authority and same will be implemented<br>A budget of 2.82 Cr has been earmarked for the conservation plan for 10 km radius. |
| 26 | As per the EDS sought by the EAC, the project proponent was directed to share a duly a | |

| Sl. No. | Comments | Response |
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| | pproved wil dlife conserv ation plan. H owever, the project prop onent has ev en now uplo aded only a copy of the l etter to the P CCF and DF O and not an approved W LCP. No pro posals from t he project pr oponent sho uld be consi dered till the time all the mitigation m easures as m entioned und er the WLC P are imple mented. | |
| 27 | All the comp liance report s for the exis ting project are not avail able, the sam e should be uploaded un der Parivesh and should b e ensured th at they are a ccessible to all. | Six-Monthly EC compliance reports of Raigarh TPP is being uploaded at MoEFCC Parivesh Portal on regular basis. |

**3.1.3. Deliberations by the committee in previous meetings**

**Date of EAC 1 :**05/11/2024

**Deliberations of EAC 1 :**

**Observations and deliberation of the EAC**

**14.6.19:** The Committee observed and noted the following:

**Recommendations of the Committee:**

**14.6.20:** In view of the foregoing and after detailed deliberations, the Committee **deferred** the proposal for grant of EC and sought for following additional information for further consideration:

**3.1.4. Deliberations by the EAC in current meetings**

**Observations and deliberation of the EAC**

**15.1.21:** The Committee observed and noted the following:

**Recommendations of the Committee:**

**15.1.22:** In view of the foregoing and after detailed deliberations, the committee ***recommended*** the instant proposal for grant of Environment Clearance under the provisions of EIA Notification, 2006 subject to uploading of written submission on PARIVESH Portal and stipulation of the following specific conditions and general conditions based on project specific requirements:

**3.1.5. Recommendation of EAC**

Recommended (Subject to submission of requisite information/ documents)

**3.1.6. Details of Environment Conditions**

**3.1.6.1. Specific**

| **A. Environmental Management** | |
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| 1. | The PP shall achieve100% utilization of ash generated as a result of the expansion project in accordance with the ash utilization notification dated 31/12/2021 and its subsequent amendment. No additional ash pond is permitted for the expansion project. In case of exigencies, ash generated from existing and proposed power plant shall be disposed to existing ash bund through high concentration slurry disposal (HCSD) system only. |
| 2. | Project proponent shall completely utilize the ash stock present in ash dyke i.e., 2.35 Million Tons within 3 three years from the date of grant of this EC. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report. |
| 3. | Proponent shall ensure that avenue plantation along NH-153 from Chhatamuda village up to plant premises shall be completed by September, 2025. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report. |
| 4. | PP shall obtain amendment in the condition no. xxvi of the existing EC dated 29/05/2010 within the time frame of three months from the date of grant of EC. A fresh CCR report will be submitted at the time of seeking this amendment. |
| 5. | PP shall engage reputed government institutes to closely monitor the hardness levels in the water samples. Digital Elevation Model (DEM) map of the study area shall be prepared as recommended in the hydrogeology report. This task shall be completed by June, 2025. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report. |

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| 6. | The hydrogeology study shall be carried out once in three years by reputed government institutes. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report. |
| 7. | PP shall explore the possibility of use of rainwater as drinking water in consultation with Public Health Engineering Department Chhattisgarh, respective Gram Panchayat and District administration wherever feasible. PP shall store rain water in the project boundary and utilize the same for plantation, recharging water in the pond and domestic utilization in colonies. A record shall be maintained of water collected through rain water and its supply system. PP shall get the water audit done every year to optimize the water requirement. |
| 8. | PP shall implement the protective measure proposed in Environment Management Plan (EMP) in a time-bound manner. The budget earmarked for the same is Rs 2110.33 Crores (Capital) and Rs 21.85 crores (recurring) and should be kept in separate accounts and audited annually. The implementation status along with the amount spent with documentary proof shall be submitted to the concerned Regional Office for the activities carried out during the previous year. In addition to the 4 CAAQMS, PP shall install two continuous ambient air quality monitoring station near ash pond area at suitable locations preferably the village side in consultation of CECB within 6 months from the date of grant of EC. |
| 9. | Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time. |
| 10. | PP shall ensure that pipelines carrying the fly ash and effluent shall be inspected regularly for any leakages. |
| 11. | PP shall install solar power plant on roof top and also road side poles within the project site will be lighting through solar power with a capacity of 1MW. Implementation status of solar plant shall be specifically submit in six monthly compliance report. |
| 12. | As committed by the PP, Zero liquid discharge shall be adopted. |
| 13. | PP shall ensure that diesel operated vehicles will be switched over to E-Vehicles/ CNG vehicles in a time bound manner, replace the passenger vehicles to E-vehicle in phased manner. Further, for local movement of officials Contract of Vehicles deployment shall be awarded to Project affected people and all efforts for adopting heavy E-vehicles /CNG vehicles like Bulkers for ash transportation for short distance subject to availability of such E-vehicle and adequate charging infrastructure in the surrounding area shall be provided. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), number of such non diesel vehicles deployed etc. in six monthly compliance report. |
| 14. | PP shall implement the concurrent plantation plan in a time bound manner. The gap plantation shall be completed in the identified 67.58 Ha land within Plant, residential and administrative areas and around Ash Pond in next two years. Further, three tier green belt shall be developed in an area of 49.82 ha in a time frame of four years from the date of grant of EC in consultation with Forest department/ Gram Panchayat/District Administration. The budget earmarked for the green belt, plantation inside and outside the plant area, along the transportation route and Miyawaki Plantation area shall be kept in a separate account and audited annually. PP should annually submit the audited statement of expenditure along with proof of activities viz. photographs (before & after with geolocation date & time), details of expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC and on PARIVESH Portal as the case may be for the activities carried out during previous year. |
| 15. | Wildlife conservation plan as approved by the competent authority shall be implemented. Additional, budget shall be added in the plan, in case additional measures suggested by state wildlife department. The final Wildlife conservation plan duly approved by the CWLW shall be submitted to RO, MoEF&CC within a time frame of three months from the date of grant of EC and the budget approved by the concerned authority shall be deposited in government account. |
| 16. | 24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system. The real time data so generated from CAAQMS shall be uploaded on company website and linked it with website of CPCB &SPCB. |

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| | Further, LED display of air quality (Continuous Online monitoring) shall be installed at prominent locations preferably outside the plant's main entrance for public viewing and in administrative complex. and maintenance of devices shall be done regularly. |
| 17. | Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system. Water Sprinkling on roads inside the plant area/ administrative/ residential areas and outside the plant area at least for 2KM on a regular basis to control the air pollution. A logbook shall be maintained for the activity and be in six-monthly compliance report. |
| 18. | Coal for the proposed power plant shall be received at plant through Railway siding only from Bijahan coal mine. Transportation of coal by road for the expansion project is not permitted. |
| 19. | PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM. |
| 20. | Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry. |
| 21. | A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the same shall be submitted to the Regional Office of the Ministry. Leachate shall be treated and reused. No treated leachate shall be discharged in any circumstances. Characteristics of Leachate and the treated leachate shall be monitored once in quarter and records shall be maintained. |
| 22. | Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers. |
| 23. | Monitoring of surface water quality and Ground Water quality shall also be regularly conducted in and around the project site and records to be maintained. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report. The monitored data shall be submitted regularly on PARIVESH portal as part of Half Yearly compliance report |
| 24. | For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution. |
| 25. | PP shall ensure that all types of plastic waste generated from the plant shall be stored separately in isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016 (as amended). In pursuant to the Ministry's OM dated 18/07/2022. PP shall also create awareness among the people working in the project area as well as in its surrounding area on the ban on Single Use Plastic (SUP) in order to ensure compliance of Ministry's Notification published by the Ministry on 12/08/2021. A report along with photograph on the measures taken shall also be included in the six monthly compliance report being submitted by PP. |
| 26. | PP is advised to implement the 'Ek Ped Maa Ke Naam' Campaign which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than Green belt development. The action in this regard shall be submitted concerned RO in six monthly report. |
| **B. Socio-economic** | |
| 1. | A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance reports. |
| 2. | Epidemiological Study among population within 5 km radius of project cover area shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of |

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| | the Ministry. |
| 3. | The budget proposed for PH is Rs 41.85 Crores. The budget proposed shall be kept in a separate account and audited annually. Project proponent shall implement the action plan to address the issues raised during public hearing including establishment of 40 bed multi-speciality hospital and free medical facilities to the villagers in 10 km radius of the project site within a time frame of 2 years from the date of grant of this EC. PP shall submit the progress report regarding the implementation of action plan to concerned RO along with the six monthly compliance report. PP shall provide the health services and organize medical camps for residents of the surrounding villages as committed during the meeting. PP shall carry out the analysis of the data of medical camp and take all necessary steps so as to cover maximum number of persons. |
| 4. | Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. |
| 5. | The establishment of a robust public grievance redressal mechanism to address concerns and complaints from local communities regarding the power plant's operations, environmental impacts, or social issues shall be developed. A Senior Officer shall review the functioning of the mechanism twice in a month. |
| **C. Miscellaneous** | |
| 1. | An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures. In addition to this, PP shall also set up modern environmental laboratory for monitoring of different environmental parameters. |
| 2. | Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974. |
| 3. | All necessary clearance from the concerned Authority, as may be applicable should be obtained prior to commencement of project or activity. |

**3.1.6.2. Standard**

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| 1(d) | **Thermal Power Plants** |
| **Statutory compliance** | |
| 1. | Emission Standards for Thermal Power Plants as per Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593(E) dated 28.6.2018 and as amended from time to time shall be complied. |
| 2. | Part C of Schedule II of Municipal Solid Wastes Rules, 2016 dated 08.04.2016 as amended from time to time shall be complied for power plants based on Municipal Solid Waste. |
| 3. | MoEF&CC Notification G.S.R 02(E) dated 2.1.2014 as amended time to time regarding use of raw or blended or beneficiated/washed coal with ash content not exceeding 34% shall be complied with, as applicable. |
| 4. | MoEF&CC Notifications on Ash Utilization S.O. 5481(E) dated 31/12/2021 as amended from time to time shall be complied. |
| 5. | MoEF&CC Notifications on Water Consumption vide Notification No. S.O. 3305(E) dated 07.12.2015 read with G.S.R 593 (E ) dated 28.6.2018 as amended from time to time shall be complied. |
| 6. | The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be |

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| | obtained, if applicable. |
| 7. | No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance. |
| 8. | Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction, necessary permission be obtained from CGWA. |
| **Ash content/mode of transporatation of coal** | |
| 1. | MoEF&CC Notification issued vide S.O. 1561 (E) dated 21.05.2020 and as amended from time to time shall be complied which inter-alia include use of coal by Thermal Power Plants, without stipulations as regards ash content or distance, shall be permitted subject to compliance of conditions prescribed under (1) Setting Up Technology Solution for emission norms, (2) Management of Ash Ponds and (3) Transportation. |
| **Air quality monitoring and Management** | |
| 1. | Flue Gas Desulphurisation System shall be installed based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO2 emissions standard as per G.S.R. 243 (E ) dated 31.03.2021 read with G.S.R. 682 (E ) dated 05.09.2022 and amended from time to time. |
| 2. | Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NOX emission standard of 100 mg/Nm3. |
| 3. | High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm3. |
| 4. | Stacks of prescribed height 120 m shall be provided with continuous online monitoring instruments for SO2, Nox and Particulate Matter as per extant rules. |
| 5. | Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically. |
| 6. | Six Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM10, PM2.5, SO2, NOX within the plant area. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually. |
| 7. | Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions. |
| 8. | Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc. |
| **Noise pollution and its control measures** | |
| 1. | The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000. |
| 2. | Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like earplugs/ear muffs, etc. |
| 3. | Periodical medical examination on hearing loss shall be carried out for all the workers and maintain audiometric record and for treatment of any hearing loss including rotating to non-noisy/less noisy areas. |

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| **Human Health Environment** | |
| 1. | Bi-annual Health check-up of all the workers is to be conducted. The study shall take into account of chronic exposure to noise which may lead to adverse effects like increase in heart rate and blood pressure, hypertension and peripheral vasoconstriction and thus increased peripheral vascular resistance. Similarly, the study shall also assess the health impacts due to air polluting agents. |
| 2. | Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases. |
| 3. | Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant. |
| 4. | Sewage Treatment Plant shall be provided for domestic wastewater. |
| **Water quality monitoring and Management** | |
| 1. | Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 3.0 m3/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5. |
| 2. | Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 2.5 m3/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water. |
| 3. | Records pertaining to measurements of daily water withdrawal and river flows (obtained from Irrigation Department/Water Resources Department) immediately upstream and downstream of withdrawal site shall be maintained. |
| 4. | Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area. |
| 5. | Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities. |
| 6. | The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. conforming to the prescribed standards shall be re-circulated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules. |
| 7. | Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water. |
| 8. | Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies. |
| 9. | Wastewater generation of 3000 KLD from various sources (viz. cooling tower blowdown, boiler blow down, wastewater from ash handling, etc) shall be treated to meet the standards of pH: 6.5-8.5; Total Suspended Solids: 100 mg/l; Oil & Grease: 20 mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l; |

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| 10. | Sewage generation of 120 KLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number):<1000 per 100 ml. |
| **Risk Mitigation and Disaster Management** | |
| 1. | Adequate safety measures and environmental safeguards shall be provided in the plant area to control spontaneous fires in coal yard, especially during dry and humid season. |
| 2. | Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made as per the extant rules in the plant area in accordance with the directives of Petroleum & Explosives Safety Organisation (PESO). Sulphur Content in the liquid fuel should not exceed 0.5%. |
| 3. | Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase. |
| 4. | Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary. |
| 5. | Regular mock drills for on-site emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situations. |
| **Green belt and Biodiversity conservation** | |
| 1. | Green belt shall be developed in an area of 33% of the total project with indigenous native tree species in accordance with CPCB guidelines. The green belt shall inter-alia cover an entire periphery of the plant. Concurrent plantation shall be done and all the earmarked area shall be suitably planted with native species in three rows within the next 2 years. |
| 2. | In-situ/ex-situ Conservation Plan for the conservation of flora and fauna should be prepared and implemented. |
| **Waste management** | |
| 1. | Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016. |
| 2. | Toxicity Characteristic Leachate Procedure (TCLP) test shall be conducted for any substance, potential of leaching heavy metals into the surrounding areas as well as into the groundwater. |
| 3. | Ash pond shall be lined with impervious liner as per the soil conditions. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached. |
| 4. | Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notification on Fly Ash Utilization issued by the Ministry S.O. 5481 (E)dated 31.12.2021, S.O.6169 (E) dated 30.12.2022, S.O.0 5 (E) dated 01.01.2024 and amendment thereto. |
| 5. | Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water. |
| 6. | In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up: i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled. ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area. |
| **Monitoring of compliance** | |
| 1. | Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as |

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| | per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry. |
| 2. | Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable. |
| 3. | Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates. |
| 4. | Monitoring of Carbon Emissions from the existing power plant aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office. |
| 5. | Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office. |
| 6. | The project proponent shall (Post-EC Monitoring): a. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government; b. upload the clearance letter on the web site of the company as a part of information to the general public. c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at http://parviesh.nic.in. d. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically; e. monitor the criteria pollutants level namely; PM (PM10& PM2.5incase of ambient AAQ), SO2, NOx (ambient levels as well as stack emissions) 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; f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB; g. 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; h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work. |
| **Corporate Environmental Responsibility (CER) activities** | |
| 1. | CER activities will be carried out as per Ministry's OM F.No.22- 65/2017- IA.III dated 30th September, 2020 and 22-65/2017- IA.III dated 25.02.2021 or as proposed by the PP in reference to Public Hearing or as earmarked in the EIA/EMP report along with the detailed scheduled of implementation with appropriate budgeting. Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the shall be submitted. |

**3.2. Agenda Item No 2:**

**3.2.1. Details of the proposal**

| **1X800MW NLC Talabira Thermal Power Project (NTTPP) Phase-II** by **NLC INDIA LIMITED** located at **SAMBALPUR,ODISHA** | | | |
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| **Proposal For** | | Fresh ToR | |
| **Proposal No** | **File No** | **Submission Date** | **Activity (Schedule Item)** |
| IA/OR/THE/500872/2024 | J-13012/14/2017-IA.I(T) | 30/10/2024 | Thermal Power Plants (1(d)) |

**3.2.2. Project Salient Features**

**Agenda No: 15.2**

**15.2: Proposed expansion of 1X800 MW NLC Talabira Thermal Power Project NTTPP phase-II by M/s NLC India Limited within the premises of 3X800 MW (Phase – I) located at Tareikela & Kumbhari Village, Jharsuguda District, Odisha – Prescribing of Terms of Reference – regarding.**

**[Proposal No. IA/OR/THE/500872/2024; F. No J-13012/14/2017-IA.I(T)]**

**15.2.1:** M/s. NLC India Ltd has made an application online vide proposal no IA/OR/THE/500872/2024 dated 30/10/2024 along with the application in prescribed format (CAF, Form – I Part A & B), copy of pre-feasibility report and proposed ToRs for undertaking detailed EIA study as per the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at item no. 1(d) Under Category "A" of the schedule of the EIA Notification, 2006 and appraised at Central Level.

**Name of the EIA consultant**: M/s. ABC Techno Labs India Private Limited (formerly known as ABC Environ Solutions Pvt. Ltd.) [NABET Certificate No.: NABET/EIA/2225/RA 0290, valid up to to Nov 16, 2025].

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

**15.2.2**: MoEF&CC accorded environmental clearance to M/s NLC India Limited vide letter dated 02/02/2021 for setting up of 3x800 MW coal based thermal power plant at Tareikela & Kumbhari Village, Jharsuguda District, Odisha. The project proponent has not yet commence the project activity at the site and applied for consent to establish to Odisha State Pollution Control Board.

**15.2.3:** Implementation status of the existing EC dated 2/2/2021

| Configuration | Capacity (MW) | As per EC da ted | Implementation Status as on | CTE from O SPCB |
|---|---|---|---|---|
| Thermal power plant | (3x800) 2400 | 02/02/2021 | Not yet commence t he project activity at the site | Yet to be obta ined. |

**15.2.4:** The instant proposal is for grant of Terms of Reference for undertaking EIA/EMP study for the proposed expansion of 1X800 MW NLC Talabira Thermal Power Project NTTPP phase-II by M/s NLC India Limited within the premises of 3X800 MW (Phase – I) located at Tareikela & Kumbhari Village, Jharsuguda District, Odisha. Total power generation after the proposed expansion will be 4x800 MW (3200 MW).

**15.2.5: Environmental site settings**

| | | | |
|---|---|---|---|
| | | | |
| | | Facilities / Existing Area (I / Proposed Are | |

| | | | |
|---|---|---|---|
| | | | |

| | nHectares) | a (InHectares) |
|---|---|---|
| Main Plant | 215.78 | 243.71 |
| Coal Handling System | - | - |
| Water System | - | - |
| Switch Yard | - | - |
| Greenbelt | 101.9811 | 166.8 |
| Roads | 6.07 | 6.07 |
| Ashpo | 70.85 | 70.85 |

| | | | |
|---|---|---|---|
| | | nd | | |
| | | Railwaysiding | - | |
| | | Water supply pipeline | - | - |
| | | Ash transport pipeline | - | - |
| | | Others (Please specify) | 198.6 | 198.6 |
| | | **Total** | **585.58** | **686.03** |
| | Land acquisition details as per MoEF&CC | The entire area of 686.03 hectare is being acquired for t he project by M/s IDCO of Odisha. The R&R activities are taken care under phase-I (3 x800MW) activities of NTTPP. | | The High-Level Clearance Autho rity (HLCA) cha ired by Chief Mi |

<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>O.M. dated 7/10/2014</td><td>As per EC recommendation for Phase- I (3 x800MW), the R&R package is being implemented for the project displaced/affected families.<br>The EC vide F.No: J-13012/14/2017-IA.I(T) granted for the proposal of phase-I which includes R&R, thus no R&R would be applicable for phase-II (1 x 800MW).</td><td>nister of Odisha in its 17th meeting held on 02.06.2017 cleared NLCIL’s proposal to set up a large capacity pit head type thermal power project (4 X800 MW in two stages) near the Talabira II & III mine blocks allocated to NLCIL. M/s IPICOL vide letter dated 10.07.2017, communicated in principle approval of HLCA, for. availability of land and water for 3200 MW capacity NLC Talabira Thermal Power Project. M/s IDCO accorded clearance for 1447 acres of land in favour of NLCIL. M/s IDCO accorded clearance for 1694.5 acres of land in favour of NLCIL for Phase-I, with this area itself Phase-II facilities will be accommodated.</td></tr>
<tr><td></td><td></td><td>Project site: Tareikela & Kumbhari Village<br>Study Area:<table><tr><td>Habitation</td><td>Distance</td><td>Direction</td></tr><tr><td>School in Tareikela</td><td>Inside project boundary</td><td>-</td></tr><tr><td>School in Kumbhari</td><td>Inside project boundary</td><td>-</td></tr></table>As per EC recommendation for Phase- I (3 x800MW), the R&R package is being implemented for the project displaced/affected families.</td><td>Land acquisition (including phase I & II) is being carried out and it is progress. R&R plan is being implemented.<br>Dist. Administration is consultation with NLCIL is planning to construct a new school at mouja hi</td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td>rma village situated outside the project site as a replacement of existing 2 schools situated within the project site.</td></tr>
<tr><td></td><td></td><td>The geographical co-ordinates of the site are as follows:<br>A. Plant Site
<table>
<tr><th>Point</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>North Extreme</td><td>21° 46’ 56.11" N</td><td>83° 59’ 30.59" E</td></tr>
<tr><td>East Extreme</td><td>21° 46’ 52.95" N</td><td>84° 00’ 20.72" E</td></tr>
<tr><td>South Extreme</td><td>21° 45’ 16.80" N</td><td>83° 59’ 9.36’’ E</td></tr>
<tr><td>West Extreme</td><td>21° 46’ 34.18" N</td><td>83° 58’ 50.54" E</td></tr>
</table>
B. Ash Pond</td><td></td></tr>
</table>

| | | | |
|---|---|---|---|
| | | <table><tr><th>Point</th><th>Latitude</th><th>Longitude</th></tr><tr><td>North Extreme</td><td>21° 45' 58.02" N</td><td>84° 0' 15.30" E</td></tr><tr><td>East Extreme</td><td>21° 45' 23.03" N</td><td>84° 0' 22.34" E</td></tr><tr><td>South Extreme</td><td>21° 45' 26.08" N</td><td>83° 59' 55.58" E</td></tr><tr><td>West Extreme</td><td>21° 44' 55.49" N</td><td>83° 59' 56.88" E</td></tr></table> | |
| | | 202.5 M above mean sea level | |
| | Involvement of Forest land if any | | |
| | | **Study area**<br><table><tr><td>Water Body</td><td>Distance</td><td>Direction</td></tr><tr><td>Bhedan River</td><td>0.5 km</td><td>west</td></tr></table> | High Flood Level (HFL) of the Bedhan River near |

| | | | |
|---|---|---|---|
| | | | |
| | | Hirakud Reservoir \| 7 km \| south | the National Highway Bridge (collected from WRD, Hirakud Reservoir) is RL 200.9m. Considering the above, the Finished Grade Level for the Main Plant area is designed. (Refer Section 4.3, page.no 46 of PFR). |
| | | | |
| | | | |
| | | | |

**15.2.6: Unit configuration and capacity of proposed project:**

| S.No. | Existing power plant configuration and capacity | Proposed power Plant configuration and capacity | Total | Technology adopted |
|---|---|---|---|---|
| 1 | (3x800) MW<br>2400 MW | (1x800) MW<br>800MW | 3200 MW | Supercritical thermal power plant |

**15.2.7: Details of fuel requirement**: The details of the fuel (coal/gas/LDO) requirement for the proposed project/ expansion cum proposed project along with its source and mode of transportation is given as below:

| Details | Fuel requirement (MTPA) | Source | Distance From site (Kms) | Mode of Transportation | Coal characteristics (Worst case scenario) |
|---|---|---|---|---|---|
| Existin | 11.37 | Talabira | 4 | Belt / pipe | Ash - (45%) Sulphu |

| Details | Fuel requirement (MTPA) | Source | Distance From site (Kms) | Mode of Transportation | Coal characteristics (Worst case scenario) |
|---|---|---|---|---|---|
| gTPP | | II & III Captive mine | | conveyor | r - (0.33%) Moisture (6.1%) GCV – 3400 Kcal/ Kg |
| Proposed TPP | 3.50 | Talabira II & III Captive mine | 4 | Belt / pipe conveyor | Ash - (45%) Sulphur - (0.33%) Moisture (6.1%) GCV - 3700Kcal/ Kg |

**15.2.8: Project cost**: Existing capital cost of project was Rs.16073.86 Crore. The capital cost of the

proposed project is Rs 7178.564 Crores and the capital cost for environmental protection measures is proposed as Rs 1439 Crore. The annual recurring cost towards the environmental protection measures is proposed as Rs 14.39 Crore.

**15.2.9: Employment**: The employment generation after expansion is about 350 nos.

**15.2.10**: **Power requirement**: Existing power requirement of 167 MW is obtained from plant. The power requirement for the proposed project is estimated as out of which 56 MW will be obtained from the power plant.

**15.2.11: Water Requirement:** Existing Water requirement is 1,76,153$m^3$/day, water requirement is obtained from Hirakud reservoir and permission for the same has been obtained from WRD, Odisha vide letter no. 19552 dated 4.09.2019. The water requirement for the proposed project is estimated as 57,600 $m^3$ /day water requirement is obtained from Hirakud reservoir and permission for the same has been obtained from WRD, Odisha vide letter no. 19552 dated 4.09.2019. The water will be transported to the plant site through pipeline. The specific water consumption for the power plant will be 3$m^3$/MWhr.

**15.2.12: Solid/ Hazardous waste generation and its management**: The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below:

| S. No. | Type of Waste | Source | Quantity generated (TPA) | Mode of Treatment | Disposal |
|---|---|---|---|---|---|
| 1 | Solid waste | Annual ash generated for expansion (1X800 MW) | 1.26 million | - | High concentrations lurry dispo |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | sal |
| 2 | Solid waste | Annual Bottom ash generated | 0.25 million | - | High concentrations lurry disposal |
| 3 | Solid waste | Annual Fly ash generated | 1.01 million | - | Ashis transported in a pneumatic pressu |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | reconveying system to fly ash silo from ESP hoppers |
| 4 | Glass Wool | Overhauling | < 0.5 | TSDF site | Road |
| 5 | Waste oil | Maintenance | < 0.5 | TSDF site | Road |

**15.2.13: Greenbelt development**: Existing green belt has been developed in 101.981 ha area which is about 40% of the total project area of 585.58 ha with total sapling of 203962 Trees [Only for expansion cases]. Proposed greenbelt will be developed in 64.819 ha which is about 40% of the total project area. Thus, total of 166.8 Ha area (40% of total project area) will be developed as greenbelt. A 50 m wide

greenbelt, consisting of at least 3 tiers around plant boundary will be developed as greenbelt and green cover as per CPCB guidelines. Local and native species will be planted with a density of 2500 trees per hectare. Total no. of 333600 saplings will be planted and nurtured in 166.8 hectares in 5 years.

**15.2.14: Ash management**: Ash will be the major solid waste generated from the power project. An ash management scheme will be implemented consisting of dry collection of fly ash, supply of ash to entrepreneurs for utilization and promoting fly ash utilization to maximum extent and safe disposal of unused ash.

| Description | Ash Generation |
|---|---|
| Annual Ash generated for expansion (1X800 MW) | 1.26 million TPA |
| Annual Bottom ash generated | 0.25 million TPA |
| Annual Fly ash generated | 1.01 million TPA |

**15.2.15: Ash Pond details**: The ash generated in the plant will be disposed in the Mine Voids / Emergency Ash Dyke. The details of emergency ash dyke are given below.

| S. No. | Details of Ash Pond | Ash pond 1 |
|---|---|---|
| 1. | Status of ash pond (Active / Exhausted (yet to be reclaimed)/ Reclaimed) | To be constructed |
| 2. | Area (Ha) | 70.82 |
| 3. | Dyke height (m) | 10 |
| 4. | Volume (m3) | 39,72,946 |
| 5. | Quantity of ash disposed (Metric Tons) | Yet to be started |
| 6. | Available volume in percentage (percent) and quantity of ash can be further disposed (Metric Tons) | Full Capacity (100%)<br>55,62,124 MT |
| 7. | Expected life of ash pond (number of years and months) | 1 Year<br>0 Months |
| 8. | Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No lining | HDPE |
| 9. | Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD) | HCSD |
| 10. | Ratio of ash: water in slurry mix (1:): | 1: 0.6 weight by weight |
| 11. | Ash water recycling system (AWRS) installed and functioning: Yes or No | Already envisaged and will be installed during construction stage of Ash water handling system of the plant |

| S. No. | Details of Ash Pond | Ash pond 1 |
|---|---|---|
| 12. | Quantity of wastewater from ash pond discharged into land or water body (m3) | 0 |
| 13. | Last date when the dyke stability study was conducted and name of the organization who conducted the study: | Will be complied on completion of design and after construction |
| 14. | Last date when the audit was conducted and name of the organization who conducted the audit: | Will be complied after construction. |

**15.2.16: Baseline data collection period (**October to December 2024):

| Attributes | Parameters | Sampling | | Remarks |
|---|---|---|---|---|
| **A. Air** | | No. of stations | Frequency | Sampling period |
| a. Meteorological parameter | Temperature, Relative Humidity, Wind Speed, Wind Direction & Rain fall | 1 | Hourly / Rain fall – Daily | 3 months + 1 Month |
| b. AAQ parameters | $PM_{10}$, $PM_{2.5}$, $SO_2$, NOx, CO, $O_3$, VOC, NMHC | 8 | 24 hourly | Two days per week for 12 weeks |
| **B. Noise** | Leq day & Leq night | 8 | Once during study period | 24 hourly |
| **C. Water** | | | | |
| Surface water/Ground water quality parameters | As per IS:10500 – 2012 & Designated Best of Use Criteria by CPCB | GW 8+ SW 5 Locations | Once during study period | Grab sampling |
| **D. Land** | | | | |
| Soil quality<br>Land use | Soil profile & Chemical constituents<br>Land use data based on recent satellite data | A.8 | Once during study period | A. Composite sample |
| Biological<br>Aquatic<br>Terrestrial | Flora and fauna | Study area | Once in study period | Field observations |

| | | | | |
|---|---|---|---|---|
| **E. Socio-economic para meters** | Socio-economic prof ile | Study area | Based on dat a collected fr om secondary sources | |

**15.2.17: Status of Pending Litigation/court case**: There is no pending litigation/court case against the proposed project.

**3.2.3. Deliberations by the committee in previous meetings**

N/A

**3.2.4. Deliberations by the EAC in current meetings**

**Observations and Deliberations of the Committee**

**15.2.18:** The Committee noted the following:

**Recommendations of the Committee**

**15.2.19:** In view of the foregoing and after detailed deliberations, the Committee ***deferred*** the proposal and asked the proponent to submit additional information on the shortcomings as mentioned above. In addition to this, the Committee also recommended for a site visit by the sub-committee of EAC to ascertain the various environmental concerns pertaining to the instant project. On receipt of the above, the proposal shall be placed before the EAC for further consideration.

**3.2.5. Recommendation of EAC**

Deferred for ADS

**3.3. Agenda Item No 3:**

**3.3.1. Details of the proposal**

| **Proposed Expansion from 1320 MW to 1980 MW Buxar Thermal Power Project by installing 1x660 MW plant u nit Near Chausa, district Buxar, Bihar** by **SJVN THERMAL PRIVATE LIMITED** located at **BUXAR,BIHAR** | | | |
|---|---|---|---|
| **Proposal For** | | Amendment in ToR | |
| **Proposal No** | **File No** | **Submission Date** | **Activity (Schedule Item)** |
| IA/BR/THE/502818/2024 | J-13012/69/2008-IA.I (T) | 11/11/2024 | Thermal Power Plants (1(d)) |

**3.3.2. Project Salient Features**

**Agenda no 15.3**

15.3 Proposed Expansion from 1320 MW to 2120 MW Buxar Thermal Power Project(BTPP) by **M/s. SJVN Thermal Private Limited** by installing 1x660 MW plant unit Near Chausa, **district Buxar, Bihar – Amendment in Terms of Reference for change in configuration of TPP from 1x660 MW to 1x800 MW– regarding.**
**[Proposal No. IA/BR/THE/502818/2024; F. No. J-13012/69/2008-IA.I (T)]**

**15.3.1:** M/s. SJVN Thermal Private Limited has made an online application vide proposal no. IA/BR/THE/502818/2024 dated 26/10/2024 along with Form 3 and pre-feasibility report for the proposed 1x800 MW TPP and sought for amendment in the ToR dated 15/03/2024 accorded for the project mentioned above. The proposed project activity is listed at item No. 1(d) – Thermal Power Plants under Category 'A' of the schedule of the EIA Notification, 2006 and appraised at the Central Level.

Name of the EIA consultant: M/s. Mantec Consultants Pvt. Ltd., Noida (Certificate No. NABET/EIA/23-26/RA 0305_Rev.01 valid up to April 20, 2026)

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

**15.3.2:** Environmental Clearance was accorded by Ministry of Environment, Forest and Climate Change(MoEF&CC) vide letter No. J-13012/69/2008-IA.II(T), dated 28.02.2017 for setting up of 2x660 MW (1320 MW) Thermal Power Plant. Presently, the power plant is under construction.
**15.3.3:** Terms of Reference (TOR) for expansion of BTPP from 1320 MW to 1980 MW by installing 1x660 MW Unit was accorded by MoEF&CC on dated 15.03.2024 for undertaking EIA/EMP study. **It has been decided by the project proponent to enhance the** installed capacity of proposed expansion unit from 1x660 MW to 1x800 MW and the same has been communicated to the Central Electricity Authority on 21/06/2024.
**15.3.4:** Instant proposal is for seeking amendment in ToR dated 15/03/2024 with respect to the configuration of the proposed TPP from 1x660 MW to 1x800 MW.
**15.3.5:** The details of the amendment sought by the proponent in the ToR dated 15/03/2024 are summarized as below:

| **S. No.** | **As per the ToR dated 15/03/2024 for the configuration of 1x660 MW** | **Amendment sought in the ToR dated 15/03/2024 due to change in configuration of the TPP from 1x660 MW to 1x800 MW** |
|---|---|---|
| 1. | Proposed Expansion from 1320 MW to 1980 MW Buxar Thermal Power Project(BTPP) by **M/s. SJVN Thermal Private Limited** by installing 1x660 MW plant unit Near Chausa, **district Buxar, Bihar** | Proposed Expansion from 1320 MW to 2120 MW Buxar Thermal Power Project(BTPP) by **M/s. SJVN Thermal Private Limited** by installing 1x800 MW plant unit Near Chausa, **district Buxar, Bihar** |
| 2. | Project Area<br>Existing (Stage I) - 519.42 Hectare<br>Proposed (Stage II)- 101 Hectare<br>Total – 620.4 | Project Area<br>Existing (Stage I) - 519.42 Hectare<br>Proposed (Stage II)- 101 Hectare<br>Total – 620.4 |

<table>
<tr><th>S. No.</th><th>As per the ToR dated 15/03/2024 for the configuration of 1x660 MW</th><th>Amendment sought in the ToR dated 15/03/2024 due to change in configuration of the TPP from 1x660 MW to 1x800 MW</th></tr>
<tr><td></td><td>2 Ha.</td><td>2 Ha.</td></tr>
<tr><td>3.</td><td>Manpower<table><tr><td>Phase</td><td>Temporary</td><td>Permanent</td></tr><tr><td>Construction Phase</td><td>3800</td><td>200</td></tr><tr><td>Operational Phase</td><td>700</td><td>200</td></tr></table></td><td>Manpower<table><tr><td>Phase</td><td>Temporary</td><td>Permanent</td></tr><tr><td>Construction Phase</td><td>4000-50000</td><td>250</td></tr><tr><td>Operational Phase</td><td>900</td><td>400</td></tr></table></td></tr>
<tr><td>4.</td><td>Water Requirement<table><tr><td>Phase</td><td>Existin</td><td>Propo</td></tr></table></td><td>Water Requirement Construction Phase-<table><tr><td>Phas</td><td>Existin</td><td>Prop</td></tr></table></td></tr>
</table>

| S. No. | As per the ToR dated 15/03/2024 for the configuration of 1x660 MW | Amendment sought in the ToR dated 15/03/2024 due to change in configuration of the TPP from 1x660 MW to 1x800 MW |
|---|---|---|
| | <table><tr><td></td><td>gin KLD</td><td>sed in KLD</td></tr><tr><td>Construction Phase</td><td>200</td><td>100</td></tr><tr><td>Operational Phase</td><td>134561</td><td>73397</td></tr></table> | <table><tr><td>e</td><td>gin KLD</td><td>osed in KLD</td></tr><tr><td>Construction Phase</td><td>200</td><td>120</td></tr><tr><td>Operational Phase</td><td>134561</td><td>36698</td></tr></table> |
| 5 | Wastewater-<br>**STP:**60 KLD MBBR Technology, based on ZLD<br>**ETP:** 1200 KLD Coal slurry settling pit, based, based on ZLD. | Wastewater-<br>**STP:** 60 KLD MBBR Technology, based on ZLD<br>**ETP:** 1200 KLD Coal slurry settling pit, based on ZLD. |

| S. No. | As per the ToR dated 15/03/2024 for the configuration of 1x660 MW | Amendment sought in the ToR dated 15/03/2024 due to change in configuration of the TPP from 1x660 MW to 1x800 MW |
|---|---|---|
| 6. | Plantation- Existing - 171.41 ha Proposed – 34.22 ha | Plantation- Existing – 171.25 ha Proposed – 42 ha |
| 7. | Existing Cost(2x660MW): Rs. 10,520.48 Crores Proposed Cost (1x660MW): Rs. 6,388.82 Crores Total Cost (1980MW): Rs. 16,909.30 Crores | Existing Cost(2x660MW): Rs. 10,520.48 Crores Proposed Cost (1x800MW): Rs. 8,322.07 Crores Total Cost (2120MW): Rs. 18,842.55 Crores |
| 8. | Coal Requirement Existing: 4.97 MTPA Proposed: 3.1 MTPA Source: Central Coal Field, Jharkhand | Coal Requirement Existing: 4.97 MTPA Proposed: 3.7 MTPA Source: Central Coal Field, Jharkhand |

**15.3.6:** Proponent informed that baseline data collection for the project was collected during 15/09/2023 to 14/12/2023.

**3.3.3. Deliberations by the committee in previous meetings**

N/A

**3.3.4. Deliberations by the EAC in current meetings**

**Observations and Deliberations of the Committee**

**15.3.7:** The Committee noted the following:

iii. Instant proposal is for seeking amendment in ToR dated 15/03/2024 with respect to the configuration of the proposed TPP from 1x660 MW to 1x800 MW.

iv. Due to the proposed amendment, there is increase in power generation from 1980 MW to 2120 MW, Coal requirement from 3.1 MTPA to 3.7 MTPA and water requirement is reducing from 73397 KLD to 36698 KLD.

**Recommendations of the Committee**

**15.3.8:** The EAC after detailed deliberations on the information submitted and as presented during the meeting **recommended** the proposal for grant of amendment in the ToR dated 15/03/2024 as mentioned at para no. 15.3.5 above subject to stipulation of following additional specific ToRs.

**3.3.5. Recommendation of EAC**

Recommended

**3.3.6. Details of Terms of Reference**

**3.3.6.1. Specific**

| **Additional Specific ToRs** | |
|---|---|
| 1. | A Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 10-km radius of the proposed project shall be conducted and the same shall be included the in EIA/EMP report. Details of industrial units present in 10 Km radius of the power plant shall be earmarked in map and submitted. |
| 2. | EIA/EMP study shall take in to consideration the different scenarios arising due to change of coal source, impact on environmental attributes due to change of coal source along with corresponding mitigation measures with EMP budget shall be submitted. |
| 3. | Impact of release of cooling tower water on aquatic life need to be studied by a reputed govt. institute and action plan for complying with the mitigation measures shall be submitted. |
| 4. | Project proponent shall commission a study on Hydrology and Hydrogeology of the project site as well as the study area of the project site through a reputed institute/Government organization. The study report along with the action plan for implementing the recommendations of the report shall be submitted along with the EIA/EMP report. |
| 5. | Biodiversity analysis of the study area to be done through any reputed Government institutions. The study report along with the action plan for implementing the recommendations of the report shall be submitted along with the EIA/EMP report. |
| 6. | Certificate from concerned District Magistrate/Executive Engineer from the State Water Resources department (or) any officer authorized by the State Government in this regard shall be submitted stating that project site is not located within Karmansha river (1.2 km from the project site) and Thora river (0.84km) flood plain corresponding to one in 25 years of flood as per Ministry's O.M. dated 14/02/2022. |
| 7. | Action plan dry ash collection system shall be submitted. |
| 8. | Project proponent shall submit action plan for shifting of school situated within the vicinity of the project site. |
| 9. | Year-wise plantation plan with detailed budget for in and around of the Plant site area with covering road side plantation should be submitted. |
| 10. | All other terms and conditions mentioned in the ToR letter dated 15/03/2024 shall remain unchanged. |

**4. Any Other Item(s)**

N/A

**5. List of Attendees**

| Sr. No. | Name | Designation | Email ID | Remarks |
|---|---|---|---|---|
| 1 | Dr Sharad Singh Negi | Chairman, EAC | sha**********@gmail.com | Present |
| 2 | Dr Santoshkumar Hampannavar | Member (EAC) | san**********@yahoo.com | Present |
| 3 | Dr Umesh Jagannathrao Kahalekar | Member (EAC) | uka*******@rediffmail.com | Present |
| 4 | Shri K B Biswas | Member (EAC) | bis*********@gmail.com | Present |
| 5 | Dr Nazimuddin | Member (EAC) | naz*******@nic.in | Absent |
| 6 | Shri Mahi Pal Singh | Member (EAC) | mps********@nic.in | Present |
| 7 | Sundar Ramanathan | Scientist E | r.s*****@nic.in | Present |
| 8 | Sh Inder Pal Singh Matharu IFS | Member (EAC) | mat********@gmail.com | Present |
| 9 | Sh Lalit Kapur | Member (EAC) | lka********@yahoo.com | Present |
| 10 | Sh Savalge Chandrasekhar | Member (EAC) | sav*****@gmail.com | Present |
| 11 | Prof Shyam Shanker Singh | Member (EAC) | sin********@gmail.com | Present |
| 12 | Dr Vinod Agrawal | Member (EAC) | vin*****@yahoo.com | Present |
| 13 | Shri Harmeet Sahaney | Member (EAC) | har**********@imd.gov.in | Absent |
| 14 | Prof R M Bhattacharjee | Member (EAC) | rmb**********@iitism.ac.in | Present |

**Ministry of Environment, Forest and Climate Change**
**Impact Assessment Division**
**(Thermal sector)**

**Date of zero draft MoM sent to Chairman: 02/12/2024**
**Approval by Chairman: 04/12/2024**
**Uploading on PARIVESH: 04/12/2024**

**SUMMARY RECORD OF THE FIFTEENTH (15TH) MEETING OF EXPERT APPRAISAL COMMITTEE (EAC) HELD ON 28th NOVEMBER 2024 FOR ENVIRONMENT APPRAISAL OF THERMAL SECTOR PROJECTS THROUGH VIRTUAL MODE.**

**28TH NOVEMBER, 2024 [THURSDAY]**

At the outset, the Chairman welcomed the Expert members & other participants and requested to start the proceeding as per the agenda listed for this meeting. The list of members who participated in the meeting is at **Annexure – I**. The Standard/Generic ToR conditions shall be system generated through the PARIVESH Portal.

Confirmation of the Minutes of the 14th Meeting of the EAC (Thermal): The minutes of the 14th meeting of the EAC (Thermal) held during 4-5th November, 2024 has been confirmed by the EAC as already uploaded on PARIVESH along with following corrections:

**A. Item No. 14.1**

| Minutes uploaded on PARIVESH | To be read as |
|---|---|
| **Para No. 14.1.24 A. Specific conditions**<br><br>**[A] Environmental Management**<br><br>2. Project proponent shall achieve stack emission level of 600 mg/Nm$^3$ and **300 mg/Nm$^3$** for sulphur di-oxide ($SO_2$) and Oxides of Nitrogen (NOx) for the existing Unit –I (350 MW) by December, 2024. | **Para No. 14.1.24 A. Specific conditions**<br><br>**[A] Environmental Management**<br><br>2. Project proponent shall achieve stack emission level of 600 mg/Nm$^3$ and **450 mg/Nm$^3$** for sulphur di-oxide ($SO_2$) and Oxides of Nitrogen (NOx) for the existing Unit –I (350 MW) by December, 2024 |

**B. Item No. 14.7**

| Minutes uploaded on PARIVESH | To be read as |
|---|---|
| **Para No. 14.7.25 A. Specific conditions**<br><br>**[A] Environmental Management**<br><br>6. PP shall implement the protective measure proposed in Environment Management Plan (EMP) in a time-bound manner. The budget earmarked for the same is Rs 880 Crores (Capital) and Rs 88 crores (recurring) and should be kept in separate accounts and audited annually. The implementation status along with the amount spent with documentary proof shall be | **Para No. 14.7.25 A. Specific conditions**<br><br>**[A] Environmental Management**<br><br>6. PP shall implement the protective measure proposed in Environment Management Plan (EMP) in a time-bound manner. The budget earmarked for the same is Rs 880 Crores (Capital) and Rs 88 crores (recurring) and should be kept in separate accounts and audited annually. The implementation status along with the amount spent with documentary proof shall be |

| Minutes uploaded on PARIVESH | To be read as |
|---|---|
| submitted to the concerned Regional Office for the activities carried out during the previous year. In addition to this existing 1 CAAQMS, PP shall install four continuous ambient air quality monitoring station near ash pond area at suitable locations preferably the village side in consultation of **OSPCB** within 6 months from the date of grant of EC. | submitted to the concerned Regional Office for the activities carried out during the previous year. In addition to the existing 1 CAAQMS, PP shall install four continuous ambient air quality monitoring station near ash pond area at suitable locations preferably the village side in consultation of **JSPCB** within 6 months from the date of grant of EC. |

**Agenda No 15.1**

**15.1** Proposed expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW **by M/s. Adani Power Limited** located at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amli Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh **- Reconsideration for Environmental Clearance based on ADS reply.**

**[Proposal No. IA/CG/THE/494913/2024; F. No. J-13012/57/2008.IA.II (T)]**

**15.1.1:** M/s. Adani Power Limited has made an online application vide proposal no. IA/CG/THE/494913/2024 dated 18/10/2024 along with copy of EIA/EMP report, Forms (CAF, Part A, B and C), certified compliance report and subsequent reply to the additional information submitted on 18/11/2024 and sought for environmental clearance under the provisions of EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at item No. 1(d) – Thermal Power Plants under Category 'A' of the schedule of the EIA Notification, 2006 and appraised at the Central Level.

Name of the EIA consultant: M/s. GreenC India Consulting Private Limited Ghaziabad. [List of ACOs with their Certificate / Extension Letter no.: NABET/EIA/2326/RA 0297, valid up to 22.02.2026].

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

**15.1.2:** The project of M/s. Adani Power Limited located in Chhote Bhandar, Bade Bhandar, Sarvani, & Amli Bhanuna Villages, Tehsil Pussore, District Raigarh, State Chhattisgarh is for enhancement/expansion of capacity from 600 (1x600) MW to 2200 MW [Proposed 1600 (2x800) MW based on Ultra Super Critical Technology].

**15.1.3:** The detail of the ToR is furnished below:

| Proposal No with Date | Consideration | Details | Date of Accord | ToR Validity |
|---|---|---|---|---|
| IA/CG/THE/438173/2023, dated 31st July 2023 | 45th EAC Meeting held on 16th August 2023 | Terms of Reference | 23rd September 2023 | 22nd September 2027 |

**15.1.4:** The existing project was accorded environmental clearance vide letter no. J-13012/57/2008-IA. II (T) dated 20/05/2010 and subsequent amendment to EC was accorded

on 16.04.2015, 26.11.2019 and 30.07.2020, Thereafter, EC was transferred vide letter dated 22.10.2019 (from KWPCL to REGL) and 24.04.2023 (REGL to APL) by MoEF&CC. Consent to Operate renewal for the existing unit was accorded by Chhattisgarh Environment Conservation Board (CECB) vide Consent Order No. 9122/TS/CECB/2022, Nava Raipur Atal Nagar, Raipur on 11/03/2022. The validity of CTO is up to 31/03/2025.

**15.1.5:** Certified compliance report from Regional Office

The status of compliance to the conditions was obtained from Regional office, Chhattisgarh Environment Conservation Board (CECB) *vide* letter dated 20.09.2024 in the name of M/s. Adani Power Limited, Raigarh. The Action taken report regarding the partially complied conditions as observed in the said report was submitted to CECB Office, vide letter no. APL/Raigarh TPP/ENV/2024-25/311 dated 02.10.2024. CECB, evaluated the same and has issued letter on 30.10.2024. The details of the observations made by CECB in the report dated 30.10.2024 along with its present status as furnished by the PP are given below.

| S No. | EC Conditions | Observation of RO, CECB (abridged) | Condition no. | | | Re-assessment by RO,CECB / Response by PP |
|---|---|---|---|---|---|---|
| | | | EC date | Specific | General | |
| 1 | Further an amount of Rs 15.0 Crores shall be earmarked as one-time capital cost for CSR program as committed by the project proponent vide its letter dated 23.03.2010. Subsequently a recurring expenditure of Rs 3.0 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation. | Industry agreed upon. Industry has not provided details about one-time capital cost 15.0 Cr. For CSR Program as committed by the project proponent vide its letter dated 23.03.2010. | 20.5.2010 | 22 | -- | **Industry complied upon.**<br>Industry informed that INR 16.05 Crores was spent during the period of FY 2010- 2012 in CSR activities.<br>Industry via it's letter dated 30.10.2024 informed that in FY 22-23 amount Rs. 1.2 Cr. and in FY 23-24 amount Rs. 1.69 Cr. Recurring expenditure has been done on CSR programme. Also in FY 24-25 amount Rs. 3.07 Cr. And additional Rs. 2 Cr. has been planned to spend on additional CSR activities utilizing previous unutilized amount. |

| S No. | EC Conditions | Observation of RO, CECB (abridged) | Condition no. | | | Re-assessment by RO,CECB / Response by PP |
|---|---|---|---|---|---|---|
| | | | EC date | Specific | General | |
| 2 | The project proponent shall formulate a well laid Corporate Environmental Policy and identify and designate responsible officers at all levels of its hierarchy to ensure adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations. | **Industry agreed upon**. | 20.5.2010 | 31 | -- | **Industry complied upon.** Industry has formulated. Corporate Environmental Policy and formed environment management cell to ensure compliance with environmental laws and regulations. Copy attached. |
| 3 | Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry | **Industry agreed upon.** | 20.5.2010 | -- | 4 | **Industry complied upon.** Industry has provided following system for prevention of spontaneous fires in coal yard, especially during summer season.<br>1. For Easy access 3m gap is give on either side of coal heaps in case of vehicle or personnel movement, whenever required.<br>2. Thirty yard sprinkler are operational covering all heaps from both side. During dry season, all yard sprinklers are being operated twice in every shift, even if system is stopped.<br>3. During stacking. Dozer compaction is being done every 1.5 m of height of coal heap to mitigate air pockets in heaps preventing spontaneous combustion.<br>4. Continuous & whenever required, HEMM (Dozer, excavator etc) is deployed |

| S No. | EC Conditions | Observation of RO, CECB (abridged) | Condition no. | | | Re-assessment by RO,CECB / Response by PP |
|---|---|---|---|---|---|---|
| | | | EC date | Specific | General | |
| | | | | | | for heap compaction & shaping & heap toe shaping.<br>5. Heap is covered via green aerated net to prevent any foreign VM, during dry season.<br>6. Pile age is strictly maintained below 45 days per our in-house SOP.<br>7. Thermography is being cloned in biweekly basis to spot any internal hot spot & if spotted immediate reclaiming is done as a precaution. |
| 4 | Avenue plantation of 2/3 rows all along the road for transportation of coal shall be carried out by the project proponent at its own expenses in consultation with the State Government Authorities. | It was informed that the joint inspection of the coal transportation route has been carried out by Van Vikas Nigam (Govt. of Chhattisgarh). The Proposal is under process. | 16.4.2015 | -- | 2 | It was informed that plantation will be carried out along NH-153 from Chhatamuda village upto Plant premises by Van Vikas Nigam (Govt. of Chhattisgarh). The Proposal is under process. |
| 5 | Compliance status to the MoEFCC Notification dated 21/05/2020. | Industry agreed upon. | 16.4.2015 | -- | -- | Industry agreed upon. |

Note: The copy of CCR received vide letter dated 30.10.2024 from CECB based on the Action Taken Report (ATR) is submitted with ADS response.

In addition to the above, the installation of Flue Gas Desulphurization as per the MoEF&CC Notification dated 05/09/2022 is reported to be under progress and the same will be completed by December 2026.

**15.1.6:** Environmental Site Settings

<table>
<tr><th>Sr. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td>1</td><td>Total Land</td><td>355.71 Ha (Private- 355.71 Ha)</td><td>Land use: The land used for the proposed expansion is within existing TPP land areas which is already under the possession of project proponent.</td></tr>
<tr><td>2</td><td>Land use breakup</td><td>
<table>
<tr><th>Facilities</th><th>Existing Area (In Hectares)</th><th>Proposed Area (In Hectares)</th></tr>
<tr><td>Main Plant</td><td>10.11</td><td>22.25</td></tr>
<tr><td>Coal Handling System</td><td>23.47</td><td>24.28</td></tr>
<tr><td>Water System</td><td>7.28</td><td>11.33</td></tr>
<tr><td>Switch Yard</td><td>-</td><td>-</td></tr>
<tr><td>Green belt</td><td>67.58</td><td>49.82</td></tr>
<tr><td>Roads</td><td>-</td><td>-</td></tr>
<tr><td>Ash pond</td><td>72.84</td><td>-</td></tr>
<tr><td>Railway siding</td><td>-</td><td>-</td></tr>
<tr><td>Water supply pipeline</td><td>-</td><td>-</td></tr>
<tr><td>Ash transport pipeline</td><td>-</td><td>-</td></tr>
<tr><td>Others (including plant Road, boundary road, Misc. etc.)</td><td>25.49</td><td>41.26</td></tr>
<tr><td>Total</td><td colspan="2">355.71 Ha.</td></tr>
</table>
</td><td>-</td></tr>
<tr><td>3</td><td>Land acquisition details as per MoEF&CC O.M. dated 7/10/2014</td><td>The proposed expansion is within the plant premises area. The land is already under the possession with APL.</td><td></td></tr>
<tr><td>4</td><td>Existence of habitation & involvement of R&R, if any</td><td>R & R is not required as land is already under possession of the proponent.</td><td></td></tr>
<tr><td>5</td><td>Latitude and Longitude of all</td><td>A. Plant site</td><td></td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td></td><td>corners of the project site</td><td>
<table>
<tr><th>Point</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>A</td><td>21°45'07.92"N</td><td>83°16'25.37"E</td></tr>
<tr><td>B</td><td>21°45'05.19"N</td><td>83°16'42.40"E</td></tr>
<tr><td>C</td><td>21°45'04.59"N</td><td>83°16'46.64"E</td></tr>
<tr><td>D</td><td>21°44'59.76"N</td><td>83°16'54.97"E</td></tr>
<tr><td>E</td><td>21°44'47.67"N</td><td>83°17'08.40"E</td></tr>
<tr><td>F</td><td>21°44'40.52"N</td><td>83°17'06.11"E</td></tr>
<tr><td>G</td><td>21°44'29.86"N</td><td>83°17'02.82"E</td></tr>
<tr><td>H</td><td>21°44'17.40"N</td><td>83°16'59.75"E</td></tr>
<tr><td>I</td><td>21°44'09.42"N</td><td>83°17'10.55"E</td></tr>
<tr><td>J</td><td>21°44'02.09"N</td><td>83°17'03.93"E</td></tr>
<tr><td>K</td><td>21°44'03.99"N</td><td>83°16'53.96"E</td></tr>
<tr><td>L</td><td>21°43'50.43"N</td><td>83°16'49.33"E</td></tr>
<tr><td>M</td><td>21°43'44.19"N</td><td>83°16'46.05"E</td></tr>
<tr><td>N</td><td>21°43'37.64"N</td><td>83°16'38.27"E</td></tr>
<tr><td>O</td><td>21°43'50.1"N</td><td>83°16'22.98"E</td></tr>
<tr><td>P</td><td>21°43'41.32"N</td><td>83°16'20.53"E</td></tr>
<tr><td>Q</td><td>21°43'49.15"N</td><td>83°16'02.52"E</td></tr>
<tr><td>R</td><td>21°44'02.77"N</td><td>83°15'54.55"E</td></tr>
<tr><td>S</td><td>21°44'21.75"N</td><td>83°15'55.35"E</td></tr>
<tr><td>T</td><td>21°44'29.30"N</td><td>83°15'59.48"E</td></tr>
<tr><td>U</td><td>21°44'46.69"N</td><td>83°16'5.021"E</td></tr>
<tr><td>V</td><td>21°44'52.46"N</td><td>83°16'21.52"E</td></tr>
</table>
B. Ash Pond
<table>
<tr><th>Point</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>A</td><td>21°44'24.37"N</td><td>83°16'5.40"E</td></tr>
<tr><td>B</td><td>21°44'22.32"N</td><td>83°16'28.20"E</td></tr>
</table>
</td><td></td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td></td><td></td><td><table><tr><td>C</td><td>21°43'51.30"N</td><td>83°16'25.26"E</td></tr><tr><td>D</td><td>21°43'52.93"N</td><td>83°16'1.74"E</td></tr></table></td><td></td></tr>
<tr><td>6</td><td>Elevation of the project site</td><td>230 m above MSL</td><td></td></tr>
<tr><td>7</td><td>Involvement of Forest land if any.</td><td>No forest land is involved.</td><td></td></tr>
<tr><td>8</td><td>Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area.</td><td>Project Site: Raigarh Thermal Power Plant<br>Study Area:<table><tr><th>Water body</th><th>Distance</th><th>Direction</th></tr><tr><td>Mahanadi River</td><td>3.5</td><td>S</td></tr><tr><td>Mand River</td><td>1.4</td><td>SW</td></tr><tr><td>Kutari Nala</td><td>3.3</td><td>SW</td></tr><tr><td>Lath Nala</td><td>5.4</td><td>SW</td></tr><tr><td>Kantang Nala</td><td>5.6</td><td>S</td></tr><tr><td>Gayasagar Nala</td><td>8.7</td><td>SE</td></tr><tr><td>Nala</td><td>2.8</td><td>NW</td></tr><tr><td>Kamrel Nala</td><td>8</td><td>NNW</td></tr></table></td><td>The High Flood Level (HFL) is RL 200.43m at a distance of 1.4 KM from TPP.</td></tr>
<tr><td>9</td><td>Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. if any within the study area</td><td>List of Reserved and protected forests:<table><tr><th>Particulars</th><th>Distance (in km)</th><th>Direction</th></tr><tr><td>Damka PF</td><td>5.4</td><td>SW</td></tr><tr><td>Devtongri PF</td><td>8</td><td>SSW</td></tr><tr><td>Kandola RF</td><td>9.7</td><td>SSE</td></tr></table></td><td>No ESZ/ESA, national Park, wildlife sanctuary /reserve in the study area of 10 km radius w.r.t TPP. Hence Not Applicable (NA).</td></tr>
<tr><td>10</td><td>Archaeological sites monuments/ historical temples etc.</td><td>Nil</td><td></td></tr>
<tr><td>11</td><td>Involvement of Critically Polluted Area/Severely Polluted area as per 2018 CEPI score</td><td>Nil</td><td></td></tr>
</table>

**15.1.7:** The unit configuration and capacity of existing and proposed project is given as below:

| S. No. | Existing power plant configuration and capacity | Proposed power plant configuration and capacity | Total | Technology |
|---|---|---|---|---|
| 1 | 600 (1x600) MW Sub- Critical | 1600 (2x800) MW Ultra Super Critical | 2200 (600+1600) MW | Sub-Critical & Ultra Super Critical |

**15.1.8**: The details of the fuel (coal/gas/LDO) requirement for the proposed project/ expansion cum proposed project along with its source and mode of transportation is given as below:

| Details | Fuel requirement (MTPA) | Source | Distance from site (Kms) | Mode of Transportation | Coal Characteristics (Worst case scenario) | Linkage document |
|---|---|---|---|---|---|---|
| Existing TPP | 3.25 Million TPA | SECL, MCL | About 110 (Rail 85 KM & Road 25 KM) | Rail & Road | Ash – < 4 0 (%) Sulphur - <0.5 (%) Moisture – 13 (%) GCV- 3065 Kcal/Kg | Through e-auction. |
| Proposed TPP | 6.6 Million TPA | Bijahan coal mine | Refer below table | Rail | Ash- < 4 0 (%) Sulphur- <0.5 (%) Moisture- 13 (%) GCV – 3700 Kcal/Kg | Fuel Supply Agreement (FSA) & e-auction. |

Transportation Rail Route with distance for expansion project:

| Rail Route | Route Length (approx..) | Status |
|---|---|---|
| Sardega Station to Bhalumuda & Ghargoda Station | 37 Km | Under Development by CIL & Indian Railways |
| Ghargoda Station to Bhupdeopur station | 51.2 Km | Existing Rail Route |
| Bhupdeopur station to Raigarh TPP through Kirodimal station route | 28.3 Km | Under Construction by APL |

**15.1.9:** Existing Water requirement is 41095 $m^3$/day, water allocation is obtained from Mahanadi River and permission for the same has been obtained from WRD Raipur, Chhattisgarh vide agreement certificate No. IN-CG20016765166330T dated 23.02.2021. The water requirement for the proposed project is estimated as 95996 $m^3$ /day which will be met from Surface Water from River Mahanadi at 05 km. The permission for drawl of surface water is obtained from Rajya Nivesh Prothsahan Board (Chhattisgarh Govt.) vide letter No./ 299/SIPB/2021/239 dated 15.03.2024 The water will be transported to the plant site through existing pipeline. The specific water consumption for the power plant is 2.5 $m^3$/MWhr.

**15.1.10:** Existing power requirement of about 50 MWh from own TPP, i.e. AUX consumption. The power requirement for the proposed project is estimated as about 144 MWh, and will be met with own generation, i.e. AUX consumption.

**15.1.11:** Baseline environmental studies

| Period | Range | Additional study (if any) |
|---|---|---|
| AAQ parameters at 15 locations (Summer 2022 and Winter 2020) | $PM_{10}$ ($\mu g/m^3$): 31 – 72.6<br>$PM_{2.5}$ ($\mu g/m^3$): 18.6 – 48.5<br>$SO_2$ ($\mu g/m^3$): 10.2 – 32.6<br>$NO_2$ ($\mu g/m^3$): 8.8 – 20<br>CO ($mg/m^3$): 0.35 – 0.78 | |
| Incremental GLC Level | $PM_{10}$ = 0.4 $\mu g/m^3$ (Level at 06 km in SW Direction)<br>$SO_2$ = 3.3 $\mu g/m^3$ (Level at 06 km in SW Direction)<br>NOx = 1.8 $\mu g/m^3$ (Level at 06 km in SW Direction) | |
| Surface Water samples (10 locations) | pH of the study area varied from 7.26 to 7.56. TDS was observed in the range of 206 mg/l at SW6 to 416 mg/l at SW10.). The maximum total hardness of surface water samples in study area was found to be 188 mg/l in sample at SW10 and the minimum was observed as 94 mg/l in the sample at SW6 which is at moderate to high levels.<br>The maximum alkalinity of water bodies samples was found to range between 60-120 mg/l in the study area. The maximum chloride concentration (90 mg/l) was found at SW10 and the minimum (45 mg/l) was recorded at SW5. The level of fluoride ranged between 0.35 mg/l to 0.55 mg/l and were found to be within the acceptable limit of drinking water. | |
| Ground Water samples at 10 locations | pH value of ground water samples varied from 7.33 to 7.54. The water samples are slightly alkaline. The maximum total hardness of ground water was found to be 328 mg/l in sample at GW5 and the minimum was observed as 190 mg/l in the sample at GW8. The minimum alkalinity of ground water was found to be 140 mg/l in sample at GW2 and GW10 and the maximum was observed as 220 mg/l in the sample at GW5. The maximum chloride concentration (75 mg/l) was found at GW5 and the minimum (45 mg/l) was recorded at GW9 and GW 10. The maximum average level of fluoride (0.45 mg/l) was found in GW5 and the minimum value (0.25 mg/l) was found at GW9 and GW10. | |
| Effluent generation details and its treatment | Effluent generation from TPP - 3000 KLD<br><br>Mode of treatment & reuse – Neutralization treatment will be provided for DM water reject. Wastewater wiutilized within the plant to achieve Zero Liquid discharge.<br><br>Domestic wastewater generation – 120 KLD<br>Domestic wastewater will be treated through latest | |

<table>
<tr><th>Period</th><th>Range</th><th>Additional study (if any)</th></tr>
<tr><td></td><td>MBBR Technology.<br>Mode of treatment & reuse - Treated water will be utilized for greenbelt and plantation purpose.</td><td></td></tr>
<tr><td>Noise levels Leq (Day & Night) at 10 locations</td><td>
<table>
<tr><th>Category</th><th>Location</th><th>Time</th><th>$L_{eq}$ dBA</th></tr>
<tr><td rowspan="4">Industrial Area</td><td rowspan="2">Project Site</td><td>Day</td><td>66.8</td></tr>
<tr><td>Night</td><td>41.6</td></tr>
<tr><td rowspan="2">Inside the Project Boundary</td><td>Day</td><td>64.3</td></tr>
<tr><td>Night</td><td>41.9</td></tr>
<tr><td rowspan="2">Commercial Area</td><td rowspan="2">Timarlaga petrol pump</td><td>Day</td><td>58.7</td></tr>
<tr><td>Night</td><td>43.4</td></tr>
<tr><td rowspan="14">Residential Area</td><td rowspan="2">Bunga Village</td><td>Day</td><td>51.4</td></tr>
<tr><td>Night</td><td>44.3</td></tr>
<tr><td rowspan="2">Ruchida Village</td><td>Day</td><td>50.5</td></tr>
<tr><td>Night</td><td>42.2</td></tr>
<tr><td rowspan="2">Kalma Village</td><td>Day</td><td>53.2</td></tr>
<tr><td>Night</td><td>40.2</td></tr>
<tr><td rowspan="2">Amalibhuan Village</td><td>Day</td><td>58.3</td></tr>
<tr><td>Night</td><td>43.9</td></tr>
<tr><td rowspan="2">Near Maa Mangla College (Surri Village)</td><td>Day</td><td>52.3</td></tr>
<tr><td>Night</td><td>42.6</td></tr>
<tr><td rowspan="2">Amalibhuana Village</td><td>Day</td><td>58.3</td></tr>
<tr><td>Night</td><td>43.9</td></tr>
<tr><td rowspan="2">Tilgai Village</td><td>Day</td><td>52.9</td></tr>
<tr><td>Night</td><td>43.6</td></tr>
<tr><td>Silent Zone</td><td colspan="2">There is no silent zone</td></tr>
</table>
</td><td></td></tr>
<tr><td>Soil Quality at 5 Locations</td><td>pH range 7.44 to 7.81; Electrical conductivity (EC); 344 to 506 µmhos/cm; potassium: 102 to 150 mg/kg; Nitrogen: 507 to 745 mg/kg; Phosphorous: 43 to 63 mg/kg;</td><td></td></tr>
<tr><td>Flora & Fauna</td><td>Schedule-I species observed in the study area: Indian grey mongoose or Asian grey mongoose (Urva edwardsii), Indian fox (Vulpes bengalensis), Indian Giant Squirrel (Ratufa indica), Indian Python (Python molurus), Indian Star Tortoise (Geochelone elegans)<br><br>APL, Raigarh has already submitted the wildlife conservation plan along with requisite documents to PCCF & DFO and further, PP will adhere & comply with all the conditions, suggestions/recommendations by PCCF office towards wildlife conservation plan.</td><td></td></tr>
<tr><td>Hydrogeology study</td><td>Recommendations of Hydrogeology study:
<table>
<tr><th>Sl. No.</th><th>Recommendations</th><th>Action Plan</th></tr>
</table>
</td><td>Consultant<br>Consultant details:<br>The hydrogeology</td></tr>
</table>

| Period | Range | | | Additional study (if any) |
|---|---|---|---|---|
| | 1. | The maximum hardness level (680.0 mg/l) exceeds both the acceptable limit (200 mg/l) and the permissible limit (600 mg/l) set by IS 10500:2012. This may indicate potential issues for water usability, especially in WS-12. Elevated hardness levels and water treatment may be required in coming future. A need for ongoing monitoring and potential remediation efforts in areas with hardness levels, particularly WS-12 can be suggested. | • Water quality monitoring shall be done once a month through NABL accredited laboratory to track Hardness Level in **WS-12** location.<br>• Further, PP shall engage reputed government institutes to closely monitoring the hardness levels for further course of action as well to take preventive action within the next 8 to 10 months.<br>• **Noughata village (WS-12) located at a distance of 6.5 km w.r.t plant site in North direction.** | study report has been prepared by M/s. Akshar Geo Services Pvt. Ltd & Vetted by NIT Delhi and the Vetted report is submitted with ADS response. |
| | 2. | By reviewing the report it was found that the values of Chloride content, Magnesium and Calcium were found to be above acceptable limit but within permissible limits. The plant may take some preventive measures accordingly | Raigarh TPP has already implemented ZLD and not using Ground water.<br>Water quality monitoring shall be done once in a month engaging NABL accredited laboratory to track parameters like Chloride content, Magnesium and Calcium and corrective/preventive actions will be taken based on findings in the report. | |

| Period | Range | | | Additional study (if any) |
|---|---|---|---|---|
| | 3. | As the topography of the study area is undulating with varied drainage network, slope map and Digital Elevation Model (DEM) map of the study area can be incorporated in future study report for better understanding. | For the present project site Slope and elevation details are provided in EIA report. Recommendation duly noted for future study. | |
| | 4. | It is recommended to mention the method used for determining stream order of the study area once in three years. | Raigarh TPP will engage reputed government institute for future study as recommended once in 3 years. | |
| Impact on aquatic ecology | Mitigation measures<br>• Plant is based on ZLD.<br>• Suitable screens (1.0-3.0 mm mesh size) at the water intake structures provided to prevent entrainment and impingement of fish and other aquatic organisms and can significantly reduce harm.<br>• Implementing comprehensive monitoring systems for water temperature, quality, and aquatic life health allows for early detection of negative impacts and timely mitigation. | | | |

**15.1.12:** The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below:

| Sr No | Type of Waste | Source | Quantity generated (TPA) | Disposal to | Remarks |
|---|---|---|---|---|---|
| 1 | Municipal Solid waste | Plant Canteen & Admin Building | 5.3 TPA | Collected; segregated using color coded waste bin, | -- |

| Sr No | Type of Waste | Source | Quantity generated (TPA) | Disposal to | Remarks |
|---|---|---|---|---|---|
| | | | | Organic waste converters (OWC) | |
| 2 | E-Waste | IT, Telecom, Used tubes & bulbs | 2.5 TPA | Collected; segregated | -- |
| 3 | Battery Waste from UPS | Automotive & Industrial | 5.4 TPA | Collected; segregated | -- |
| 4 | Bio-medical Waste | First Aid Centre | 0.025 TPA | Collected; segregated | -- |
| 5 | Hazardous Waste | Plant Operation | Used/Spent Oil – 60 TPA Spent ion Exchange resin containing toxic Metals – 5 TPA Waste or residue containing Oil – 8 TPA Empty/ Barrels/ Contaminated Containers 15 TPA | Collected; segregated | -- |

**15.1.13:** Public Consultation

| | |
|---|---|
| Details of advertisement given | The Times of India, Haribhoomi, Krantikari Sanket |
| Date of public consultation | 12.07.2024, Time 11.00 AM onward |
| Venue | Playground/field near the Government Higher Secondary School, Supa |
| Presiding Officer | Smt. Santan Devi Jangde, Additional District Magistrate, Raigarh |
| Major issues raised | Employment to Local People, Community Rural Infrastructure Development, Dust generation issue, Education, Community Health & infrastructure, Job to locals. |
| No. of people attended | Approx. 400 |

Action plan as per MoEF&CC O.M. dated 30/09/2020 to address the concerns of public consultation:

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| **A** | **Educational Initiatives** | | | | | | | |
| | Modernization & necessary construction of identified Primary / Higher Secondary School of core zone village of the project site in consultation with Local Government Authorities. Identified aadarsh school shall be developed by APL with full support of local administration. | 3.0 | 1.6 | - | Actual recurring cost will be borne by APL Raigarh | | **4.6** | School of 1858 sq meters area is proposed to be constructed in Bade Bhandar **within 2 years** with classrooms and other basic facilities viz. principal room, staff room, library, assembly hall, computer room, administrative room, toilets, storeroom, playground etc. |
| | Distribution of drinking water filter/Drinking water coolers in schools. | 0.1 | 0.2 | 0.2 | - | - | **0.5** | APL will provide drinking water facility in more than 20-25 nearby villages Bade Bhandar, Chhote Bhandar, Amli bhanuna, Sarvani etc. |
| | Basic teaching and learning infrastructure support to Govt. Schools, Supporting in creation of assembly halls, prayer halls, classrooms and **Smart class**, computer room, space for mid-day meals, playground, school boundary walls etc. for government school. | 2.0 | 1.5 | 1.0 | - | - | **4.5** | APL will provide infrastructure support to Govt. School in about 20 Villages Bade Bhandar, Sarvani, Amli Bhanuna, Jevridih, Supa, Kathli. |
| | Educational Vocational Guidance fair (EVGF) for career talk. Conducting Quiz competition and awareness programs for Students, Provide assistance for coaching Classes. | 0.15 | 0.30 | 0.30 | - | - | **0.75** | APL will provide Scholarship to promote education for girls in the nearby 20-25 villages and Extracurricular activities like 'Yoga", events' etc. will be supported. |
| | Community provides awareness about education, health, hygiene, and good practices. | 0.10 | 0.20 | 0.20 | - | - | **0.5** | Functional literacy in Chhattisgarh state is 71% & 75% in 20 villages where APL is working. Further APL aims to meet 80% functional literacy within the next 2 years. |

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| | Program for skill improvements of teaching staffs in govt. school. | 0.10 | 0.20 | 0.20 | - | - | **0.5** | Program for skill improvement of teaching staff is being conducted in about 8 government schools of the nearby villages. |
| | **Sub Total** | **5.45** | **4.00** | **1.90** | - | - | **11.35** | |
| **B** | **Community Health Initiatives** | | | | | | | |
| | Providing assistance for the construction & operation of Primary Health Centre equipped with necessary facilities within core village of TPP (Bade Bhandar) in consultation with local government authorities. | 4.25 | 3.25 | Actual recurring cost will be borne by APL Raigarh | | | **7.5** | **Hospital in an area of 3200 sq meter to be constructed within 2 years with 40 beds**, doctors' cabin, nurses/staff rooms, emergency room, dispensary, pathology, patients' waiting area, toilets (M & F), parking area, equipment etc. |
| | Rural Medical Camps through Medical Team of Primary Health Centre @ 4 Nos. of camps per month (@ 60 patients per camp), Safe Menstrual Hygiene Management Awareness, Mega Health Camp, Cataract Screening & Operation. | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | **1.5** | Mobile Health Care Unit services is being provided in about 28 villages.<br>Medical camps will be periodically organized in about 10-15 villages Bade Bhandar, Chhote Bhandar, Amli Bhanuna Sarvani, Barpali, Jevridih, Kathli, Tupakdhar, Bunga, Ranbhatha, Taparda, Supa, Kotmara. |
| | Promotion of awareness of malnutrition and anemia. | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | **0.75** | Awareness on Mother & child health and knowledge enhancement on preventive health care being promoted in about 18-20 Villages Bade Bhandar, Chhote Bhandar, Amli Bhanuna Sarvani, Kalma, Chandli, Amlipali, |

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| | | | | | | | | Shankarpali, Pusalda, Jatri and Tilgi. |
| | Promotion of Poshan Vatika at backyard of villagers & Project Suposhan. | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | **1.0** | In about 25-30 nearby Villages Jevridih, Kathli, Bunga, Ranbhatha, Taparda, Supa. |
| | **Sub Total** | **4.9** | **3.9** | **0.65** | **0.65** | **0.65** | **10.75** | |
| **C** | **Sustainable Livelihood and Women Empowerment** | | | | | | | |
| | Skill Development Centre (SDC) to make the youth for achieving their Goals in life by becoming Skilled Professionals. | 0.55 | 0.55 | 0.55 | 0.55 | 0.3 | **2.5** | APL is providing ITI Training & Skill Development Program in the nearby villages. |
| | Development & Support for Drip irrigation, assistance for mushroom, vegetable cultivation and livestock management in core zone villages | 0.35 | 0.35 | 0.35 | 0.35 | 0.1 | **1.5** | Support being provided in Villages Bade Bhandar, Chhote Bhandar, Amli Bhanuna and Sarvani. |
| | **Sub Total** | **0.9** | **0.9** | **0.9** | **0.9** | **0.4** | **4.0** | |
| **D** | **Community Rural Infrastructure Development** | | | | | | | |
| | Repairing, strengthening & Maintenance of Existing roads in consultation with Gram Panchayats. | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | **3.5** | Cement Concrete Road (about 6000 meters length) will be constructed near Sarvani & Amli Bhanuna and will be extended to other villages. |
| | To provide facility for potable drinking water, RO Plants and water supply system through overhead tanks | 1.05 | 1.05 | 0.30 | 0.20 | 0.15 | **2.75** | Portable drinking water facility being provided to Bade Bhandar, Chhote Bhandar, Amli Bhanuna Sarvani etc. |
| | Creation of clean and hygienic environment by proper drainage | 0.6 | 0.6 | 0.25 | 0.20 | 0.10 | **1.75** | Strengthening of drainage facility in the nearby |

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| | systems, community sanitation campaign, waste management awareness etc. implementation of Swachchh Bharat Initiative. | | | | | | | villages is under progress and further will be continued. |
| | Upgradation & Renovation of sanitation facilities such as toilets etc. | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | **2.0** | Upgradation & renovation of sanitation facility is being provided and will be provided on need based in Villages Sarvani, Bade Bhandar and Amli Bhanuna and other villages. |
| | Provision of solar street lighting, green nurturing programs, plantation drives etc. in | 0.7 | 0.7 | 0.7 | 0.25 | 0.35 | **2.7** | Solar street lighting is provided in Villages Barpali, Supa, Bunga & Tarda and other neaby villages shall be provided.<br>Plantation drive will be conducted in consultation with forest office. |
| | **Sub Total** | **3.45** | **3.45** | **2.35** | **1.75** | **1.7** | **12.7** | |
| **E** | **Development of Playgrounds for Sports** | | | | | | | |
| | Development of playgrounds and promotion of sports and training for school children. | 0.1 | 0.1 | 0.1 | 0.05 | 0.05 | **0.4** | Playground shall be developed In Villages Bade Bhandar & Amli Bhanuna. |
| | Cultural activities for villagers & provide sports equipment such as swing sets etc. | 0.1 | 0.1 | 0.1 | 0.05 | 0.05 | **0.4** | Renovation work will be done in nearby temples & cultural/assembly halls for Bhajan Kirtaan. |
| | **Sub Total** | **0.2** | **0.2** | **0.2** | **0.1** | **0.1** | **0.8** | |
| **F** | **Development of local youth & women for various activities at village level** | | | | | | | |
| | Team/ Leaders development & capacity building activities at village level for various programme and activities. | 0.45 | 0.45 | 0.45 | 0.20 | 0.20 | **1.75** | The program is already in progress and further strengthening will be done for more youths. |

| Sr. No | Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing | Proposed Expenditures year wise (Rs. In Crores) | | | | | Total Proposed Expenditures (Rs. In Crores) | Physical Targets |
|---|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | | |
| | Vehicles for emergency purpose for local villagers including private ambulances as per requirement | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.5** | Vehicles are already made available to all. |
| | **Sub Total** | **0.55** | **0.55** | **0.55** | **0.30** | **0.30** | **2.25** | |
| | **Total (A+B+C+D+E+F)** | **15.45** | **13.0** | **6.55** | **3.70** | **3.15** | **41.85** | |

**15.1.14:** Existing capital cost of project was Rs. 2,900 Cr. The capital cost of the proposed expansion project is Rs 13,600 Crores and the capital cost for environmental protection measures is proposed as Rs. 2110.33 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 21.85 Crores. The employment generation from the proposed project / expansion is 396 Nos. The details of cost for environmental protection measures as follows:

| S.No. | Description of Item | Existing (Rs. In Crores) | | Proposed (Rs. In Crores) | |
|---|---|---|---|---|---|
| | | Capital Cost | Recurring Cost | Capital Cost (updated) | Recurring Cost |
| (i). | Air Pollution Control | 81.20 | 3.23 | 1692.48 | 15.95 |
| (ii). | Noise control | 2.15 | 0.15 | 30.0 | 0.25 |
| (iii). | Water Pollution Control | 25.50 | 0.86 | 193.03 | 2.95 |
| (iv). | Ash management | 15.45 | 6.86 | 170 | 1.6 |
| (v). | Environmental Monitoring and Management | 0.15 | 0.06 | 16.82 | 0.50 |
| (vi). | Green Belt Development | 1.05 | 0.06 | 8.0 | 0.60 |
| (vii). | Addressal of Public Consultation issues | 1.7 | 0.1 | 41.85 | 4.57 |

**15.1.15:** Existing green belt has been developed in 67.58 ha area which is about 34.3% of the total project area of 197 ha with total sapling of 3,10,000 Trees. Proposed greenbelt will be developed in 49.82 ha which is about 33% of the total project area. Thus, total of **117.4 ha** area (33% of total project area) will be developed as greenbelt. Around 30 m wide greenbelt, consisting of at least around plant boundary will be developed as greenbelt and green cover as per CPCB guidelines. Local and native species will be planted with a density of 2500 trees per hectare. Total no. of 4,34,425 saplings will be planted and nurtured in 117.4 hectares and available area in 5 years.

**Updated Action Plan for Greenbelt and Plantation**

| S No. | Area (Ha) | Description | Proposed (Gap/Casualty replacement) | Year wise Action Plan (FY) | Budget Cost in (Rs.) |
|---|---|---|---|---|---|
| 1 | 67.58 | Already Plantation done | Gap filling by planting additional **(Casualty replacement will be completed within two years)** | 2024-2025<br>2025-2026<br>2026-2027 | **0.316 Cr.**<br>**0.388 Cr.**<br>**0.295 Cr.** |
| 2 | 49.82 | Greenbelt will be developed | Details action as below. (Five-year Plan) | | **9.21 Crores** |

**Five Year Action Plan for Proposed Greenbelt Development (Expansion)**

| Year | Plantation on safety zone (7.5 Meter) & Un-worked Area | | Cost of sapling along with maintenance Rs.600/Plant | | Name of species |
|---|---|---|---|---|---|
| | Area (Ha.) | No. of Trees | Capital cost | Recurring cost/Annum | |
| 2024-25 | 16.6 | 41,500 | Plant Purchase Cost- 7.47 Cr | Maintenance/Watering/Manuring Cost (@ Rs.100/Plant) – Rs. 1.24 Cr | Sal (Shorea robusta) Teak (Tectona grandis) Mahua (Madhuca indica), Neem (Azadirachta indica) Bamboo (Bambusa), Amaltas (Cassia fistula), Sissoo (Dalbergia sissoo), Peepal (Ficus religiosa), Khamar (Gmelina arborea), Melia azederach (Mahaneem), Neolamarckia cadamba (Kadam) and other local species as per CPCB/CECB Guidelines. |
| 2025-26 | 16.6 | 41,500 | | | |
| 2026-27 | 16.6 | 41,500 | | | |
| 2027-28 | Manpower & Manure for maintenance | | | Rs. 0.25 (Lumpsum) | |

| Year | Plantation on safety zone (7.5 Meter) & Un-worked Area | | Cost of sapling along with maintenance Rs.600/Plant | | Name of species |
|---|---|---|---|---|---|
| | Area (Ha.) | No. of Trees | Capital cost | Recurring cost/Annum | |
| 2028-29 | Manpower & Manure for maintenance | | | Rs. 0.25 (Lumpsum) | |
| **Total** | **49.8** | **1,24,500** | **7.47 Crores** | **1.74 Crores** | |
| | | | **Total 9.21 Crores** | | |

**Status and Proposed Greenbelt Plantation**

| Sl. No. | Type | Area (Ha) | Percentage |
|---|---|---|---|
| 1 | **Existing Greenbelt** | **67.58** | 34.% |
| 2 | Proposed Greenbelt | 49.82 | -- |
| | Total Greenbelt Area | **117.4** | **33 %** |

**Plantation Methodology:**

Plantation will be implemented through Miyawaki plantation technique to provide dense with native species and the approach is supposed to ensure that plant growth is 10 times faster and the resulting plantation is 30 times denser than usual. It involves planting dozens of native species in the same area and becomes maintenance-free after the first three years.

- The native trees of the region are identified and divided into four layers — Canopy Trees, Trees, Sub-trees & Shrubs.
- The quality of soil is analyzed and biomass, which would help enhance the perforation capacity, water retention capacity, and nutrients in it, is mixed with it.
- A mound is built with the soil and the seeds are planted at a very high density — three to five saplings per square meter. The ground is covered with a thick layer of mulch.

**15.1.16: Ash management for the last three years (Existing):**

| Year | Quantity generated (MTPA) | Quantity utilized (MTPA) | % of utilization | Balance quantity (MTPA) | No. of storage silos with capacity |
|---|---|---|---|---|---|
| 2021-22 | 1.095 | 0.410 | 37.4 | 0.685 | Silo 1- 1000 MT Silo 2- 2500 MT |
| 2022-23 | 1.246 | 1.198 | 96.1 | 0.048 | |
| 2023-24 | 1.282 | 1.122 | 87.5 | 0.160 | |

**MTPA: Million Ton Per Annum*

**A. Fly ash Generation details for the last three years = 2.89876 MTPA**
**Fly ash Utilization details for the last three years = 2.12548 MTPA**

| S. No. | Activity (as applicable) | Quantity (MTPA) | Percentage (%) | Remarks (Prior approval of SPCB details to be mentioned) |
|---|---|---|---|---|
| 1 | Fly ash-based products (bricks or blocks or tiles or fiber cement sheets or pipes or boards or panels) | 0.006 | 0.28 | As per MoEFCC Notification for Fly Ash Notification |
| 2 | Cement manufacturing | 0.0148 | 0.70 | |
| 3 | Ready mix concrete | 0 | … | |
| 4 | Ash and Geo-polymer based construction materials | 0 | … | |
| 5 | Manufacturing of sintered or cold bonded ash aggregate | 0 | … | |
| 6 | Construction of roads, road and fly over embankment | 0 | …. | |
| 7 | Construction of dams | 0 | … | |
| 8 | Filling up of low lying area | 2.1046 (Abandoned Mines/ Stone Quarry) | 99.0 | Yes, NOC granted by SPCB. |
| 9 | Filling of mine voids: | 0 | …. | |
| 10 | Use in overburden dumps | 0 | …. | |
| 11 | Agriculture | 0 | …. | |
| 12 | Construction of shoreline protection structures in coastal districts | 0 | …. | |
| 13 | Export of ash to other countries | 0 | …. | |
| 14 | Others (please specify) | 0 | …. | |
| | **Total** | 2.1254 | 100 | |

**B. Bottom ash generation for last three years = 0.72469 MTPA**
**Bottom ash Utilization for last three years = 0.60443 MTPA**

| S.No. | Activity (as applicable) | Quantity (MTPA) | Percentage (%) | Remarks (Prior approval of SPCB details to be mentioned) |
|---|---|---|---|---|
| 1 | Fly ash based products (bricks or blocks or tiles or fiber cement sheets or pipes or boards or panels) | 0.01 | 1.65 | As per MoEFCC, Fly Ash Notification |
| 2 | Cement manufacturing | 0 | …. | As per MoEFCC, Fly Ash Notification |
| 3 | Ready mix concrete | 0 | …. | |
| 4 | Ash and Geo-polymer-based construction materials | …. | …. | …. |
| 5 | Manufacturing of sintered or cold bonded ash aggregate | …. | …. | …. |
| 6 | Construction of roads, road and fly over embankment | …. | …. | …. |
| 7 | Construction of dams | | …. | |
| 8 | Filling up of low lying area | 0.594432 (Abandoned Mines, Stone Quarry) | 98.34 | Yes, NOC granted by SPCB. |
| 9 | Filling of mine voids | 0 | …. | …. |
| 10 | Use in overburden dumps | 0 | …. | …. |
| 11 | Agriculture | 0 | …. | …. |
| 12 | Construction of shoreline protection structures in coastal districts | 0 | …. | …. |
| 13 | Export of ash to other countries | 0 | …. | …. |
| 14 | Others (please specify) | 0 | …. | …. |
| | **Total** | **0.60443** | **100** | |

**Legacy ash details** = No Legacy Ash as per Fly Ash notification S.O. 6169 (E) dated 30.12.2022

**C. Ash Stock in Operational Ash Pond- 2.355 MTPA**

**D. Ash Pond details: -**

| S.No. | Details of Ash pond | Ash pond 1 |
|---|---|---|
| 1 | Status of ash pond (Active / Exhausted (yet to be reclaimed)/ Reclaimed) | Active |

| S.No. | Details of Ash pond | Ash pond 1 |
|---|---|---|
| 2 | Area (Ha) | 70.43 |
| 3 | Dyke height (m) | 12.0 |
| 4 | Volume ($m^3$) | 84.51 Lakh $m^3$ |
| 5 | Quantity of ash disposed (Million Tons) | 2.355 |
| 6 | Available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons) | About 70% (60 Lakh $m^3$) |
| 7 | Expected life of ash pond (number of years and months) | 15 yrs. Considering October'2024 (Capacity/life of ash dyke calculated in worst scenario for 25 years) |
| 8 | Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No lining | HDPE |
| 9 | Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD) | HCSD |
| 10 | Ratio of ash: water in slurry mix (1:___): | 65:35 |
| 11 | Ash water recycling system (AWRS) installed and functioning: Yes or No | Yes |
| 12 | Quantity of wastewater from ash pond discharged into land or water body ($m^3$) | 0 |
| 13 | Last date when the dyke stability study was conducted and name of the organization who conducted the study: | 19th June 2024, NIT, Rourkela |
| 14 | Last date when the audit was conducted and name of the organization who conducted the audit: | 01.10.2023, NIT Delhi |

**E. Proposed ash utilization plan for expansion project**

| Details | Existing generation (Phase- 1) (MTPA) | Proposed generation (Phase- II) (MTPA) | Total | Utilization (MTPA) | % of utilization | Balance quantity (MTPA) | No. of storage silos with capacity |
|---|---|---|---|---|---|---|---|
| Ash (Fly & Bottom) | 1.282 | 2.356* | 3.638 | 3.638 | 100 | Nil | Existing TPP: Silo 1- 1000 MT Silo 2- 2500 MT Proposed TPP: Silo 4x2500 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | MT |

* MTPA: Million Ton Per Annum
*Proposed ash generation calculated considering 85% PLF and worst coal scenario.
Avg. Ash% content about 40%

Ash pond details: Nil. The existing ash pond will be used for the proposed expansion.

**15.1.17**: Summary of violation under EIA, 2006/court case/show cause/direction if any.

**A. <u>Summary of court cases</u>**

| Sl. No | Case no. | Court Details | Brief Summary of the Case | Last date of hearing | Next date/ Order Passed | Action taken by PP |
|---|---|---|---|---|---|---|
| 1 | 3044/2010 | Civil Court, Raigarh | A complaint is filed to recover the deficit of "Stamp duty & Registration fees" on R&R amount. | 03.02.2011 | Awaited | Matter is pending before Secretary-Revenue for guidelines on the matter since 3-Feb-2011. Neither party is pushing the matter. And no hearing is taking place. To be kept on hold. |
| 2 | E.C. 181/2014 | Labour court, Allahabad | Petitioners filed a compensation claim for a fatal road accident involving an employee of M/s Roots Cooling System Pvt. Ltd (Party) alleging it to be employment-related injury. | - | Awaited | No liability of APL as the compensation is to be paid by Contractor. |
| 3 | WP (C) No. 6003/2010 | Civil (High Court, Bilaspur) | The Case is between Govt of Chhattisgarh & petitioners - challenging land acquisition proceedings | 07.01.2022 | Awaited | The hearing was held on 07.01.2022 as the court opinion that Weit Petition is pending since 2010. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | no. 21/ A-82/ 2009- 10 of Village Chhote Bhandar. we are as Party. | | | Opportunity has been given to Petitioners to make their representatio ns. |
| 4 | WP (C) No. 5918/2010 | Civil (High Court, Bilaspur) | The Cases is between Govt of Chhattisgarh & petitioners are challenging the notification issued under Sec-4 & Sec-6/ land acquisition proceeding no. 22/ A-82/ 2009- 10 of village Bade Bhandar. and we are as Party. | 07.01.2022 | Awaited | The hearing was held on 07.01.2022 as per the court opinion that Weit Petition is pending since 2010.<br>Opportunity has been given to Petitioners to make their representatio ns. |
| 5 | Criminal Case/ 759/ 2016 | Criminal (JMFC Court, Raigarh) | Calming forged registry - FIR no. 205/2016 was filed for forged registry in name of Ghansiram & Harichand-Ucchbhitti (Railway land). | -- | Awaited | Police submitted the charge sheet on 03.11.16. Scheduled for registration of charges.<br>Bail granted by High court, Bilaspur for all accused. Also scheduled for argument on accused application. |
| 6 | 6/ B-105(3)/ 2016-17 | Civil (District Registrar | A case has been filed for the loss of | -- | Awaited | Scheduled for submission |

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| | | court, Raigarh) | stamp duty and registration fee alleging suppression of the facts by KWPCL. | | | of patwari prativedan.<br>Application to be filed for restoration of case and name change on next hearing date.<br>Case has been refiled in the Commissioner Court. |
| 7 | A.P./A-6/2017-18 | Civil (Additional Commissioner, Bilaspur) | An appeal has been filed by Kulkitdas against an order in favor of his daughter Lata and KWPCL, wherein the ownership of land is disputed. | -- | Awaited | Scheduled for record call. Restoration applications are not needed, however application to be filed for name change. |
| 8 | A21 09/2016<br>(Not Registered Yet) | Civil (Commissioner Court, Bilaspur) | The case is filed through villager for getting land purchasing approval from land Commissioner as the village comes under the tribal area. | -- | Awaited | Scheduled for record call.<br>APL is not in array of parties. |
| 9 | 72-A/2020 | Declaration and Possession<br>(2nd CJ II) | Appeal Filed by Arjun Nishad for possession of land purchased by Company. | -- | Awaited | -- |

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| 10 | OMP(I) COMM. NO.348 OF 2016 & AA 107 of 2017/OMP (I) COMM. NO.349 OF 2016 & AA 108 of 2017 | Arbitration (Tribunal court, New Delhi) | Agency had filed the case in Tribunal Court for extra claim.<br>Although Final Contract Closure MOM dated 12 Jun 2015 mutually agreed & signed. | -- | Awaited | In view of the resolution plan getting approved without giving any right to Prem co. to claim the amount under dispute. The same gets extinguished and as such the arbitration is now infructuous. |
| 11 | ARB.P111/17 & 112/7 | Arbitration (Tribunal court, New Delhi) | Although Final Contract Closure MOM dated 12 Jun 2015 mutually agreed & signed. Agency had filed the case in Tribunal Court for extra claim. | -- | - | In view of the resolution plan getting approved without giving any right to Premco to claim the amount under dispute. The same gets extinguished and as such the arbitration is now infructuous. |
| 12 | Writ Petition All Orders Civil [Related To Other Matter] (WPC) (Filing Number) 1248/2022 | High Court,<br>Bilaspur | The petition challenges the order by the Regional Officer, directing the petitioner to pay INR 18,90,000 without demonstrating the | 10.03.2022 | Awaited | The matter was heard on 10.03.2022 wherein the Hon'ble Court granted an interim order staying the effect and operation of RO, order |

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| | | | determination method. It also contests the cancellation of the NOC by the Sub-Divisional Officer, Sarangarh District, on 08.10.2021. | | | dated 04.12.2021 (levy of Rs. 18.9 lakhs).<br>Further, the Respondent authorities are restrained from taking any coercive steps against APL Raigarh. |
| 13 | Appeal No. 446 of 2022 | APTEL, New Delhi | Appeal against the Order Dated 08.08.2022 passed by CSERC in Petition No. 67 of 2020 (T)<br>Carrying Cost to be allowed from the date the amounts were due to REGL instead of date of filing of Petition | -- | Awaited | Pending for hearing.<br>IA for name change from REGL to APL was allowed by APTEL on 02.06.2023. |
| 14 | Appeal No. 437 of 2019 | APTEL, New Delhi | Appeal against levy of Relinquishment Charges for surrender of LTA | 23.11.2020 | Awaited | 23.11.2020 – PGCIL not to raise invoice during pendency of Appeal, except for cases under IBC.<br>To be Included in List of Finals<br>IA for name change from |

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| | | | | | | REGL to APL was allowed by APTEL on 02.06.2023. |
| 15 | WPC 835 of 2023 filed by REGL challenging CECB's Direction under Section 31A of Air Act | Chhattisgarh High court | Appeal against levy of Relinquishment Charges for surrender of LTA | 23.11.2020 | Awaited | 23.11.2020 – PGCIL not to raise invoice during pendency of Appeal, except for cases under IBC. To be Included in List of Finals<br>IA for name change from REGL to APL was allowed by APTEL on 02.06.2023. |
| 16 | Civil Suit Class B (DJ ADJ)/0000001/2022 | District court, New Delhi (Non-Regulatory) | A suit has been filed against REGL/APL for the refund of INR 19,60,437, which includes the EMD amount of Rs. 4,60,438 and a Bank Guarantee of Rs. 15,00,000, along with interest. The plaintiffs claim that all obligations have been discharged, but the amounts have | -- | Awaited | For hearing. |

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| | | | not been returned. | | | |
| 17 | OA No. 70/2023_Suo Moto Application by NGT against various Thermal Power Plants | Central Zone Bench of NGT, Bhopal (Non-Regulatory) | Imposition of Compensation [provisional Rs. 6.1689 Crores (Rs. 2.120 Crore for impact + Rs. 4.0489 Crore, towards cost of Road construction)], as road is being used by different/various TPPs & Industries due to impact and damage of road by transportation of Coal by road from Kulda Mine to destination. | 17.10.2024 | disposed off | Last hearing of NGT was held on 17.10.2024.<br>NGT order OA no. 70/2023 stands disposed off and imposed compensation (penalty) is nullified to TPP's & Industries. |
| 18 | MSEFC-CASE-No.MH/20/S/NGR/02811- EM Services (India) Pvt Ltd Vs Adani Infra | MSEFC Court Nagpur<br>(Non-Regulatory) | A Party was hired for plant maintenance during Shutdown. During the maintenance, an accident happened by the party with a Govt Ambulance coming to Plant on the subject matter District Collector had directed Raigarh TPP to compensate for the same and same was | -- | Awaited | A Party was hired for plant maintenance during Shutdown. During the maintenance, an accident happened by the party with a Govt Ambulance coming to Plant on the subject matter District Collector had directed Raigarh TPP to |

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| | | | executed. The party had laid a complaint in MSEFC Court Nagpur. | | | compensate for the same and same was executed. The party had laid a complaint in MSEFC Court Nagpur.<br>The hearing date is awaited. |
| 19 | 90/2023 | Appellant Court<br>Regulatory | Petition for determination of Energy Charge Rate for FY 20-21, FY 21-22, FY 22-23 towards supply of 5% power to CSPDCL. | -- | Awaited | The hearing date is awaited. |

**B. Summary of Show Cause Notices**

| S. No | Issuing authority | Date | Reasons for the issuance of SCN | Status of reply to submission | Present status |
|---|---|---|---|---|---|
| There is no Show cause notices issued either by MoEFCC or CECB for APL, Raigarh TPP. | | | | | |

**C. Summary of Violation:-**

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| Any violation case pertaining to the project on following:<br>i. The Environment Protection Act, 1986<br>ii. Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980.<br>iii. The Wildl i f e (Protection) Act, 1972 | No. |

**15.1.18**: Name of the EIA consultant: M/s. GreenC India Consulting Private Limited Ghaziabad. [List of ACOs with their Certificate / Extension Letter no.: NABET/EIA/2326/RA 0297, valid up to 22.02.2026].

**ADS Information in chronology [Only for ADS cases]**

**15.1.19:** The proposal was initially considered in 14th EAC meeting of Reconstituted EAC (Thermal) held on 4-5th November 2024. Proposal was deferred for want of following additional information. Proponent uploaded the additional information on 18/11/2024 and the proposal was placed before the EAC for consideration in its 15th meeting held on 28/11/2024.

1. Proceedings of the public hearing held for the existing project shall be submitted along with the action taken to address these issues.
2. Project proponent shall submit a comprehensive action plan with detailed activity wise outlay to address the issues raised during the public hearing held for the existing project as well as for the expansion project by explicitly stating the physical targets in accordance with the Ministry's OM dated 30/09/2020 and its subsequent amendments. The action plan inter-alia include scheme for supporting schools and hospitals in surrounding area for mitigating the effects of air pollution on the local population.
3. Hydrogeology study report submitted by the proponent shall be vetted by the reputed government institute. The vetted report along with the recommendations and action plan to comply with the recommendations shall be submitted to the Ministry.
4. Action taken report submitted by the proponent against the observations of certified compliance report shall be submitted along with the comments/views of the CECB.
5. Ash pond calculation needs to be revisited as life of the ash pond is mentioned as only 15 years.
6. Project proponent shall submit revised ash management plan for improving ash pond management. The plan shall inter-alia include ash pond details, infrastructure facilities, ash generation and utilization as per the ash utilization notification dated 31/12/2021 and its subsequent amendments as well as legacy ash utilization and plan for reduction in existing ash pond area etc.
7. Revised action plan for green belt development covering 33% of the project area shall be submitted giving details of native species and cost outlay.
8. Action plan for installation of dry ash collection system and ash disposal by HCSD shall be submitted.
9. Project proponent shall explore the feasibility for installation of air cooled condenser system for the expansion project and the same shall be submitted.
10. Proponent shall submit action plan for installation of solar power generation on roof top and also road side poles within the project site. A time bound plan for installation of minimum 1 MW solar power generation facility be submitted.
11. Traffic assessment study report submitted shall be revisited by incorporating the mitigation measures to be adopted for coal transportation by road. Project proponent shall submit the flood plain map of Mand river (1.4km distance) vis-à-vis with the project site, impact of project on aquatic ecology along with the mitigation measures to be adopted for the protection of the Mand river. Certificate from concerned District Magistrate/Executive Engineer from the State Water Resources department (or) any officer authorized by the State Government in this regard shall be submitted stating that project site is not located within Mand river flood plain corresponding to one in 25 years of flood as per Ministry's O.M. dated 14/02/2022.
12. Project proponent shall submit the details of case no OA 70 of 2023 pending before the Hon'ble NGT with specific reference to the existing 600 MW by mentioning the details of

non-compliance of conditions observed by the Hon'ble NGT and action taken by the proponent to comply with the directions of Hon'ble NGT. In this regard, RO of MoEF&CC may also give observations with regard to the coal transportation issues raised before the Hon'ble NGT and action if any taken by the PP.

13. Project proponent shall clarify the stack height proposed under the expansion project is in consonance with prescribed norms of Central Electricity Authority.
14. PP shall submit plan to ensure that diesel operated vehicles will be switched over to E-Vehicles/ CNG vehicles in a time bound manner, replace the passenger vehicles to E-vehicle in phased manner.
15. Time bound action plan to mitigate the impact of the project on the health of villagers of surrounding area be submitted.

**15.1.20:** Proponent uploaded the additional information on 18/11/2024 and the proposal was placed before the EAC for consideration in its 15th meeting held on 28/11/2024. Point-wise reply of ADS is given as below:

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| i. | Proceedings of the public hearing held for the existing project shall be submitted along with the action taken to address these issues. | Public Hearing was conducted by previous organization M/s Korba West Power Company Limited in the year **2009** for 600 (1x600) MW. Further, KWPCL again conducted Public Hearing in the year 2012 for proposed expansion for which EC was not granted.<br><br>Later, Adani Power Ltd. acquired Korba West Power Company Ltd. (KWPCL) through NCLT **on 20th July'2019**.<br><br>Based on concerns raised by the Public during the Public Hearing, the activities were executed / implemented in consultation with local authority (Panchayats).<br><br>In compliance of EC Conditions as well Public Hearing obligations, company has already spent **INR 16.05 Crores** during the period of FY 2010-2014 and has certified by reputed Government Institute "Indian Institute of Social Welfare & Business Management, Kolkata (Calcutta University)"<br><br>**Based on previous Public Hearing the following activities have already been implemented (for Existing Unit):**<br><br>• Community Infrastructure Development at Villages Bade Bhandar, Chhote Bhandar, Bunga, Ranbhatha, Taparda, Supa, Kotmara, Kalma, Chandli, Amlipali, Shankarpali (Construction of Road, Community Hall, Panchayats Bhawan etc.) and others): 1343.80 Lakhs spent during FY 2010-2014.<br>• Livelihood Enhancement at Villages Amlibhouna, Sarvani, Supa, Kotmara, Kalma and others (Mushroom cultivation, Animal husbandry, Tailoring training etc.) 94.74 Lakhs |

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| | | • Education support programs at Villages Bade Bhandar, Chhote Bhandar, Amlibhouna, Sarvani, Chandli, Amlipali, Shankarpali, Pusalda, Jatri, Tilgi and others (ITI training, remedial classes, Skill training, support of teachers etc.) 58.97 Lakhs<br>• Community Health Programs at Villages Amlibhouna, Sarvani, Supa, Kotmara, Kalma and others (Mobile Service, Mother child health program etc,) 78.15 Lakhs<br>• Other Community support CSR related activities/ Culture/ promotion of sports at Villages Supa, Bade Bhandar, Chhote Bhandar, Taparda and others (Flood Relief Support, Kabbadi Tournaments). 30.15 Lakhs<br>**Expenditures details for activities already implemented for Existing Plant Unit based on previous PH is uploaded with ADS response.** |
| ii. | Project proponent shall submit a comprehensive action plan with detailed activity wise outlay to address the issues raised during the public hearing held for the existing project as well as for the expansion project by explicitly stating the physical targets in accordance with the Ministry's OM dated 30/09/2020 and its subsequent amendments.<br><br>The action plan inter-alia include scheme for supporting schools and hospitals in surrounding area for mitigating the effects of air pollution on the local population. | The action plan is prepared based on concerns raised during the Public Hearing for existing project address in Point/reply no 1 and for the **Proposed Expansion 1600 MW (12th July 2024)** the budget allocation for construction of School and Community Hospital and fulfilment of public needs as focused area with explicit physical targets in detail (Five years CER Plan) are as follows.:<br>A. Education<br>B. Community health<br>C. Sustainable Livelihood and Women Empowerment<br>D. Community Rural Infrastructure Development.<br>E. Development of Playground for Sports<br>F. Development of Local Youth and Women for various activities at village level.<br>Detailed course of action along with proposed activities and physical target for proposed TPP are uploaded with ADS response and the same is furnished at para no. 15.1.13.<br><br>Additionally, Adani Power Ltd. Raigarh is continuously engaged in various activities under the CSR through Adani Foundation in 20 Villages (4 core +16 buffer villages). |
| iii. | Hydrogeology study report submitted by the proponent shall be | The hydrogeology study report has been vetted by NIT Delhi and the report is uploaded along with ADS response. |

<table>
<tr><th>S. No.</th><th>ADS Point</th><th>Reply/Response of PP</th></tr>
<tr><td></td><td>vetted by the reputed government institute. The vetted report along with the recommendations and action plan to comply with the recommendations shall be submitted to the Ministry.</td><td>The action plan to address the recommendation of NIT is as follows:
<table>
<tr><th>S. No.</th><th>Recommendation</th><th>Action Plan</th></tr>
<tr><td>1.</td><td>The maximum hardness level (680.0 mg/l) exceeds both the acceptable limit (200 mg/l) and the permissible limit (600 mg/l) set by IS 10500:2012. This may indicate potential issues for water usability, especially in WS-12. Elevated hardness levels and water treatment may be required in coming future. A need for ongoing monitoring and potential remediation efforts in areas with hardness levels, particularly WS-12 can be suggested.</td><td>Water quality monitoring shall be done once a month through NABL accredited laboratory to track Hardness Level in WS-12 location.<br><br>Further, we shall engage reputed government institutes to closely monitor the hardness levels for further course of action as well as to take preventive action within the next 8 to 10 months.<br><br>Noughata village (WS 12) is about 6.5 Km w.r.t. Plant Site in North direction.</td></tr>
<tr><td>2</td><td>By reviewing the report it was found that the values of Chloride content, Magnesium and Calcium were found to be above acceptable limit but within permissible limits. The plant may take some preventive measures accordingly</td><td>Raigarh TPP has already implemented ZLD and not using Ground Water<br><br>However, Water quality monitoring shall be done once in a month through engaging NABL accredited laboratory to track parameters like Chloride content, Magnesium and Calcium and corrective/preventive actions</td></tr>
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| S. No. | ADS Point | Reply/Response of PP |
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| | | <table><tr><td></td><td></td><td>will be taken based on findings in the report.</td></tr><tr><td>3</td><td>As the topography of the study area is undulating with varied drainage network, slope map and Digital Elevation Model (DEM) map of the study area can be incorporated in future study report for better understanding.</td><td>For the present project site Slope and elevation details are provided in the EIA report. Recommendation duly noted and reputed institute will be engaged for future study.</td></tr><tr><td>4</td><td>It is recommended to mention the method used for determining stream order of the study area once in three years.</td><td>Raigarh TPP will engage reputed government institute for future study as recommended once in 3 years.</td></tr></table> |
| iv. | Action taken report submitted by the proponent against the observations of certified compliance report shall be submitted along with the comments/views of the CECB. | Updated (Second) Certified Compliance Report (CCR) received vide letter dated 30.10.2024 based on the Action Taken Report (ATR) dated 08.10.2024 and first CCR report was received on 20.09.2024.<br><br>The Action taken report and updated CCR is uploaded with ADS response and also furnished at para no. 15.1.5 |
| v. | Ash pond calculation needs to be revisited as life of the ash pond is mentioned as only 15 years. | **Existing** Ash Pond calculations have been revisited considering capacity of ash storage for 15 years from the current year'2024.<br><br>Annual Ash generation from existing unit is about **1.28 Million Ton** and minimum yearly ash utilization of **80% (1.02 Million Ton**), balance (20%) 0.26 Million Ton ash may be disposed off in the ash dyke.<br><br>The total capacity of ash pond is 8.5 Million Ton.<br><br>As on date ash stored in dyke is about 2.35 Million Ton. The available space is **6.15 Million Ton** which will be sufficient for future purpose and 2.3 Million Ton stored ash in dyke |

| S. No. | ADS Point | Reply/Response of PP |
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| | | shall be utilized as per Fly Ash Notification & subsequent Amendments.<br><br>**Expansion** Project considering 100% ash utilization from 1st year (COD). |
| vi. | Project proponent shall submit revised ash management plan for improving ash pond management. The plan shall inter-alia include ash pond details, infrastructure facilities, ash generation and utilization as per the ash utilization notification dated 31/12/2021 and its subsequent amendments as well as legacy ash utilization and plan for reduction in existing ash pond area etc., | APL Raigarh has **Not envisaged additional / new** Ash Pond for proposed expansion, ash pond stock will be utilized, and the same space shall be used for unutilized ash in case of any emergency (Pandemic or non-availability of transportation) & during rainy season.<br><br>The Action plan for ash generation and utilization as well as legacy ash utilization as per notification dated 31.12.2021 and its subsequent amendments is uploaded with ADS response and also furnished at para no 15.1.16. |
| vii. | Revised action plan for green belt development covering 33% of the project area shall be submitted giving details of native species and cost outlay. | Revised green belt development plan covering 33% of the project area including details of native species with budget provision (Rs. 9.21 Crores). |
| viii. | Action plan for installation of dry ash collection system and ash disposal by HCSD shall be submitted. | The Dry Ash management system is proposed to provide along with Integrated fly ash silo system with pneumatic vacuum conveying facility at single location for better and more effective fly ash handling system.<br><br>The fly ash will be removed from ESP hoppers and APH hoppers to transport fly ash to silos via transfer piping system which utilizes vacuum conveying up-to intermediate surge hopper and pressurized conveying up to main fly ash silos (**3 no. of capacity 2500 Tons**). From the fly ash silos, fly ash shall be transported in dry form through rail / road for possible utilization. |

| S. No. | ADS Point | Reply/Response of PP |
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| | | Fly ash and bottom ash shall be disposed via High Concentration Slurry disposal (HCSD) system to Ash dyke in **case of emergency.** |
| ix. | Project proponent shall explore the feasibility for installation of air-cooled condenser system for the expansion project and the same shall be submitted. | APL Raigarh has already completed a feasibility study for expansion project and WRD, Govt of Chhattisgarh has ensured sufficient water availability therefore Water-Cooling Condenser (WCC) has been proposed.<br><br>Feasibility for installing of air-cooling condenser (ACC) has been evaluated and observed that there is space/area constraint for the installation of ACC as the expansion project is accommodated in the existing plant premises and efficiency of the plant will reduce as heat rate will be high which will lead to higher coal consumption. Also, auxiliary power consumption will be higher. Addition to above, installing ACC will further increase the CAPEX and OPEX for the project which will make it techno economically non-viable. |
| x. | Proponent shall submit action plan for installation of solar power generation on roof top and also roadside poles within the project site. A time bound plan for installation of minimum 1 MW solar power generation facility be submitted. | APL Raigarh is proposed to install roof top Solar Panels (7181 sqm), roadside streetlights (no.80-100) and Ground mounted Solar panels, which will be total capacity of **1.0 MW** (<1000KVA) (as suggested by Hon'ble EAC members during the meeting) |
| xi. | Traffic assessment study report submitted shall be revisited by incorporating the mitigation measures to be adopted for coal transportation by road. Project proponent shall submit the flood plain map of Mand river (1.4km distance) vis-à-vis with the project site, impact of project on aquatic ecology along with the mitigation measures to be adopted | Traffic assessment study has been revisited and the revised assessment outcome along with mitigation measures has been uploaded with ADS response.<br><br>The High Flood Level (HFL) at Kalma Barrage is RL 200.43m. The HFL of the Mand River which meets into the Mahanadi River can also considered as the same. Mand River passes at the west side of the plant boundary at an approximate distance is about 1.4 km. HFL Certificate from WRD Raigarh has been submitted. |

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| | for the protection of the Mand river. Certificate from concerned District Magistrate/Executive Engineer from the State Water Resources department (or) any officer authorized by the State Government in this regard shall be submitted stating that project site is not located within Mand river flood plain corresponding to one in 25 years of flood as per Ministry's O.M. dated 14/02/2022. | |
| xii. | Project proponent shall submit the details of case no OA 70 of 2023 pending before the Hon'ble NGT with specific reference to the existing 600 MW by mentioning the details of non-compliance of conditions observed by the Hon'ble NGT and action taken by the proponent to comply with the directions of Hon'ble NGT. In this regard, RO of<br><br>MoEF&CC may also give observations with regard to the coal transportation issues raised before the Hon'ble NGT and action if any taken by the PP. | NGT Central Zone Bench at Bhopal via Suo Moto Application (OA 70 of 2023) had Imposition of Compensation [provisional Rs. 6.1689 Crores] (Rs. 2.120 Crore for impact + Rs. 4.0489 Crore, towards cost of Road construction),<br><br>The penalties were imposed for various TPPs & Industries (12% of 100) for damage of road due to transportation of Coal by road from Kulda Mine to destination.<br><br>Last hearing of NGT was held on **17.10.2024** stated that "APL Raigarh TPP had taken firm steps and stopped the transportation of Coal by road from Kulda Mine on immediate and Rail line construction up to the TPP" is under progress.<br><br>**NGT order OA no. 70/2023 stands disposed off and imposed compensation (penalty) is nullified to TPP's & Industries.**<br><br>The NGT order dated **08/11/2024** is uploaded with ADS response.<br><br>APL Raigarh has already started the construction of the railway line which will be completed by June 2026 and thereafter no road transportation will be involved. |
| xiii. | Project proponent shall clarify the stack height proposed under the expansion project is in | The stack height of 120m for proposed expansion is as per the MoEFCC Notification dated 28.06.2018. |

| S. No. | ADS Point | Reply/Response of PP |
|---|---|---|
| | consonance with prescribed norms of Central Electricity Authority. | Minimum height of stack 100m with FGD and APL Raigarh has proposed to install **120m** stack with **FGD.** |
| xiv. | PP shall submit plan to ensure that diesel operated vehicles will be switched over to E-Vehicles/ CNG vehicles in a time bound manner, replace the passenger vehicles to E-Vehicle in phased manner. | APL Raigarh is agreed and already initiated the use of the e-vehicles as mode of transportation within plant premises and the same will be implemented in **phase manner.** |
| xv. | Time bound action plan to mitigate the impact of the project on the health of villagers of surrounding area be submitted. | APL has already prepared the action plan to address the issues raised during the public hearing which inter-alia provide health care facilities to the villagers and budget allocated is **Rs 10.75 Crores** and details activities are as below**.**<br><br>Budget includes Community Hospital (construction of 40 beds in Bade Bhandar Village) & operation of Primary Health Centre, improving of infrastructure in govt health and wellness centers, Ambulance / mobile health care unit, health camps (Eye checkup, orthopedic, obstetrics, gynecology etc.), nutrition, and as per their requirements and in consultation with panchayats/local feedback.<br><br>**Pollution control measures proposed to mitigate air and water impact are as below**:<br><br>Raigarh TPP has already proposed adequate mitigation measures under EMP as installation of ESP (99.99% efficient), FGD, SCR, Dust suppression system & dust extraction systems to minimize the air pollution well within the prescribed standard/ limit of MoEFCC, CPCB & CECB. The Plant is based on ZLD. Budget allocation of **Rs 2110.33 Crores** has been kept for implementation of Environmental Management Plan (EMP). |

**15.1.21** Written submissions

Project proponent has submitted the following written submissions during the meeting:

i. Installation of two additional Continuous Ambient Air Monitoring Stations (CAAQMS), where the maximum Ground level concentration (GLC) of $PM_{2.5}$ and $PM_{10}$ is observed.
ii. Available ash stock in ash dyke 2.35 Million Tons in ash dyke shall be utilize / disposed off in Four-year period.
iii. The existing Environmental Laboratory shall be strengthened / enhanced for Air, Water and applicable parameters for TPP with adequate facility and qualified staff.
iv. Revised budget to address the issues raised during public hearing as mentioned at para no 15.1.13 and revised green belt development action plan as mentioned at para 15.1.15.
v. Point wise response by the proponent to the issues raised in the public representation received with respect to the instant proposal is furnished as below:

| Sl. No. | Comments | Response |
|---|---|---|
| 1 | At the outset, we would like to request the committee members to direct the project proponent to submit the Need assessment and cost-benefit analysis for the power plant, its ancillary activities, and their expansion. Our Hon'ble Prime Minister announced at COP26 that, the Ministry of New and Renewable Energy is committed to achieving 500 GW of installed electricity capacity from non-fossil fuel sources by 2030. After which many of the existing coal-fired thermal power plants may not be required. | Raigarh TPP will follow the Government of India rules & regulation and direction all time.<br><br>As per the National Electricity Plan (NEP) published by the Central Electricity Authority, MoP in March-2023, India's Peak Electricity Demand is likely to increase to around 366 GW in FY 2031-32 from the current Peak Demand of around 216 GW in FY 2022-23. The Base Demand is also expected to increase to 2473 BU by FY 2031-32. CEA also predicts that India's likely Installed Capacity by the end of FY 2031-32 will be around 900 GW, up by around 484 GW as compared to the present Installed Capacity.<br><br>Similarly, the current installed capacity of Chhattisgarh State is around 25,424 MW. Over 90 % of the capacity is through coal-based sources. The proposed project can help in meeting the growing power demand and requirement of the country & improve Gross State Domestic Product (GSDP). It not only ensures a reliable power supply for the region but also supports economic growth, thereby strengthening the overall energy landscape in Chhattisgarh.<br><br>Need based assessment study is already conducted through govt reputed institute. |
| 2 | We request the authority to direct the project proponent to submit all the details of the proposed ancillary activities including details of sources of coal for the | Details of all components for the project, along with all ancillary activities is already provided |

<table>
<tr><th>Sl. No.</th><th>Comments</th><th>Response</th></tr>
<tr><td></td><td>proposed power plant for the expansion, proposed road and rail network and transmission lines.</td><td>along with EC Application (refer EIA-EMP Report).</td></tr>
<tr><td>3</td><td>We would also like to draw your attention to the Load Generation Balance Report 2023-2024. As per this report, by Central Electricity Authority, Ministry of Power, GoI, 'It is observed that Himachal Pradesh, Rajasthan, Chhattisgarh, Tamil Nadu, Arunachal Pradesh, Meghalaya, Nagaland and Tripura are likely to be surplus both in terms of Peak and Energy on annual basis for the year 2023-24'</td><td rowspan="2">As per the Central Electricity Authority (CEA), MoP, the Peak Demand is likely to increase to around 340 GW from the current Peak Demand of around 190 GW. The Base Demand is also expected to increase to 2325 BU by 2030. CEA also predicts that India's likely Installed Capacity by the end of FY'2030 will be around 817 GW, up by around 450 GW as compared to the present Installed Capacity. In terms of Coal based capacity, CEA estimates a capacity addition of over 60 GW (60,000 MW) till 2030 and the proposed project will only add 1.6 GW to the mammoth requirement of 60 GW. It is also pertinent to note that as per the National Electricity Plan (NEP), further 840 MW of capacity from State Genco is slated to retire by FY 2022. Further, as estimated by CEA, new thermal capacity of 60 GW will be required to meet India's power demand. Thus, the proposed expansion project to be set up by Adani Power Limited, Raigarh will help in meeting the nation's as well as the state's requirement as Ministry of Power and CEA direction / guidelines.</td></tr>
<tr><td>4</td><td>Therefore, the need of this expansion needs to be considered, especially in view of the commitment by our Hon'ble Prime Minister.</td></tr>
<tr><td>5</td><td>The location of the proposed power plant falls in the wildlife corridor of Gomardha WLS, Debrigarh WLS, Barnawapara WLS, Bhoramdev WLS, Achanakmar WLS, Badalkhol WLS from Chhattisgarh, and Sunabeda WLS from Orissa and Kanha National Park, Phen WLS in Madhya Pradesh.</td><td>No National Park or Wildlife Sanctuary are present within 15 km radius of the project site.<br><br>A site-specific wildlife conservation plan has been prepared and submitted to concerned authority.<br><br>The distance of the mentioned WLS with respect to TPP as follows:
<table>
<tr><th>Sl No</th><th>Wildlife Santuary</th><th>Distance w.r.t TPP (Km)</th><th>Direction w.r.t TPP</th></tr>
<tr><td>1</td><td>Gormardha WLS</td><td>16.5</td><td>SW</td></tr>
<tr><td>2</td><td>Debrigarh WLS</td><td>30</td><td>ESE</td></tr>
<tr><td>3</td><td>Barnawapara WLS</td><td>59.13</td><td>WSW</td></tr>
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| | | 4 Bhoramdev WLS 220.7 W<br>5 Achanakmak WLS 116.88 NW<br>6 Badalkhol WLS (Chhattisgarh) 80 SWW<br>7 Sunabeda WLS (Orissa) 126.92 SW<br>8 Kanha National Park 263.22 WNW<br>9 Phen WLS 231.18 WNW<br>10 Badrama WLS 91.5 SE |
| 6 | These are important habitats and corridor areas for tigers, elephants, leopards, sloth bears, and other diverse fauna and flora. | **Not Applicable**.<br>No important habitats/ corridor areas for tigers, elephants, leopards, sloth bears are present within 10 km radius of the project site. |
| 7 | The wildlife corridor needs to be protected for the free movement of Tigers and other large mammals to establish a healthy population. | Not Applicable. |
| 8 | Tiger population in Chhattisgarh is already declining. The Tiger population of Chhattisgarh has declined to 19 tigers (as per 2018) from 46 tigers (as per 2014). | Not Applicable.<br>No Tiger Reserve present within 15 km radius of the project site. |
| 9 | Section 38-O (g) of the Wildlife Protection Act, 1972 will be applicable to the proposed project. Section 38-O (g) states that '*Ensure that tiger reserves and areas linking one PA or Tiger Reserve with another PA or Tiger Reserve are not diverted for ecologically unsustainable uses, except in public interest and the approval of the NBWL and on the advice of the NTCA*'. | Not Applicable.<br>No PA/Tiger Reserve present within 15 km radius of the project site. |
| 10 | We request the committee to direct the project proponent to submit the proposal to National Tiger Conservation Authority (NTCA) and National Board for Wildlife for obtaining wildlife clearances. | Not Applicable. |

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| 11 | The proposed project if allowed will have a negative impact on the wildlife corridor impacting the movement of wildlife. It may also lead to an increase in Human-Wildlife Conflict in the area. | Not Applicable. |
| 12 | We urge the committee to kindly consider the importance of wildlife corridors and above-mentioned points. The proposal, if permitted, will disturb the already fragmented wildlife corridor. Efforts should be undertaken by the respective authorities to restore the fragmented corridor as it will help in creating a diverse gene pool. | Not Applicable.<br>The expansion project is within the existing plant premises. No National Park, Sanctuary, Tiger Reserve, or migratory routes/wildlife corridor exists within 15 km of the power station. |
| 13 | The project proponent should be directed to conduct a Cumulative Impact Assessment of all the existing and proposed projects in the 15-km radius and Carrying capacity study of the region. | A Cumulative Impact Assessment that Valued Environmental and Social Components (VECs) as receptors of impacts from proposed & existing projects in the 15 km radius, has been carried out and is already provided along with EC Application (refer EIA-EMP Report). |
| 14 | We would also like to draw your attention to the fact that the average PLF of all the coal-based thermal power plants in India has been in the range of 55-65% in summer over the past 3 years. It is not clear why new power plants are required when existing ones are not operational at 100% capacity for lack of demand. | As per the National Electricity Plan (NEP) published by the Central Electricity Authority, MoP in March-2023, India's Peak Electricity Demand is likely to increase to around 366 GW in FY 2031-32 from the current Peak Demand of around 216 GW in FY 2022-23. The Base Demand is also expected to increase to 2473 BU by FY 2031-32. CEA also predicts that India's likely Installed Capacity by the end of FY 2031-32 will be around 900 GW, up by around 484 GW as compared to the present Installed Capacity.<br>The proposed project can help in meeting the growing power demand and requirement of the country & improve Gross State Domestic Product (GSDP). It not only ensures a reliable power supply for the region but also supports economic growth, thereby strengthening the overall energy landscape in Chhattisgarh. |

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| 15 | The impact of this project on India's commitment to the Paris Climate Change Accord should also be examined. | Adani Power Ltd will follow the MoP & CEA direction & guidelines.<br><br>APL at Business level is committed is committed towards Sustainable Development Goals (SDGs) and exploring net zero target in line with national commitments. |
| 16 | The project is being submitted in a piecemeal manner. We request the Committee Members to ensure that piece-mealing of any project is not allowed, as it does not allow to consider the overall impact of the proposal on the environment. | The Final EIA & EMP Report has been prepared as the ToR granted and provided along with all annexures/supporting which has been uploaded on MoEFCC Parivesh portal with EC application. Any Essential/additional information sought by the honourable EAC, was also submitted on portal. |
| 17 | Need assessment and cost-benefit analysis for the new thermal power plant, transmission lines, coal mines, washeries, and their expansion needs to be studied; given the Hon'ble Prime Minister's announcement at COP26 that, the Ministry of New and Renewable Energy is committed to achieving 500 GW of installed electricity capacity from non-fossil fuel sources by 2030. Pursuant to this, many of the existing coal-fired thermal power plants may not be required. | As per the National Electricity Plan (NEP) published by the Central Electricity Authority, MoP in March-2023, India's Peak Electricity Demand is likely to increase to around 366 GW in FY 2031-32 from the current Peak Demand of around 216 GW in FY 2022-23. The Base Demand is also expected to increase to 2473 BU by FY 2031-32. CEA also predicts that India's likely Installed Capacity by the end of FY 2031-32 will be around 900 GW, up by around 484 GW as compared to the present Installed Capacity.<br><br>Similarly, the current installed capacity of Chhattisgarh State is around 25,424 MW. Over 90 % of the capacity is through coal-based sources. The proposed project can help in meeting the growing power demand and requirement of the country & improve Gross State Domestic Product (GSDP). It not only ensures a reliable power supply for the region but also supports economic growth, thereby strengthening the overall energy landscape in Chhattisgarh. |
| 18 | The cost-benefit analysis of the ecological costs involved in the coal-based thermal power plant, transmission lines, coal mining, washery, and coal-based industries should be undertaken. | The Cost benefit analysis has been prepared and provided along with EC Application (refer EIA-EMP Report). |

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| 19 | A table on 'Summary of violation under EIA, 2006/court case/show cause/direction if any, related to the project under consideration shall be furnished.' shows that there are at least 19 pending court cases, as shared by the Project proponent. It is clear that the project area issue is sub-judice, hence any decision regarding the proposed project should be taken only after the cases are decided. | The List of Court Cases are provided along with EC Application and there are no pending Court Cases related to Environment and Forest. |
| 20 | As per the Monitoring report uploaded under Parivesh, it has been mentioned that the fly ash utilisation for the period April 2021 to March 2022 is 37.48%. Details of 100% fly ash utilization plan as per latest fly ash Utilization Notification along with firm agreements / MoU with contracting parties including other usages etc. should be submitted by the project proponent. The plan for disposal method / mechanism of bottom ash also needs to be furnished. | As per Fly Ash Notification 2021, the Ash utilization of Raigarh TPP for FY 2021-22 was <60%. Therefore, the first compliance cycle to meet 100% ash utilization is 5 Years The ash utilization plan has been prepared & furnished along with EC Application to MoEFCC.<br>Efforts are being made to achieve 100% ash utilization within the stipulated timeline.<br>APL will adhere Fly Ash Notification 2021 and subsequent amendments. |
| 21 | The surrounding area is agricultural land. A research study was undertaken in the year 2014 titled "Distribution of natural radioactivity in coal and combustion residues of thermal power plants ". The study stated that coal contains naturally occurring radionuclides and on burning it results in enrichment of these radionuclides in the ashes. Even despite the implementation of the best possible mechanism to restrict the release of fly ash from the stack, huge amounts of it gets released into the environment. | APL Raigarh is proposed to provide Electrostatic Precipitator (ESP with 99.99% efficiency), FGD, Low Nox Burners, SCR, Bag filters and Dust suppression & extraction system to ensure capture of fine particulate matter, emissions to the meet the standards of MoEFCC & CPCB/SPCB.<br>Efforts are being made to achieve 100% ash utilization within the stipulated timeline. |
| 22 | The fly ash and bottom ash generated from coal-fired thermal power plants are significant sources of exposure to the naturally occurring radionuclides that will | Regularly coal analysis, ash, and emissions for radioactive content will be carried out to ensure compliance of EC & consent order with safety standards. |

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| | affect the population in the vicinity of the plant. | |
| 23 | From the public hearing proceedings, it can be observed that many have vehemently opposed the proposed expansion for various reasons, one of them being pollution in the area due to coal and its transportation, and impact on the local water bodies. The locals have also shown apprehensions for the proposed expansion as it will lead to an increase in further pollution and traffic. This will lead to severe health hazards in the population residing in the study area, as well as negatively impact the agriculture in the area. | Public hearing for the proposed project was conducted on 12.07.2024 and the main issues raised during the public hearing were related to Education, Community health, Sustainable Livelihood, Women Empowerment, Community Rural Infrastructure Development, Development of Playground for Sports etc.<br><br>The action plan to address these issues has been prepared in accordance with the Ministry's OM dated 30.09.2020 and its subsequent amendments with explicit physicals targets.<br><br>A total of Rs. 41.85 Cr. has been earmarked to address the issue raised during public hearing for proposed expansion.<br><br>Additionally, Pollution Control measures proposed to mitigate air and water impact are as below.<br><br>Plantation in nearby villages.<br><br>Raigarh TPP has already proposed adequate mitigation measures under EMP as installation of ESP (99.99% efficient), FGD, SCR, Dust suppression system & dust extraction systems to minimize the air pollution well within the prescribed standard/ limit of MoEFCC, CPCB & CECB. The Plant is based on ZLD.<br><br>A state-of-the-art roof top rainwater harvesting system will be provided to collect the run -off for ground water recharging.<br><br>Budget allocation of Rs 2110.33 Crores has been kept for implementation of Environmental Management Plan (EMP). |
| 24 | The water for the proposed expansion will be drawn from Kalma barrage, on the Mahanadi River. The project proponent has not provided any details of the existing information regarding the quantity of | Suitable mesh size will be provided at the intake point of the barrage for preventing the entrapment of algae and fish.<br><br>Mesh size of 5-10 mm is used at intake point thereby preventing entrapment of macro algae, |

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| | fish/organisms that have been entrapped in the intake channels and the species composition and sizes at different times of the year. | small fish, crustaceans and large fish into the water intake system. |
| 25 | The impact of proposed projects on the ecology and biodiversity of the region should be carried out for a minimum of three seasons and not less than 12 months. A mitigation plan for the same is to be developed. | An extensive ecological survey was carried out during the Oct-Dec 2023 within 10 km radius of the project site as per the EIA Notification 2006 & subsequent amendments which is submitted along with EC application (refer EIA & EMP Report). |
| 26 | As per the EDS sought by the EAC, the project proponent was directed to share a duly approved wildlife conservation plan. However, the project proponent has even now uploaded only a copy of the letter to the PCCF and DFO and not an approved WLCP. No proposals from the project proponent should be considered till the time all the mitigation measures as mentioned under the WLCP are implemented. | Wildlife conservation plan is under approval with concern authority and same will be implemented<br>A budget of 2.82 Cr has been earmarked for the conservation plan for 10 km radius. |
| 27 | All the compliance reports for the existing project are not available, the same should be uploaded under Parivesh and should be ensured that they are accessible to all. | Six-Monthly EC compliance reports of Raigarh TPP is being uploaded at MoEFCC Parivesh Portal on regular basis. |

**Observations and deliberation of the EAC**

**15.1.21:** The Committee observed and noted the following:

i. Instant proposal is for expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW located at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amli Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh.

ii. Existing project was accorded environmental clearance vide letter no. J-13012/57/2008-IA. II (T) dated 20/05/2010 and subsequent amendment to EC was accorded on 16.04.2015, 26.11.2019 and 30.07.2020, Thereafter, EC was transferred vide letter dated 22.10.2019 (from KWPCL to REGL) and 24.04.2023 (REGL to APL) by MoEF&CC. Consent to Operate renewal for the existing unit was accorded by Chhattisgarh Environment Conservation Board (CECB) on 11/03/2022. The validity of CTO is up to 31/03/2025.

iii. The Committee deliberated on the certified compliance report of Regional Office - CECB along with the action taken report of the project proponent and found it satisfactory.

iv. A total area of 355.71 ha will be required for the proposed expansion, which is within the existing TPP area. The entire area of 355.71 ha. is already under possession of Adani Power Limited. No additional land is proposed to be acquired.

v. FGD installation in the existing power plant shall be completed by December, 2026.

vi. The hydrogeology study report done by the proponent has been vetted by NIT- Delhi. The recommendations made in this regard shall be complied by the proponent in a time bound manner.

vii. Existing capital cost of project was Rs. 2,900 Cr. The capital cost of the proposed expansion project is Rs 13,600 Crores and the capital cost for environmental protection measures is proposed as Rs. 2110.33 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 21.85 Crores. The employment generation from the proposed project / expansion is 396 Nos.

viii. The EAC also took into consideration the drone survey of the project site and kml file on the Google Earth presented by the project proponent along with DSS of the project site on PARIVESH.

ix. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site as ascertained from DSS. River Mand is flowing at a distance of 1.4 km in SW direction. The High Flood Level (HFL) is RL 200.43m at a distance of 1.4 KM from TPP.

x. The project site is not located within the Critically Polluted Area (CPA) / Severally Polluted Area (SPA) as per CEPI assessment 2018 of CPCB.

xi. The Committee deliberated on the baseline data and incremental GLC due to the proposed project and observed that AAQ levels are within NAAQS.

xii. Public hearing for the project was held on 12/07/2024. The Committee looked in to the videography of the public hearing proceedings, deliberated on the public hearing issues along with action plan submitted by the proponent to address the issues raised during the public hearing and found it satisfactory. The committee advised the PP to implement the PH action plan in a time bound manner.

xiii. The Committee noted that the EIA reports are in compliance of the ToR issued for the project, reflecting the present environmental status and the projected scenario for all the environmental components.

xiv. Effluent of 3000 KLD will be treated in ETP and Domestic waste water of 120 KLD will be treated through STP and reused. The plant will be based on Zero Liquid discharge system.

xv. The proposed power plant does not require additional ash pond as existing ash pond will be used.

xvi. Existing Water requirement is 41095 $m^3$/day, water allocation is obtained from Mahanadi River and permission for the same has been obtained from WRD Raipur, Chhattisgarh vide agreement certificate No. IN-CG20016765166330T dated 23.02.2021. The water requirement for the proposed project is estimated as 95996 $m^3$ /day which will be met from Surface Water from River Mahanadi at 05 km. The

permission for drawl of surface water is obtained from Rajya Nivesh Prothsahan Board (Chhattisgarh Govt.) vide letter No./ 299/SIPB/2021/239 dated 15.03.2024 The water will be transported to the plant site through existing pipeline. The specific water consumption for the power plant is 2.5 $m^3$/MWhr.

xvii. The present coal linkage of existing thermal power plant is from coal mines of SECL and MCL. Coal requirement for the proposed expansion will be met from Bijahan coal mine and transported to the plant site by rail only.

xviii. Green belt is proposed to be developed in an area of 33 % of the total area.

xix. Schedule-I species observed in the study area: Indian grey mongoose or Asian grey mongoose (*Urva edwardsii*), Indian fox (*Vulpes bengalensis*), Indian Giant Squirrel (*Ratufa indica*), Indian Python (*Python molurus*), Indian Star Tortoise (*Geochelone elegans*). APL, Raigarh has already submitted the wildlife conservation plan along with requisite documents to PCCF & DFO for approval and the same is under process.

xx. EAC observed that 19court cases are pending against the proposed project. There are no show cause notice pending against the project.

xxi. EAC noted that they are in receipt of one public representation against the instant project. Proponent submitted point wise reply to the said representation and the same has been deliberated by the EAC.

xxii. The EAC also deliberated on the additional information and written submission of the project proponent and found it satisfactory.

xxiii. The EAC noted that the Project Proponent has given an undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.

**Recommendations of the Committee:**

**15.1.22:** In view of the foregoing and after detailed deliberations, the committee ***recommended*** the instant proposal for grant of Environment Clearance under the provisions of EIA Notification, 2006 subject to uploading of written submission on PARIVESH Portal and stipulation of the following specific conditions and general conditions based on project specific requirements:

**A. Specific conditions**

**[A] Environmental Management**

1) The PP shall achieve100% utilization of ash generated as a result of the expansion project in accordance with the ash utilization notification dated 31/12/2021 and its subsequent amendment. No additional ash pond is permitted for the expansion project. In case of exigencies, ash generated from existing and proposed power plant shall be disposed to existing ash bund through high concentration slurry disposal (HCSD) system only.

2) Project proponent shall completely utilize the ash stock present in ash dyke i.e., 2.35 Million Tons within 3 three years from the date of grant of this EC. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report.

3) Proponent shall ensure that avenue plantation along NH-153 from Chhatamuda village up to plant premises shall be completed by September, 2025. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report.

4) PP shall obtain amendment in the condition no. xxvi of the existing EC dated 29/05/2010 within the time frame of three months from the date of grant of EC. A fresh CCR report will be submitted at the time of seeking this amendment.

5) PP shall engage reputed government institutes to closely monitor the hardness levels in the water samples. Digital Elevation Model (DEM) map of the study area shall be prepared as recommended in the hydrogeology report. This task shall be completed by June, 2025. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report.

6) The hydrogeology study shall be carried out once in three years by reputed government institutes. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report.

7) PP shall explore the possibility of use of rainwater as drinking water in consultation with Public Health Engineering Department Chhattisgarh, respective Gram Panchayat and District administration wherever feasible. PP shall store rain water in the project boundary and utilize the same for plantation, recharging water in the pond and domestic utilization in colonies. A record shall be maintained of water collected through rain water and its supply system. PP shall get the water audit done every year to optimize the water requirement.

8) PP shall implement the protective measure proposed in Environment Management Plan (EMP) in a time-bound manner. The budget earmarked for the same is Rs 2110.33 Crores (Capital) and Rs 21.85 crores (recurring) and should be kept in separate accounts and audited annually. The implementation status along with the amount spent with documentary proof shall be submitted to the concerned Regional Office for the activities carried out during the previous year. In addition to the 4 CAAQMS, PP shall install two continuous ambient air quality monitoring station near ash pond area at suitable locations preferably the village side in consultation of CECB within 6 months from the date of grant of EC.

9) Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time.

10) PP shall ensure that pipelines carrying the fly ash and effluent shall be inspected regularly for any leakages.

11) PP shall install solar power plant on roof top and also road side poles within the project site will be lighting through solar power with a capacity of 1MW. Implementation status of solar plant shall be specifically submit in six monthly compliance report.

12) As committed by the PP, Zero liquid discharge shall be adopted.

13) PP shall ensure that diesel operated vehicles will be switched over to E-Vehicles/ CNG vehicles in a time bound manner, replace the passenger vehicles to E-vehicle in phased manner. Further, for local movement of officials Contract of Vehicles deployment shall be awarded to Project affected people and all efforts for adopting heavy E-vehicles /CNG vehicles like Bulkers for ash transportation for short distance subject to

availability of such E-vehicle and adequate charging infrastructure in the surrounding area shall be provided. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), number of such non diesel vehicles deployed etc. in six monthly compliance report.

14) PP shall implement the concurrent plantation plan in a time bound manner. The gap plantation shall be completed in the identified 67.58 Ha land within Plant, residential and administrative areas and around Ash Pond in next two years. Further, three tier green belt shall be developed in an area of 49.82 ha in a time frame of four years from the date of grant of EC in consultation with Forest department/ Gram Panchayat/District Administration. The budget earmarked for the green belt, plantation inside and outside the plant area, along the transportation route and Miyawaki Plantation area shall be kept in a separate account and audited annually. PP should annually submit the audited statement of expenditure along with proof of activities viz. photographs (before & after with geolocation date & time), details of expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC and on PARIVESH Portal as the case may be for the activities carried out during previous year.

15) Wildlife conservation plan as approved by the competent authority shall be implemented. Additional, budget shall be added in the plan, in case additional measures suggested by state wildlife department. The final Wildlife conservation plan duly approved by the CWLW shall be submitted to RO, MoEF&CC within a time frame of three months from the date of grant of EC and the budget approved by the concerned authority shall be deposited in government account.

16) 24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system. The real time data so generated from CAAQMS shall be uploaded on company website and linked it with website of CPCB &SPCB. Further, LED display of air quality (Continuous Online monitoring) shall be installed at prominent locations preferably outside the plant's main entrance for public viewing and in administrative complex. and maintenance of devices shall be done regularly.

17) Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system. Water Sprinkling on roads inside the plant area/ administrative/ residential areas and outside the plant area at least for 2KM on a regular basis to control the air pollution. A logbook shall be maintained for the activity and be in six-monthly compliance report.

18) Coal for the proposed power plant shall be received at plant through Railway siding only from Bijahan coal mine. Transportation of coal by road for the expansion project is not permitted.

19) PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM.

20) Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.

21) A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the same shall be submitted to the Regional Office of the Ministry. Leachate shall be treated and reused. No treated leachate shall be

discharged in any circumstances. Characteristics of Leachate and the treated leachate shall be monitored once in quarter and records shall be maintained.

22) Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.

23) Monitoring of surface water quality and Ground Water quality shall also be regularly conducted in and around the project site and records to be maintained. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report. The monitored data shall be submitted regularly on PARIVESH portal as part of Half Yearly compliance report

24) For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.

25) PP shall ensure that all types of plastic waste generated from the plant shall be stored separately in isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016 (as amended). In pursuant to the Ministry's OM dated 18/07/2022. PP shall also create awareness among the people working in the project area as well as in its surrounding area on the ban on Single Use Plastic (SUP) in order to ensure compliance of Ministry's Notification published by the Ministry on 12/08/2021. A report along with photograph on the measures taken shall also be included in the six monthly compliance report being submitted by PP.

26) PP is advised to implement the 'Ek Ped Maa Ke Naam' Campaign which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than Green belt development. The action in this regard shall be submitted concerned RO in six monthly report.

**[B] Socio-economic**

1) A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance reports.

2) Epidemiological Study among population within 5 km radius of project cover area shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.

3) The budget proposed for PH is Rs 41.85 Crores. The budget proposed shall be kept in a separate account and audited annually. Project proponent shall implement the action plan to address the issues raised during public hearing including establishment of 40 bed multi-speciality hospital and free medical facilities to the villagers in 10 km radius of the project site within a time frame of 2 years from the date of grant of this EC. PP shall submit the progress report regarding the implementation of action plan to

concerned RO along with the six monthly compliance report. PP shall provide the health services and organize medical camps for residents of the surrounding villages as committed during the meeting. PP shall carry out the analysis of the data of medical camp and take all necessary steps so as to cover maximum number of persons.

4) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

5) The establishment of a robust public grievance redressal mechanism to address concerns and complaints from local communities regarding the power plant's operations, environmental impacts, or social issues shall be developed. A Senior Officer shall review the functioning of the mechanism twice in a month.

**[C] Miscellaneous**

1) An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures. In addition to this, PP shall also set up modern environmental laboratory for monitoring of different environmental parameters.
2) Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
3) All necessary clearance from the concerned Authority, as may be applicable should be obtained prior to commencement of project or activity.

**B. General conditions**

**A. Statutory compliance:**

i. Emission Standards for Thermal Power Plants as per Ministry's Notification S.O. 3305€ dated 7.12.2015, G.S.R.593 (E) dated 28.6.2018 and as amended from time to time shall be complied.
ii. Part C of Schedule II of Municipal Solid Wastes Rules, 2016 dated 08.04.2016 as amended from time to time shall be complied for power plants based on Municipal Solid Waste.
iii. MoEF&CC Notification G.S.R 02 (E ) dated 2.1.2014 as amended time to time regarding use of raw or blended or beneficiated/washed coal with ash content not exceeding 34% shall be complied with, as applicable.
iv. MoEF&CC Notifications on Ash Utilization S.O. 5481(E) dated 31/12/2021 as amended from time to time shall be complied.
v. MoEF&CC Notifications on Water Consumption vide Notification No. S.O. 3305(E) dated 07.12.2015 read with G.S.R 593 (E ) dated 28.6.2018 as amended from time to time shall be complied.
vi. The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.

vii. No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.

viii. Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction, necessary permission be obtained from CGWA.

**B. Ash content/ mode of transportation of coal:**

i. MoEF&CC Notification issued vide S.O. 1561 (E) dated 21.05.2020 and as amended from time to time shall be complied which inter-alia include use of coal by Thermal Power Plants, without stipulations as regards ash content or distance, shall be permitted subject to compliance of conditions prescribed under (1) Setting Up Technology Solution for emission norms, (2) Management of Ash Ponds and (3) Transportation.

**C. Air quality monitoring and Management:**

i. Flue Gas Desulphurisation System shall be installed based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the $SO_2$ emissions standard as per G.S.R. 243 (E ) dated 31.03.2021 read with G.S.R. 682 (E ) dated 05.09.2022 and amended from time to time.

ii. Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve $NO_X$ emission standard of 100 mg/$Nm^3$.

iii. High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/$Nm^3$.

iv. Stacks of prescribed height 120 m shall be provided with continuous online monitoring instruments for $SO_2$, Nox and Particulate Matter as per extant rules.

v. Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically.

vi. Six Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as $PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_X$ within the plant area. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.

vii. Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.

viii. Appropriate Air Pollution Control measures (Des/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc.

**D. Noise pollution and its control measures:**

i. The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000.

ii. Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like earplugs/ear muffs, etc.

iii. Periodical medical examination on hearing loss shall be carried out for all the workers and maintain audiometric record and for treatment of any hearing loss including rotating to non-noisy/less noisy areas.

**E. Human Health Environment:**

i. Bi-annual Health check-up of all the workers is to be conducted. The study shall take into account of chronic exposure to noise which may lead to adverse effects like increase in heart rate and blood pressure, hypertension and peripheral vasoconstriction and thus increased peripheral vascular resistance. Similarly, the study shall also assess the health impacts due to air polluting agents.

ii. Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases.

iii. Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant.

iv. Sewage Treatment Plant shall be provided for domestic wastewater.

**F. Water quality monitoring and Management:**

i. Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 3.0 $m^3$/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5.

ii. In case of the water withdrawal from river, a minimum flow 15% of the average flow of 120 consecutive leanest days should be maintained for environmental flow whichever is higher, to be released during the lean season after water withdrawal for proposed power plant.

iii. Records pertaining to measurements of daily water withdrawal and river flows (obtained from Irrigation Department/Water Resources Department) immediately upstream and downstream of withdrawal site shall be maintained.

iv. Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area.

v. Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities.

vi. The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. conforming to the prescribed standards shall be re-circulated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.

vii. Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water.

viii. Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies

ix. Wastewater generation of 3000 KLD from various sources (viz. cooling tower blowdown, boiler blow down, wastewater from ash handling, etc) shall be treated to meet the standards of pH: 6.5-8.5; Total Suspended Solids: 100 mg/l; Oil & Grease: 20

mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l;

x. Sewage generation of 120 KLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number):<1000 per 100 ml.

**G. Risk Mitigation and Disaster Management:**

i. Adequate safety measures and environmental safeguards shall be provided in the plant area to control spontaneous fires in coal yard, especially during dry and humid season.
ii. Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made as per the extant rules in the plant area in accordance with the directives of Petroleum & Explosives Safety Organisation (PESO). Sulphur Content in the liquid fuel should not exceed 0.5%.
iii. Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
iv. Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary.
v. Regular mock drills for on-site emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situations.

**H. Green belt and Biodiversity conservation:**

i. Green belt shall be developed in an area of 33% of the total project with indigenous native tree species in accordance with CPCB guidelines. The green belt shall inter-alia cover an entire periphery of the plant. Concurrent plantation shall be done and all the earmarked area shall be suitably planted with native species in three rows within the next 2 years.
ii. In-situ/ex-situ Conservation Plan for the conservation of flora and fauna should be prepared and implemented.

**I. Waste management:**

i. Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.
ii. Toxicity Characteristic Leachate Procedure (TCLP) test shall be conducted for any substance, potential of leaching heavy metals into the surrounding areas as well as into the groundwater.
iii. Ash pond shall be lined with impervious liner as per the soil conditions. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached.
iv. Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notification on Fly Ash Utilization issued by the Ministry S.O. 5481 (E)dated 31.12.2021, S.O.6169 (E) dated 30.12.2022, S.O.0 5 (E) dated 01.01.2024 and amendment thereto.
v. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.
vi. In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up:

i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled.
ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.

**J. Monitoring of compliance:**

i. Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.
ii. Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.
iii. Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.
iv. Monitoring of Carbon Emissions from the existing power plant as well as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
v. Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
vi. An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.
vii. The project proponent shall (Post-EC Monitoring):

a. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;

b. upload the clearance letter on the web site of the company as a part of information to the general public.

c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at http://parviesh.nic.in.

d. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;

e. monitor the criteria pollutants level namely; PM ($PM_{10}$& $PM_{2.5}$ incase of ambient AAQ), $SO_2$, Nox (ambient levels as well as stack emissions) 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;

f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies

as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB;

g. 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;

h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.

**K. Corporate Environmental Responsibility (CER) activities:**

i. CER activities will be carried out as per Ministry's OM F.No.22- 65/2017- IA.III dated 30th September, 2020 and 22-65/2017- IA.III dated 25.02.2021 or as proposed by the PP in reference to Public Hearing or as earmarked in the EIA/EMP report along with the detailed scheduled of implementation with appropriate budgeting. Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the shall be submitted.

**Agenda No: 15.2**

**15.2: Proposed expansion of 1X800 MW NLC Talabira Thermal Power Project NTTPP phase-II by M/s NLC India Limited within the premises of 3X800 MW (Phase – I) located at Tareikela & Kumbhari Village, Jharsuguda District, Odisha – Prescribing of Terms of Reference – regarding.**

**[Proposal No. IA/OR/THE/500872/2024; F. No J-13012/14/2017-IA.I(T)]**

**15.2.1:** M/s. NLC India Ltd has made an application online vide proposal no IA/OR/THE/500872/2024 dated 30/10/2024 along with the application in prescribed format (CAF, Form – I Part A & B), copy of pre-feasibility report and proposed ToRs for undertaking detailed EIA study as per the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at item no. 1(d) Under Category "A" of the schedule of the EIA Notification, 2006 and appraised at Central Level.

**Name of the EIA consultant**: M/s. ABC Techno Labs India Private Limited (formerly known as ABC Environ Solutions Pvt. Ltd.) [NABET Certificate No.: NABET/EIA/2225/RA 0290, valid up to to Nov 16, 2025].

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

**15.2.2**: MoEF&CC accorded environmental clearance to M/s NLC India Limited vide letter dated 02/02/2021 for setting up of 3x800 MW coal based thermal power plant at Tareikela & Kumbhari Village, Jharsuguda District, Odisha. The project proponent has not yet commence the project activity at the site and applied for consent to establish to Odisha State Pollution Control Board.

**15.2.3:** Implementation status of the existing EC dated 2/2/2021

| Configuration | Capacity (MW) | As per EC dated | Implementation Status as on | CTE from OSPCB |
|---|---|---|---|---|
| Thermal power plant | (3x800)<br>2400 | 02/02/2021 | Not yet commence the project activity at the site | Yet to be obtained. |

**15.2.4:** The instant proposal is for grant of Terms of Reference for undertaking EIA/EMP study for the proposed expansion of 1X800 MW NLC Talabira Thermal Power Project NTTPP phase-II by M/s NLC India Limited within the premises of 3X800 MW (Phase – I) located at Tareikela & Kumbhari Village, Jharsuguda District, Odisha. Total power generation after the proposed expansion will be 4x800 MW (3200 MW).

**15.2.5: Environmental site settings**

<table>
<tr><th>S. No.</th><th>Particulars</th><th colspan="3">Details</th><th>Remarks</th></tr>
<tr><td>i.</td><td>Total land</td><td colspan="3">686.03 ha [NLCIL]</td><td>Land use: vacant land</td></tr>
<tr><td>ii.</td><td>Land use break up</td><td colspan="3"><table>
<tr><td>Facilities</td><td>Existing Area (In Hectares)</td><td>Proposed Area (In Hectares)</td></tr>
<tr><td>Main Plant</td><td>215.78</td><td>243.71</td></tr>
<tr><td>Coal Handling System</td><td>-</td><td>-</td></tr>
<tr><td>Water System</td><td>-</td><td>-</td></tr>
<tr><td>Switch Yard</td><td>-</td><td>-</td></tr>
<tr><td>Green belt</td><td>101.981</td><td>166.8</td></tr>
<tr><td>Roads</td><td>6.07</td><td>6.07</td></tr>
<tr><td>Ash pond</td><td>70.85</td><td>70.85</td></tr>
<tr><td>Railway siding</td><td>-</td><td></td></tr>
<tr><td>Water supply pipeline</td><td>-</td><td>-</td></tr>
<tr><td>Ash transport pipeline</td><td>-</td><td>-</td></tr>
</table></td><td>For phase-II, 28 ha is required. 28 ha vacant land is available within the 243.71 ha acquired for phase-I.</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td></td><td></td><td><table>
<tr><td>Others (Please specify)</td><td>198.6</td><td>198.6</td></tr>
<tr><td>Total</td><td>585.58</td><td>686.03</td></tr>
</table></td><td></td></tr>
<tr><td>iii.</td><td>Land acquisition details as per MoEF&CC O.M. dated 7/10/2014</td><td>The entire area of 686.03 hectare is being acquired for the project by M/s IDCO of Odisha. The R&R activities are taken care under phase-I (3 x800MW) activities of NTTPP.<br><br>As per EC recommendation for Phase- I (3 x800MW), the R&R package is being implemented for the project displaced/affected families.<br><br>The EC vide F.No: J-13012/14/2017-IA.I(T) granted for the proposal of phase-I which includes R&R, thus no R&R would be applicable for phase-II (1 x 800MW).</td><td>The High-Level Clearance Authority (HLCA) chaired by Chief Minister of Odisha in its 17th meeting held on 02.06.2017 cleared NLCIL's proposal to set up a large capacity pit head type thermal power project (4X800 MW in two stages) near the Talabira II & III mine blocks allocated to NLCIL. M/s IPICOL<br><br>vide letter dated 10.07.2017, communicated in principle approval of HLCA, for. availability of land and water for 3200 MW capacity NLC Talabira Thermal<br><br>Power Project. M/s IDCO</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td></td><td></td><td></td><td>accorded clearance for 1447 acres of land in favour of NLCIL. M/s IDCO accorded clearance for 1694.5 acres of land in favour of NLCIL for Phase-I, with this area itself Phase-II facilities will be accommodated.</td></tr>
<tr><td>iv.</td><td>Existence of habitation & involvement of R&R, if any.</td><td>Project site: Tareikela & Kumbhari Village<br>Study Area:<table><tr><td>Habitation</td><td>Distance</td><td>Direction</td></tr><tr><td>School in Tareikela</td><td>Inside project boundary</td><td>-</td></tr><tr><td>School in Kumbhari</td><td>Inside project boundary</td><td>-</td></tr></table>As per EC recommendation for Phase- I (3 x800MW), the R&R package is being implemented for the project displaced/affected families.</td><td>Land acquisition (including phase I & II) is being carried out and it is progress. R&R plan is being implemented.<br>Dist. Administration is consultation with NLCIL is planning to construct a new school at mouja hirma village situated outside the project site as a replacement of existing 2 schools situated within the project site.</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td>v.</td><td>Latitude and Longitude of all corners of the project site.</td><td>The geographical co-ordinates of the site are as follows:<br>A. Plant Site
<table>
<tr><td>Point</td><td>Latitude</td><td>Longitude</td></tr>
<tr><td>North Extreme</td><td>21°46’56.11" N</td><td>83°59’30.59"E</td></tr>
<tr><td>East Extreme</td><td>21°46’52.95" N</td><td>84° 00’ 20.72"E</td></tr>
<tr><td>South Extreme</td><td>21°45’16.80" N</td><td>83°59’9.36’’E</td></tr>
<tr><td>West Extreme</td><td>21°46’34.18" N</td><td>83° 58’ 50.54"E</td></tr>
</table>
B. Ash Pond
<table>
<tr><td>Point</td><td>Latitude</td><td>Longitude</td></tr>
<tr><td>North Extreme</td><td>21°45'58.02" N</td><td>84° 0'15.30"E</td></tr>
<tr><td>East Extreme</td><td>21°45'23.03" N</td><td>84° 0'22.34"E</td></tr>
<tr><td>South Extreme</td><td>21°45'26.08" N</td><td>83°59'55.58"E</td></tr>
<tr><td>West Extreme</td><td>21°44'55.49" N</td><td>83°59'56.88"E</td></tr>
</table></td><td>--</td></tr>
<tr><td>vi.</td><td>Elevation of the project site above mean sea level (AMSL)</td><td>202.5 M above mean sea level</td><td>--</td></tr>
<tr><td>vii.</td><td>Involvement of Forest land if any</td><td>No. Project does not involve forestland.</td><td>--</td></tr>
<tr><td>viii.</td><td>Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site</td><td>Study area
<table>
<tr><td>Water Body</td><td>Distance</td><td>Direction</td></tr>
<tr><td>Bhedan River</td><td>0.5 km</td><td>west</td></tr>
</table></td><td>High Flood Level (HFL) of the Bedhan River near the National Highway Bridge</td></tr>
</table>

| S. No. | Particulars | Details | Remarks |
|---|---|---|---|
| | as well as study area | Hirakud Reservoir \| 7 km \| south | (collected from WRD, Hirakud Reservoir) is RL 200.9m. Considering the above, the Finished Grade Level for the Main Plant area is designed. (Refer Section 4.3, page.no 46 of PFR).<br><br>Bhedan river is located 500m away from plant boundary and Plant will be graded to RL 202.5 m and 202.0 m levels, which are above the predicted high flood level of 200m and no plant facilities are planned below this level. |
| ix. | Existence of ESZ / ESA / National Park / Wildlife Sanctuary / Biosphere Reserve / Tiger Reserve / Elephant Reserve etc. if any within the study area | There are no. national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors, etc. within 10 km distance from the project site. | -- |
| x. | Archaeological sites monuments/ historical temples etc. | No | -- |

| S. No. | Particulars | Details | Remarks |
|---|---|---|---|
| xi | Whether the project is in the Critically Polluted Area (CPA)/ Severely Polluted Area (SPA) or within 10 km of CPA/SPA. | No<br>Proposed Phase-II expansion Project is adjacent to Phase-I and envisaged in the already acquired land for Phase-I, which is located in "other polluted area" as per the Phase-1 EAC minutes dated 7th April, 2022.Also 40% green belt is envisaged as per Phase-I EC conditions. All the environmental protections systems are envisaged for Phase-II to comply with MoEF&CC notification. All APC control measures like FGD, ESP, Bag filters, Dry fog systems are in place for the proposed expansion. An ETP also is planned for the project. The details will be included in the EIA/EMP report. | -- |

**15.2.6: Unit configuration and capacity of proposed project:**

| S.No. | Existing power plant configuration and capacity | Proposed power Plant configuration and capacity | Total | Technology adopted |
|---|---|---|---|---|
| 1 | (3x800) MW<br>2400 MW | (1x800) MW<br>800MW | 3200 MW | Supercritical thermal power plant |

**15.2.7: Details of fuel requirement**: The details of the fuel (coal/gas/LDO) requirement for the proposed project/ expansion cum proposed project along with its source and mode of transportation is given as below:

| Details | Fuel requirement (MTPA) | Source | Distance From site (Kms) | Mode of Transportation | Coal characteristics (Worst case scenario) |
|---|---|---|---|---|---|
| Existing TPP | 11.37 | Talabira II & III Captive mine | 4 | Belt / pipe conveyor | Ash - (45%)<br>Sulphur - (0.33%)<br>Moisture (6.1%)<br>GCV – 3400 Kcal/Kg |
| Proposed TPP | 3.50 | Talabira II & III Captive mine | 4 | Belt / pipe conveyor | Ash - (45%)<br>Sulphur - (0.33%)<br>Moisture (6.1%)<br>GCV - 3700Kcal/Kg |

**15.2.8: Project cost**: Existing capital cost of project was Rs.16073.86 Crore. The capital cost of the proposed project is Rs 7178.564 Crores and the capital cost for environmental protection measures is proposed as Rs 1439 Crore. The annual recurring cost towards the environmental protection measures is proposed as Rs 14.39 Crore.

**15.2.9: Employment**: The employment generation after expansion is about 350 nos.

**15.2.10**: **Power requirement**: Existing power requirement of 167 MW is obtained from plant. The power requirement for the proposed project is estimated as out of which 56 MW will be obtained from the power plant.

**15.2.11: Water Requirement:** Existing Water requirement is 1,76,153$m^3$/day, water requirement is obtained from Hirakud reservoir and permission for the same has been obtained from WRD, Odisha vide letter no. 19552 dated 4.09.2019. The water requirement for the proposed project is estimated as 57,600 $m^3$ /day water requirement is obtained from Hirakud reservoir and permission for the same has been obtained from WRD, Odisha vide letter no. 19552 dated 4.09.2019. The water will be transported to the plant site through pipeline. The specific water consumption for the power plant will be 3$m^3$/MWhr.

**15.2.12: Solid/ Hazardous waste generation and its management**: The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below:

| S. No. | Type of Waste | Source | Quantity generated (TPA) | Mode of Treatment | Disposal |
|---|---|---|---|---|---|
| 1 | Solid waste | Annual ash generated for expansion (1X800 MW) | 1.26 million | - | High concentration slurry disposal |
| 2 | Solid waste | Annual Bottom ash generated | 0.25 million | - | High concentration slurry disposal |
| 3 | Solid waste | Annual Fly ash generated | 1.01 million | - | Ash is transported in a pneumatic pressure conveying system to fly ash silo from ESP hoppers |
| 4 | Glass Wool | Overhauling | < 0.5 | TSDF site | Road |
| 5 | Waste oil | Maintenance | < 0.5 | TSDF site | Road |

**15.2.13: Greenbelt development**: Existing green belt has been developed in 101.981 ha area which is about 40% of the total project area of 585.58 ha with total sapling of 203962 Trees [Only for expansion cases]. Proposed greenbelt will be developed in 64.819 ha which is about 40% of the total project area. Thus, total of 166.8 Ha area (40% of total project area) will be developed as greenbelt. A 50 m wide greenbelt, consisting of at least 3 tiers around plant boundary will be developed as greenbelt and green cover as per CPCB guidelines. Local and native species will be planted with a density of 2500 trees per hectare. Total no. of 333600 saplings will be planted and nurtured in 166.8 hectares in 5 years.

**15.2.14: Ash management**: Ash will be the major solid waste generated from the power project. An ash management scheme will be implemented consisting of dry collection of fly ash, supply of ash to entrepreneurs for utilization and promoting fly ash utilization to maximum extent and safe disposal of unused ash.

| Description | Ash Generation |
|---|---|
| Annual Ash generated for expansion (1X800 MW) | 1.26 million TPA |
| Annual Bottom ash generated | 0.25 million TPA |
| Annual Fly ash generated | 1.01 million TPA |

**15.2.15: Ash Pond details**: The ash generated in the plant will be disposed in the Mine Voids / Emergency Ash Dyke. The details of emergency ash dyke are given below.

| S. No. | Details of Ash Pond | Ash pond 1 |
|---|---|---|
| 1. | Status of ash pond (Active / Exhausted (yet to be reclaimed)/ Reclaimed) | To be constructed |
| 2. | Area (Ha) | 70.82 |
| 3. | Dyke height (m) | 10 |
| 4. | Volume (m3) | 39,72,946 |
| 5. | Quantity of ash disposed (Metric Tons) | Yet to be started |
| 6. | Available volume in percentage (percent) and quantity of ash can be further disposed (Metric Tons) | Full Capacity (100%)<br>55,62,124 MT |
| 7. | Expected life of ash pond (number of years and months) | 1 Year<br>0 Months |
| 8. | Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No lining | HDPE |
| 9. | Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD) | HCSD |
| 10. | Ratio of ash: water in slurry mix (1:): | 1: 0.6 weight by weight |
| 11. | Ash water recycling system (AWRS) installed and functioning: Yes or No | Already envisaged and will be installed during construction stage of Ash water handling system of the plant |
| 12. | Quantity of wastewater from ash pond discharged into land or water body (m3) | 0 |

| S. No. | Details of Ash Pond | Ash pond 1 |
|---|---|---|
| 13. | Last date when the dyke stability study was conducted and name of the organization who conducted the study: | Will be complied on completion of design and after construction |
| 14. | Last date when the audit was conducted and name of the organization who conducted the audit: | Will be complied after construction. |

**15.2.16: Baseline data collection period (**October to December 2024):

| Attributes | Parameters | Sampling | | Remarks |
|---|---|---|---|---|
| **A. Air** | | No. of stations | Frequency | Sampling period |
| a. Meteorological parameter | Temperature, Relative Humidity, Wind Speed, Wind Direction & Rain fall | 1 | Hourly / Rainfall – Daily | 3 months + 1 Month |
| b. AAQ parameters | $PM_{10}$, $PM_{2.5}$, $SO_2$, NOx, CO, $O_3$, VOC, NMHC | 8 | 24 hourly | Two days per week for 12 weeks |
| **B. Noise** | Leq day & Leq night | 8 | Once during study period | 24 hourly |
| **C. Water** | | | | |
| Surface water/Ground water quality parameters | As per IS:10500 – 2012 & Designated Best of Use Criteria by CPCB | GW 8+ SW 5 Locations | Once during study period | Grab sampling |
| **D. Land** | | | | |
| Soil quality<br>Land use | Soil profile & Chemical constituents<br>Land use data based on recent satellite data | A.8 | Once during study period | A. Composite sample |
| Biological<br>Aquatic<br>Terrestrial | Flora and fauna | Study area | Once in study period | Field observations |
| **E. Socio-economic parameters** | Socio-economic profile | Study area | Based on data collected from secondary sources | |

**15.2.17: Status of Pending Litigation/court case**: There is no pending litigation/court case against the proposed project.

**Observations and Deliberations of the Committee**

**15.2.18:** The Committee noted the following:

i. Instant proposal is for seeking ToR for undertaking EIA/EMP study for expansion of 1X800 MW NLC Talabira Thermal Power Project NTTPP phase-II by M/s NLC India Limited within the premises of 3X800 MW (Phase – I) located at Tareikela & Kumbhari Village, Jharsuguda District, Odisha.

ii. MoEF&CC accorded environmental clearance to M/s NLC India Limited vide letter dated 02/02/2021 for setting up of 3x800 MW coal based thermal power plant at Tareikela & Kumbhari Village, Jharsuguda District, Odisha.

iii. EAC observed following shortcoming in the instant proposal:

a) The project proponent has not yet commence the project activity at the site with respect to the EC dated 2/2/2021 and applied for consent to establish to Odisha State Pollution Control Board. However, without implementing the project, proponent is again seeking for ToR for undertaking EIA study for addition of 1x800 MW TPP. No justification has been furnished by the proponent in this regard. Further, implementation status of existing EC with time frame for completion of the same has not been presented by the proponent.

b) During deliberations, the proponent informed that levelling of the project site needs to be undertaken at the project site before commencement of construction work. But proponent is unable to explain the site levelling details along with the details of the material to be used for levelling activity vis-à-vis site topography conditions.

c) There is a ambiguity with respect to the area of project site as the proponent has used Ha and acres terminology together in the application and the pre-feasibility report. Further, as s per the KML file uploaded, the area is mentioned as 186.37 Ha contrary to the 585.58 Ha area mentioned in EC letter dated 02.02.2021 and 686.03 Ha area as mentioned in PPT submitted by the PP. This needs to be clarified by the proponent along with the requisite supporting documents.

d) Under the proposed ToR, project proponent has mentioned only four AAQ parameters will be monitored at 8 locations. The number of monitoring stations and parameters proposed for AAQ monitoring found to be not adequate. PP is required revisit the proposed ToR by increasing the number of monitoring stations and all the parameters as per NAAQS needs to be monitored. Besides, the proposed ToR do not contain site specific studies such as hydrology & hydrogeology study, biodiversity assessment study for assessing the impact on aquatic flora and fauna, impact on crop yield and impact of project on Bhedan river etc are found to be missing. PP has been advised to revisit the proposed ToR by adequately incorporating the site specific environmental concerns.

e) As per decision support system (DSS), EAC noted that the project area falls in the severely polluted area (SPA), however, PP disclosed that the proposed project does not fall in SPA. PP needs to submit the factual information with documentary evidence from OSPCB.

f) A River (Bhedan) is flowing nearby the project area. PP needs to submit the HFL data with documentary evidence issued by the concerned State Water Resources Department (WRD). Project proponent shall confirm that project site is not located within Bhedan river flood plain corresponding to one in 25 years of flood as per Ministry's O.M. dated 14/02/2022.

g) As per decision support system (DSS), EAC noted that Ramsar site which is considered an important Environmental sensitive area is at around 3 km distance from the project site, however, PP submitted that there is no any Environmental sensitive area within 10 km of the study area. PP needs to furnish the factual information for the same and to conduct the Biodiversity analysis of 10 km area by the reputed government institutes/organizations.

h) The EAC observed that the application made by the person is not in accordance with the authorization letter as submitted by the PP.

i) Expected life of the ash pond is mentioned as 1 year only which needs to be revisited by the PP.

j) The ash pond location is very close to Bhedan river. Proponent may re-examine the location of ash pond.

iv. EAC opined that a site visit should be conducted by the Sub-committee of EAC to ascertain the various environmental concerns pertaining to the instant project.

**Recommendations of the Committee**

**15.2.19:** In view of the foregoing and after detailed deliberations, the Committee ***deferred*** the proposal and asked the proponent to submit additional information on the shortcomings as mentioned above. In addition to this, the Committee also recommended for a site visit by the sub-committee of EAC to ascertain the various environmental concerns pertaining to the instant project. On receipt of the above, the proposal shall be placed before the EAC for further consideration.

**Agenda no 15.3**

15.3 Proposed Expansion from 1320 MW to 2120 MW Buxar Thermal Power Project(BTPP) by **M/s. SJVN Thermal Private Limited** by installing 1x660 MW plant unit Near Chausa, **district Buxar, Bihar – Amendment in Terms of Reference for change in configuration of TPP from 1x660 MW to 1x800 MW– regarding.**

**[Proposal No. IA/BR/THE/502818/2024; F. No. J-13012/69/2008-IA.I (T)]**

**15.3.1:** M/s. SJVN Thermal Private Limited has made an online application vide proposal no. IA/BR/THE/502818/2024 dated 26/10/2024 along with Form 3 and pre-feasibility report for the proposed 1x800 MW TPP and sought for amendment in the ToR dated 15/03/2024 accorded for the project mentioned above. The proposed project activity is listed at item No. 1(d) – Thermal Power Plants under Category 'A' of the schedule of the EIA Notification, 2006 and appraised at the Central Level.

Name of the EIA consultant: M/s. Mantec Consultants Pvt. Ltd., Noida (Certificate No. NABET/EIA/23-26/RA 0305_Rev.01 valid up to April 20, 2026)

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

**15.3.2:** Environmental Clearance was accorded by Ministry of Environment, Forest and Climate Change(MoEF&CC) vide letter No. J-13012/69/2008-IA.II(T), dated 28.02.2017 for setting up of 2x660 MW (1320 MW) Thermal Power Plant. Presently, the power plant is under construction.

**15.3.3:** Terms of Reference (TOR) for expansion of BTPP from 1320 MW to 1980 MW by installing 1x660 MW Unit was accorded by MoEF&CC on dated 15.03.2024 for undertaking

EIA/EMP study. **It has been decided by the project proponent to enhance the** installed capacity of proposed expansion unit from 1x660 MW to 1x800 MW and the same has been communicated to the Central Electricity Authority on 21/06/2024.

**15.3.4:** Instant proposal is for seeking amendment in ToR dated 15/03/2024 with respect to the configuration of the proposed TPP from 1x660 MW to 1x800 MW.

**15.3.5:** The details of the amendment sought by the proponent in the ToR dated 15/03/2024 are summarized as below:

<table>
<tr><th>S. No.</th><th>As per the ToR dated 15/03/2024 for the configuration of 1x660 MW</th><th>Amendment sought in the ToR dated 15/03/2024 due to change in configuration of the TPP from 1x660 MW to 1x800 MW</th></tr>
<tr><td>1.</td><td>Proposed Expansion from 1320 MW to 1980 MW Buxar Thermal Power Project(BTPP) by M/s. SJVN Thermal Private Limited by installing 1x660 MW plant unit Near Chausa, district Buxar, Bihar</td><td>Proposed Expansion from 1320 MW to 2120 MW Buxar Thermal Power Project(BTPP) by M/s. SJVN Thermal Private Limited by installing 1x800MW plant unit Near Chausa, district Buxar, Bihar</td></tr>
<tr><td>2.</td><td>Project Area<br>Existing (Stage I) - 519.42 Hectare<br>Proposed (Stage II)- 101 Hectare<br>Total – 620.42 Ha.</td><td>Project Area<br>Existing (Stage I) - 519.42 Hectare<br>Proposed (Stage II)- 101 Hectare<br>Total – 620.42 Ha.</td></tr>
<tr><td>3.</td><td>Manpower<table><tr><td>Phase</td><td>Temporary</td><td>Permanent</td></tr><tr><td>Construction Phase</td><td>3800</td><td>200</td></tr><tr><td>Operational Phase</td><td>700</td><td>200</td></tr></table></td><td>Manpower<table><tr><td>Phase</td><td>Temporary</td><td>Permanent</td></tr><tr><td>Construction Phase</td><td>4000-5000</td><td>250</td></tr><tr><td>Operational Phase</td><td>900</td><td>400</td></tr></table></td></tr>
<tr><td>4.</td><td>Water Requirement<table><tr><td>Phase</td><td>Existing in KLD</td><td>Proposed in KLD</td></tr><tr><td>Construction Phase</td><td>200</td><td>100</td></tr><tr><td>Operational Phase</td><td>134561</td><td>73397</td></tr></table></td><td>Water Requirement Construction Phase-<table><tr><td>Phase</td><td>Existing in KLD</td><td>Proposed in KLD</td></tr><tr><td>Construction Phase</td><td>200</td><td>120</td></tr><tr><td>Operational Phase</td><td>134561</td><td>36698</td></tr></table></td></tr>
<tr><td>5</td><td>Wastewater-<br>STP:60 KLD MBBR Technology, based on ZLD<br>ETP: 1200 KLD Coal slurry settling pit, based, based on ZLD.</td><td>Wastewater-<br>STP: 60 KLD MBBR Technology, based on ZLD<br>ETP: 1200 KLD Coal slurry settling pit, based on ZLD.</td></tr>
<tr><td>6.</td><td>Plantation-<br>Existing - 171.41 ha<br>Proposed – 34.22 ha</td><td>Plantation-<br>Existing – 171.25 ha<br>Proposed – 42 ha</td></tr>
<tr><td>7.</td><td>Existing Cost(2x660MW): Rs. 10,520.48 Crores<br>Proposed Cost (1x660MW): Rs. 6,388.82 Crores<br>Total Cost (1980MW): Rs. 16,909.30 Crores</td><td>Existing Cost(2x660MW): Rs. 10,520.48 Crores<br>Proposed Cost (1x800MW): Rs. 8,322.07 Crores<br>Total Cost (2120MW): Rs. 18,842.55 Crores</td></tr>
<tr><td>8.</td><td>Coal Requirement</td><td>Coal Requirement</td></tr>
</table>

| S. No. | As per the ToR dated 15/03/2024 for the configuration of 1x660 MW | Amendment sought in the ToR dated 15/03/2024 due to change in configuration of the TPP from 1x660 MW to 1x800 MW |
|---|---|---|
| | Existing: 4.97 MTPA<br>Proposed: 3.1 MTPA<br>Source: Central Coal Field, Jharkhand | Existing: 4.97 MTPA<br>Proposed: 3.7 MTPA<br>Source: Central Coal Field, Jharkhand |

**15.3.6:** Proponent informed that baseline data collection for the project was collected during 15/09/2023 to 14/12/2023.

**Observations and Deliberations of the Committee**

**15.3.7:** The Committee noted the following:

i. Environmental Clearance was accorded by Ministry of Environment, Forest and Climate Change(MoEF&CC) vide letter No. J-13012/69/2008-IA.II(T), dated 28.02.2017 for setting up of 2x660 MW (1320 MW) Thermal Power Plant. Presently, the power plant is under construction.

ii. Terms of Reference (TOR) for expansion of BTPP from 1320 MW to 1980 MW by installing 1x660 MW Unit was accorded by MoEF&CC on dated 15.03.2024 for undertaking EIA/EMP study.

iii. Instant proposal is for seeking amendment in ToR dated 15/03/2024 with respect to the configuration of the proposed TPP from 1x660 MW to 1x800 MW.

iv. Due to the proposed amendment, there is increase in power generation from 1980 MW to 2120 MW, Coal requirement from 3.1 MTPA to 3.7 MTPA and water requirement is reducing from 73397 KLD to 36698 KLD.

**Recommendations of the Committee**

**15.3.8:** The EAC after detailed deliberations on the information submitted and as presented during the meeting **recommended** the proposal for grant of amendment in the ToR dated 15/03/2024 as mentioned at para no. 15.3.5 above subject to stipulation of following additional specific ToRs.

i. A Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 10-km radius of the proposed project shall be conducted and the same shall be included the in EIA/EMP report. Details of industrial units present in 10 Km radius of the power plant shall be earmarked in map and submitted.

ii. EIA/EMP study shall take in to consideration the different scenarios arising due to change of coal source, impact on environmental attributes due to change of coal source along with corresponding mitigation measures with EMP budget shall be submitted.

iii. Impact of release of cooling tower water on aquatic life need to be studied by a reputed govt. institute and action plan for complying with the mitigation measures shall be submitted.

iv. Project proponent shall commission a study on Hydrology and Hydrogeology of the project site as well as the study area of the project site through a reputed institute/Government organization. The study report along with the action plan for implementing the recommendations of the report shall be submitted along with the EIA/EMP report.

v. Biodiversity analysis of the study area to be done through any reputed Government institutions. The study report along with the action plan for implementing the recommendations of the report shall be submitted along with the EIA/EMP report.

vi. Certificate from concerned District Magistrate/Executive Engineer from the State Water Resources department (or) any officer authorized by the State Government in this regard shall be submitted stating that project site is not located within Karmansha river (1.2 km from the project site) and Thora river (0.84km) flood plain corresponding to one in 25 years of flood as per Ministry's O.M. dated 14/02/2022.

vii. Action plan dry ash collection system shall be submitted.

viii. Project proponent shall submit action plan for shifting of school situated within the vicinity of the project site.

ix. Year-wise plantation plan with detailed budget for in and around of the Plant site area with covering road side plantation should be submitted.

All other terms and conditions mentioned in the ToR letter dated 15/03/2024 shall remain unchanged.

*******

**ANNEXURE-I**

LIST OF PARTICIPANTS OF EAC (THERMAL) IN 15th MEETING HELD ON 28TH NOVEMBER 2024 THROUGH VIRTUAL MODE

| S. No. | Name & Address | Role | 28.11.2024 |
|---|---|---|---|
| 1. | Dr. Sharad Singh Negi (I.F.S. Retd.) | Chairman | Present |
| 3. | Shri Inder Pal Singh Matharu, IFS (Retd.) | Member | Present |
| 3. | Shri Lalit Kapur | Member | Present |
| 4. | Dr. Umesh Jagannathrao Kahalekar | Member | Present |
| 5. | Dr. Santosh Kumar Hampannavar | Member | Present |
| 6. | Shri Savalge Chandrasekhar | Member | Present |
| 7. | Shri K. B. Biswas | Member | Present |
| 8. | Prof. Shyam Shanker Singh | Member | Present |
| 9. | Dr. Vinod Agrawal | Member | Present |
| 10. | Dr Nazimuddin, Scientist - F | Representative of Central Pollution Control Board | Absent |
| 11. | Shri Mahi Pal Singh, Chief Engineer | Representative of Central Electricity Authority (CEA) | Present |
| 13. | Shri Harmeet Sahaney | Representative of Indian Meteorological Department (IMD) | Absent |
| 13. | Prof. R M Bhattacharjee | Representative of IIT/ISM Dhanbad | Present |
| 14. | Shri Sundar Ramanathan | Member Secretary | Present |
| 15. | Dr. Rajesh Prasad Rastogi | Scientist 'D' | Present |

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## APPROVAL OF CHAIRMAN EAC



**Re: Fwd: Re: MEETING NOTICE: Agenda and VC link for 15th EAC meeting of Thermal Power Projects dated 28-11-2024-reg.**

sh sharadnegi1957@gmail.com <sharadnegi1957@gmail.com>
Wed, 04 Dec 2024 10:18:01 AM +0530

To "RAJESH PRASAD RASTOGI" <rp.rastogi@gov.in>

Cc "Sundar Ramanathan" <r.sundar@nic.in>

Approved MoM of 15th EAC Thermal meeting as proposed.
Dr S S Negi
**Vice Chairman, Rural Development and Migration Commission, Uttarakhand**
former Director General Forest and Special Secretary Govt of India
Address: 178 Subhash Road Dehradun
Mob 09411173194

On Wed, Dec 4, 2024 at 10:00 AM RAJESH PRASAD RASTOGI <rp.rastogi@gov.in> wrote:
•••