सत्यमेव जयते

File No: J-13011/56/2006-IA.II(T)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division
****

Date **20/02/2025**

To,

Sh. R N Shukla
M/s Mahan Energen Limited (MEL)
Adani Corporate House, Shantigram, Near Vaishnodevi Circle, S.G Highway, Ahmedabad - 382421, Gujarat
E-mail: MEL.Adanipower2023@gmail.com

Subject: **Expansion of Bandhaura Thermal Power Plant under Phase III by adding 1600 MW (2x800 MW) Ultra-Super Critical TPP to existing 2800 MW [Phase I: 1200 MW (2x600MW) + Phase II: 1600 MW (2x800MW)] within the existing premises of Thermal Power Plant by M/s. Mahan Energen Limited (MEL) located at Villages Bandhaura, Khairahi, Karsualal and Nagwa, Tehsil Mada, District Singrauli, Madhya Pradesh - Grant of Environmental Clearance – regarding.**

Sir/Madam,

This is with reference to your proposal number IA/MP/THE/513987/2024 dated 16/12/2024 along with a written submission dated 05.02.2025 submitted by M/s. Mahan Energen Limited (MEL) to the Ministry for grant of Environmental Clearance (EC) seeking Environment Clearance under the provisions of the EIA Notification 2006 and as amended for the project mentioned above.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC24A0601MP5759959N
(ii) File No.	J-13011/56/2006-IA.II(T)
(iii) Clearance Type	Fresh EC
(iv) Category	A
(v) Project/Activity Included Schedule No.	1(d) Thermal Power Plants
(vi) Sector	Thermal Projects
(vii) Name of Project	Proposed Expansion of Bandhaura Thermal Power Plant under Phase–III by adding 1600 (2x800) MW Ultra Super Critical TPP to Existing 2800 (1200+1600) MW Ph-I & Ph-II within the existing plant boundary of Thermal Power Plant at District Singrauli, Madhya Pradesh by Mahan Energen Limited (MEL)
(viii) Name of Company/Organization	M/s Mahan Energen Limited (MEL)

(ix) Location of Project (District, State)	SINGRAULI, MADHYA PRADESH
(x) Issuing Authority	MoEF&CC
(xi) Applicability of General Conditions as per EIA Notification, 2006	No

3. M/s. Mahan Energen Limited (MEL) has made an online application vide proposal no. IA/MP/THE/513987/2024 dated 16/12/2024 along with copy of EIA/EMP report, CAF (Part A, B & C) and Certified compliance report seeking Environment Clearance (EC) under the provisions of the EIA Notification, 2006 for the project mentioned above.

4. 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.

5. The instant Proposal was considered by the EAC (Thermal) in its 18th meeting held on 24th January, 2025. The PP has submitted the written information on 05.02.2025. The MoM for the same may be seen using the following web link: https://parivesh.nic.in

Details submitted by the project proponent

6. The project of M/s. Mahan Energen Limited (MEL) is located at villages Bandhaura, Khairahi, Karsualal and Nagwa, Tehsil Mada, District Singrauli, Madhya Pradesh is for enhancement/expansion of capacity by adding 1600 (2x800) MW ultra-super critical to existing capacity of 2800 [Phase I: 1200 (2x600) MW operational and phase II: 1600 (2x800) MW under construction].

7. The detail of the ToR is furnished below:

Proposal No with date	Consideration	Details	Date of accord	ToR Validity
IA/MP/THE/456997/2024 Dated 23/01/2024	5th meeting of EAC held on 14.02.2024	Terms of Reference	02.07.2024	01.07.2028

8. The existing project was granted environmental clearance for Phase I: 2x600 MW (1200 MW) vide letter no. J-13011/56/2006-IA.II (T) dated 20.04.2007 and subsequent amendments dated 10.02.2009, 23.08.2013 08.04.2016, 16.07.2023. The EC was transferred from M/s. Essar Power (M.P.) Limited (EPMPL) to M/s. Mahan Energen Limited (MEL) on 15.09.2022. Consent to Operate for the existing units 1200 MW (2x600 MW) Phase-I was accorded by Madhya Pradesh Pollution Control Board vide consent no. 59389 dated 22.12.2023. The validity of CTO is up to 28.02.2027. Subsequently, the project was accorded for another Environment Clearance for expansion of 1200 MW TPP to 2800 MW by adding 2x800 MW Ultra Super Critical unit vide letter no. J-13011/56/2006-IA.II (T) dated 02/08/2023.

9. The implementation status of the existing EC is given below:

S. No.	Configuration	Capacity (MW)	EC details	Implementation Status	Production as per CTO
1.	2x600 MW	1200 MW (Phase I)	EC dated 20.04.2007 and amendments 10.02.2009, 23.08.2013, 08.04.2016, 16.07.2023 & EC transferred dated 15.09.2022	Project implemented and the unit is under operation	CTO renewal obtained and is valid up to 28/02/2027.
2.	2x800 MW (1600 MW)	1600 MW (Phase II)	EC dated 02/08/2023	Project is under construction	CTE obtained on 27/09/2023. Likely to be commissioned by 31/03/2027.

Certified compliance report from Regional Office: The Status of compliance of earlier ECs dated 20/04/2007 & 02/08/2023 was obtained from Regional Office, Bhopal, MoEF&CC vide File no. 4-1/2023(Env)/I/89864/2024 dated: 09.12.2024 in the name of M/s. Mahan Energen Limited. The Action taken report regarding the partially/non-complied conditions was submitted to Regional office, MoEF&CC, Bhopal vide letter no. APL/MEL/TPP/ENV/MoEFCC/2024-25/228 dated 09.12.2024. The details of the observations made by RO in the report dated 09.12.2024 and the response of

proponent is given as below:

a) Status of compliance to the conditions prescribed in the EC dated 20/04/2007 & its subsequent amendments: All the prescribed conditions have been complied with.

b) Status of compliance to the conditions prescribed in the EC dated 02/08/2023

S. No.	Non-compliances Details (EC Condition)	Observation of RO (abridged)	Condition no.			Response by PP
			EC date	Specific	General	
1	Project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality / local bodies/ similar organization located within 50km radius of the proposed power project to minimize the water drawl from surface water bodies.	**Not Complied** Project Proponent is yet to identify the availability of sewage water nearby and there by explore the feasibility usage of sewage water.	02.08.2023	xi	--	**Noted and Agreed** PP has discussed with the concerned Municipal Corporation Department regarding the availability of Sewage Treatment Plant (STP) in Singrauli but as it is a Rural Town, no STP is located within 50 Km radius of the Mahan TPP. However, if any STP will be set up in future, PP will explore the feasibility to use the treated water for plant operation.
2	A detailed ecological monitoring and survey covering forestry, fisheries, wildlife, and its habitat shall be done once in two years to assess the impacts of project on the local environment and ecology. Monitoring report shall be uploaded on the Parivesh Portal and a copy of the same be submitted to the regional office of MoEF&CC.	**Not Complied** Study on local ecology is yet to be started. It is recommended to assess the local biodiversity and identify the indicator species for monitoring and evaluation in periodical basis within the study area, i.e., area covering 10km distance from project boundary.	02.08.2023	xix	--	**Agreed & Compliance Assured** Proponent is in the process of conducting said study through a Reputed Govt Institute which will assess the local biodiversity and identification of indicator species. The study will be completed and submitted within two years, as per the timeline mentioned in Environmental Clearance (EC) conditions.
3	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	**Not complied** Study on the epidemiology is yet to be initiated.	02.08.2023	xxv	--	**Agreed & Compliance Assured** Proponent is in the process of conducting the epidemiological study among the population within 5 km radius w.r.t. TPP through a reputed govt institute. The study will be completed and submitted within two years, as per the timeline mentioned in Environmental Clearance (EC) conditions. Necessary measures

S. No.	Non-compliances Details (EC Condition)	Observation of RO (abridged)	Condition no.			Response by PP
			EC date	Specific	General	
	taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.					as per the study findings shall be taken in consultation with district administration for further implementation.
4	Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project, the treated sewage of .....KLD from STP .... (name) shall be used as an alternative to the fresh water source to minimize the freshwater drawl from surface water bodies	**Not Complied** Project Proponent is yet to identify the availability of sewage water nearby and there by explore the feasibility usage of sewage water	02.08.2023	viii	8	**Noted and Agreed** PP has discussed with the concerned Municipal Corporation Department regarding the availability of Sewage Treatment Plant (STP) in Singrauli but as it is a Rural Town, no STP is located within 50 Km radius of the Mahan TPP. However, if any STP will be set up in future, PP will explore the feasibility to use the treated water for plant operation.

Status of installation of Flue Gas Desulphurization as per the MoEF&CC Notification dated 05/09/2022 & amendment dated 30/12/2024.

Under progress and will be commissioned before December 2029 (Phase-I). Construction and installation of FGD for Phase-II has already started.

10. Environmental site settings:

<table>
<tr><th>S. No.</th><th>Particulars</th><th colspan="4">Details</th><th>Remarks</th></tr>
<tr><td>1.</td><td>Total land</td><td colspan="4">473.48 Ha</td><td>Land use: Industrial use</td></tr>
<tr><td>2.</td><td>Land use break up</td><td>Facilities</td><td>Phase - I 2x600 MW (In Ha)</td><td>Phase - II 2x800 MW (In Ha)</td><td>Phase - III 2x800 MW (In Ha)</td><td>--</td></tr>
<tr><td></td><td></td><td>BTG (including FGD, Switchyard, Transformer yard, etc.</td><td>18.21</td><td>24.69</td><td>24.69</td><td></td></tr>
<tr><td></td><td></td><td>Coal & Ash facility (including</td><td>38.46</td><td>6.07</td><td>2.83</td><td></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>Stock yard & AHP facility)</td><td></td><td></td><td></td></tr>
<tr><td>Water system (including reservoir cooling tower, CW pump house, DM water system, clarified industrial wastewater treatment facility)</td><td>12.14</td><td>27.53</td><td>10.12</td></tr>
<tr><td>Ash Dyke</td><td>57.48</td><td>36.43</td><td>-</td></tr>
<tr><td>Miscellaneous Facility (including plant, road, boundary road, misc. building, etc.)</td><td>13.4</td><td>7.2</td><td>4.85</td></tr>
<tr><td>Greenbelt (about 40%)</td><td>108.05</td><td>14.56</td><td>66.77</td></tr>
<tr><td>Sub Total</td><td>247.74</td><td>116.48</td><td>109.26</td></tr>
<tr><td>Total</td><td colspan="3">473.48 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 Land is already under the possession of MEL.</td><td>Land Documents are submitted along with EIA & EMP Report.</td></tr>
<tr><td>4.</td><td>Existence of habitation & involvement of R&R, if any.</td><td><u>Project site</u>: Name of village - Bandhaura, Khairahi, Karsualal and Nagwa – No R&R
Study Area:
<table>
<tr><th>S. No.</th><th>Habitation</th><th>Distance (Km) & Direction</th></tr>
<tr><td>1.</td><td>Bandhaura</td><td>0.2 KM/ North</td></tr>
<tr><td>2.</td><td>Khairahi</td><td>0.5 KM/ West</td></tr>
<tr><td>3.</td><td>Karsualal</td><td>1.0 KM/ East</td></tr>
<tr><td>4.</td><td>Nagwa</td><td>1.0 KM/ SE</td></tr>
</table>
</td><td>Status of R&R.- Not applicable as R&R is not involved.</td></tr>
<tr><td>5.</td><td>Latitude and Longitude of all corners of the project site.</td><td>Plant site and Ash Pond
<table>
<tr><th>S. No.</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>1</td><td>24° 0'5.22"N</td><td>82°23'35.46"E</td></tr>
<tr><td>2</td><td>24° 0'37.46"N</td><td>82°23'47.59"E</td></tr>
<tr><td>3</td><td>24° 0'42.72"N</td><td>82°23'55.62"E</td></tr>
<tr><td>4</td><td>24° 0'42.28"N</td><td>82°24'8.50"E</td></tr>
<tr><td>5</td><td>24° 0'39.05"N</td><td>82°24'37.63"E</td></tr>
<tr><td>6</td><td>24° 0'42.74"N</td><td>24° 0'42.74"N</td></tr>
<tr><td>7</td><td>24° 0'33.38"N</td><td>82°25'18.26"E</td></tr>
<tr><td>8</td><td>24° 0'22.48"N</td><td>82°25'22.10"E</td></tr>
</table>
</td><td></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>9</td><td>24° 0'11.19"N</td><td>82°24'58.42"E</td></tr>
<tr><td>10</td><td>24° 0'10.33"N</td><td>82°24'41.35"E</td></tr>
<tr><td>11</td><td>24° 0'7.87"N</td><td>82°24'35.41"E</td></tr>
<tr><td>12</td><td>24° 0'2.42"N</td><td>82°24'24.13"E</td></tr>
<tr><td>13</td><td>24° 0'1.65"N</td><td>82°24'10.35"E</td></tr>
<tr><td>14</td><td>23°59'52.06"N</td><td>82°25'29.20"E</td></tr>
<tr><td>15</td><td>23°59'46.32"N</td><td>82°25'31.05"E</td></tr>
<tr><td>16</td><td>23°59'41.47"N</td><td>82°25'27.25"E</td></tr>
<tr><td>17</td><td>23°59'36.59"N</td><td>82°25'21.56"E</td></tr>
<tr><td>18</td><td>23°59'28.26"N</td><td>82°25'13.77"E</td></tr>
<tr><td>19</td><td>23°59'30.14"N</td><td>82°25'2.06"E</td></tr>
<tr><td>20</td><td>23°59'28.74"N</td><td>82°24'56.68"E</td></tr>
<tr><td>21</td><td>23°59'11.86"N</td><td>82°24'44.80"E</td></tr>
<tr><td>22</td><td>23°59'2.92"N</td><td>82°24'41.83"E</td></tr>
<tr><td>23</td><td>23°58'44.79"N</td><td>82°24'30.74"E</td></tr>
<tr><td>24</td><td>23°58'43.12"N</td><td>82°24'11.56"E</td></tr>
<tr><td>25</td><td>23°58'32.18"N</td><td>82°24'9.64"E</td></tr>
<tr><td>26</td><td>23°58'31.34"N</td><td>82°24'7.46"E</td></tr>
<tr><td>27</td><td>23°58'45.11"N</td><td>82°24'8.77"E</td></tr>
<tr><td>28</td><td>23°59'0.64"N</td><td>82°24'7.76"E</td></tr>
<tr><td>29</td><td>23°59'6.23"N</td><td>2°24'17.33"E</td></tr>
<tr><td>30</td><td>23°59'19.12"N</td><td>82°24'24.80"E</td></tr>
<tr><td>31</td><td>23°59'31.65"N</td><td>82°24'27.11"E</td></tr>
<tr><td>32</td><td>23°59'42.23"N</td><td>82°24'36.46"E</td></tr>
<tr><td>33</td><td>23°59'56.48"N</td><td>82°24'41.92"E</td></tr>
</table>
</td><td></td></tr>
<tr><td>6.</td><td>Elevation of the project site</td><td>365 m above mean sea level</td><td></td></tr>
<tr><td>7.</td><td>Involvement of Forest land if any.</td><td>Nil. Proponent submitted a letter dated 15/01/2025 obtained from State Forest department stating that no forest land is involved in the total land of 473.48 Ha.</td><td>No Forest Land is involved</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><u>Project site:</u> Nil
Study area
<table>
<tr><th>Particulars</th><th>Distance (in km)</th><th>Direction</th></tr>
<tr><td>Seasonal Nallah</td><td>Adjoining to boundary</td><td>-</td></tr>
<tr><td>Rampa River</td><td>7.0 km</td><td>SE</td></tr>
<tr><td>Sukhra Nadi</td><td>2.8 km</td><td>ENE</td></tr>
<tr><td>Hurdul Nadi</td><td>4.0 km</td><td>WSW</td></tr>
<tr><td>Laua Nadi</td><td>7.4 km</td><td>NE</td></tr>
<tr><td>Saravn Nadi</td><td>8.6 km</td><td>NNW</td></tr>
<tr><td>Mayar Nadai</td><td>8.9 km</td><td>E</td></tr>
<tr><td>Jharia Nadi</td><td>9.6 km</td><td>WSW</td></tr>
<tr><td>Kanchanumuda Nadi</td><td>10.7 km</td><td>NNE</td></tr>
<tr><td>Sulkhia Nadi</td><td>10.8 km</td><td>WNW</td></tr>
<tr><td>Mahan Nadi</td><td>11.4 km</td><td>NW</td></tr>
</table></td><td>WRD, Singrauli letter no. 94/95 dt; 10.01.2025. The HFL data is not available as it is Seasonal Nallah.</td></tr>
<tr><td>9.</td><td>Existence of ESZ/ ESA/ national park/</td><td><u>Study area:</u> Nil
Status of NBWL approval: Not Applicable</td><td>No ESZ/ESA, National Park, WL sanctuary/reserve in the study area</td></tr>
</table>

S. No.	Particulars	Details	Remarks
	wildlife sanctuary/ biosphere reserve/ tiger reserve/elephant reserve etc. if any within the study area	**List of Reserved and protected forests:** **Particulars** / **Distance (In km)** / **Direction** Mohanban R.F. / Adjoining / W Pidarwah P.F. / 7.9 km / N Vihara P.F. / 10.5 km / ENE	of 15 km radius w.r.t TPP. PCCF (WL) Bhopal, Madhya Pradesh issued distance certificate vide letter no.- VP/March/2022/Mine-133/1940 dated 06.03.2023. Hence Not Applicable.
10.	Archaeological sites monuments/ historical temples, etc.	Not present in 10 km radius w.r.t TPP. Hence Not Applicable	Not Applicable
11.	Involvement of Critically Polluted Area/Severely Polluted area as per 2018 CEPI core	Involvement of CPA/SPA- Nil Proximity to CPA/SPA- Nil	No critically/severely polluted area declared by CPCB/MPPCB is located within 15 km radius of project site**.** Letter issued by MPPCB, Bhopal vide letter no.-2908/Tak./Pranibo/2024 dated 11.06.2024. Hence, Not Applicable.

11. The unit configuration and capacity of existing and proposed project is given as below:

Sr. No.	Existing power plant configuration and capacity	Proposed power plant configuration and capacity	Total	Technology adopted
1.	Phase I - 1200 (2x600) MW Super Critical (Operational) Phase II - 1600 (2x800) MW (Under Construction) Ultra Super Critical	Phase III - 1600 (2x800) MW Ultra Super Critical units	4400 MW (1200 + 1600 + 1600) MW	Super Critical & Ultra Super Critical

12. 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	Phase I – 5.5 Million TPA Phase II – 6.85 Million TPA	Phase I – Suliyari Coal Mine CCL, NCL Mines and e-Auction. Phase II – Dhirauli Mines & e-Auction]	Phase-I: Railway: From Coal mine to Gajara Bahara Railway siding. Road: From Gajara Bahara Railway siding (16.2 Km) to TPP & Suliyari Coal Mine to TPP (About 32 km) Phase-II: Conveyor Belt: 4.6 Km.	Phase II - Integrated transportation through railway and road Phase II - Conveyor belt	Ash - <40(%) Sulphur - <0.5 (%) Moisture - 13 (%) GCV - 3000-3500 Kcal/Kg	Fuel Supply Agreement (FSA) & e-auction.

Details	Fuel requirement (MTPA)	Source	Distance from site (Kms)	Mode of Transportation	Coal Characteristics (Worst case scenario)	Linkage document
			Coal conveyor belt area & project work will be completed by December 2026.			
Proposed TPP	6.5 Million TPA	Mara II Mahan Coal Mine of MEL & e-Auction	Conveyor Belt: 4.6 Km. Coal conveyor belt area & project work will be completed by December 2026.	Phase III: Conveyor belt	Ash - <40(%) Sulphur - <0.5 (%) Moisture - 13 (%) GCV - 3200-3700 Kcal/Kg	Fuel Supply Agreement (FSA) & e-auction.
	LDO: 2500 KLD	Nearby POL depots	Nil	By road	Nil	Nil

It was informed that the length of the Conveyor belt is 4.6 km and the Right of Way for the Conveyor belt is 19.4272 Ha of forestland for which Stage II FC (No. FP/MP/Others/405152/2022) has been obtained on 09/12/2024 under the provisions of Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980. The conveyor belt project located outside the project site is being implemented by M/s. Mahan Fuel Management Limited and the same is not considered as a part of TPP project.

13. **Water requirement**: Water Requirement: Existing Water requirement is (62 MCM) 169,863 m3/day, water allocation is obtained from Rihand reservoir (Govind Ballabh Pant Reservoir) and permission for the same has been obtained from Water Resources Department (WRD), Singrauli, Madhya Pradesh vide letter dated 01.09.2022. The water requirement for the proposed project is estimated as (28.55 MCM) 78,219 m3/day, which will met from Rihand reservoir (Govind Ballabh Pant Reservoir). The permission for drawl of surface water is obtained from WRD, Madhya Pradesh vide letter dated 19.02.2024. The water will be transported to the plant site through existing water pipeline. The specific water consumption for the power plant is 2.5 m3/MWhr.

14. **Power requirement**: Existing power requirement of about 72 MW from own TPP, i.e. AUX consumption. The power requirement for the proposed expansion project is estimated as 120 MW, and will be met with own generation, i.e. AUX consumption.

15. Baseline Environmental Studies

Period	Pre- Monsoon Season (1st March 2024 to 31st May 2024)	
AAQ parameters at 13 Locations(min and max)	PM_{10} (µg/m^3)	83.1 – 46.1
	$PM_{2.5}$ (µg/m^3)	48.9 – 27.1
	SO_2 (µg/m^3)	15.40 – 8.50
	NOx (µg/m^3)	24.4 – 13.6
	CO (mg/m^3)	430 – 770
	Hg: BLQ (LOQ-0.15)	
Incremental GLC level	PM_{10} = Max. GLC (1.20 µg/m^3) SO_2 = Max. GLC (2.10 µg/m^3) NOx = Max. GLC (2.17 µg/m^3) To control air emissions from expansion Ultra Super Critical TPP Stacks, adequately	

<table>
<tr><th>Period</th><th>Pre- Monsoon Season (1st March 2024 to 31st May 2024)</th></tr>
<tr><td></td><td>designed Electrostatic Precipitator (ESP) with more than 99.99% efficiency are envisaged. Flu Gas Desulphurization (FGD) with lime scrubbing for control of SO_2, De NOx system of SCR / NSCR type with low NOx burner are proposed and will be as per the MPPCB/CPCB & MoEFCC notifications & guidelines. For the control of fugitive dust emission within and around the coal handling plant, coal dust extraction system with pulse jet bag filter and suppression systems will be provided.</td></tr>
<tr><td>Ground water quality at 13 locations</td><td>pH: 6.61 to 7.63,
Total dissolved Solids: 86 to 640 mg/l,
Total Hardness (as CaCO3): 36 to 488 mg/l,
Total Alkalinity: 20 to 336 mg/l,
Heavy metals like Copper (as Cu) - BLQ(LOQ-0.02), Lead (as Pb) - BLQ(LOQ-0.005), Cadmium (as Cd) - BLQ(LOQ-0.002), Chromium (as Cr) - BLQ(LOQ-0.02), Arsenic (as As)- BLQ(LOQ-0.005) and Mercury(as Hg)- BLQ(LOQ-0.001)</td></tr>
<tr><td>Surface water quality at 5 locations</td><td>pH: 7.40 to 7.86,
Dissolved Oxygen: 6.0 to 6.5 mg/l,
BOD: 5.0 to 6.0 mg/l,
COD: 20 to 30 mg/l,
Heavy metals like Copper (as Cu) - BLQ(LOQ-0.02), Lead (as Pb)- BLQ(LOQ-0.005), Cadmium (as Cd)- BLQ(LOQ-0.002), Chromium (as Cr) - BLQ(LOQ-0.02), Arsenic (as As)- BLQ(LOQ-0.005) and Mercury (as Hg)- BLQ(LOQ-0.001)</td></tr>
<tr><td>Effluent generation details and its treatment</td><td>· Wastewater generation from Phase III TPP is about 2430 KLD
· Mode of treatment & reuse – ETP capacity is 2700 KLD. Wastewater will be led to an ETP/ Neutralization & Equalization tank where they shall be treated through clarifiers and led to Central Monitoring Basin. The treated water shall meet the MPPCB, MoEF&CC norms. Oily wastes shall be treated using oil water separators and the treated effluent led to CMB. pH corrections shall be made as required for chemical wastes. RO reject shall either be brought to CMB or used for gardening directly. CW system shall operate at a COC of 5 and the blow down water shall be recycled directly in FGD and Ash Handling systems. Any excess blow down water shall be treated by installing pre-treatment, ultrafiltration and reverse osmosis.
· Domestic wastewater generation from Phase III TPP is about 18 KLD – STP capacity is 20KLD. Domestic wastewater will be treated in STP through latest MBBR Technology.
· Mode of treatment & reuse - Treated water will be utilized for greenbelt and plantation purpose.</td></tr>
<tr><td>Noise levels Leq (Day and Night) at 13 locations</td><td>73.8 to 47.8 dB(A) for the Day time and
62.7 to 38.2 dB(A) for the Night time.</td></tr>
<tr><td>Traffic assessment study findings</td><td>· Traffic study has been conducted at MDR 1212 which is approximately 0.19 Km (distance) connecting the plant site.
· Transportation of raw material will be done 90% by conveyor belt and 10% by road.
· Existing PCU is 4348.5 PCU/day on MDR 1212 and existing level of service (LOS) is B.
<table>
<tr><th>Road</th><th>Location</th><th>Volume (in PCU/Day)</th><th>Capacity (in PCU/Day)</th><th>Existing V/C Ratio</th><th>LOS</th><th>Performance</th></tr>
<tr><td rowspan="2">MDR 1212</td><td>T1 (At Bandhaura towards Amliya)</td><td>4348.5</td><td>15000</td><td>0.29</td><td>B</td><td>Very Good</td></tr>
<tr><td>T2 (At Rajmilan towards Waidhan & Singrauli)</td><td>2023</td><td>15000</td><td>0.13</td><td>A</td><td>Excellent</td></tr>
</table>
· PCU load after proposed project will be 4348.5 (Existing) + 809.5 (Additional) PCU/day</td></tr>
</table>

<table>
<tr><th>Period</th><th colspan="3">Pre- Monsoon Season (1st March 2024 to 31st May 2024)</th></tr>
<tr><td></td><td colspan="3">and level of service (LOS) will be B.
Conclusion: The level of service will be B after including additional traffic due to the proposed expansion project.</td></tr>
<tr><td>Soil Quality at 8 Locations</td><td colspan="3">pH range: 7.41 to 8.38,
Electrical conductivity (EC): 0.169 to 0.389 µmhos/cm,
Calcium content: 290.19 to 369.04 mg/kg,
Potassium: 304.00 to 340.21 kg/hec,
Nitrogen: 191.20 to 221.04 kg/hec,
Phosphorous: 25.30 to 70.66 kg/hec,
Magnesium: 103.00 to 137.50 mg/kg,
Organic Matter: 0.58% to 0.75%</td></tr>
<tr><td>Flora and fauna</td><td colspan="3">As per revised categorization given in the Wild Life (Protection) Amendment Act, 2022, total 16 Schedule I Species found in the buffer zone during field survey and secondary sources. Of 16 Schedule I Species, 6 are mammals, 5 are avifauna and 5 herpeto-fauna.
The List of Flora & Fauna is duly authenticated by DFO, Singrauli vide letter no. 7704 dated: 12.12.2024.
A Wildlife Conservation & Management Plan (WLCP) has been prepared and submitted to Principal Chief Conservator of Forest (Wildlife), Govt. of Madhya Pradesh and the same has been assessed by DFO, Singrauli and forwarded to PCCF, Bhopal vide letter no. 7907 on dated 24.12.2024 for the approval.</td></tr>
<tr><td>Hydrogeology study</td><td>The action plan to address the recommendation of the Hydrogeology report and Watershed management plan are as below:
<table>
<tr><th>Sl. No.</th><th>Recommendations</th><th>Action Plan</th></tr>
<tr><td>1</td><td>Since the TDS levels at Karsua Raja are relatively close to the permissible limit, it is recommended to monitor the TDS levels regularly to ensure that they do not exceed the threshold.</td><td>Water quality monitoring shall be done once a month through NABL accredited laboratory to monitor TDS Level.
- Karsua Raja Well is located at 2.58 Km w.r.t plant site in SE direction</td></tr>
<tr><td>2</td><td>As the value of hardness as CaCO3; in Karsua Raja groundwater sample is found to be above acceptable limit but within the permissible limit. A need for ongoing monitoring and potential remediation efforts can be suggested in the report.</td><td>Mahan TPP has already implemented ZLD and not using Ground water.
-Water quality monitoring shall be done once in a month engaging NABL accredited laboratory to track hardness as $CaCO_3$ content and corrective/preventive actions will be taken based on findings in the report.</td></tr>
<tr><td>3</td><td>By reviewing the report, it was found that the value of Magnesium was found to be above acceptable limit but within permissible limits. The plant may take some preventive measures</td><td>Water quality monitoring shall be done once in a month engaging NABL accredited laboratory to track Magnesium content and corrective/preventive actions will be taken based on findings in the report.</td></tr>
</table></td><td>Consultant details:
The hydrogeology study report has been prepared by M/s. Akshar Geo Services Pvt. Ltd & Vetted by NIT Delhi.</td></tr>
</table>

<table>
<tr><th>Period</th><th colspan="2">Pre- Monsoon Season (1st March 2024 to 31st May 2024)</th><th></th></tr>
<tr><td></td><td colspan="2"><table>
<tr><td></td><td>accordingly.</td><td></td></tr>
<tr><td>4</td><td>The maximum value of sodium concentration found in the Khanua Khas village falls under "Unsuitable" category of water classification as mentioned in Table 4.2 in the report. It is recommended to suggest some preliminary treatment measures.</td><td>Water quality monitoring shall be done once in a month engaging NABL accredited laboratory to track Sodium concentration and corrective/preventive actions will be taken based on findings in the report. However, the distance of the village Khanua Khas from the project boundary is 9.14 km.</td></tr>
<tr><td>5</td><td>It is recommended to mention the method used for determining stream order of the study area once in three years.</td><td>Mahan TPP will engage reputed government institute for future study as recommended once in 3 years.</td></tr>
</table>
The water sampling, analysis as well monitoring will be conducted by March’2025 and further regular interval once in 2 months.</td><td></td></tr>
<tr><td>Impact study on bio-diversity and aquatic ecology</td><td colspan="2">Recommendations of study report:
· An inventory of the various plant groupings observed in the study region was created. Flora of core zone- 15 species of trees, 12 species of shrubs, 17 species of herbs, 3 species of Creepers, 8 species of grasses were observed.
· Flora of Buffer zone- 92 tree species, 21 shrubs, 23 herbs, grasses & climbers, in addition to this 3 cereals species, 10 pulses and oil species, 8 fruit species and 20 vegetable species were found in buffer zone during field survey.
· Fauna of core zone- 4 mammals, 17 Avifauna (Birds), 4 reptiles and butterflies species were identified.
· Fauna of Buffer zone- in Terrestrial Fauna - 14 Mammalian species, 112 avifauna species, 5 Herpetofauna and in Aquatic Fauna - 15 fish species, 16 butterflies and insect’s species were observed/ reported in Buffer Zone.</td><td>Good Earth Envirocare in association with the Indian Institute of Social Welfare and Management Kolkata in 2024.& Gaurang Environmental Solutions Pvt. Ltd. Consultancy</td></tr>
<tr><td>Risk assessment study</td><td colspan="2">For the proposed expansion (Phase III), existing LDO storage tanks will suffice, and no new LDO storage tanks are proposed. LDO will be used only for Light-up of power plant, estimated quantity of LDO per annum 2500 KL/Annum.
A quantitative risk assessment for LDO has been carried out and provided in Chapter 7 of the Final EIA/EMP report.
Risk associated with LDO has been assessed and is included in the Emergency Management Plan which inter-alia includes the following:
· Maintain emergency response equipment and conduct regular fire drills.
· Store Light Diesel Oil (LDO) and other hazardous materials in tanks with adequate secondary containment systems.
· Use corrosion-resistant materials for tanks storing caustic and acidic substances.
· Equip tanks with safety valves and ensure regular inspection of flanges and joints.</td><td></td></tr>
</table>

Period	Pre- Monsoon Season (1st March 2024 to 31st May 2024)	
	· Deploy spill control kits and provide neutralizing agents near corrosive material storage. · Implement a preventive maintenance program for all critical equipment. · Conduct regular safety audits and risk reviews. · Provide Personal Protective Equipment (PPE) to workers. · Establish communication systems for real-time incident reporting and management. · Submit risk management and safety reports to authorities as per MSIHC rules. · Maintain compliance with the guidelines of MoEF&CC and other relevant bodies.	

16. 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	Municipal Solid waste	Plant Canteen & Admin Building	90 TPA	Collected; segregated using color coded waste bin, Organic waste converters (OWC)	Inorganic will be disposed via local municipal authorized vendor &Organic/Biodegradable waste by OWC.
2	E-Waste	IT, Telecom, Used tubes & bulbs	3.5 TPA	Collected; segregated	Registered Recycler Vendors.
3	Battery Waste from UPS	Automotive & Industrial	7.0 TPA	Collected; segregated	Authorized Vendors
4	Bio-medical Waste	First Aid Center	0.12 TPA	Collected; segregated	Authorized Vendors
5	Hazardous Waste	Plant Operation	125 TPA (Used/Spent Oil, Spent ion Exchange resin containing toxic Metals, Waste or residue containing Oil, Empty/ Barrels/ Contaminated Containers)	Collected; segregated	Registered Recyclers/Pre-processors with CECB & Authorized Recyclers
6	Fly Ash & Bottom Ash	Plant Operation	2.6 MTPA	Collected in silos and bulkers	Used in cement industries, brick

17. **Public Consultation**:

Details of advertisement given	1. Dainik Bhaskar (Hindi), Singrauli dated 10.09.2024 2. Patrika (Hindi), Satna dated 10.09.2024 3. The Times of India (English), Bhopal dated 10.09.2024
Date of public consultation	Date: 10.10.2024, Thursday, 12:00 noon
Venue	Playground, Ground near Raila Gram Panchayat (Near Romi Petrol Pump), Village - Raila, Tehsil- Mada, District- Singrauli (M.P.).
Presiding Officer	Sri Arvind Kumar Jha, Additional District Magistrate, Singrauli
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. 1400

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

Sl. No	Key Area Identification under CER for addressing issued raised during Public Hearing	Time bound (year wise) expenditure (Rs. In Crores)					Total Proposed Expenditure (Rs. in Crores)
		1st	2nd	3rd	4th	5th	
During the Public Hearing of MEL Phase-III, public need raised was majorly (>90%) related to employment opportunities. MEL has already provided employment opportunities of about >80% to the local people from nearby villages & Madhya Pradesh & the remaining employment opportunities is given to people from other states (<20%).							
A	**Educational Initiatives**						
	Modernization, Repair & necessary construction of identified Primary / Higher Secondary School of nearby villages of the project site in consultation with Local Government/School Authorities. Identified Primary / Higher Secondary School shall be developed by MEL with full support of local administration.	2.0	2.0	1.0	-	-	5.0
	Distribution of drinking water filter/Drinking water coolers in schools.	0.25	0.25	-	-	-	0.5
	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	1.75	0.80	-	-	4.55
	Educational Vocational Guidance fair (EVGF) for career talk. Conducting Quiz competition and awareness programs for Students, Provide assistance for coaching Classes	1.5	1.0	0.2	0.2	0.1	3.0
	Community to provide awareness about education, health, hygiene, and good practices.	0.1	0.1	0.1	0.1	0.1	0.5
	Program for skill improvements of teaching staffs in govt. school.	0.1	0.1	0.1	0.1	0.1	0.5
	Sub Total	**5.95**	**5.2**	**2.2**	**0.4**	**0.3**	**14.05**
B	**Community Health Initiatives**						
	Providing assistance for the construction & operation of 2 adopted Primary Health Centres at Nagwa and Chaura equipped with necessary facilities and other health centers in the nearby villages of MEL in consultation with local government authorities. Establishment of 100 bedded hospital at village Raila is under progress by MEL for providing better health facilities in the area based on the public need identified during public hearing (MEL Phase-II).	1.25	1.25	1.25	-	-	3.75
	Rural Medical Camps through Medical Team of Primary Health Centre @ 4 Nos. of camps per month (@ 60 patients	0.2	0.2	0.2	0.2	0.2	1

Sl. No	Key Area Identification under CER for addressing issued raised during Public Hearing	Time bound (year wise) expenditure (Rs. In Crores)					Total Proposed Expenditure (Rs. in Crores)
		1st	2nd	3rd	4th	5th	
	per camp), Safe Menstrual Hygiene Management Awareness, Mega Health Camp, Cataract Screening & Operation.						
	Promotion of awareness of malnutrition and anemia.	0.1	0.1	0.1	0.1	0.1	0.5
	Promotion of Poshan Vatika at backyard of villagers & Project Suposhan.	0.15	0.15	0.15	0.15	0.15	0.75
	Sub Total	**1.7**	**1.7**	**1.7**	**0.45**	**0.45**	**6.0**
C	**Sustainable Livelihood and Women Empowerment**						
	Skill Development Centre (SDC) to make the youth for achieving their Goals in life by becoming Skilled Professionals.	0.5	0.2	-	-	-	0.7
	Development & Support for Drip irrigation, assistance for mushroom, vegetable cultivation and livestock management in core zone villages.	0.25	0.25	-	-	-	0.5
	Sub Total	**0.75**	**0.45**	**-**	**-**	**-**	**1.2**
D	**Community Rural Infrastructure Development**						
	Repairing, strengthening & Maintenance of Existing roads in consultation with Gram Panchayats.	0.5	0.5	-	-	-	1.0
	To provide facility for potable drinking water, and water supply system through overhead tanks	0.45	0.15	-	-	-	0.6
	Creation of clean and hygienic environment by proper drainage systems, community sanitation campaign, waste management awareness etc. implementation of Swachchh Bharat Initiative.	0.5	0.2	0.1	0.1	0.1	1.0
	Upgradation & Renovation of sanitation facilities such as toilets etc.	0.5	0.5	-	-	-	1.0
	Provision of solar street lighting, green nurturing programs, implementation of Swachchh Bharat initiatives.	0.3	0.3	0.2	0.1	0.1	1.0
	Sub Total	**2.25**	**1.65**	**0.3**	**0.2**	**0.2**	**4.6**
E	**Sports & Culture Development**						
	Promotion of sports for youths and women.	0.05	0.05	0.05	-	-	0.15
	Cultural activities for villagers	0.05	0.05	0.05	-	-	0.15
	Sub Total	**0.1**	**0.1**	**0.1**	**-**	**-**	**0.30**
F	**Development of local youth & women for management & administration**						
	Team/ Leaders development at village level as coordinator for various programme and activities.	0.10	0.10	0.10	0.10	0.10	0.50
	Vehicles for emergency purpose for local villagers including private ambulances as per requirement	0.5	0.05	0.05	0.05	0.05	0.7
	Sub Total	**0.6**	**0.15**	**0.15**	**0.15**	**0.15**	**1.20**
G	**R & R Colony Renovation**						
	Renovation of R & R Private Higher Secondary School & Repair & Maintenance of Existing roads.	0.25	0.25	-	-	-	0.5

Sl. No	Key Area Identification under CER for addressing issued raised during Public Hearing	Time bound (year wise) expenditure (Rs. In Crores)					Total Proposed Expenditure (Rs. in Crores)
		1st	2nd	3rd	4th	5th	
	Renovation of R & R Primary Health Centre	0.25	0.25	-	-	-	0.5
	Sub Total	**0.50**	**0.50**	**-**	**-**	**-**	**1.0**
	Total (A+B+C+D+E+F+G)	**11.85**	**09.75**	**4.45**	**1.2**	**1.1**	**28.35**
	Total budgetary allocation for Phase-III						**28.35**

18. **Cost of project**: Existing capital cost of project was Rs. 21,600 Cr. The capital cost of the proposed expansion project is Rs 13,863 Crores and the capital cost for environmental protection measures is proposed as Rs. 3,000 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 300 Crores. The employment generation from the expansion project is 300. The details of cost for environmental protection measures as follows:

S. No.	Item Description	Cost (Rs. in Crores)
1	Electrostatic Precipitator	542.80
2	Chimney	59.00
3	Cooling Tower including civil works	189.15
4	Ash Handling including ash water recirculation	227.18
5	Ash disposal civil work	29.50
6	Dust extraction & suppression system	8.26
7	DM Plant Waste Treatment System	47.61
8	Sewerage collection, treatment & disposal	1.77
10	Green Belt & landscaping	10.00
11	FGD and SCR	1848.98
12	Rainwater harvesting	7.19
13	Solar power	3.19
14	Environmental Laboratory & Environmental Monitoring (Capital + Recurring)	10.03
15	CEMS, CAAQMS, EQMS monitoring system & Main gate display board	11.80
16	Wind Breaking Wall, Dry Fog System & RCC Flooring in Coal Storage Area.	3.54
Total capital cost in (Rs. in Crores)		**3000.00 Cr.**
10% of capital cost as recurring cost (Rs. in Crores)		**300 Crores**

19. **Green belt development**: Existing green belt has been developed in 122.61 ha area which is about 33% of the total project area of 372.3 ha with total sapling of 1,58,606 Trees. Proposed greenbelt will be developed in 66.77 ha which is about 14.10% of the total project area. Thus, total of 189.38 ha area (40% of total project area) will be developed as greenbelt. Around 10 m wide greenbelt all along 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 1,66,925 saplings will be planted and nurtured in 66.77 hectares in a time frame of 5 years.

20. Proposed ash utilization plan for expansion project:

Details	Existing generation (Phase- 1) (MTPA)	Proposed generation (Phase- II) (MTPA)	Proposed generation (Phase- III) (MTPA)	Total	Utilization (MTPA)	% of utilization	Balance quantity (MTPA)	No. of storage silos with capacity
Ash (Fly & Bottom)	1.58	2.33	2.6	6.51	6.51	100	Nil	Existing TPP: (6x1000MT) Proposed TPP: Ph2- 3x2500 MT Ph3-3x2500 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: There are three ash dyke in the project site with a total area of 93.91 Ha (Reclaimed ash pond - 42.69 Ha; Under construction for phase II - 36.43 Ha and Active ash pond - 42.69 Ha). No new ash pond is envisaged for the proposed expansion project. Existing active ash pond will only be utilized. The active Ash pond details are furnished as below:

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)	42.69
3	Dyke height (m)	10.0
4	Volume (m^3)	42.68 Lakh m^3
5	Quantity of ash disposed (Million Tons)	1.096
6	Available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons)	About 74% (31.73 Lakh MT)
7	Expected life of ash pond (number of years and months)	Capacity/life of existing ash dyke calculated in worst scenario for 20 years from January 2025 Proposed ash dyke will be developed along with the construction & capacity/life will be 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:	January 2024 IIT, Guwahati
14	Last date when the audit was conducted and name of the organization who conducted the audit:	November 2024, NIT Delhi

Written submissions

21. Project proponent has submitted the following written information during the meeting:

S. No.	Information / clarification sought during EAC meeting	Written submissions by PP
1	PP should undertake to submit the Biodiversity Assessment report vetted by a reputed institute.	**Biodiversity/ Ecological Assessment**: The Biodiversity Assessment Study has already been completed by Good Earth Envirocare in association with experts from Indian Institute of Social Welfare & Business Management (University of Calcutta). However, during the deliberation in the meeting the Hon'ble EAC Members suggested that the Study Report should be Vetted by Reputed Institute within one year. PP hereby undertake to submit the **Vetted Biodiversity Assessment Report** by a reputed institute and the report will be submitted to MoEFCC in one year. PP will adhere to all mitigation measures, recommendations/ suggestion outlined in the vetted study report and their implementation in a time bound manner.
2	PP should give commitment that the	**Ash Utilization/Disposal:** We confirm that the balance/available ash

S. No.	Information / clarification sought during EAC meeting	Written submissions by PP
	available ash stock in ash dyke as on date will be utilized within a span of 2 years.	stock in the ash dyke as on date, will be utilized / disposed of in two years. PP undertake to ensure that the available stock will be disposed of in a proper manner within the next two years by adhering to the **Fly Ash Notification 2021 & its subsequent amendments.**
3	PP shall install Continuous Ambient Air Monitoring Stations (CAAQMS) in consultation with the concerned authority.	**Continuous Ambient Air Monitoring Stations (CAAQMS)** will be installed at suitable locations as per suggestion and in consultation with Madhya Pradesh Pollution Control Board (MPPCB).
4	PP shall enhance the Solar Power Capacity and install solar panels in the nearby schools.	**Enhancement in Solar Power:** Solar panels of about 2 MW capacity will be installed and best efforts will be made to Maximize Solar Power. Additionally, Solar lights will be installed in the nearby Schools in consultation with local administration /authorities/principal/ teachers.
5	PP shall furnish the court cases pertaining to environment.	**Status of Court cases no. WP No 11180 of 2010**. Court Details - District Court Brief Summary of the Case-Rehabilitation benefits regarding - The petitioner had challenged the order of collector dt. 28.6.2010 whereby the collector has rejected the representation of the petitioner regarding rehabilitation benefits. Next date/Order Passed- Awaited Action taken by PP- Matter has not been listed since 2016. **Directions were issued by MPPCB regarding Ash water overflow during heavy rain in August'2019 to Essar Power M.P. Ltd.** Details of Case: **Case No.: I.A. No. 83/2022** Principal Bench of NCLT: Justice Ramalingam Sudhakar (President) and Sh. Avinash K. Srivastava (Member-Technical) **Parties: Essar Power M.P. Limited Vs. MPPCB & APL in NCLT Bench.** **Status:** The environmental compensation of Rs. 90.82 crore was imposed by MPPCB and admitted by the Resolution Professional handling the Corporate Insolvency Resolution Process of Essar Power MP Limited. As per the Judgement and Order dated 01.11.2021 approving the Resolution Plan of Adani Power Limited, Operational Creditors including Government i.e. MPPCB whose claims were admitted being NIL Essar Power MP Limited filed IA No. 83 before NCLT with a prayer that since the sum of Rs. 90.82 crore stands extinguished under the approved Resolution Plan. APL acquired TPP through NCLT on 16.03.2022. The case was listed on 20.11.2024, before NCLT Principal Bench, Delhi. The Bench adjourned the matter for the next date of hearing on **05.02.2025** and the matter is sub-judice. Proponent will abide by the final judgement which is subject matter before the NCLT.

22. **Observations and deliberations by the Committee**: The Committee observed and noted the following:

i. Instant proposal is for expansion of Bandhaura Thermal Power Plant under Phase - III by adding 1600 (2x800) MW Ultra-Super Critical TPP to existing 2800 (1200+1600) MW Ph-I & Ph-II within the existing plant boundary of Thermal Power Plant by M/s. Mahan Energen Limited (MEL) at villages Bandhaura, Khairahi, Karsualal and Nagwa, Tehsil Mada, District Singrauli, Madhya Pradesh.

ii. The existing project was granted environmental clearance for Phase I: 2x600 MW (1200 MW) vide letter no. J-13011/56/2006-IA.II (T) dated 20.04.2007 and subsequent amendments dated 10.02.2009, 23.08.2013 08.04.2016,

16.07.2023. The EC was transferred from M/s. Essar Power (M.P.) Limited (EPMPL) to M/s. Mahan Energen Limited (MEL) on 15.09.2022. Consent to Operate for the existing units 1200 MW (2x600 MW) Phase-I was accorded by Madhya Pradesh Pollution Control Board vide consent no. 59389 dated 22.12.2023. The validity of CTO is up to 28.02.2027. Subsequently, the project was accorded for another Environment Clearance for expansion of 1200 MW TPP to 2800 MW by adding 2x800 MW Ultra Super Critical unit vide letter no. J-13011/56/2006-IA.II (T) dated 02/08/2023. CTE obtained on 27/09/2023. Presently, the construction is under progress and likely to be commissioned by 31/03/2027.

iii. Committee deliberated on the certified compliance report of the existing units along with the action taken of the proponent and found it satisfactory.

iv. ToR for the proposed expansion project was obtained on 02/07/2024.

v. Total land under possession of M/s. Mahan Energen Limited (MEL) is 473.48 Ha including existing unit. A total area of 101.18 Ha will be required for the proposed expansion, which is within the existing project boundary of 473.48 Ha. No additional land is proposed to be acquired. No R&R issues are involved as the entire land is under the possession of the project proponent.

vi. Proposal involves no forestland. However, the Right of Way for the Conveyor belt outside the project site involves 19.4272 Ha of forestland for which Stage II FC (No. FP/MP/Others/405152/2022) has been obtained on 09/12/2024 under the provisions of Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980. M/s. Mahan Fuel Management Limited is implementing the conveyor belt project and the same is not considered as a part of TPP project.
vii. 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.

viii. 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.

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

x. The water requirement for the proposed project is estimated as (28.55 MCM) 78,219 m3/day, which will met from Rihand reservoir (Govind Ballabh Pant Reservoir). The permission for drawl of surface water is obtained from WRD, Madhya Pradesh vide letter dated 19.02.2024.

xi. Coal requirement for phase I project is being met through rail and road. Coal requirement for phase II and III project will be met through conveyor belt of 4.6 km length and is expected to be commissioned by Dec, 2026. There will be no road transportation of coal for Phase I, II and III after Dec, 2026.

xii. The power requirement for the proposed expansion project is estimated as 120 MW, and will be met with own generation, i.e. AUX consumption.

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

xiv. There are 16 Schedule I Species found in the buffer zone and a Wildlife Conservation & Management Plan (WLCP) has been prepared and submitted to Principal Chief Conservator of Forest (Wildlife), Govt. of Madhya Pradesh for the approval.

xv. Committee deliberated on the action plan arising out of Hydrogeology study and bio-diversity and found it satisfactory.

xvi. Public hearing for the project was held on 10/10/2024. 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.

xvii. Existing green belt has been developed in 122.61 ha area which is about 33% of the total project area of 372.3 ha with total sapling of 1,58,606 Trees. Proposed greenbelt will be developed in 66.77 ha which is about 14.10% of the total project area. Thus, total of 189.38 ha area (40% of total project area) will be developed as greenbelt.

xviii. Committee deliberated on the existing ash management of the 1200 MW and proposed ash management for the expansion project and found it satisfactory.

xix. Existing capital cost of project was Rs. 21,600 Crores. The capital cost of the proposed expansion project is Rs. 13,863 Crores and the capital cost for environmental protection measures is proposed as Rs. 3000.0 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 206.55 Crores.

xx. 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.

xxi. With respect to existing project one court case is pending with Hon'ble NCLT.

xxii. The EAC also deliberated on the 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.

23. **Recommendations of the Committee**: The EAC after detailed deliberations on the information submitted and as presented during the meeting **recommended** for grant of Environmental Clearance to the proposed "Expansion of Bandhaura Thermal Power Plant under Phase III by adding 1600 MW (2x800 MW) Ultra-Super Critical TPP to existing 2800 MW [Phase I: 1200 MW (2x600MW) + Phase II: 1600 MW (2x800MW)] within the existing premises of Thermal Power Plant by M/s. Mahan Energen Limited (MEL) located at Villages Bandhaura, Khairahi, Karsualal and Nagwa, Tehsil Mada, District Singrauli, Madhya Pradesh", under the provisions of EIA Notification, 2006 subject to the stipulation of specific conditions and standard/general conditions (**Annexure 1**).

24. The MoEF&CC has examined the proposal in accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and based on the recommendations of the EAC hereby accords Environmental Clearance to **M/s. Mahan Energen Limited (MEL)** for "*Expansion of Bandhaura Thermal Power Plant under Phase III by adding 1600 MW (2x800 MW) Ultra-Super Critical TPP to existing 2800 MW [Phase I: 1200 MW (2x600MW) + Phase II: 1600 MW (2x800MW)] within the existing premises of Thermal Power Plant located at Villages Bandhaura, Khairahi, Karsualal and Nagwa, Tehsil Mada, District Singrauli, Madhya Pradesh*" subject to compliance of the Specific/General environmental conditions (**Annexure 1**).

25. The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

26. The Environmental Clearance to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

27. The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.

28. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

29. General Instructions:

(i) The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC website where it is displayed.

(ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn must display the same for 30 days from the date of receipt.

(iii) The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions.

(iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.

(v) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(vi) The Regional Office of this MoEF&CC shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

(vii) Validity of EC is as per the provision of EIA Notification, 2006 and its subsequent amendment.

30. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

31. This issue with an approval of the Competent Authority

Yours faithfully,

(Sundar Ramanathan)
Scientist ‘F’
Tel: 011- 20819378
Email- r.sundar@nic.in

Copy To

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. Deputy Director General of Forests (C),Ministry of Environment, Forest and Climate Change, Regional Office, Kendriya Paryavaran Bhawan, E-5 Arera Colony, Link Road-3, Ravishankar Nagar, Bhopal – 462016.
4. The Chairman, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.

5. The Regional Director, Central Ground Water Board, North Central Region, Block-1, 4th Floor, Paryawas Bhawan Area Hills, Jail Road, Bhopal - 462011, Madhya Pradesh.
6. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi – 32.
7. The Chairman, Madhya Pradesh Pollution Control Board, E-5, Main Rd No. 3, Ekant Park, Arera Colony, Bhopal, Madhya Pradesh 462 016.
8. The Member Secretary, Madhya Pradesh Pollution Control Board, E-5, Main Rd No. 3, Ekant Park, Arera Colony, Bhopal, Madhya Pradesh 462 016.
9. The District Collector, Singrauli, Government of M.P.
10. PARIVESH Portal.

Annexure 1

Specific EC Conditions for (Thermal Power Plants)

1. [A] Environmental Management

S. No	EC Conditions
1.1	The project proponent shall abide by all orders and judicial pronouncements, made from time to time by the Hon'ble NCLT (Principal Bench) in I.A. No. 83/2022.
1.2	Project proponent shall adopt 100% 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.
1.3	Quantity of Ash available in Ash Dyke as on 31/03/2024 is 1.096 Million Ton and the same shall be lifted/utilized by 31/12/2026 as committed by the proponent.
1.4	Biodiversity Assessment Study report of Good Enviro Care organization shall be vetted by a reputed Government Institute and the report shall be submitted to the Ministry and the concerned Regional Office of MoEF&CC within one year from the date of grant of EC. The recommendations of the study report shall be complied upon by the project proponent in a time bound manner and compliance status in this regard shall submitted along with the six monthly compliance report.
1.5	Project proponent shall install 2 MW ground mounted PV solar capacity facility on the rooftops of buildings, vacant land available within the plant boundary as committed.
1.6	In addition to the existing 3 Continuous Ambient Air Quality Monitoring Stations (CAAQMS), Project proponent shall install additional three continuous ambient air quality monitoring at suitable locations within the project site and in the study area in consultation with MPPCB as committed.
1.7	The water requirement for the proposed project is estimated as 78219 m3/day that will be sourced from the Rihand reservoir (Govind Ballabh Pant Reservoir). No ground water extraction is permitted for the project. Further, Ground water levels and ground water quality will be monitored in line with guidelines of CGWA.
1.8	Project proponent shall store harvested rainwater in the project boundary (0.66 MCM rainwater) 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 rainwater and its supply system. PP shall get the water audit done every year to optimize the water requirement.

S. No	EC Conditions
1.9	Project proponent shall implement the protective measure proposed in EMP in a time-bound manner. The budget earmarked for the same is Rs. 3000 Crores (Capital) and Rs. 300 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.
1.10	Project proponent shall assess the carbon footprint of the project and develop carbon sink/carbon sequestration resources using modern technologies. The implementation report shall be submitted to the concerned Regional Office of the MoEF&CC.
1.11	Project proponent shall install and commission the FGD for the existing 2x600 MW & 2x800 MW units and proposed 2x800 MW unit as per the Ministry's notification dated 05/09/2022 and its subsequent amendments.
1.12	Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time.
1.13	Project proponent shall ensure that pipelines carrying the fly ash and effluent shall be inspected regularly for any leakages.
1.14	Effluent of 2700 KLD will be treated through Effluent Treatment Plant. As committed by the Project proponent, Zero liquid discharge shall be adopted for the existing and the proposed plant. No wastewater will be discharged outside the project site.
1.15	PP shall ensure that diesel operated vehicles will be switched over to E-Vehicles/CNG/LNG 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/LNG/CNG like Bulkers for ash transportation for short distance subject to availability of such E-vehicle/facility and requisite 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 e-vehicles deployed etc. in six monthly compliance report.
1.16	PP shall implement the concurrent plantation plan in a time bound manner. The gap plantation shall be completed in the identified 122.61 Ha land area within Plant, residential and administrative areas and around Further, three tier green belt shall be developed in an area of 66.76 ha in a time frame of 36 months from the date of grant of EC in consultation with Forest department/ Gram Panchayat/District Administration all along the peripehery of the project and coal transportation route. PP shall also adopt Miyawaki plantation technique and plantation with minimum 5m height of the saplings in upcoming monsoon season. 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.
1.17	Project proponent shall carry out community plantation with incentive scheme by distributing 50,000 saplings per year for a period of five years. Further, PP shall provide basic facilities to the nearby schools such as drinking water, sanitation facilities and shall also develop green belt around

S. No	EC Conditions
	the nearby schools. Regular watering of saplings planted in the nearby schools will be carried out by Project Proponent to mitigate the air and noise pollution. Further, PP shall organize quarterly awareness programs for school students to educate them on the significance and preservation of trees.
1.18	PP shall strengthen the existing Primary Health Center (PHC) & Community Health Center (CHC) in the study area for better public health as committed. Compliance status in this regard shall be submitted along with the six monthly compliance to the concerned Regional Office of MoEF&CC.
1.19	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.
1.20	Project proponent shall install LED display of air quality (Continuous AAQ monitoring) and stack emission (Continuous emission monitoring) 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.
1.21	Project proponent shall carry out Water Sprinkling on roads inside the plant area/ administrative/ residential areas and outside the plant area at least for 2 KM on a regular basis to control the air pollution. A logbook shall be maintained for the activity and be in six-monthly compliance report.
1.22	PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM.
1.23	Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
1.24	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.
1.25	Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.
1.26	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.
1.27	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.

S. No	EC Conditions
1.28	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 submitted by PP.
1.29	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.

2. [B] Socio-economic

S. No	EC Conditions
2.1	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 5 km 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 report.
2.2	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.
2.3	The budget proposed for PH is Rs. 28.35 Crores. The budget proposed shall be kept in a separate account and audited annually. Project proponent shall implement the following action plan to address the issues raised during public hearing within a time frame of 3 years from the date of grant of EC. PP shall submit the progress report regarding the implementation of action plan to concerned RO along with the six monthly compliance report.
2.4	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.

3. [C] Miscellaneous

S. No	EC Conditions
3.1	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.
3.2	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control

S. No	EC Conditions
	Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
3.3	All necessary clearance from the concerned Authority, as may be applicable should be obtained prior to commencement of project or activity.

Standard EC Conditions for (Thermal Power Plants)

1. Statutory Compliance

S. No	EC Conditions
1.1	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.
1.2	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.
1.3	MoEF&CC Notifications on Ash Utilization S.O. 5481 (E) dated 31/12/2021 as amended from time to time shall be complied.
1.4	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.
1.5	The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.
1.6	No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.

2. Ash Content/mode Of Transporatation Of Coal

S. No	EC Conditions
2.1	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.

3. Air Quality Monitoring And Management

S. No	EC Conditions
3.1	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.

S. No	EC Conditions
3.2	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.
3.3	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.
3.4	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.
3.5	Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically.
3.6	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, NOXwithin the plant area at least at one location. 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.
3.7	Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.
3.8	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.

4. Noise Pollution And Its Control Measures

S. No	EC Conditions
4.1	The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000.
4.2	Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like earplugs/ear muffs, etc.
4.3	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.

5. Human Health Environment

S. No	EC Conditions
5.1	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.

S. No	EC Conditions
5.2	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.

6. Water Quality Monitoring And Management

S. No	EC Conditions
6.1	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.
6.2	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.
6.3	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.
6.4	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.
6.5	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.
6.6	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.
6.7	Wastewater generation of 2700 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;
6.8	Sewage generation of 20 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.

7. Risk Mitigation And Disaster Management

S. No	EC Conditions
7.1	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.
7.2	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%.
7.3	Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
7.4	Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary.
7.5	Regular mock drills for on-site emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situations.

8. Green Belt And Biodiversity Conservation

S. No	EC Conditions
8.1	Green belt shall be developed in an area of 40% 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.
8.2	In-situ/ex-situ Conservation Plan for the conservation of flora and fauna should be prepared and implemented.

9. Waste Management

S. No	EC Conditions
9.1	Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.
9.2	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.
9.3	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.
9.4	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 dated 31.12.2021, S.O.6169 (E) dated 30.12.2021, S.O.05 (E) dated 01.01.2024 and amendment thereto.
9.5	Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.

10. Monitoring Of Compliance

S. No	EC Conditions
10.1	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.
10.2	Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.
10.3	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.
10.4	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.
10.5	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.

11. Corporate Environmental Responsibility (Cer) Activities

S. No	EC Conditions
11.1	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.