



सत्यमेव जयते

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



Minutes of 18TH MEETING OF EXPERT APPRAISAL COMMITTEE (THERMAL SECTOR), SCHEDULED TO BE HELD DURING 24TH JANUARY, 2025 TH Date: 03/02/2025
ROUGH PHYSICAL MODE meeting Thermal Projects held from 24/01/2025 to 24/01/2025

MoM ID: EC/MOM/EAC/552572/1/2025
Agenda ID: EC/AGENDA/EAC/552572/1/2025
Meeting Venue: Indus Hall, MOEF&CC, New Delhi
Meeting Mode: Physical
Date & Time:

24/01/2025	10:00 AM	05:05 PM
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1. Opening remarks

The Member Secretary apprised the members of the EAC that consequent to the resignation tendered by Dr.Sharad Singh Negi (I.F.S Retd.), Chairman - Expert Appraisal Committee (Thermal Power & Coal Mining), MoEF&CC vide Order dated 16/01/2025 nominated Shri. Inder Pal Singh Matharu (I.F.S Retd.) as interim Chairman, Expert Appraisal Committee (Thermal Power & Coal Mining) with immediate effect. At the outset, Shri. Inder Pal Singh Matharu (I.F.S Retd.) 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.

2. Confirmation of the minutes of previous meeting

Confirmation of the Minutes of the 17th Meeting of the EAC (Thermal): The minutes of the 17th meeting of the EAC (Thermal) held during 30/12/2024 have been confirmed by the EAC.
[The main PDF of MoM is enclosed at Page no. 58 - 154]

3. Details of proposals considered by the committee

Day 1 -24/01/2025

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Proposed Expansion of Bandhaura Thermal Power Plant under Phase-III by adding 1600 (2x800) MW Ultra Su per 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) by MAHAN ENERGEN LIMITED located at SINGRAULI, MADHYA PRADESH			
Proposal For		Fresh EC	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/MP/THE/513987/2024	J-13011/56/2006-IA.II(T)	10/01/2025	Thermal Power Plants (1(d))

3.1.2. Project Salient Features

Agenda No 18.1

18.1 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 - Environmental Clearance – reg.**

[Proposal No. IA/MP/THE/513987/2024; F. No. J-13011/56/2006-IA. II (T)]

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

18.1.2: 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].

18.1.3: The detail of the ToRs obtained for the expansion project for undertaking EIA/EMP study is furnished as below:

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

18.1.4: 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.

18.1.5: The implementation status of the existing ECs is given below:

	Capacity (MW)	Implementation Status	Production as per CTO
	1200 MW (Phase I)	Project implemented and the unit	CTO renewed and obtained

		Capacity (M W)		Implementation Status	Production as per CTO
				is under operation	and is valid up to 28/02/2027.

18.1.6: 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:

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	02.08.2023	xix	--	

S. No.	Non-compliances Details (EC Condition)	Observation of RO (abridged)	Condition no.			Response by PP
			EC date	Specific	General	
		distance from project boundary.				
3	Epidemiological Study among population within 5 km radius of project cover areas 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 reports shall be submitted to the Regional Office of the Ministry.	Not complied Study on the epidemiology is yet to be initiated.	02.08.2023	xxv	--	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 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 ofKLD 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.

18.1.7: Environmental site settings:

S. No.	Particulars	Details				Remarks							
1.	Total land	473.48 Ha				Land use: Industrial use							
2.	Land use break up	<table border="1"> <thead> <tr> <th>Facilities</th> <th>Phase - I 2x600 MW (In Ha)</th> <th>Phase - II 2x800 MW (In Ha)</th> <th>Phase - III 2x800 MW (In Ha)</th> </tr> </thead> <tbody> <tr> <td>BTG (including FGD, Switchyard, Transformer yard, etc.</td> <td>18.21</td> <td>24.69</td> <td>24.69</td> </tr> </tbody> </table>	Facilities	Phase - I 2x600 MW (In Ha)	Phase - II 2x800 MW (In Ha)	Phase - III 2x800 MW (In Ha)	BTG (including FGD, Switchyard, Transformer yard, etc.	18.21	24.69	24.69	--		
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3.	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	The Land is already under the possession of MEL.	Land Documents are submitted along with EIA & EMP Report.																												
4.	Existence of habitation & involvement of R&R, if any.	<p>Project site: Name of village - Bandhaura, Khairahi, Karsualal and Nagwa – No R&R</p> <p>Study Area:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Habitation</th> <th>Distance (Km) & Direction</th> </tr> </thead> <tbody> <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> </tbody> </table>	S. No.	Habitation	Distance (Km) & Direction	1.	Bandhaura	0.2 KM/ North	2.	Khairahi	0.5 KM/ West	3.	Karsualal	1.0 KM/ East	4.	Nagwa	1.0 KM/ SE	Status of R&R.- Not applicable as R&R is not involved.													
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6.	Elevation of the project site	365 m above mean sea level																																																																																					
7.	Involvement of Forest land if any.	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.	No Forest Land is involved																																																																																				
8.	Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area	<p>Project site: Nil</p> <p>Study area</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Distance (in km)</th> <th>Direction</th> </tr> </thead> <tbody> <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</td> <td>10.7 km</td> <td>NNE</td> </tr> </tbody> </table>	Particulars	Distance (in km)	Direction	Seasonal Nallah	Adjoining to boundary	-	Rampa River	7.0 km	SE	Sukhra Nadi	2.8 km	ENE	Hurdul Nadi	4.0 km	WSW	Laua Nadi	7.4 km	NE	Saravn Nadi	8.6 km	NNW	Mayar Nadai	8.9 km	E	Jharia Nadi	9.6 km	WSW	Kanchanumuda	10.7 km	NNE	WRD, Singrauli letter no. 94/95 dt; 10.01.2025. The HFL data is not available as it is Seasonal Nallah.																																																						
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9.	Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. if any within the study area	<p>Study area: Nil Status of NBWL approval: Not Applicable List of Reserved and protected forests:</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Distance (In km)</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>Mohanban R.F.</td> <td>Adjoining</td> <td>W</td> </tr> <tr> <td>Pidarwah P.F.</td> <td>7.9 km</td> <td>N</td> </tr> <tr> <td>Vihara P.F.</td> <td>10.5 km</td> <td>ENE</td> </tr> </tbody> </table>	Particulars	Distance (In km)	Direction	Mohanban R.F.	Adjoining	W	Pidarwah P.F.	7.9 km	N	Vihara P.F.	10.5 km	ENE	No ESZ/ESA, National Park, WL sanctuary/reserve in the study area 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.
Particulars	Distance (In km)	Direction													
Mohanban R.F.	Adjoining	W													
Pidarwah P.F.	7.9 km	N													
Vihara P.F.	10.5 km	ENE													
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	<p><u>Involvement of CPA/SPA-</u> Nil <u>Proximity to CPA/SPA-</u> Nil</p>	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.												

18.1.8: 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 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

18.1.9: The details of the fuel requirement (coal & LDO) for the existing and the proposed expansion 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 – Suli yari 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 & Suli yari Coal Mine to TPP (About 32 km) Phase-II: Conveyor Belt: 4.6 Km. Coal conveyor belt are a & project work will be completed by December 2026.	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.
Proposed TPP	6.5 Million TPA	Mara II Mahan Coal Mine of MEL & e-Auction	Conveyor Belt: 4.6 Km. Coal conveyor belt are a & 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

18.1.10: 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.

18.1.11: 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.

18.1.12: Baseline Environmental Studies:

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)												
AAQ parameters at 13 Locations(min and max)	<table border="1"> <tr> <td>PM₁₀ (µg/m³)</td> <td>83.1 – 46.1</td> </tr> <tr> <td>PM_{2.5} (µg/m³)</td> <td>48.9 – 27.1</td> </tr> <tr> <td>SO₂ (µg/m³)</td> <td>15.40 – 8.50</td> </tr> <tr> <td>NO_x (µg/m³)</td> <td>24.4 – 13.6</td> </tr> <tr> <td>CO (mg/m³)</td> <td>430 – 770</td> </tr> <tr> <td colspan="2">Hg: BLQ (LOQ-0.15)</td> </tr> </table>	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	NO _x (µg/m ³)	24.4 – 13.6	CO (mg/m ³)	430 – 770	Hg: BLQ (LOQ-0.15)	
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Incremental GLC level	<p>PM₁₀ = Max. GLC (1.20 µg/m³) SO₂ = Max. GLC (2.10 µg/m³) NO_x = Max. GLC (2.17 µg/m³)</p> <p>To control air emissions from expansion Ultra Super Critical TPP Stacks, adequately designed Electrostatic Precipitator (ESP) with more than 99.99% efficiency are envisaged. Flu Gas Desulphurization (FGD) with lime scrubbing for control of SO₂, De NO_x system of SCR / NSCR type with low NO_x 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.</p>												
Ground water quality at 13 locations	<p>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)</p>												
Surface water quality at 5 locations	<p>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)</p>												
Effluent generation details and its treatment	<p>♣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 pr</p>												

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)																				
	<p>e-treatment, ultrafiltration and reverse osmosis.</p> <ul style="list-style-type: none"> 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. 																				
Noise levels Leq (Day and Night) at 13 locations	73.8 to 47.8 dB(A) for the Day time and 62.7 to 38.2 dB(A) for the Night time.																				
Traffic assessment study findings	<ul style="list-style-type: none"> 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 border="1"> <thead> <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> </thead> <tbody> <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 Rajmilian towards Waidhan & Singrauli)</td> <td>2023</td> <td>15000</td> <td>0.13</td> <td>A</td> <td>Excellent</td> </tr> </tbody> </table> <ul style="list-style-type: none"> PCU load after proposed project will be 4348.5 (Existing) + 809.5 (Additional) PCU/day and level of service (LOS) will be B. <p>Conclusion: The level of service will be B after including additional traffic due to the proposed expansion project.</p>	Road	Location	Volume (in PCU/Day)	Capacity (in PCU/Day)	Existing V/C Ratio	LOS	Performance	MDR 1212	T1 (At Bandhaura towards Amliya)	4348.5	15000	0.29	B	Very Good	T2 (At Rajmilian towards Waidhan & Singrauli)	2023	15000	0.13	A	Excellent
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	T2 (At Rajmilian towards Waidhan & Singrauli)	2023	15000	0.13	A	Excellent															
Soil Quality at 8 Locations	<p>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/hect, Nitrogen: 191.20 to 221.04 kg/hect, Phosphorous: 25.30 to 70.66 kg/hect, Magnesium: 103.00 to 137.50 mg/kg, Organic Matter: 0.58% to 0.75%</p>																				
Flora and fauna	<p>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.</p> <p>The List of Flora & Fauna is duly authenticated by DFO, Singrauli vide letter no. 7704 dated: 12.12.2024.</p> <p>A Wildlife Conservation & Management Plan (WLCP) has been prepared</p>																				

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)																
	<p>d 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.</p>																
Hydrogeology study	<p>The action plan to address the recommendation of the Hydrogeology report and Watershed management plan are as below:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Recommendations</th> <th>Action Plan</th> </tr> </thead> <tbody> <tr> <td>1</td> <td> <p>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.</p> </td> <td> <p>Water quality monitoring shall be done once a month through NABL accredited laboratory to monitor TDS Level.</p> <p>- Karsua Raja Well is located at 2.58 Km w.r.t plant site in SE direction</p> </td> </tr> <tr> <td>2</td> <td> <p>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.</p> </td> <td> <p>Mahan TPP has already implemented ZLD and not using Groundwater.</p> <p>-Water quality monitoring shall be done once in a month engaging NABL accredited laboratory to track hardness as CaCO₃ content and corrective/preventive actions will be taken based on findings in the report.</p> </td> </tr> <tr> <td>3</td> <td> <p>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 accordingly.</p> </td> <td> <p>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.</p> </td> </tr> <tr> <td>4</td> <td> <p>The maximum value of sodium concentration found in</p> </td> <td> <p>Water quality monitoring shall be done once in a month engaging</p> </td> </tr> </tbody> </table>	Sl. No.	Recommendations	Action Plan	1	<p>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.</p>	<p>Water quality monitoring shall be done once a month through NABL accredited laboratory to monitor TDS Level.</p> <p>- Karsua Raja Well is located at 2.58 Km w.r.t plant site in SE direction</p>	2	<p>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.</p>	<p>Mahan TPP has already implemented ZLD and not using Groundwater.</p> <p>-Water quality monitoring shall be done once in a month engaging NABL accredited laboratory to track hardness as CaCO₃ content and corrective/preventive actions will be taken based on findings in the report.</p>	3	<p>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 accordingly.</p>	<p>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.</p>	4	<p>The maximum value of sodium concentration found in</p>	<p>Water quality monitoring shall be done once in a month engaging</p>	<p>Consultant details: The hydrogeology study report has been prepared by M/s. Akshar Geo Services Pvt. Ltd & Vetted by NIT Delhi.</p>
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5	It is recommended to mention the method used for determining stream order of the study area once in three years.	Mahan TPP will engage reputed government institute for future study as recommended once in 3 years.						
Impact study on bio-diversity and aquatic ecology	<p>Recommendations of study report:</p> <ul style="list-style-type: none"> • 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. 		Good Earth Envirocare in association with the Indian Institute of Social Welfare and Management Kolkata in 2024.& Gaurang Environmental Solutions Pvt. Ltd. Consultancy					
Risk assessment study	<p>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.</p>							

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)	
	<p>Risk associated with LDO has been assessed and is included in the Emergency Management Plan which inter-alia includes the following:</p> <ul style="list-style-type: none"> ● 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. ● 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. 	

18.1.13: 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 a 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

S. No.	Type of Waste	Source	Quantity generated (TPA)	Mode of Treatment	Disposal
5	Hazardous Waste	Plant Operation	125 TPA (Used/Spent Oil, Spent Ion Exchange resin containing toxic Metals, Waste or residue containing Oil, Empty/ Barr els/ 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

18.1.14: 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

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	
<p>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%).</p>							
A	Educational Initiatives						

Sl. No	Key Area Identification under CER for addressing issues raised during Public Hearing	Time bound (year wise) expenditure (Rs. In Crores)					Total Proposed Expenditure (Rs. in Crores)
		1st	2nd	3rd	4th	5th	
	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	1.25	1.25	1.25	-	-	3.75

Sl. No	Key Area Identification under CER for addressing issues raised during Public Hearing	Time bound (year wise) expenditure (Rs. In Crores)					Total Proposed Expenditure (Rs. in Crores)
		1st	2nd	3rd	4th	5th	
	<p>tion 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.</p> <p>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).</p>						
	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.	0.2	0.2	0.2	0.2	0.2	1
	Promotion of awareness of malnutrition and anemia.	0.1	0.1	0.1	0.1	0.1	0.5
	Promotion of Poshan Vaitika 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 village	0.25	0.25	-	-	-	0.5

Sl. No	Key Area Identification under CER for addressing issues raised during Public Hearing	Time bound (year wise) expenditure (Rs. In Crores)					Total Proposed Expenditure (Rs. in Crores)	
		1st	2nd	3rd	4th	5th		
	s.							
	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 Swachh 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 Swachh 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		0.10	0.10	0.10	0.10	0.10	0.50

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		
	for various programme and activities.							
	Vehicles for emergency purpose for local villagers including private ambulances as per requirement	0.5	0.05	0.05	0.05	0.05	0.05	0.7
	Sub Total	0.6	0.15	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
	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	1.1	28.35
	Total budgetary allocation for Phase-III							28.35

18.1.15: 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

S. No.	Item Description	Cost (Rs. in Crores)
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

18.1.16: Greenbelt 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.

18.1.17: Ash management for last three years (For the existing project):

Year	Quantity generated (MTPA)	Quantity utilized (MTPA)	% of utilization	Balance quantity (MTPA)	No. of storage silos with capacity
2021-22	0.836	0.213	25.46	0.623	(6x1000 MT)
2022-23	0.908	0.910	100.2	..	

3					
2023-24	1.428	1.480	103.72	..	

*MTPA: Million Ton Per Annum

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)	0.000282	0.01	As per MoEFCC Notification for Fly Ash Notification
2.	Cement manufacturing	1.218	56.83	
3.	Filling up of low-lying area	0.925 (Abandoned Mines/Stone Quarry, Construction of Phase II project within the plant boundary)	43.16	Yes, NOC granted by SPCB.
	Total	2.143	100	

B. Bottom ash generation for last three years = 0.637 MTPA

Bottom ash Utilization for last three years = 0.467 MTPA

S. No.	Activity (as applicable)	Quantity (MTPA)	Percentage (%)	Remarks (Prior approval of SPCB details to be mentioned)
1.	Filling up of low-lying area	0.467 (Abandoned Mines/Stone Quarry, Construction of Phase II project within the plant boundary)	100	Yes, NOC granted by SPCB.
	Total	0.467	100	

C. Legacy ash details: No Legacy Ash as per Fly Ash notification S.O. 6169 (E) dated 30.12.2021.

D. Ash Stock in Operational Ash Pond: 1.096 Million Ton (as on March 2024)

E. 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)	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 LCS D)	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

F. Proposed ash utilization plan for expansion project:

Details	Existing generation (Phase-I) (MTPA)	Proposed generation (Phase-II) (MTPA)	Proposed generation (Phase- II I) (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 T PP: Ph2- 3x250 0 MT Ph3-3x2500 MT
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* *MTPA: Million Ton Per Annum*

*Proposed ash generation calculated considering 85% PLF and worst coal scenario.

Avg. Ash% content about 40%

Ash pond details: No new ash pond is envisaged. Existing ash pond will be utilized.

18.1.18: Summary of court cases: PP reported that there is no legal issue/violation wr.t i) Environment (Protection) Act, ii) Air(P&CP) Act, Water (P&CP), Act, Van (Sanrakshan Evam Samvardhan) Adhiniyam and Wildlife Protection Act after acquisition through NCLT dated 16.03.2022.

Directions were issued by MPPCB regarding Ash water overflow during heavy rain in August 2019 and matter is sub-judice with NCLT. Details of Case with directions as follows.

Case No.: I.A. No. 83/2022

Parties: Essar Power M.P. Limited Vs. MPPCB & APL

Bench: Justice Ramalingam Sudhakar (President) and Sh. Avinash K. Srivastava (Member-Technical) (Principal Bench).

The case was listed on 20.11.2024, before NCLT Principal Bench, Delhi. The Bench adjourned the matter for the next date **05.02.2025**.

Written submissions

18.1.19: Project proponent has submitted the following written information during the meeting:

Sr. 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 available ash stock in ash dyke as on date will be utilized within a span of 2 years.	Ash Utilization/Disposal: We confirm that the balance/available ash 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).

Sr. No.	Information / clarification sought during EAC meeting	Written submissions by PP
4	PP shall enhance the Solar Power Capacity and install solar panels in the nearby schools.	<p>Enhancement in Solar Power: Solar panels of about 2 MW capacity will be installed and best efforts will be made to Maximize Solar Power.</p> <p>Additionally, Solar lights will be installed in the nearby Schools in consultation with local administration /authorities/principal/ teachers.</p>
5	PP shall furnish the court cases pertaining to environment.	<p>Status of Court cases no. WP No 11180 of 2010.</p> <p>Court Details - District Court</p> <p>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.</p> <p>Directions were issued by MPPCB regarding Ash water overflow during heavy rain in August'2019 to Essar Power M.P. Ltd.</p> <p>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)</p> <p>Parties: Essar Power M.P. Limited Vs. MPPCB & APL in NCLT Bench.</p> <p>Status: The environmental compensation of Rs. 90.82 crore was imposed by MPPCB and admitted by the Resolution on Professional handling the Corporate Insolvency Resolution Process of Essar Power MP Limited. As per the Judgment 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.</p> <p><u>APL acquired TPP through NCLT on 16.03.2022.</u></p> <p>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.</p>

3.1.3. Deliberations by the committee in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

Observations and deliberation of the EAC

18.1.20: 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.

Recommendations of the Committee:

18.1.21: 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	
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.
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.
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.
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.
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.
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.
7.	The water requirement for the proposed project is estimated as 78219 m ³ /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.
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.
9.	Project proponent shall implement the protective measure proposed in EMP in a time-bound manner. The budget

	<p>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.</p>
10.	<p>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.</p>
11.	<p>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.</p>
12.	<p>Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time.</p>
13.	<p>Project proponent shall ensure that pipelines carrying the fly ash and effluent shall be inspected regularly for any leakages.</p>
14.	<p>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.</p>
15.	<p>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 Bulklers 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.</p>
16.	<p>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 periphery 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.</p>
17.	<p>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 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.</p>
18.	<p>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.</p>
19.	<p>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.</p>

2 0.	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.
2 1.	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.
2 2.	PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM.
2 3.	Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
2 4.	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.
2 5.	Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.
2 6.	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.
2 7.	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.
2 8.	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.
2 9.	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 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.	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. 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.
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.
[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.
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

1(c) 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 Notifications on Ash Utilization S.O. 5481 (E) dated 31/12/2021 as amended from time to time shall be complied.
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.
5.	The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.
6.	No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.
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 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.
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/Nm 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/Nm 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.
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.	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 , NOX within 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.
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.
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.	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.
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 m ³ /MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5.
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.
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.	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.
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.	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.
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;
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.
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 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.
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 dated 31.12.2021, S.O.6169 (E) dated 30.12.2021, S.O.05 (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/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.
Monitoring of compliance	
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.
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.	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.
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.
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

2X660 MW Ennore SEZ Thermal Power Plant by M/s. TNPGL (Erstwhile TANGEDCO) at Voyalur village, Ponneri Taluk, Tiruvallur District, Tamil Nadu – Extension of EC validity by TANGEDCO located at THIRUVALUR, TAMIL NADU			
Proposal For		Application for Validity Extension of EC- Form-6	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/TN/THE/506571/2024	J-13012/36/2010-IA II (T)	24/12/2024	Thermal Power Plants (1(d))

3.2.2. Project Salient Features

Agenda No: 18.2

18.2: Proposed 2x660 MW Ennore SEZ Thermal Power Plant by M/s. **Tamil Nadu Power Generation Corporation Limited (TNPGL)** (Erstwhile TANGEDCO) at Village Vayalur, Taluk Ponneri, District Thiruvallur, Tamil Nadu – **Extension of validity of EC dated 7/01/2014 & CRZ clearance dated 01/01/2014 – reg.**

[Proposal No. IA/TN/THE/506571/2024; F. No. J-13012/36/2010-IA. II (T) & F.No. 11-80/2011-IA.III]

18.2.1: M/s. Tamil Nadu Power Generation Corporation Limited (TNPGL) (Erstwhile TANGEDCO) has made an online application vide proposal no. IA/TN/THE/506571/2024 dated 19/11/2024 along with CAF and Form 6 seeking validity extension of the EC dated 07/01/2014 under the provisions of EIA, Notification 2006 and validity extension of CRZ dated 01/01/2014. 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. Re Sustainability Solutions Private Limited, Hyderabad [NABET Certificate No.: NABET/EIA/2225/RA 0278, Valid up to 26/09/2025].

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

18.2.2: Details of the EC & CRZ clearance:

MoEF&CC has accorded following clearances and amendment to M/s. TANGEDCO for the 2x660 MW Ennore SEZ Thermal Power Plant

S r. N o.	Details of Letter No.	Facility	Clearance	Date of issuance
1.	11-80/2011-IA. III	Coal conveyer and cooling water system for the Ennore SEZ Thermal power station	CRZ	01/01/2014
2.	J-13012/36/2010-IA.II (T)	2x800 MW Ennore SEZ Super critical imported coal based Thermal power plant	Environment Clearance	07/01/2014

2	CW intake pipeline from NCTPP complex	50	50	
3	CW outfall pipeline to NCTPP complex	50	50	

18.2.4: Reasons of the delay in implementation:

- The work was awarded to M/s. BHEL and another tenderer has filed a case before High court of Madras and the work was halted due to stay.
- Further, TANGEDCO approached Hon'ble Supreme court of India and after hearing, the judgement was pronounced in favour of TANGEDCO.
- As there was a delay of 2 years to recommence the work. Subsequently, there was a delay due to COVID 19.
- Hence, 70% of work has completed till date and rest of the work is progressing which shall require extension with validity of 1 year.

18.2.5: Proposal of project proponent:

Project proponent has requested the Ministry to extend the validity of EC & CRZ clearance for another one year i.e. up to 31/12/2025 for completing the remaining work.

18.2.6: Details regarding pending court cases:

- As already the Project Proponent has approached the MoEF&CC in this regard, it is open to get their acknowledgement and try to stick to the original proposal without any deviation.*
- Incidentally, when the application was taken up, it was brought to our knowledge that there were concrete structures to an extent of 5460 m³, which were abandoned in the CRZ area have to be removed.*
- The Chief Engineer - Tamil Nadu Power Generation Corporation Limited (TNPGL) has filed an affidavit dated 21.09.2024, wherein it is stated that for the clearance of the above concrete structures, tenders have to be floated as per the Tamil Nadu Transparency in Tender Rules, 2000, which would approximately take 145 days or 5 months minimum.*
- We, while disposing of this miscellaneous application, direct the Project Proponent to stick to the timeline given in the affidavit and remove the concrete structures within the time.*

3.2.3. Deliberations by the committee in previous meetings

N/A

3.2.4. Deliberations by the EAC in current meetings

Observations and deliberation of the EAC

18.2.7: The Committee observed and noted the following:

- Instant proposal is for extending the validity of EC & CRZ accorded for the 2x660 MW Ennore SEZ Super critical imported coal based Thermal power plant by another one year i.e., 31/12/2025.
- It was apprised to the EAC following are the provisions under EIA, 2006 and CRZ, 2011 for validity extension:
- Project proponent has not submitted any credible document such as site photographs, work order issued to the contractors and time bar chart indicating the completion of 70% of construction work at the project site.
- Committee noted that proponent has not submitted the recommendations of the Coastal Zone

Management Authority concerned for extending the validity of the CRZ clearance dated 01/01/2014 as required under the provisions of CRZ Notification, 2011.

- v. Committee noted that project proponent has changed the company name from M/s. TANGEDCO to M/s. Tamil Nadu Power Generation Corporation Limited (TNPGL). Name transfer of EC & CRZ clearance in the new company name has not been obtained by the proponent till date.
- vi. Proponent has not submitted the compliance to the observations made by Hon'ble NGT in its Order dated 23/09/2024 in Miscellaneous Application [13 of 2024 (SZ)] as mentioned at para no 18.2.6.

18.2.8: Recommendations of the Committee:

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

3.2.5. Recommendation of EAC

Deferred for ADS

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

Proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant at Village Rahangol, Kandarei, Tehsil Athagarh, District Cuttack, Odisha by Orissa Thermal Energy Private Limited by Adani Power Limited located at CUTTACK, ODISHA

Proposal For		Fresh ToR	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/OR/THE/515150/2025	J-13012/02/2025-IA.I(T)	13/01/2025	Thermal Power Plants (1(d))

3.3.2. Project Salient Features

Agenda No: 18.3

18.3: Proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant by **M/s. Orissa Thermal Energy Limited (OTEL)** at Villages Rahangol and Kandarei, Tehsil Athagarh, District Cuttack, Odisha – **Terms of Reference – reg.**

[Proposal No. IA/OR/THE/515150/2025; F. No. J-13012/02/2025-IA.I (T)]

18.3.1: M/s. Orissa Thermal Energy Limited (OTEL) a subsidiary of Adani Power Limited has made an application vide online vide proposal no. IA/OR/THE/515150/2025 dated 09/01/2025 along with the application in prescribed format (CAF, 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 the central level.

Name of the EIA consultant: M/s. Greencinda Consulting Private Limited [NABET Certificate 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 discussion held during the meeting, are given as under:

18.3.2: The instant proposal is for grant of Terms of Reference for undertaking EIA/EMP study for the proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant at villages Rahangol and Kandarei, Tehsil Athagarh, District Cuttack, Odisha by M/s. Orissa Thermal Energy Limited (OTEL). Total capacity of proposed TPP is 2400 MW.

18.3.3: The project site as mentioned above was originally granted environmental clearance vide letter no. J-13011/51/2008-IA.II (T) dated 18/02/2009 from MoEF&CC in favour of M/s. KVK Nilanchal Power Private Limited for setting up of 4x350 MW coal based thermal power project in an area of 938 acres (379.75 Ha) at Kandarei village, Athagarh Tehsil, District Cuttack, Odisha. As per the EC accorded, there is no involvement of forestland. Subsequently, EC was amended on 23/11/2010 for setting up of 3x350 MW TPP in place of 4x350 MW TPP. Odisha State Pollution Control Board granted the Consent to Establish vide file no. 26746/Ind-II-NOC-5065 dated 19/12/2008. Further, M/s. KVK Nilanchal Power Private Limited had commenced construction of 1x350 MW by establishing a chimney and could not complete the same within the validity of environmental clearance. The validity of the EC was extended till 17/02/2019 vide Ministry’s letter dated 21/08/2014. Now, the EC is expired.

18.3.4: M/s. KVK Nilanchal Power Private Limited (“KNPPL”) was acquired by M/s Padmaprabhu Commodity Trading Private Limited (“PCTPL”) through NCLT. PCTPL was declared the Successful Bidder in the E-auction conducted on 26.08.2022 for KNPPL. Consequently, PCTPL is now the sole owner of all the assets and materials that were previously owned by KNPPL. Later, Registrar of Companies, Delhi, vide CIN U51909GJ2020PTC114529 certified that the name of the company has been changed from Padmaprabhu Commodity Trading Private Limited to Orissa Thermal Energy Limited (OTEL) dated 17.09.2024 & 30.12.2024.

18.3.5: M/s. Orissa Thermal Energy Limited (OTEL) subsidiary of APL has now proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant in the above site i.e. villages Rahangol and Kandarei, Tehsil Athagarh, District Cuttack, Odisha by initiating the de-novo process for obtaining EC under the provisions of EIA Notification, 2006.

18.3.6: Environmental site settings:

		331.49 Ha										
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	57.87											
		Non- Forest Land- 322.26 Ha Forest land- 9.235 Ha Total land- 331.49 Ha										
		<p>Project site: Nil</p> <p>Study Area:</p> <table border="1"> <thead> <tr> <th>Habitation</th> <th>Distance (K m)</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>Khanduali</td> <td>0.44</td> <td>N</td> </tr> <tr> <td>Rahangol</td> <td>0.14</td> <td>S</td> </tr> </tbody> </table>	Habitation	Distance (K m)	Direction	Khanduali	0.44	N	Rahangol	0.14	S	
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		<p>Name: Nilanchal Thermal Power Plant</p> <table border="1"> <thead> <tr> <th>Water body</th> <th>Distance</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>Mahanadi River</td> <td>8.8 km</td> <td>SSE</td> </tr> </tbody> </table>	Water body	Distance	Direction	Mahanadi River	8.8 km	SSE																																											
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Mahanadi River	8.8 km	SSE																																																	
		<p>Name of the ESZ: Kapilash Wildlife Sanctuaries Status of Notification: Kapilash Wildlife Sanctuary was notified by MoEF&CC vide notification S.O. 16 59 (E) dated 17/06/2015. Distance of project from ESZ: 3.2 km Status of NBWL approval: Not required</p>																																																	

List of Reserved and protected forests:		
Particulars	Direction	Distance (In km)
Ranibania RF	W	0.7
Baniabandha RF	N	0.9
Deulia RF	WSW	1.5
Sankaipci RF	ESE	1.9
Subasi RF	S	2.5
Kapilasha RF	WNW	2.9
Gadobola	W	4.5
Gobara RF	ENE	4.9
Sunia Muhan RF	SE	5
Oringa RF	SSW	5.5
Adala RF	W	5.7
Patapuri Rf	WNW	5.8
Barahmanabasta RF	S	5.8
Baula RF	SE	7.4
Khalakhala RF	SSW	8.9
Dalijorha RF	NE	10

18.3.7: Unit configuration and capacity of proposed project:

S. No.	Proposed power plant configuration	Total	Technology adopted
1.	2400 (3x800) MW	2400 MW	Ultra Super Critical

18.3.8: Details of fuel requirement: The details of the fuel requirement for the 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
Proposed TPP	9.67	Bijahan coal mines, Gondbahera Ujheni coal mines, Gondulpara coal mines & e-auction	90	Rail	Ash - 40 (%) Sulphur - 0.5 (%) Moisture - 13 (%) GCV - 3700 Kcal/Kg	Fuel Supply Agreement

18.3.9: Project cost: The capital cost of the proposed project is Rs. 27,438 Crores and the capital cost

for environmental protection measures is proposed as Rs. 4,528 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 45.2 Crores.

18.3.10: Employment: The employment generation from the proposed project during Construction Phase is 275 permanent employments and 175 indirect employment excluding contractual manpower (Approx 5000-8000) & during Operational Phase 400 permanent and 150 indirect employment excluding contractual manpower (Approx 2000-2500).

18.3.11: Power requirement: The power requirement for the proposed project is estimated about 192 MW, out of which 192 MW will be met with own generation, i.e. AUX consumption.

18.3.12: Water Requirement: The water requirement for the proposed project is estimated as 1,15,200 m³/day, out of which 1,15,200 m³/day of freshwater requirement will be obtained from the Mahanadi River and the plant is based on ZLD concept. The permission for drawl of surface water will be obtained from WRD, Odisha. The water will be transported to the plant site through Pipeline. The specific water consumption for the power plant will be 2.0 m³/day.

18.3.13: 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	Municipal Solid Waste	Plant Canteen	60	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 Equipment	2.5 TPA	Collected; segregated	Registered Recycler vendor
3	Battery waste from UPS	Automotive & Industrial	5.0 TPA	Collected; segregated	Authorized Vendor
4	Bio medical waste	First aid center	0.1 TPA	Collected; segregated	Authorized vendor
5	Hazardous Waste	Plant Operation	Empty Barrels/ Containers/ Contaminated Liners – 12 TPA, Used/ Spent Oil – 90 TPA, Spent ion exchange resin container toxic metals – 4.0 TPA, Waste or residues containing oil – 4.0 TPA		Registered Recyclers/Pre-processors with SPCB & Authorized Recyclers

18.3.14: Greenbelt development: Proposed greenbelt will be developed in 116.6 Ha, which is about 35.17% of the total project area. Thus, a total of 116.6 Ha area (35.17% of total project area) will be developed as greenbelt. A 10 m wide greenbelt, consisting of at least 3 tiers around the 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 2,91,500 saplings will be planted and nurtured in 116.6 hectares in 5 years.

18.3.15: Ash management (Only for green field cases):

Details	Annual generation (MTPA)	Utilization (M TPA)	% of utilization	Balance quantity (M TPA)	No. of storage silos with capacity
Ash (Fly & Bottom)	3.86	3.86	100	--	4x2500 MT

A. Ash Pond details:

S. No.	Details of Ash Pond	Ash pond
1.	Area (Ha)	30.35
2.	Dyke height (m)	As per CPCB guidelines
3.	Volume (m ³)	...
4.	Quantity of ash to be disposed (Metric Tons)	...
5.	Expected life of ash pond (number of years and months)	...
6.	Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No lining	HDPE
7.	Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)	HCSD
8.	Ratio of ash: water in slurry mix (1:):	65:35
9.	Ash water recycling system (AWRS): Yes or No	Yes
10.	Quantity of wastewater from ash pond to be discharged into land or water body (m ³)	0
11.	Details regarding dyke stability study and name of the organization who conducted the study:

18.3.16: Baseline data collection period (October to December 2024):

Attributes	Parameters	Sampling		Remarks
		No. of stations	Frequency	
A. Air				

Attributes	Parameters	Sampling		Remarks
		No. of stations	Frequency	
A-1 Meteorological parameters	Wind speed, Wind direction, Relative Humidity, Rainfall & Solar radiation, Cloud Cover & Dust Fall	01	Hourly	IS 5182 Part 1-20 Site-specific primary data is essential Secondary data from IMD, Bhubaneswar/ Cuttack nearest IMD station.
A-2 AAQ parameters	PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂ , CO, HC	10	24 hourly data, twice a week	Measurement Methods: As per CPCB norms
B. Noise	Hourly equivalent noise levels	9	One time sampling	Min: IS: 4954- 1968 as adopted by CPCB
C. Water				
C-1 Surface water	Total Carbon; pH; Dissolved Oxygen, Biological Oxygen Demand, Free NH ₄ , Boron, Sodium Absorption ratio and Electrical Conductivity	6	One time sampling	Surface water samples have been collected from 6 different locations for analysis monthly and are compared to Class-C CPCB Designated Water Quality Criteria and IS 2296.
C-2 Ground water quality parameters	PH, temp, turbidity, magnesium hardness, total alkalinity, chloride, sulphate, nitrate, fluoride, sodium, potassium salinity, Total nitrogen, total phosphorus, DO, Phenol, Heavy metals, Total coliforms, faecal coliforms Phytoplankton, Zooplankton, Fish & other aquatic flora & fauna	8	One time sampling	Samples for water quality have been collected and analysed as per: IS: 2488 (Part 1-5), per standard APHA and IS: 3025 criteria and IS: 10500, 2012. methods for sampling International standard practices for benthos and aquatic flora & fauna.
D. Land				
D-1 Soil quality	Physical and chemical characteristics Particle size distribution; Texture, pH, Electrical conductivity, Cation exchange capacity, Alkali metals, Sodium Absorption Ratio (SAR), Permeability, Porosity	6	One time sampling	Soil samples have been collected as per BIS specifications) in the study area by Auger up to depth of 30 cm and homogenized samples will be analyzed as per the methods described in "Soil Chemical Analysis" (M. L. Jackson, 1967).
D-2 Land use/ Landscape	Location code, Total project area, Topography, Drainage (natural) Cultivated, forest plantation	At least 20 points along with plant boundary and general major land	-	NRSC Satellite Imagery, 2020 and Census data, 2011.

Attributes	Parameters	Sampling		Remarks
		No. of stations	Frequency	
	s, water bodies, roads and settlements	d use categories in the study area.		
E. Traffic Survey				
E-1 Traffic Volume Count		In 1 location.	24 hour	--
F. Solid & Hazardous Waste				
F-1 Quantity	<ul style="list-style-type: none"> • Based on waste generated from per unit production • Per capita contribution • Collection, transport and disposal system • Process Waste • Quality (oily, chemical, biological) 	Once Time	Process wise or activity wise for respective raw material used. Domestic waste depends upon the season also.	--
E. Biological				
E-1 Aquatic	Primary productivity, Aquatic weeds, Enumeration of phytoplankton, zooplankton and benthos, Fisheries Diversity indices Trophic levels, Rare and endangered species,	Samples to collect from upstream and downstream of discharge point, nearby tributaries at downstream, and also from dug wells close to activity site	During the study	Seasonal sampling for aquatic biota Plankton net, Sediment dredge, Depth sampler, Microscope if any nearby River.
E-2 Terrestrial	Vegetation – species, list, economic importance, forest produce, medicinal value Importance value index (IVI) of trees and wild animals	Considering probable impact, sampling points and number of samples to be decided on established guidelines on ecological studies based on site environment setting within 10 km radius from the proposed site	One Time	One season for terrestrial biota. Preliminary assessment. Microscopic analysis of plankton and meiobenthos, studies of macrofauna, aquatic vegetation and application of indices, viz. Shannon, similarity, dominance IVI etc. Point quarter plot-less method (random sampling) for terrestrial vegetation survey.
Avifauna	Rare and endangered species Sanctuaries / National park / Biosphere reserve	For forest studies, chronic as well as short-term impacts should be analysed	One Time	Secondary data to collect from Government offices, NGOs, published literature Field binocular

Attributes	Parameters	Sampling		Remarks
		No. of stations	Frequency	
		d warranting d ata on microcli mate condition s.		
H. Socio-eco nomic	Demographic structure Infrastructure resource base	Socio-economi c survey is bas ed on proportio nate	Different imp acts occurs d uring constru ction	Community/Village Level s urvey are based group discu ssions and consultation/que stionnaire and Census of In dia data.

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

3.3.3. Deliberations by the committee in previous meetings

N/A

3.3.4. Deliberations by the EAC in current meetings

Observations and deliberation of the EAC

18.3.18: The Committee observed and noted the following:

- ii. M/s. Orissa Thermal Energy Limited (OTEL) has now proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant in the above site i.e., village Rahangol, Kandarei, Tehsil Athagarh, District Cuttack, Odisha by initiating the de-novo process for obtaining EC under the provisions of EIA Notification, 2006
- iii. Instant proposal is for grant of Terms of Reference for undertaking EIA/EMP study for the proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant by M/s. Orissa Thermal Energy Limited (OTEL) at villages Rahangol, Kandarei, Tehsil Athagarh, District Cuttack, Odisha. Total capacity of proposed TPP is 2400 MW.
- v. Total area requirement of the project is 331.49 Ha [Private: 117.18 Ha; Govt.: 214.315 Ha]. The proposed project involves 9.235 Ha of Forest Land. Forest application for diversion of Forest land/patches has been submitted on 05/12/2024, proposal no. FP/OR/THE/513328/2024.
- vi. Two Reserved Forests namely Ranibania RF and Baniabandha RF are located at a distance of 0.7 km and 0.9km from the project site.
- vii. The Kapilash Wildlife Sanctuary was notified by MoEF&CC vide notification S.O. 1659 (E) dated 17/06/2015. PP informed that the project site is located at a distance of 3.2km from the ESZ boundary of Kapilash Wildlife Sanctuary.
- viii. The water requirement for the proposed project is estimated as 1,15,200 m³/day, out of which 1,15,200 m³/day of freshwater requirement will be obtained from the Mahanadi River and the plant is based on ZLD concept.
- ix. The capital cost of the proposed project is Rs. 27,438 Crores and the capital cost for environmental protection measures is proposed as Rs. 4,528 Crores. The annual recurring cost towards the

environmental protection measures is proposed as Rs. 45.2 Crores.

- x. Fly ash will be collected in dry form in silos and all efforts shall be made for 100% utilization of ash.
- xi. There are no Court Cases pending against the project.
- xii. 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

18.3.19: The EAC after detailed deliberations on the information submitted and as presented during the meeting *recommended* the proposal for grant of ToR for conducting an EIA study with Public Consultation for the above project under the provisions of the EIA Notification, 2006, as amended along with the following specific ToR in addition to the generic ToRs.

3.3.5. Recommendation of EAC

Recommended

3.3.6. Details of Terms of Reference

3.3.6.1. Specific

[A] Environmental Management and Biodiversity Conservation

1.	All the parameters as mentioned in the National Ambient Air Quality Standards (NAAQS) shall be monitored by the project proponent.
2.	A certificate from PCCF, wild-life to be submitted with respect to the distance of the project site from the ESZ boundary of Kapilash Wildlife Sanctuary along with the mitigation measures if any to be followed considering the proximity of the project site to the Kapilash Wildlife Sanctuary.
3.	Project proponent shall submit the stage I Forest Clearance for the diversion of 9.235 Ha of forestland envisaged under the project. Project proponent shall also obtain recommendations from the State Forest department regarding the impact of project on the nearby Reserved Forests along with the mitigation measures if any to be followed.
4.	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.
5.	Biodiversity analysis of the project site and study area shall be done through any reputed Government institutions. The study report shall inter-alia include impact of release of cooling tower water on aquatic life and action plan for complying with the mitigation measures shall be submitted.
6.	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.

7.	Radioactivity studies along with coal analysis to be provided (sulphur, ash percentage and heavy metals including Pb, Cr, As and Hg). Details of auxiliary fuel, if any including its quantity, quality, storage, etc should also be given.
8.	PP should submit the detailed plan in tabular format (year-wise for the life of the project) for concurrent afforestation and green belt development in and around the project site. The PP should submit the number of saplings to be planted, names of native species, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development. In addition to this, PP should show on a surface plan (5- year interval for life of project) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditure to be incurred needs to be submitted. Plantation plan should be prepared in such a way that 80% of the plantation to be carried out in first 5 years and for the remaining years the proposal for gap filling. The seedling of height not less than 2 meters to be selected and accordingly cost of plantation needs to be decided. In addition to this, plantation in the safety zone at project boundary the plantation should be planned in such a way that it should be completed within 2 years only.
9.	Action plan for development of three-tier plantation programme (33 % of total project cover area) along the periphery of the project boundary and the coal transportation route shall be provided. PP shall submit concurrent plantation plan.
10.	Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed units and shall be incorporated in EIA/EMP report.
11.	Details of Ash management plan as per MoEF&CC notification dated 31/12/2021 & its subsequent amendment for the proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.
12.	Action plan for dry ash collection system (Bottom ash and Fly ash) shall be submitted.
13.	Action plan for disposal of ash through High Concentration Slurry Disposal (only in emergency conditions) shall be submitted.
14.	Proper protection measures like high-density polyethylene (HDPE) lining, appropriate height of bund and adequate distance between the proposed Ash pond and water body (minimum 60 meters) etc. shall be planned to reduce the possibility of mixing leachate with any freshwater body for ash pond. A high-density Slurry disposal plan shall be prepared.
15.	Pond and ground water quality (10 locations within 2 km radius of the plant boundary) shall be studied and report be submitted along with EIA/EMP. Action plan for Ground water monitoring stations on all hotspots like schools/hospitals within 2 km radius of the plant boundary be submitted. Baseline Study for Heavy metals in Groundwater, Surface water and soil to be carried out and incorporated in EIA/EMP report.
16.	Details pertaining to water source, treatment and discharge should be provided.
17.	PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
18.	Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
19.	An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution and incorporated in EIA/EMP report.
20.	PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total material handled) and steps to be taken for reduction of the same. The year-wise target for reduction in the specific diesel consumption needs to be submitted. PP shall also explore the possibility of using e-vehicles/LNG/CNG-based machinery and trucks for the operation and transportation of Coal and ash and submit an implementation strategy.

2 1.	PP shall provide the details of transportation of fly ash from the plant, transportation route etc. Further, carry out a traffic study for at least one month and provide the impact of transportation along with the mitigation measures.
2 2.	PP shall submit the action plan to adhere to the Plastic Waste Management Rules 2016 and to adhere Ministry's OM dated 18/07/2022.
2 3.	Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.
2 4.	PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.
2 5.	The input parameters for the AAQ modelling and the influence of various combinations of these on the AAQ must be reported in the EIA/EMP Report. In addition to the Wind Rose diagram collected for one season during the preparation of the E.I.A., wind rose diagram for all seasons must be provided using secondary data from sources such as IMD/CPCB etc.
2 6.	PP shall take all necessary steps to control the Air Quality and take additional mitigation measures for proposed TPP to maintain the Ambient Air Quality values within the limits. The action plan regarding maintaining ambient quality standards (Time weighted average for 24 hours and Annual both) be submitted.
2 7.	Carbon emission due to TPP and allied carbon sequestration plan be submitted.
2 8.	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. An action plan in this regard shall be submitted.
[B] Disaster Management	
1.	A Disaster Management Plan shall be prepared and incorporated in the EIA/EMP report.
[C] Socio-economic Study	
1.	The Public Health Action Plan including the provisions for drinking water supply for the local population shall be in the EIA/EMP Report. The status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the needs of the labour force and local populace.
2.	Public consultation (Public Hearing and Written submission) shall be conducted as per the provisions of EIA Notification, 2006 and as amended. As per the Ministry's OM dated 30.09.2020, to address the concern raised during the Public Hearing, the Project Proponent is required to submit the detailed activities proposed with year-wise budgetary provision (Capital and recurring) for 10 years. Activities proposed shall be part of EMP. Tentative no. of project affected families (if any) shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared. The recommendation Socio-economic study may also be considered while planning the activities & budget.
3.	A need based Social Impact Assessment Study shall also be carried out and an action plan on its recommendations may also be submitted with budgetary provisions.
4.	Demographic details and land use change details in 10 km area shall be submitted.

[D] Miscellaneous	
1.	Plot the wind rose diagram using the typical meteorological year (TMY) data for the period considered for the study. The monitoring units shall be deployed in the field based on the coverage area ratio and direction of the wind. A mathematical model shall be developed for the local site rather than using the standard model available in software for both air & water quality modelling.
2.	PP shall align its activities to one/few of the Sustainable Development Goals (SDG) and start working on the mission of net zero by 2050. PPs shall update the same to the EAC.
3.	PP shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.
4.	Detailed description of all the court cases including all directions given by the apex and currents status of them shall submit.
5.	PP should provide in the EIA Report details of all the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after grant of EC.
6.	The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs, which will analyze the samples.
7.	PP should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this PP should mention the number and designation of persons to be engaged for the implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.
8.	PP should submit the year-wise, activity wise and time-bound budget earmarked for EMP, occupational health surveillance, and activities proposed to address the issues raised during Public Hearing. The capital and recurring expenditure to be incurred needs to be submitted.
9.	Activities shall be prepared based on the issues arise during public hearing conducted and fresh written submission with defined timeline and budgetary provisions.
10.	Aerial view video of project site and transportation route proposed for this project shall be recorded through drone and be submitted.
11.	The PP should ensure that only NABET-accredited consultants shall be engaged for the preparation of EIA/EMP Reports. PP shall ensure that the accreditation of the consultant is valid during the collection of baseline data, preparation of EIA/EMP report and the appraisal process. The PP and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and the PP and consultant are fully accountable for the same.
12.	PP should provide in the EIA Report details of the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after the grant of EC.
13.	The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.
14.	All the certificates viz. Involvement of Forestland, distance from the protected area, and list of flora & fauna should be duly authenticated by the Forest Department. The Certificate should bear the name, designation, official seal of the person signing the certificate and dispatch number.

3.3.6.2. Standard

1(d)	Thermal Power Plants
Corporate Environment Policy	
1.	Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
2.	Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.
3.	What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
4.	Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
Details of the Project and Site	
1.	Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.
2.	Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
3.	Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.
4.	If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.
5.	Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.
6.	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
7.	Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.
8.	The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.
9.	Land requirement for the project shall be optimized and in any case not more than what has been specified by

	CEA from time to time. Item wise break up of land requirement shall be provided.
10.	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
Ecology biodiversity and Environment	
1.	Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
2.	Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished. In addition, wherever ground water is drawn, PP shall submit detailed plan of Water charging activity to be undertaken.
3.	Hazards Characterization: Past incidents of hazard events within 10km radius of project area with detailed analysis of causes and probability of reoccurrence
4.	Feasibility of near zero discharge concept shall be critically examined and its details submitted.
5.	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
6.	Plan for recirculation of ash pond water and its implementation shall be submitted.
7.	Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.
8.	A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.
9.	Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.
10.	A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.
11.	The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re- circulation of effluents.
12.	Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.
13.	It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.

1 4.	Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.
Environmental Baseline study and mitigation measures	
1.	One complete season (critical season) site specific meteorological and AAQ data (except monsoon season) as per latest MoEF&CC Notification shall be collected along with past three year's meteorological data for that particular season for wins speed analysis and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM10, PM2.5, SO2, NOx, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre - dominant downwind direction at a location where maximum ground level concentration is likely to occur.
2.	In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
3.	Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.
4.	Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.
5.	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
6.	A list of industries existing and proposed in the study area shall be furnished.
7.	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
8.	Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modelling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
Environmental Management Plan	
1.	EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.
2.	A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be prepared. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Provision for mock drills shall be suitably incorporated to check the efficiency of the plans drawn.
3.	The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/ Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details

	of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.
4.	Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash along with monitoring mechanism.
Green belt development	
1.	Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months
2.	Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary not less than 2000 tree per ha with survival rate of more than 85% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO ₂ and other gaseous pollutants and hence a stratified green belt should be developed.
Miscellaneous	
1.	In case any dismantling of old plants are envisaged, the planned land use & land reclamation of dismantled area to be furnished.
2.	All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.
3.	Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.
Socio-economic activities	
1.	R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.
2.	While formulating CER schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CER details done in the past should be clearly spelt out in case of expansion projects.
3.	A detailed CER plan along with activities wise break up of financial commitment shall be prepared in terms of the provisions OM No. 22-65/2017-IA.III dated 30.09.2020. CER component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified.
4.	If the area has tribal population, it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.
5.	Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.
6.	Occupational health and safety measures for the workers including identification of work related health hazards

	shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conductive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.
7.	Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.
8.	Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.

Statutory compliance

1.	The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.
2.	Vision document specifying prospective long term plan of the project shall be formulated and submitted.

3.4. Agenda Item No 4:

3.4.1. Details of the proposal

Amendment of Environmental Clearance for 1X800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities at Villages Ennur & Puzhuvivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO). by TANGEDCO located at THIRUVALLUR, TAMIL NADU			
Proposal For		Amendment in EC	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/TN/THE/475354/2024	J-13012/14/2012-IA.II(T)	14/06/2024	Thermal Power Plants (1(d))

3.4.2. Project Salient Features

<p><u>Agenda No 18.4</u></p> <p>18.4 1x800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities by M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO) at NCTPS Complex, Villages Ennur & Puzhuvivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu – Amendment in EC & CRZ regarding change of coal source from 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion – reg.</p> <p>[Proposal No. IA/TN/THE/475354/2024; F. No. J-13012/14/2012-IA.II (T)]</p> <p>18.4.1: The above proposal was originally considered by the EAC – Thermal in its 11th meeting held on 27-28th June, 2024 and the proposal was recommended for amendment in EC & CRZ dated 20/01/2016 for change of coal source from use of 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion subject to stipulation of additional specific conditions.</p>
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18.4.2: The above proposal was referred back by the Ministry to the EAC for examining the following additional information submitted by the proponent post recommendations of EAC – Thermal.

S.No.	Additional information sought	Reply submitted by the project proponent
i.	Concrete figures about the quantum of additional fly ash likely to be generated per year over and above that already approved under the previous EC	<p>A) Ash content for 100% Foreign coal - 12% Ash quantity -806.9 TPD</p> <p>Already Proposed Silo - 3nos (2 No for fly ash , 1 No for bottom ash)</p> <p>B) Ash content for Foreign (50%) & domestic coal (50%) - 25.5%</p> <p>Total Ash quantity generated- 2209.32 TPD</p> <p><u>Excess Ash generated- 1402.42 TPD</u></p>
ii.	Ash management plan	<p>The existing ash handling system could cater to the enhanced ash generation quantity as detailed below.</p> <p><u>A. Ash handling</u></p> <p>Now constructed Silos- 3 Nos (2 Nos for fly ash , 1 No for bottom ash)</p> <p>i) Fly Ash Silo capacity- 2 x 2520=5040 MT</p> <p>Fly ash evacuation is through vacuum system from ESP hopper and will be stored in fly ash silos of capacity (2x2520=5040MT) which will be having capacity for 24 hours storage each.</p> <p>ii) Bottom Ash Silo capacity-1 x 1800=1800 MT</p> <p>Bottom ash evacuation is dry type initially through closed conveyor system up to intermediate silo and from there up to bottom ash silo of capacity (1x1800=1800 MT) is by pipe line.</p> <p><u>B. Ash utilization</u></p> <p>The ash will be sold to cement / brick industries through E-auction as being followed in NCTPS Stage 1&2. The fly ash will be loaded in closed trucks / bulkers through telescopic spout assembly of Fly ash Silo and transported to cement/ Brick companies. The bottom ash will be conditioned by quenching with water (18m³/hour) and will be loaded in truck and covered with tarpaulin for transporting. Hence, 100% ash Utilization will be achieved as per MOEF &CC Notification 31.12.2021.</p> <p><u>C. Ash disposal in case of emergency</u></p> <p>In case of emergency, both fly and bottom ash will be made as slurry and transported to existing NCTPS ash dyke through existing ash pipelines of NCTPS. Water required for making slurry will be around 8082 m³/day , which will be sourced from CT blow down pump and guard pond water (reject sea water). 12 Nos piezometric wells are already available in and around the existing ash dyke of NCTPS. It is assured that the ash slurry pipelines will be monitored to avoid any leakages to protect the nearby area.</p>

S.No.	Additional information sought	Reply submitted by the project proponent
Compliance to the recommendations of the site visit report of the sub-committee of EAC relevant to the proposal under consideration		
iii.	The EIA report including carrying capacity of existing ash pond along with remedial measures to avoid pollution wherein ash from Stage I and Stage II is being disposed and emergency ash disposal of Stage I II is proposed shall be prepared.	The EIA report, including details of the carrying capacity of the existing ash pond, has been submitted to MOEF&CC. The report was prepared by M/s Cholamandalam M S Risk Services Ltd, Chennai. The proposed pipelines will transfer ash slurry from Stage III to the designated ash dyke pond of NCTPS. The ash dyke pond covers ~133 hectares (328 acres), representing a permanent land footprint. The pond falls within the NCTPS land area and is already used for ash disposal by Stage I & II plants.
iv.	Design report of the ash slurry pipeline corridor for the Stage III NCTPS power plant and exploring the feasibility of using the existing ash slurry pipelines of Stage I and Stage II NCTPS plant for the proposed Stage III shall be prepared by NCTPS.	The design report for the ash slurry pipeline of NCTPP Stage III is submitted. It has been decided to use the existing ash slurry pipelines of NCTPS Stage I & II instead of constructing new pipelines. This decision was made to minimize environmental impact. NCTPP Stage III will dispose of ash slurry only in emergencies, as both fly ash and bottom ash are disposed of in dry form.
v.	Adequacy report from Competent Authority on existing ash dyke capacity to accommodate the proposed ash slurry from stage III NCTPS shall be submitted.	The existing ash pond of NCTPS is sufficient as wet ash will be disposed of promptly to brick industries and other works. Details of the ash pond: Area: 328 acres. (133 Ha) Capacity: 57.5 lakh m ³ (at a height of 5m). Current stock: 29 lakh m ³ . Remaining capacity: 28.5 lakh m ³ .

The above additional information was presented by the proponent along with their EIA consultant M/s. Re Sustainability Solutions Private Limited, Hyderabad [NABET Certificate No.: NABET/EIA/2225/RA 0278, Valid up to 26/09/2025]. In addition to the above, proponent informed that Hon'ble NGT(SZ) in Original Application No.122 of 2021 (SZ) with Original Application No.162 of 2021 (SZ) vide its judgement dated 31/01/2022 directed the proponent not to proceed with the work of laying the pipeline through the CRZ zone and also in the other area in violation of the Environment Clearance and CRZ Clearance granted to them in 20/01/2016, without getting necessary further clearances in this respect by filing afresh application in accordance with law. Besides, the Hon'ble NGT also imposed a compensation of Rs. 50 lakhs which has been paid by them to TNPCB on 30/3/2022. In compliance to the said judgment, proponent filed another amendment proposal bearing No: IA/TN/THE/442379/2023 was submitted to the Ministry seeking for amendment in the EC & CRZ dated 20/01/2016 for the ash slurry pipeline for stage III project. The proposal was considered by the EAC in its meeting held on 04/09/2023 and 31/10/2023 wherein the proposal was deferred and EAC recommended for site visit by a sub-committee. During the site visit, it was informed by M/s. TANGEDCO that they have decided to utilize the existing spare lines of NCTPS Stage – I & II to reduce the environment impact. In view of this, PP informed the EAC that no new ash slurry pipelines are envisaged for the stage III project and the

proposal no. IA/TN/THE/442379/2023 is being withdrawn by them.

Furthermore, the proponent informed that there is another matter namely, OA No 8 of 2016 titled as R.Ravimaran (Died) & Ors. vs Union of India & Ors. tagged with OA No 198 of 2016 titled as Meenava Thanthai K.R. Selvaraj Kumar vs The Chief Secretary Government of Tamil Nadu, Chennai & Ors., filed before the Hon'ble Tribunal (SZ), Chennai regarding illegal dumping of ash slurry and violation of conditions of Environmental Clearance and CRZ Clearance granted by dumping fly ash and draining the wastewater into the Buckingham Canal and Kosasthalaiyar River respectively.

In this regard, the Hon'ble Tribunal vide its judgment dated 05/07/2022 passed the following directions for compliance by the PP:

- i. To carry on their activities strictly in accordance with law and complying with the conditions imposed in the Environmental Clearance and the Consent granted by the State Pollution Control Board.
- ii. To replace the old ash slurry carrying pipes as undertaken by them within the time frame fixed and also take all necessary precautions of providing necessary sensor system to detect the leak immediately and also the mechanism by which production and pumping of ash slurry through the damaged pipeline can be stopped immediately, so that further pumping can be avoided so as to minimize the leak if at all if it happens in future.
- iii. To pay the compensation already assessed by the State Pollution Control Board on various occasions for the violations noticed by them and also compensation directed to be paid by this Tribunal in other related connected matters viz., Original Application Nos.122 of 2021 (SZ) and 162 of 2021 (SZ) which were already disposed of this Tribunal by giving certain directions.
- iv. To pay environmental compensation which is likely to be assessed on the basis of the study to be conducted by the agency which is going to conduct study for remediation process, apart from the compensation already imposed by various proceedings of the Tamil Nadu Pollution Control Board and directed to be paid by this Tribunal.
- v. To bear the expenses for conducting the study through the agency to be identified for preparation of DPR and also the expenses for remediation.
- vi. To undertake the remediation process and complete the same at the earliest possible time, as delay in implementation will result in further damage to the environment.
- vii. To carry out the recommendations made by the Joint Expert Committee regarding creating green cover, including plantation of mangroves and other species suggested which are conducive to environment and that will not affect the riverine and coastal zone ecology.
- viii. To take immediate steps to remove the fly ash already deposited in that area due to the breach of fly ash slurry carrying pipes without delay and after removal of the same, soil analysis will have to be conducted by the CPCB and SPCB and if further remediation will have to be conducted or further steps are required for removal of further fly ash deposit found in that area, then that also will have to be carried out by the PP.

On the above, the PP has informed that the compliance of the aforesaid order is under process.

The representatives have requested to amend the EC & CRZ dated 20/01/2016 for change of change of coal source from 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion as the 1x800 MW is ready for commissioning and trial runs have been completed.

3.4.3. Deliberations by the committee in previous meetings

Date of EAC 1 :28/06/2024

Deliberations of EAC 1 :

S. no.	Details	Units	Imported 100%	Imported 50% Indian 50%	Indian coal
1.	Coal consumption	TPH	280	361	442
		TPD	6720	8664	10608
		MTPA	2.09	2.69	3.29
2.	Ash	%	12	25.5	34
3.	Sulphur	%	0.80	0.65	0.55
4.	Gross Calorific Value	Kcal/kg	6000	4654	3800

Type of coal	Coal quantity (TPH)	Ash content (%)	Total Ash Quantity (TPH)	Fly Ash Quantity (TPH)	Bottom Ash Quantity (TPH)
Imported coal	280	12.0	33.60	23.52	10.08
Mixed coal (Imported 50%, Indian 50%)	361	25.5	92.06	64.44	27.62

Note: Due to change in composition of the coal, the ash quantity will increase

S. No	Particulars	100% Imported Coal		Indian Coal 50%: Imported Coal 50%		Remark
		Capital Cost (Rs. in Crores)	Recurring Cost (Rs. in Crores)	Capital Cost (Rs. in Crores)	Recurring Cost (Rs. in Crores)	
1	Dust Control System	192.0	48.0	192.0	98	No change
	i) ESP	0		3.50		
2	Chimney	88.90	48.0	88.90	98	Increased
	FGD, De NOx burners etc.	0		615.0		
3	Water treatment plant including clarifier, UF,	42.24		42.24		No c

	RO, DM, Electrical and Instrumentation					hang e
4	Effluent Treatment Plant	3.50		3.50		
5	Dense phase, pneumatic Ash Handling Plant including bottom ash & fly ash silos, conveying compressors and other equipment	106.56		106.56		
6	Development of Greenbelt	3.84		3.84		
7	Sewage System	1.44		1.44		
8	Chemical dosing and Chlorination Plant	9.70		9.70		
9	Pollution monitoring instruments/ equipment	14.16		14.16		
10	Other unforeseen items	14.16		14.16		
	Total	480.0	48.0	1,185.21	98	Incr ease d

3.4.4. Deliberations by the EAC in current meetings

Observations and deliberation of the EAC

18.4.3: The Committee observed and noted the following:

- i. Present proposal is for seeking amendment in EC & CRZ regarding change of coal source from 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion.
- ii. Proposal was earlier recommended by the EAC in its meeting held on 11th meeting held on 27-28th June, 2024 and the same was recommended by the EAC subject to stipulation of additional specific conditions.
- iii. Proposal was referred back by the Ministry for examining the additional information submitted by the proponent as mentioned at para no. 18.4.2. Committee deliberated on the same and found it satisfactory.
- iv. Committee noted that proposal no. IA/TN/THE/442379/2023 of M/s. TANGEDCO is being withdrawn by the project proponent.

3.4.5. Recommendation of EAC

Recommended

3.4.6. Details of Environment Conditions

3.4.6.1. Specific

Additional specific condition	
1.	Project proponent shall comply with all the directions passed by the Hon'ble National Green Tribunal vide its judgement dated 05/07/2022 in OA No 8 of 2016 titled as R.Ravimaran (Died) & Ors. vs Union of India & Ors. tagged with OA No 198 of 2016 titled as Meenava Thanthai K.R. Selvaraj Kumar vs The Chief Secretary Government of Tamil Nadu, Chennai & Ors. Compliance status in this regard shall be submitted to the concerned Regional Office of the MoEF&CC along with the six monthly compliance report.

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	Present
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	Present
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: 28/01/2025

Approval by Chairman: 03/02/2025

Uploading on PARIVESH: 03/02/2025

SUMMARY RECORD OF THE EIGHTEENTH (18TH) MEETING OF EXPERT APPRAISAL COMMITTEE (EAC) HELD ON 24TH JANUARY 2025 FOR ENVIRONMENT APPRAISAL OF THERMAL SECTOR PROJECTS THROUGH PHYSICAL MODE.

24TH JANUARY, 2025 [FRIDAY]

The Member Secretary apprised the members of the EAC that consequent to the resignation tendered by Dr. Sharad Singh Negi (I.F.S Retd.), Chairman - Expert Appraisal Committee (Thermal Power & Coal Mining), MoEF&CC vide Order dated 16/01/2025 nominated Shri. Inder Pal Singh Matharu (I.F.S Retd.) as interim Chairman, Expert Appraisal Committee (Thermal Power & Coal Mining) with immediate effect. At the outset, Shri. Inder Pal Singh Matharu (I.F.S Retd.) 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 17th Meeting of the EAC (Thermal): The minutes of the 17th meeting of the EAC (Thermal) held during 30/12/2024 have been confirmed by the EAC.

Agenda No 18.1

18.1 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 - Environmental Clearance – reg.**

[Proposal No. IA/MP/THE/513987/2024; F. No. J-13011/56/2006-IA. II (T)]

18.1.1: 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. 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. Gaurang Environmental Solutions Pvt. Ltd., Jaipur, [NABET Accreditation No.: NABET/EIA /23-26/RA 0338; Valid up to: 07/12/2026].

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

18.1.2: 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].

18.1.3: The detail of the ToRs obtained for the expansion project for undertaking EIA/EMP study is furnished as below:

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

18.1.4: 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.

18.1.5: The implementation status of the existing ECs 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

S. No.	Configuration	Capacity (MW)	EC details	Implementation Status	Production as per CTO
					by 31/03/2027.

18.1.6: 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 of 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	Not Complied Study on local ecology is yet to be started. It is recommended to assess the local biodiversity and identify the indicator	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.

MoM of 18th meeting of the EAC for Thermal sector held on 24th January, 2025

S. No.	Non-compliances Details (EC Condition)	Observation of RO (abridged)	Condition no.			Response by PP
			EC date	Specific	General	
	Parivesh Portal and a copy of the same be submitted to the regional office of MoEF&CC.	species for monitoring and evaluation in periodical basis within the study area, i.e., area covering 10km distance from project boundary.				
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 taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.	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 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 ofKLD 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.

18.1.7: Environmental site settings:

S. No.	Particulars	Details				Remarks
1.	Total land	473.48 Ha				Land use: Industrial use
2.	Land use break up	Facilities	Phase - I 2x600 MW (In Ha)	Phase - II 2x800 MW (In Ha)	Phase - III 2x800 MW (In Ha)	--
		BTG (including FGD, Switchyard, Transformer yard, etc.)	18.21	24.69	24.69	
		Coal & Ash facility (including Stock yard & AHP facility)	38.46	6.07	2.83	
		Water system (including reservoir cooling tower, CW pump house, DM water system, clarified industrial wastewater treatment facility)	12.14	27.53	10.12	
		Ash Dyke	57.48	36.43	-	
		Miscellaneous Facility (including plant, road, boundary road, misc. building, etc.)	13.4	7.2	4.85	
		Greenbelt (about 40%)	108.05	14.56	66.77	
		Sub Total	247.74	116.48	109.26	
		Total	473.48 Ha			

S. No.	Particulars	Details	Remarks		
3.	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	The Land is already under the possession of MEL.	Land Documents are submitted along with EIA & EMP Report.		
4.	Existence of habitation & involvement of R&R, if any.	Project site: Name of village - Bandhaura, Khairahi, Karsualal and Nagwa – No R&R	Status of R&R.- Not applicable as R&R is not involved.		
		Study Area:			
		S. No.		Habitation	Distance (Km) & Direction
		1.		Bandhaura	0.2 KM/ North
		2.		Khairahi	0.5 KM/ West
5.	Latitude and Longitude of all corners of the project site.	Plant site and Ash Pond			
		S. No.		Latitude	Longitude
		1		24° 0'5.22"N	82°23'35.46"E
		2		24° 0'37.46"N	82°23'47.59"E
		3		24° 0'42.72"N	82°23'55.62"E
		4		24° 0'42.28"N	82°24'8.50"E
		5		24° 0'39.05"N	82°24'37.63"E
		6		24° 0'42.74"N	24° 0'42.74"N
		7		24° 0'33.38"N	82°25'18.26"E
		8		24° 0'22.48"N	82°25'22.10"E
		9		24° 0'11.19"N	82°24'58.42"E
		10		24° 0'10.33"N	82°24'41.35"E
		11		24° 0'7.87"N	82°24'35.41"E
		12		24° 0'2.42"N	82°24'24.13"E
		13		24° 0'1.65"N	82°24'10.35"E
		14		23°59'52.06"N	82°25'29.20"E
		15		23°59'46.32"N	82°25'31.05"E
		16		23°59'41.47"N	82°25'27.25"E
		17		23°59'36.59"N	82°25'21.56"E
		18		23°59'28.26"N	82°25'13.77"E
		19		23°59'30.14"N	82°25'2.06"E
		20		23°59'28.74"N	82°24'56.68"E
		21		23°59'11.86"N	82°24'44.80"E
		22		23°59'2.92"N	82°24'41.83"E
		23		23°58'44.79"N	82°24'30.74"E
		24		23°58'43.12"N	82°24'11.56"E
25	23°58'32.18"N	82°24'9.64"E			

S. No.	Particulars	Details			Remarks																																				
		26	23°58'31.34"N	82°24'7.46"E																																					
		27	23°58'45.11"N	82°24'8.77"E																																					
		28	23°59'0.64"N	82°24'7.76"E																																					
		29	23°59'6.23"N	2°24'17.33"E																																					
		30	23°59'19.12"N	82°24'24.80"E																																					
		31	23°59'31.65"N	82°24'27.11"E																																					
		32	23°59'42.23"N	82°24'36.46"E																																					
		33	23°59'56.48"N	82°24'41.92"E																																					
6.	Elevation of the project site	365 m above mean sea level																																							
7.	Involvement of Forest land if any.	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.			No Forest Land is involved																																				
8.	Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area	<p>Project site: Nil</p> <p>Study area</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Distance (in km)</th> <th>Direction</th> </tr> </thead> <tbody> <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>Kanchanumud a 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> </tbody> </table>			Particulars	Distance (in km)	Direction	Seasonal Nallah	Adjoining to boundary	-	Rampa River	7.0 km	SE	Sukhra Nadi	2.8 km	ENE	Hurdul Nadi	4.0 km	WSW	Laua Nadi	7.4 km	NE	Saravn Nadi	8.6 km	NNW	Mayar Nadai	8.9 km	E	Jharia Nadi	9.6 km	WSW	Kanchanumud a Nadi	10.7 km	NNE	Sulkhia Nadi	10.8 km	WNW	Mahan Nadi	11.4 km	NW	WRD, Singrauli letter no. 94/95 dt; 10.01.2025. The HFL data is not available as it is Seasonal Nallah.
Particulars	Distance (in km)	Direction																																							
Seasonal Nallah	Adjoining to boundary	-																																							
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9.	Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/elephant reserve etc. if any within the study area	<p>Study area: Nil</p> <p>Status of NBWL approval: Not Applicable</p> <p>List of Reserved and protected forests:</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Distance (In km)</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>Mohanban R.F.</td> <td>Adjoining</td> <td>W</td> </tr> <tr> <td>Pidarwah P.F.</td> <td>7.9 km</td> <td>N</td> </tr> <tr> <td>Vihara P.F.</td> <td>10.5 km</td> <td>ENE</td> </tr> </tbody> </table>			Particulars	Distance (In km)	Direction	Mohanban R.F.	Adjoining	W	Pidarwah P.F.	7.9 km	N	Vihara P.F.	10.5 km	ENE	No ESZ/ESA, National Park, WL sanctuary/reserve in the study area 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.																								
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S. No.	Particulars	Details	Remarks
			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	<u>Involvement of CPA/SPA- Nil</u> <u>Proximity to CPA/SPA- Nil</u>	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.

18.1.8: 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

18.1.9: The details of the fuel requirement (coal & LDO) for the existing and the proposed expansion 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-I: Railway: From Coal mine to Gajara Bahara Railway siding.	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
		Phase II – Dhirauli Mines & e-Auction]	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. 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) Adhinyam, 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.

18.1.10: 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.

18.1.11: 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.

18.1.12: Baseline Environmental Studies:

Period	Pre- Monsoon Season (1 st March 2024 to 31 st 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 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.	
Ground water quality at 13 locations	pH: 6.61 to 7.63, Total dissolved Solids: 86 to 640 mg/l, Total Hardness (as CaCO ₃): 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)	
Surface water quality at 5 locations	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,	

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)																				
	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)																				
Effluent generation details and its treatment	<ul style="list-style-type: none"> 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. 																				
Noise levels Leq (Day and Night) at 13 locations	73.8 to 47.8 dB(A) for the Day time and 62.7 to 38.2 dB(A) for the Night time.																				
Traffic assessment study findings	<ul style="list-style-type: none"> 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 border="1"> <thead> <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> </thead> <tbody> <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)</td> <td>2023</td> <td>15000</td> <td>0.13</td> <td>A</td> <td>Excellent</td> </tr> </tbody> </table>	Road	Location	Volume (in PCU/Day)	Capacity (in PCU/Day)	Existing V/C Ratio	LOS	Performance	MDR 1212	T1 (At Bandhaura towards Amliya)	4348.5	15000	0.29	B	Very Good	T2 (At Rajmilan towards Waidhan)	2023	15000	0.13	A	Excellent
Road	Location	Volume (in PCU/Day)	Capacity (in PCU/Day)	Existing V/C Ratio	LOS	Performance															
MDR 1212	T1 (At Bandhaura towards Amliya)	4348.5	15000	0.29	B	Very Good															
	T2 (At Rajmilan towards Waidhan)	2023	15000	0.13	A	Excellent															

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)									
	<table border="1"> <tr> <td></td> <td>& Singrauli)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <ul style="list-style-type: none"> PCU load after proposed project will be 4348.5 (Existing) + 809.5 (Additional) PCU/day 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. 				& Singrauli)					
	& Singrauli)									
Soil Quality at 8 Locations	<p>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/hect, Nitrogen: 191.20 to 221.04 kg/hect, Phosphorous: 25.30 to 70.66 kg/hect, Magnesium: 103.00 to 137.50 mg/kg, Organic Matter: 0.58% to 0.75%</p>									
Flora and fauna	<p>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.</p>									
Hydrogeology study	<p>The action plan to address the recommendation of the Hydrogeology report and Watershed management plan are as below:</p>		<p>Consultant details: The hydrogeology study report has been prepared by M/s. Akshar Geo Services Pvt. Ltd & Vetted by NIT Delhi.</p>							
Sl. No.	Recommendations	Action Plan								
1	<p>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.</p>	<p>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</p>								

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)		
	2	As the value of hardness as CaCO ₃ ; 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.	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.
	3	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 accordingly.	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.
	4	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.	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.
	5	It is recommended to mention the	Mahan TPP will engage reputed

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)	
	method used for determining stream order of the study area once in three years.	government institute for future study as recommended once in 3 years.
	The water sampling, analysis as well monitoring will be conducted by March'2025 and further regular interval once in 2 months.	
Impact study on bio-diversity and aquatic ecology	<p>Recommendations of study report:</p> <ul style="list-style-type: none"> • 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. 	
Risk assessment study	<p>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.</p> <p>Risk associated with LDO has been assessed and is included in the Emergency Management Plan which inter-alia includes the following:</p> <ul style="list-style-type: none"> • 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. 	

Period	Pre- Monsoon Season (1 st March 2024 to 31 st May 2024)
	<ul style="list-style-type: none"> • Use corrosion-resistant materials for tanks storing caustic and acidic substances. • Equip tanks with safety valves and ensure regular inspection of flanges and joints. • 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.

18.1.13: 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,	Collected; segregated	Registered Recyclers/Pre-processors with CECB & Authorized Recyclers

S. No.	Type of Waste	Source	Quantity generated (TPA)	Mode of Treatment	Disposal
			Waste or residue containing Oil, Empty/ Barrels/ Contaminated Containers)		
6	Fly Ash & Bottom Ash	Plant Operation	2.6 MTPA	Collected in silos and bulkers	Used in cement industries, brick

18.1.14: 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)
		1 st	2 nd	3 rd	4 th	5 th	
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	2.0	2.0	1.0	-	-	5.0

MoM of 18th meeting of the EAC for Thermal sector held on 24th January, 2025

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)
		1 st	2 nd	3 rd	4 th	5 th	
	School shall be developed by MEL with full support of local administration.						
	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 per camp), Safe Menstrual Hygiene Management Awareness, Mega Health Camp, Cataract Screening & Operation.	0.2	0.2	0.2	0.2	0.2	1
	Promotion of awareness of malnutrition and anemia.	0.1	0.1	0.1	0.1	0.1	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)
		1 st	2 nd	3 rd	4 th	5 th	
	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 Swachhh 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 Swachhh 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						

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)	
		1 st	2 nd	3 rd	4 th	5 th		
	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
	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

18.1.15: 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

S. No.	Item Description	Cost (Rs. in Crores)
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

18.1.16: Greenbelt 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.

18.1.17: Ash management for last three years (For the existing project):

Year	Quantity generated (MTPA)	Quantity utilized (MTPA)	% of utilization	Balance quantity (MTPA)	No. of storage silos with capacity
2021-22	0.836	0.213	25.46	0.623	(6x1000 MT)
2022-23	0.908	0.910	100.2	..	
2023-24	1.428	1.480	103.72	..	

*MTPA: Million Ton Per Annum

A. Fly ash Generation details for the last three years = 2.535 MTPA

Fly ash Utilization details for the last three years = 2.143 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)	0.000282	0.01	As per MoEFCC Notification for Fly Ash Notification
2.	Cement manufacturing	1.218	56.83	
3.	Filling up of low-lying area	0.925 (Abandoned Mines/Stone Quarry, Construction of Phase II project within the plant boundary)	43.16	Yes, NOC granted by SPCB.
Total		2.143	100	

B. Bottom ash generation for last three years = 0.637 MTPA
Bottom ash Utilization for last three years = 0.467 MTPA

S. No.	Activity (as applicable)	Quantity (MTPA)	Percentage (%)	Remarks (Prior approval of SPCB details to be mentioned)
1.	Filling up of low-lying area	0.467 (Abandoned Mines/Stone Quarry, Construction of Phase II project within the plant boundary)	100	Yes, NOC granted by SPCB.
Total		0.467	100	

C. Legacy ash details: No Legacy Ash as per Fly Ash notification S.O. 6169 (E) dated 30.12.2021.

D. Ash Stock in Operational Ash Pond: 1.096 Million Ton (as on March 2024)

E. 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)	42.69
3	Dyke height (m)	10.0
4	Volume (m ³)	42.68

S. No.	Details of Ash pond	Ash pond 1
		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

F. 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: No new ash pond is envisaged. Existing ash pond will be utilized.

18.1.18: Summary of court cases: PP reported that there is no legal issue/violation wr.t i) Environment (Protection) Act, ii) Air(P&CP) Act, Water (P&CP), Act, Van (Sanrakshan Evam Samvardhan) Adhiniyam and Wildlife Protection Act after acquisition through NCLT dated 16.03.2022.

A. Summary of direction issued by MPPCB and case pending with NCLT:

Directions were issued by MPPCB regarding Ash water overflow during heavy rain in August 2019 and matter is sub-judice with NCLT. Details of Case with directions as follows.

Case No.: I.A. No. 83/2022

Parties: Essar Power M.P. Limited Vs. MPPCB & APL

Bench: Justice Ramalingam Sudhakar (President) and Sh. Avinash K. Srivastava (Member-Technical) (Principal Bench).

The case was listed on 20.11.2024, before NCLT Principal Bench, Delhi. The Bench adjourned the matter for the next date **05.02.2025**.

B. Summary of violation if any under The Environment Protection Act, 1986; Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980; The Wild Life (Protection) Act, 1972: NIL

Written submissions

18.1.19: Project proponent has submitted the following written information during the meeting:

Sr. 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.	<p>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.</p> <p>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.</p> <p>PP will adhere to all mitigation measures, recommendations/ suggestion outlined in the vetted</p>

Sr. No.	Information / clarification sought during EAC meeting	Written submissions by PP
		study report and their implementation in a time bound manner.
2	PP should give commitment that the available ash stock in ash dyke as on date will be utilized within a span of 2 years.	<p>Ash Utilization/Disposal: We confirm that the balance/available ash stock in the ash dyke as on date, will be utilized / disposed of in two years.</p> <p>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.</p>
3	PP shall install Continuous Ambient Air Monitoring Stations (CAAQMS) in consultation with the concerned authority.	<p>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).</p>
4	PP shall enhance the Solar Power Capacity and install solar panels in the nearby schools.	<p>Enhancement in Solar Power: Solar panels of about 2 MW capacity will be installed and best efforts will be made to Maximize Solar Power.</p> <p>Additionally, Solar lights will be installed in the nearby Schools in consultation with local administration /authorities/principal/ teachers.</p>
5	PP shall furnish the court cases pertaining to environment.	<p>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.</p> <p>Directions were issued by MPPCB regarding Ash water overflow during heavy rain in August'2019 to Essar Power M.P. Ltd.</p> <p>Details of Case:</p> <p>Case No.: I.A. No. 83/2022</p> <p>Principal Bench of NCLT: Justice Ramalingam Sudhakar (President) and Sh. Avinash K. Srivastava (Member-Technical)</p> <p>Parties: Essar Power M.P. Limited Vs. MPPCB & APL in NCLT Bench.</p>

Sr. No.	Information / clarification sought during EAC meeting	Written submissions by PP
		<p>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.</p> <p><u>APL acquired TPP through NCLT on 16.03.2022.</u></p> <p>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.</p> <p>Proponent will abide by the final judgement which is subject matter before the NCLT.</p>

Observations and deliberation of the EAC

18.1.20: 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.

Recommendations of the Committee:

18.1.21: 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 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.
- 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 12) Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time.
- 13) Project proponent shall ensure that pipelines carrying the fly ash and effluent shall be inspected regularly for any leakages.
- 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.

- 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.
- 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 periphery 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.
- 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 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.
- 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.
- 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.
- 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.

- 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.
- 22) PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM.
- 23) Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
- 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.
- 25) Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.
- 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
- 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.
- 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.
- 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.

[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 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) 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. 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.
- 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.

[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.
- 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:

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

B. Ash content/ mode of transportation 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.

C. 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 NO_x 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. Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM₁₀, PM_{2.5}, SO₂, NO_x within the plant area at six locations. 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.

D. 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.

E. 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. 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.

F. 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. 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.
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. 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.

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. 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.
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;
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.

G. 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.

H. Green belt and Biodiversity conservation:

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.
2. In-situ/ex-situ Conservation Plan for the conservation of flora and fauna should be prepared and implemented.

I. 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 dated 31.12.2021, S.O.6169 (E) dated 30.12.2021, S.O.05 (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.

J. Monitoring of compliance:

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.
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. 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.
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& PM_{2.5} in case 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.

K. 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 schedule 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: 18.2

18.2: Proposed 2x660 MW Ennore SEZ Thermal Power Plant by **M/s. Tamil Nadu Power Generation Corporation Limited (TNPGL)** (Erstwhile TANGEDCO) at Village Vayalur, Taluk Ponneri, District Thiruvallur, Tamil Nadu – **Extension of validity of EC dated 7/01/2014 & CRZ clearance dated 01/01/2014 – reg.**

[Proposal No. IA/TN/THE/506571/2024; F. No. J-13012/36/2010-IA. II (T) & F.No. 11-80/2011-IA.III]

18.2.1: M/s. Tamil Nadu Power Generation Corporation Limited (TNPGL) (Erstwhile TANGEDCO) has made an online application vide proposal no. IA/TN/THE/506571/2024 dated 19/11/2024 along with CAF and Form 6 seeking validity extension of the EC dated 07/01/2014 under the provisions of EIA, Notification 2006 and validity extension of CRZ dated 01/01/2014. 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. Re Sustainability Solutions Private Limited, Hyderabad [NABET Certificate No.: NABET/EIA/2225/RA 0278, Valid up to 26/09/2025].

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

18.2.2: Details of the EC & CRZ clearance:

MoEF&CC has accorded following clearances and amendment to M/s. TANGEDCO for the 2x660 MW Ennore SEZ Thermal Power Plant

Sr. No.	Details of Letter No.	Facility	Clearance	Date of issuance
1.	11-80/2011-IA. III	Coal conveyer and cooling water system for the Ennore SEZ Thermal power station	CRZ	01/01/2014
2.	J-13012/36/2010-IA.II (T)	2x800 MW Ennore SEZ Super critical imported coal based Thermal power plant	Environment Clearance	07/01/2014
3.		Change in configuration of TPP from 2x800 MW to 2x660MW	EC amendment	14/08/2018
4.		2x660 MW Ennore SEZ Super critical imported coal based Thermal power plant	Extension of validity of EC till 06/01/2021	04/02/2019
5.	J-13012/36/2010-IA.II (T)	EC: 2x660 MW Ennore SEZ Super critical imported coal based Thermal power plant CRZ: Coal conveyer and cooling water system	Extension of validity of EC & CRZ till 31/12/2023	09/04/2021
6.	<p>As per amendment to the EIA Notification, 2006 dated 18/01/2021, the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19).</p> <p>As per amendment to the CRZ Notification, 2011 dated 03/07/2023, the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of CRZ clearance granted under this notification in view of outbreak of Corona Virus (COVID-19).</p> <p>In view of the above, the validity of EC & CRZ will be expiring on 31/12/2024.</p>			

18.2.3: Status of implementation of CRZ clearance dated 01/01/2014 & EC dated 07/01/2014 is given below:

A. EC dated 07/01/2014

Sr. No.	Equipment	Percentage of completed portion (%)	Yet to be completed (in %)	Expected schedule of completion
1	Boiler & Auxiliaries Unit I & II	81	19	31.12.2025
2	Power House & Auxiliaries Unit I & II	63.26	36.74	31.12.2025
3	NDCT I & II	68.99	31.01	31.12.2025
4	Water system (RODM,PT,CWS)	67.17	32.83	31.12.2025
5	SWIO System	72.19	27.81	31.12.2025
6	Coal handling system	64.22	35.78	31.12.2025
7	Ash handling system	59.05	40.95	31.12.2025
8	400 KV GIS & Switch yard	85.95	14.05	31.12.2025
9	Chimney	87.09	12.91	31.12.2025
10	Fire detection & Protection system	57.92	42.08	31.12.2025

B. CRZ clearance dated 01/01/2014

Sr. No.	Description of facilities	Percentage of completed portion (%)	Yet to be completed (in %)	Expected schedule of completion
1	Coal pipe conveyor from Ennore Port	50	50	31.12.2025
2	CW intake pipeline from NCTPP complex	50	50	31.12.2025
3	CW outfall pipeline to NCTPP complex	50	50	31.12.2025

18.2.4: Reasons of the delay in implementation:

- The work was awarded to M/s. BHEL and another tenderer has filed a case before High court of Madras and the work was halted due to stay.
- Further, TANGEDCO approached Hon'ble Supreme court of India and after hearing, the judgement was pronounced in favour of TANGEDCO.
- As there was a delay of 2 years to recommence the work. Subsequently, there was a delay due to COVID 19.
- Hence, 70% of work has completed till date and rest of the work is progressing which shall require extension with validity of 1 year.

18.2.5: Proposal of project proponent:

Project proponent has requested the Ministry to extend the validity of EC & CRZ clearance for another one year i.e. up to 31/12/2025 for completing the remaining work.

18.2.6: Details regarding pending court cases:

- A Suo-Moto case was filed by Hon'ble NGT in OA no. 162/2021 and NGT directed to obtain amendment in CRZ clearance for the change in route of pipe conveyer and CW lines.
- Subsequently, Miscellaneous Application [13 of 2024(SZ)] was filed before the NGT by the proponent to proceed with the construction activity of the conveyance corridor of the 2×660 MW Ennore SEZ Supercritical Imported Coal-based Thermal Power Plant in an approved route in CRZ Area as per the CRZ Clearance dated 01.01.2014 and Environmental Clearance dated 07.01.2014, and best possible route in Non-CRZ Area in the interest of the project and environment, in compliance with Clause 7 (ii) (c) of EIA Notification, 2006.
- The Hon'ble NGT vide its order dated 23/09/2024 disposed of the above M.A. with the following observations:
 - a. *As already the Project Proponent has approached the MoEF&CC in this regard, it is open to get their acknowledgement and try to stick to the original proposal without any deviation.*
 - b. *Incidentally, when the application was taken up, it was brought to our knowledge that there were concrete structures to an extent of 5460 m³, which were abandoned in the CRZ area have to be removed.*
 - c. *The Chief Engineer - Tamil Nadu Power Generation Corporation Limited (TNPGL) has filed an affidavit dated 21.09.2024, wherein it is stated that for the clearance of the above concrete structures, tenders have to be floated as per the Tamil Nadu Transparency in Tender Rules, 2000, which would approximately take 145 days or 5 months minimum.*
 - d. *We, while disposing of this miscellaneous application, direct the Project Proponent to stick to the timeline given in the affidavit and remove the concrete structures within the time.*

Observations and deliberation of the EAC

18.2.7: The Committee observed and noted the following:

- i. Instant proposal is for extending the validity of EC & CRZ accorded for the 2x660 MW Ennore SEZ Super critical imported coal based Thermal power plant by another one year i.e., 31/12/2025.
- ii. It was apprised to the EAC following are the provisions under EIA, 2006 and CRZ, 2011 for validity extension:

- EIA, 2006: The validity period of validity of Environmental Clearance may be extended in for one year, if an application is made in the laid down proforma to the regulatory authority by the applicant within the validity period of the existing Environment Clearance.
 - CRZ, 2011: The clearance accorded to the projects under this notification shall be valid for a period of ten years. Provided that the period of validity of the CRZ clearance may be extended by a maximum period of one year, if an application is made by the applicant within the period of validity of the CRZ Clearance along with the recommendations of the Coastal Zone Management Authority concerned.
- iii. Project proponent has not submitted any credible document such as site photographs, work order issued to the contractors and time bar chart indicating the completion of 70% of construction work at the project site.
 - iv. Committee noted that proponent has not submitted the recommendations of the Coastal Zone Management Authority concerned for extending the validity of the CRZ clearance dated 01/01/2014 as required under the provisions of CRZ Notification, 2011.
 - v. Committee noted that project proponent has changed the company name from M/s. TANGEDCO to M/s. Tamil Nadu Power Generation Corporation Limited (TNPGL). Name transfer of EC & CRZ clearance in the new company name has not been obtained by the proponent till date.
 - vi. Proponent has not submitted the compliance to the observations made by Hon'ble NGT in its Order dated 23/09/2024 in Miscellaneous Application [13 of 2024 (SZ)] as mentioned at para no 18.2.6.

18.2.8: Recommendations of the Committee:

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

- i. Credible document indicating the completion of 70% of construction work at the project site.
- ii. Recommendations of the Coastal Zone Management Authority concerned for extending the validity of the CRZ clearance dated 01/01/2014.
- iii. EC & CRZ transfer letter in the name of M/s. Tamil Nadu Power Generation Corporation Limited (TNPGL).
- iv. Point wise compliance to the observations made by Hon'ble NGT in its Order dated 23/09/2024 in Miscellaneous Application [13 of 2024 (SZ)] along with the relevant supporting document.

Agenda No: 18.3

18.3: Proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant by M/s. **Orissa Thermal Energy Limited (OTEL)** at Villages Rahangol and Kandarei, Tehsil Athagarh, District Cuttack, Odisha – **Terms of Reference – reg.**

[Proposal No. IA/OR/THE/515150/2025; F. No. J-13012/02/2025-IA.I (T)]

18.3.1: M/s. Orissa Thermal Energy Limited (OTEL) a subsidiary of Adani Power Limited has made an application vide online vide proposal no. IA/OR/THE/515150/2025 dated 09/01/2025 along with the application in prescribed format (CAF, 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 the central level.

Name of the EIA consultant: M/s. Greencinda Consulting Private Limited [NABET Certificate 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 discussion held during the meeting, are given as under:

18.3.2: The instant proposal is for grant of Terms of Reference for undertaking EIA/EMP study for the proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant at villages Rahangol and Kandarei, Tehsil Athagarh, District Cuttack, Odisha by M/s. Orissa Thermal Energy Limited (OTEL). Total capacity of proposed TPP is 2400 MW.

18.3.3: The project site as mentioned above was originally granted environmental clearance vide letter no. J-13011/51/2008-IA.II (T) dated 18/02/2009 from MoEF&CC in favour of M/s. KVK Nilanchal Power Private Limited for setting up of 4x350 MW coal based thermal power project in an area of 938 acres (379.75 Ha) at Kandarei village, Athagarh Tehsil, District Cuttack, Odisha. As per the EC accorded, there is no involvement of forestland. Subsequently, EC was amended on 23/11/2010 for setting up of 3x350 MW TPP in place of 4x350 MW TPP. Odisha State Pollution Control Board granted the Consent to Establish vide file no. 26746/Ind-II-NOC-5065 dated 19/12/2008. Further, M/s. KVK Nilanchal Power Private Limited had commenced construction of 1x350 MW by establishing a chimney and could not complete the same within the validity of environmental clearance. The validity of the EC was extended till 17/02/2019 vide Ministry’s letter dated 21/08/2014. Now, the EC is expired.

18.3.4: M/s. KVK Nilanchal Power Private Limited (“KNPPL”) was acquired by M/s Padmaprabhu Commodity Trading Private Limited (“PCTPL”) through NCLT. PCTPL was declared the Successful Bidder in the E-auction conducted on 26.08.2022 for KNPPL. Consequently, PCTPL is now the sole owner of all the assets and materials that were previously owned by KNPPL. Later, Registrar of Companies, Delhi, vide CIN U51909GJ2020PTC114529 certified that the name of the company has been changed from Padmaprabhu Commodity Trading Private Limited to Orissa Thermal Energy Limited (OTEL) dated 17.09.2024 & 30.12.2024.

18.3.5: M/s. Orissa Thermal Energy Limited (OTEL) subsidiary of APL has now proposed 3x800 MW Coal Based Ultra Super Critical Nilanchal Thermal Power Plant in the above site i.e. villages Rahangol and Kandarei, Tehsil Athagarh, District Cuttack, Odisha by initiating the de-novo process for obtaining EC under the provisions of EIA Notification, 2006.

18.3.6: Environmental site settings:

S. No.	Particulars	Details	Remarks																
i.	Total land	331.49 Ha [Private: 117.18 Ha; Govt.: 214.315 Ha; Agriculture: 0 Ha;]	Land use: Land requirement for the proposed power project of 2400 MW capacity is about 331.49 Ha. Forest Land (inside the plant boundary): 9.235 Ha (barest minimum, scattered unavoidable forest patches). Proposal no. FP/OR/THE/513328/2024 Non-Forest Land is 322.26 Ha.																
ii.	Land use break up	<table border="1"> <thead> <tr> <th>Facilities</th> <th>Proposed Area (In Ha)</th> </tr> </thead> <tbody> <tr> <td>Main Plant (Plant Area including BTG, FGD, Water Facility, AHP Facility, Switchyard & Misc Facility)</td> <td>94.70</td> </tr> <tr> <td>Coal Handling System (Coal Stock Yard including Rail Yard)</td> <td>57.87</td> </tr> <tr> <td>Water System (Reservoir)</td> <td>22.26</td> </tr> <tr> <td>Green belt</td> <td>116.60</td> </tr> <tr> <td>Township</td> <td>9.71</td> </tr> <tr> <td>Ash pond</td> <td>30.35</td> </tr> <tr> <td>Total</td> <td>331.49 Ha</td> </tr> </tbody> </table>	Facilities	Proposed Area (In Ha)	Main Plant (Plant Area including BTG, FGD, Water Facility, AHP Facility, Switchyard & Misc Facility)	94.70	Coal Handling System (Coal Stock Yard including Rail Yard)	57.87	Water System (Reservoir)	22.26	Green belt	116.60	Township	9.71	Ash pond	30.35	Total	331.49 Ha	--
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iii.	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	Non- Forest Land- 322.26 Ha Forest land- 9.235 Ha Total land- 331.49 Ha	Land is already under the possession of the project except the following: Forest Land (inside the plant boundary): 9.235 Ha are forest Land (barest minimum, scattered unavoidable forest patches). Proposal no.																

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iv.	Existence of habitation & involvement of R&R, if any.	<p>Project site: Nil Study Area:</p> <table border="1"> <thead> <tr> <th>Habitation</th> <th>Distance (Km)</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>Khanduali</td> <td>0.44</td> <td>N</td> </tr> <tr> <td>Rahangol</td> <td>0.14</td> <td>S</td> </tr> <tr> <td>Kandarei</td> <td>0.09</td> <td>SW</td> </tr> <tr> <td>Sabitripur</td> <td>0.26</td> <td>W</td> </tr> <tr> <td>Macharpur</td> <td>1.02</td> <td>SE</td> </tr> <tr> <td>Khuntuni</td> <td>2.06</td> <td>SW</td> </tr> <tr> <td>Mahalaxmipur (Near RF)</td> <td>4.03</td> <td>NNW</td> </tr> <tr> <td>Kakhadi</td> <td>9.07</td> <td>S</td> </tr> <tr> <td>Radhakrushnapur</td> <td>0.5</td> <td>NE</td> </tr> </tbody> </table>	Habitation	Distance (Km)	Direction	Khanduali	0.44	N	Rahangol	0.14	S	Kandarei	0.09	SW	Sabitripur	0.26	W	Macharpur	1.02	SE	Khuntuni	2.06	SW	Mahalaxmipur (Near RF)	4.03	NNW	Kakhadi	9.07	S	Radhakrushnapur	0.5	NE	R&R is not applicable and the entire land is under the possession of the proponent.																		
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v.	Latitude and Longitude of all corners of the project site.	<p>The geographical co-ordinates of the site are as follows:</p> <p>A. Plant Site</p> <table border="1"> <thead> <tr> <th>Point</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>20°36'3.47"N</td> <td>85°44'16.07"E</td> </tr> <tr> <td>B</td> <td>20°35'42.61"N</td> <td>85°44'55.83"E</td> </tr> <tr> <td>C</td> <td>20°35'29.80"N</td> <td>85°45'7.79"E</td> </tr> <tr> <td>D</td> <td>20°35'1.24"N</td> <td>85°45'36.29"E</td> </tr> <tr> <td>E</td> <td>20°35'4.56"N</td> <td>85°45'07.96"E</td> </tr> <tr> <td>F</td> <td>20°34'53.02"N</td> <td>85°44'36.78"E</td> </tr> <tr> <td>G</td> <td>20°34'52.58"N</td> <td>85°44'8.66"E</td> </tr> <tr> <td>H</td> <td>20°34'57.89"N</td> <td>85°43'52.89"E</td> </tr> <tr> <td>I</td> <td>20°35'22.26"N</td> <td>85°43'57.21"E</td> </tr> <tr> <td>J</td> <td>20°35'43.16"N</td> <td>85°44'0.21"E</td> </tr> </tbody> </table> <p>B. Ash Pond</p> <table border="1"> <thead> <tr> <th>Point</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>20°35'59.56"N</td> <td>85°44'20.73"E</td> </tr> <tr> <td>B</td> <td>20°35'51.90"N</td> <td>85°44'48.01"E</td> </tr> <tr> <td>C</td> <td>20°35'46.64"N</td> <td>85°44'50.31"E</td> </tr> <tr> <td>D</td> <td>20°35'46.44"N</td> <td>85°44'19.33"E</td> </tr> </tbody> </table>	Point	Latitude	Longitude	A	20°36'3.47"N	85°44'16.07"E	B	20°35'42.61"N	85°44'55.83"E	C	20°35'29.80"N	85°45'7.79"E	D	20°35'1.24"N	85°45'36.29"E	E	20°35'4.56"N	85°45'07.96"E	F	20°34'53.02"N	85°44'36.78"E	G	20°34'52.58"N	85°44'8.66"E	H	20°34'57.89"N	85°43'52.89"E	I	20°35'22.26"N	85°43'57.21"E	J	20°35'43.16"N	85°44'0.21"E	Point	Latitude	Longitude	A	20°35'59.56"N	85°44'20.73"E	B	20°35'51.90"N	85°44'48.01"E	C	20°35'46.64"N	85°44'50.31"E	D	20°35'46.44"N	85°44'19.33"E	--
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S. No.	Particulars	Details	Remarks															
vi.	Elevation of the project site above mean sea level (AMSL)	72-94 m above mean sea level	--															
vii.	Involvement of Forest land if any	Area of the forest land involved: 9.235 Ha	Application for Stage I FC has been submitted vide proposal no. FP/OR/THE/513328/2024															
viii.	Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area	<p>Project Site: Name: Nilanchal Thermal Power Plant</p> <p>Study Area:</p> <table border="1"> <thead> <tr> <th>Water body</th> <th>Distance</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>Mahanadi River</td> <td>8.8 km</td> <td>SSE</td> </tr> </tbody> </table>	Water body	Distance	Direction	Mahanadi River	8.8 km	SSE	Mahanadi River is 8.8 Km in SSE w.r.t Project site.									
Water body	Distance	Direction																
Mahanadi River	8.8 km	SSE																
ix.	Archaeological sites monuments/historical temples etc.	Not present in 10km radius w.r.t TPP.	--															
x.	Existence of ESZ / ESA / National Park / Wildlife Sanctuary / Biosphere Reserve / Tiger Reserve / Elephant Reserve etc. if any within the study area	<p>Study Area:</p> <p>Name of the ESZ: Kapilash Wildlife Sanctuaries</p> <p>Status of Notification: Kapilash Wildlife Sanctuary was notified by MoEF&CC vide notification S.O. 1659 (E) dated 17/06/2015.</p> <p>Distance of project from ESZ: 3.2 km</p> <p>Status of NBWL approval: Not required</p> <p>List of Reserved and protected forests:</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Direction</th> <th>Distance (In km)</th> </tr> </thead> <tbody> <tr> <td>Ranibania RF</td> <td>W</td> <td>0.7</td> </tr> <tr> <td>Baniabandha RF</td> <td>N</td> <td>0.9</td> </tr> <tr> <td>Deulia RF</td> <td>WSW</td> <td>1.5</td> </tr> <tr> <td>Sankaipci RF</td> <td>ESE</td> <td>1.9</td> </tr> </tbody> </table>	Particulars	Direction	Distance (In km)	Ranibania RF	W	0.7	Baniabandha RF	N	0.9	Deulia RF	WSW	1.5	Sankaipci RF	ESE	1.9	--
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S. No.	Particulars	Details			Remarks
		Subasi RF	S	2.5	
		Kapilasha RF	WNW	2.9	
		Gadobola	W	4.5	
		Gobara RF	ENE	4.9	
		Sunia Muhan RF	SE	5	
		Oringa RF	SSW	5.5	
		Adala RF	W	5.7	
		Patapuri Rf	WNW	5.8	
		Barahmanabasta RF	S	5.8	
		Baula RF	SE	7.4	
		Khalakhala RF	SSW	8.9	
		Dalijorha RF	NE	10	
xii.	Whether the project is in the Critically Polluted Area (CPA)/ Severely Polluted Area (SPA) or within 10 km of CPA/SPA.	No			

18.3.7: Unit configuration and capacity of proposed project:

S. No.	Proposed power plant configuration	Total	Technology adopted
1.	2400 (3x800) MW	2400 MW	Ultra Super Critical

18.3.8: Details of fuel requirement: The details of the fuel requirement for the 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

Proposed TPP	9.67	Bijahan coal mines, Gondbahera Ujheni coal mines, Gondulpara coal mines & e-auction	90	Rail	Ash - 40 (%) Sulphur - 0.5 (%) Moisture - 13 (%) GCV - 3700 Kcal/Kg	Fuel Supply Agreement
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18.3.9: Project cost: The capital cost of the proposed project is Rs. 27,438 Crores and the capital cost for environmental protection measures is proposed as Rs. 4,528 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 45.2 Crores.

18.3.10: Employment: The employment generation from the proposed project during Construction Phase is 275 permanent employments and 175 indirect employment excluding contractual manpower (Approx 5000-8000) & during Operational Phase 400 permanent and 150 indirect employment excluding contractual manpower (Approx 2000-2500).

18.3.11: Power requirement: The power requirement for the proposed project is estimated about 192 MW, out of which 192 MW will be met with own generation, i.e. AUX consumption.

18.3.12: Water Requirement: The water requirement for the proposed project is estimated as 1,15,200 m³/day, out of which 1,15,200 m³/day of freshwater requirement will be obtained from the Mahanadi River and the plant is based on ZLD concept. The permission for drawl of surface water will be obtained from WRD, Odisha. The water will be transported to the plant site through Pipeline. The specific water consumption for the power plant will be 2.0 m³/day.

18.3.13: 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	Municipal Solid Waste	Plant Canteen	60	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 Equipment	2.5 TPA	Collected; segregated	Registered Recycler vendor
3	Battery waste from UPS	Automotive & Industrial	5.0 TPA	Collected; segregated	Authorized Vendor
4	Bio medical waste	First aid center	0.1 TPA	Collected; segregated	Authorized vendor
5	Hazardous Waste	Plant Operation	Empty Barrels/ Containers/ Contaminated		Registered Recyclers/Pre-processors with SPCB & Authorized

S. No.	Type of Waste	Source	Quantity generated (TPA)	Mode of Treatment	Disposal
			Liners – 12 TPA, Used/Spent Oil – 90 TPA, Spent ion exchange resin container toxic metals – 4.0 TPA, Waste or residues containing oil – 4.0 TPA		Recyclers

18.3.14: Greenbelt development: Proposed greenbelt will be developed in 116.6 Ha, which is about 35.17% of the total project area. Thus, a total of 116.6 Ha area (35.17% of total project area) will be developed as greenbelt. A 10 m wide greenbelt, consisting of at least 3 tiers around the 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 2,91,500 saplings will be planted and nurtured in 116.6 hectares in 5 years.

18.3.15: Ash management (Only for green field cases):

Details	Annual generation (MTPA)	Utilization (MTPA)	% of utilization	Balance quantity (MTPA)	No. of storage silos with capacity
Ash (Fly & Bottom)	3.86	3.86	100	--	4x2500 MT

A. Ash Pond details:

S. No.	Details of Ash Pond	Ash pond
1.	Area (Ha)	30.35
2.	Dyke height (m)	As per CPCB guidelines
3.	Volume (m ³)	...
4.	Quantity of ash to be disposed (Metric Tons)	...
5.	Expected life of ash pond (number of years and months)	...
6.	Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No lining	HDPE
7.	Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)	HCSD
8.	Ratio of ash: water in slurry mix (1:___):	65:35
9.	Ash water recycling system (AWRS): Yes or No	Yes
10.	Quantity of wastewater from ash pond to be discharged into land or water body (m ³)	0
11.	Details regarding dyke stability study and name of the organization who conducted the study:

18.3.16: Baseline data collection period (October to December 2024):

Attributes	Parameters	Sampling		Remarks
		No. of stations	Frequency	
A. Air				
A-1 Meteorological parameters	Wind speed, Wind direction, Relative Humidity, Rainfall & Solar radiation, Cloud Cover & Dust Fall	01	Hourly	IS 5182 Part 1-20 Site-specific primary data is essential Secondary data from IMD, Bhubaneswar/ Cuttack nearest IMD station.
A-2 AAQ parameters	PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂ , CO, HC	10	24 hourly data, twice a week	Measurement Methods: As per CPCB norms
B. Noise	Hourly equivalent noise levels	9	One time sampling	Min: IS: 4954- 1968 as adopted by CPCB
C. Water				
C-1 Surface water	Total Carbon; pH; Dissolved Oxygen, Biological Oxygen Demand, Free NH ₄ , Boron, Sodium Absorption ratio and Electrical Conductivity	6	One time sampling	Surface water samples have been collected from 6 different locations for analysis monthly and are compared to Class-C CPCB Designated Water Quality Criteria and IS 2296.
C-2 Ground water quality parameters	PH, temp, turbidity, magnesium hardness, total alkalinity, chloride, sulphate, nitrate, fluoride, sodium, potassium salinity, Total nitrogen, total phosphorus, DO, Phenol, Heavy metals, Total coliforms, faecal coliforms Phyto plankton, Zooplankton, Fish & other aquatic flora & fauna	8	One time sampling	Samples for water quality have been collected and analysed as per: IS: 2488 (Part 1-5), per standard APHA and IS: 3025 criteria and IS: 10500, 2012. methods for sampling International standard practices for benthos and aquatic flora & fauna.
D. Land				
D-1 Soil quality	Physical and chemical characteristics Particle size distribution; Texture, pH, Electrical conductivity, Cation exchange capacity, Alkali metals, Sodium Absorption Ratio (SAR), Permeability, Porosity	6	One time sampling	Soil samples have been collected as per BIS specifications) in the study area by Auger up to depth of 30 cm and homogenized samples will be analyzed as per the methods described in "Soil Chemical Analysis" (M. L. Jackson, 1967).
D-2 Land use/Landscape	Location code, Total project area, Topography, Drainage (natural) Cultivated, forest plantations, water bodies, roads and settlements	At least 20 points along with plant boundary and general major land use categories in the study area.	-	NRSC Satellite Imagery, 2020 and Census data, 2011.
E. Traffic Survey				

Attributes	Parameters	Sampling		Remarks
		No. of stations	Frequency	
E-1 Traffic Volume Count		In 1 location.	24 hour	--
F. Solid & Hazardous Waste				
F-1 Quantity	<ul style="list-style-type: none"> Based on waste generated from per unit production Per capita contribution Collection, transport and disposal system Process Waste Quality (oily, chemical, biological) 	Once Time	Process wise or activity wise for respective raw material used. Domestic waste depends upon the season also.	--
E. Biological				
E-1 Aquatic	Primary productivity, Aquatic weeds, Enumeration of phytoplankton, zooplankton and benthos, Fisheries Diversity indices Trophic levels, Rare and endangered species,	Samples to collect from upstream and downstream of discharge point, nearby tributaries at downstream, and also from dug wells close to activity site	During the study	Seasonal sampling for aquatic biota Plankton net, Sediment dredge, Depth sampler, Microscope if any nearby River.
E-2 Terrestrial	Vegetation – species, list, economic importance, forest produce, medicinal value Importance value index (IVI) of trees and wild animals	Considering probable impact, sampling points and number of samples to be decided on established guidelines on ecological studies based on site eco-environment setting within 10 km radius from the proposed site	One Time	One season for terrestrial biota. Preliminary assessment. Microscopic analysis of plankton and meiobenthos, studies of macrofauna, aquatic vegetation and application of indices, viz. Shannon, similarity, dominance IVI etc. Point quarter plot-less method (random sampling) for terrestrial vegetation survey.
Avifauna	Rare and endangered species Sanctuaries / National park / Biosphere reserve	For forest studies, chronic as well as short-term impacts should be analysed warranting data on microclimate conditions.	One Time	Secondary data to collect from Government offices, NGOs, published literature Field binocular
H. Socio-economic	Demographic structure Infrastructure resource base	Socio-economic survey is based on proportionate	Different impacts occurs during construction	Community/Village Level survey are based group discussions and consultation/questionnaire and Census of India data.

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

Observations and deliberation of the EAC

18.3.18: The Committee observed and noted the following:

- i. The project site as mentioned above was originally granted environmental clearance vide letter no. J-13011/51/2008-IA.II (T) dated 18/02/2009 from MoEF&CC in favour of M/s. KVK Nilanchal Power Private Limited for setting up of 4x350 MW coal based thermal power project in an area of 938 acres (379.75 Ha) at Kandarei village, Athagarh Tehsil, District Cuttack, Odisha. As per the EC accorded, there is no involvement of forestland. Subsequently, EC was amended on 23/11/2010 for setting up of 3x350 MW TPP in place of 4x350 MW TPP. Odisha State Pollution Control Board granted the Consent to Establish vide file no. 26746/Ind-II-NOC-5065 dated 19/12/2008. Further, M/s. KVK Nilanchal Power Private Limited had commenced construction of 1x350 MW by establishing a chimney and could not complete the same within the validity of environmental clearance. The validity of the EC was extended till 17/02/2019 vide Ministry's letter dated 21/08/2014. Now, the EC is expired.
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- iv. 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.
- v. Total area requirement of the project is 331.49 Ha [Private: 117.18 Ha; Govt.: 214.315 Ha]. The proposed project involves 9.235 Ha of Forest Land. Forest application for diversion of Forest land/patches has been submitted on 05/12/2024, proposal no. FP/OR/THE/513328/2024.
- vi. Two Reserved Forests namely Ranibania RF and Baniabandha RF are located at a distance of 0.7 km and 0.9km from the project site.
- vii. The Kapilash Wildlife Sanctuary was notified by MoEF&CC vide notification S.O. 1659 (E) dated 17/06/2015. PP informed that the project site is located at a distance of 3.2km from the ESZ boundary of Kapilash Wildlife Sanctuary.

- viii. The water requirement for the proposed project is estimated as 1,15,200 m³/day, out of which 1,15,200 m³/day of freshwater requirement will be obtained from the Mahanadi River and the plant is based on ZLD concept.
- ix. The capital cost of the proposed project is Rs. 27,438 Crores and the capital cost for environmental protection measures is proposed as Rs. 4,528 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 45.2 Crores.
- x. Fly ash will be collected in dry form in silos and all efforts shall be made for 100% utilization of ash.
- xi. There are no Court Cases pending against the project.
- xii. 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

18.3.19: The EAC after detailed deliberations on the information submitted and as presented during the meeting **recommended** the proposal for grant of ToR for conducting an EIA study with Public Consultation for the above project under the provisions of the EIA Notification, 2006, as amended along with the following specific ToR in addition to the generic ToRs.

[A] Environmental Management and Biodiversity Conservation

- i. All the parameters as mentioned in the National Ambient Air Quality Standards (NAAQS) shall be monitored by the project proponent.
- ii. A certificate from PCCF, wild-life to be submitted with respect to the distance of the project site from the ESZ boundary of Kapilash Wildlife Sanctuary along with the mitigation measures if any to be followed considering the proximity of the project site to the Kapilash Wildlife Sanctuary.
- iii. Project proponent shall submit the stage I Forest Clearance for the diversion of 9.235 Ha of forestland envisaged under the project. Project proponent shall also obtain recommendations from the State Forest department regarding the impact of project on the nearby Reserved Forests along with the mitigation measures if any to be followed.
- iv. 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.
- v. Biodiversity analysis of the project site and study area shall be done through any reputed Government institutions. The study report shall inter-alia include impact of release of cooling tower water on aquatic life and action plan for complying with the mitigation measures shall be submitted.
- vi. 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.

- vii. Radioactivity studies along with coal analysis to be provided (sulphur, ash percentage and heavy metals including Pb, Cr, As and Hg). Details of auxiliary fuel, if any including its quantity, quality, storage, etc should also be given.
- viii. PP should submit the detailed plan in tabular format (year-wise for the life of the project) for concurrent afforestation and green belt development in and around the project site. The PP should submit the number of saplings to be planted, names of native species, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development. In addition to this, PP should show on a surface plan (5- year interval for life of project) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditure to be incurred needs to be submitted. Plantation plan should be prepared in such a way that 80% of the plantation to be carried out in first 5 years and for the remaining years the proposal for gap filling. The seedling of height not less than 2 meters to be selected and accordingly cost of plantation needs to be decided. In addition to this, plantation in the safety zone at project boundary the plantation should be planned in such a way that it should be completed within 2 years only.
- ix. Action plan for development of three-tier plantation programme (33 % of total project cover area) along the periphery of the project boundary and the coal transportation route shall be provided. PP shall submit concurrent plantation plan.
- x. Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed units and shall be incorporated in EIA/EMP report.
- xi. Details of Ash management plan as per MoEF&CC notification dated 31/12/2021 & its subsequent amendment for the proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.
- xii. Action plan for dry ash collection system (Bottom ash and Fly ash) shall be submitted.
- xiii. Action plan for disposal of ash through High Concentration Slurry Disposal (only in emergency conditions) shall be submitted.
- xiv. Proper protection measures like high-density polyethylene (HDPE) lining, appropriate height of bund and adequate distance between the proposed Ash pond and water body (minimum 60 meters) etc. shall be planned to reduce the possibility of mixing leachate with any freshwater body for ash pond. A high-density Slurry disposal plan shall be prepared.
- xv. Pond and ground water quality (10 locations within 2 km radius of the plant boundary) shall be studied and report be submitted along with EIA/EMP. Action plan for Ground water monitoring stations on all hotspots like schools/hospitals within 2 km radius of the plant boundary be submitted. Baseline Study for Heavy metals in Groundwater, Surface water and soil to be carried out and incorporated in EIA/EMP report.

- xvi. Details pertaining to water source, treatment and discharge should be provided.
- xvii. PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
- xviii. Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
- xix. An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution and incorporated in EIA/EMP report.
- xx. PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total material handled) and steps to be taken for reduction of the same. The year-wise target for reduction in the specific diesel consumption needs to be submitted. PP shall also explore the possibility of using e-vehicles/LNG/CNG-based machinery and trucks for the operation and transportation of Coal and ash and submit an implementation strategy.
- xxi. PP shall provide the details of transportation of fly ash from the plant, transportation route etc. Further, carry out a traffic study for at least one month and provide the impact of transportation along with the mitigation measures.
- xxii. PP shall submit the action plan to adhere to the Plastic Waste Management Rules 2016 and to adhere Ministry's OM dated 18/07/2022.
- xxiii. Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.
- xxiv. PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.
- xxv. The input parameters for the AAQ modelling and the influence of various combinations of these on the AAQ must be reported in the EIA/EMP Report. In addition to the Wind Rose diagram collected for one season during the preparation of the E.I.A., wind rose diagram for all seasons must be provided using secondary data from sources such as IMD/CPCB etc.
- xxvi. PP shall take all necessary steps to control the Air Quality and take additional mitigation measures for proposed TPP to maintain the Ambient Air Quality values within the limits. The action plan regarding maintaining ambient quality standards (Time weighted average for 24 hours and Annual both) be submitted.
- xxvii. Carbon emission due to TPP and allied carbon sequestration plan be submitted.
- xxviii. 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. An action plan in this regard shall be submitted.

[B] Disaster Management

- i. A Disaster Management Plan shall be prepared and incorporated in the EIA/EMP report.

[C] Socio-economic Study

- i. The Public Health Action Plan including the provisions for drinking water supply for the local population shall be in the EIA/EMP Report. The status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the needs of the labour force and local populace.
- ii. Public consultation (Public Hearing and Written submission) shall be conducted as per the provisions of EIA Notification, 2006 and as amended. As per the Ministry's OM dated 30.09.2020, to address the concern raised during the Public Hearing, the Project Proponent is required to submit the detailed activities proposed with year-wise budgetary provision (Capital and recurring) for 10 years. Activities proposed shall be part of EMP. Tentative no. of project affected families (if any) shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared. The recommendation Socio-economic study may also be considered while planning the activities & budget.
- iii. A need based Social Impact Assessment Study shall also be carried out and an action plan on its recommendations may also be submitted with budgetary provisions.
- iv. Demographic details and land use change details in 10 km area shall be submitted.

[D] Miscellaneous

- i. Plot the wind rose diagram using the typical meteorological year (TMY) data for the period considered for the study. The monitoring units shall be deployed in the field based on the coverage area ratio and direction of the wind. A mathematical model shall be developed for the local site rather than using the standard model available in software for both air & water quality modelling.
- ii. PP shall align its activities to one/few of the Sustainable Development Goals (SDG) and start working on the mission of net zero by 2050. PPs shall update the same to the EAC.
- iii. PP shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.
- iv. Detailed description of all the court cases including all directions given by the apex and current status of them shall submit.
- v. PP should provide in the EIA Report details of all the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after grant of EC.
- vi. The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs, which will analyze the samples.
- vii. PP should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this PP should mention the number and designation of persons to be engaged for the implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.

- viii. PP should submit the year-wise, activity wise and time-bound budget earmarked for EMP, occupational health surveillance, and activities proposed to address the issues raised during Public Hearing. The capital and recurring expenditure to be incurred needs to be submitted.
- ix. Activities shall be prepared based on the issues arise during public hearing conducted and fresh written submission with defined timeline and budgetary provisions.
- x. Aerial view video of project site and transportation route proposed for this project shall be recorded through drone and be submitted.
- xi. The PP should ensure that only NABET-accredited consultants shall be engaged for the preparation of EIA/EMP Reports. PP shall ensure that the accreditation of the consultant is valid during the collection of baseline data, preparation of EIA/EMP report and the appraisal process. The PP and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and the PP and consultant are fully accountable for the same.
- xii. PP should provide in the EIA Report details of the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after the grant of EC.
- xiii. The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.
- xiv. All the certificates viz. Involvement of Forestland, distance from the protected area, and list of flora & fauna should be duly authenticated by the Forest Department. The Certificate should bear the name, designation, official seal of the person signing the certificate and dispatch number.

Agenda No 18.4

18.4 1x800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities by M/s. **Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO)** at NCTPS Complex, Villages Ennur & Puzhuvakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu – **Amendment in EC & CRZ regarding change of coal source from 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion – reg.**

[Proposal No. IA/TN/THE/475354/2024; F. No. J-13012/14/2012-IA.II (T)]

18.4.1: The above proposal was originally considered by the EAC – Thermal in its 11th meeting held on 27-28th June, 2024 and the proposal was recommended for amendment in EC & CRZ dated 20/01/2016 for change of coal source from use of 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion subject to stipulation of additional specific conditions.

18.4.2: The above proposal was referred back by the Ministry to the EAC for examining the following additional information submitted by the proponent post recommendations of EAC – Thermal.

S.No.	Additional information sought	Reply submitted by the project proponent
i.	Concrete figures about the quantum of additional fly ash likely to be generated per year over and above that already approved under the previous EC	<p>A) Ash content for 100% Foreign coal - 12% Ash quantity - 806.9 TPD</p> <p>Already Proposed Silo - 3nos (2 No for fly ash , 1 No for bottom ash)</p> <p>B) Ash content for Foreign (50%) & domestic coal (50%) - 25.5%</p> <p>Total Ash quantity generated- 2209.32 TPD</p> <p><u>Excess Ash generated- 1402.42 TPD</u></p>
ii.	Ash management plan	<p>The existing ash handling system could cater to the enhanced ash generation quantity as detailed below.</p> <p><u>A. Ash handling</u></p> <p>Now constructed Silos- 3 Nos (2 Nos for fly ash , 1 No for bottom ash)</p> <p>i) Fly Ash Silo capacity- 2 x 2520=5040 MT</p> <p>Fly ash evacuation is through vacuum system from ESP hopper and will be stored in fly ash silos of capacity (2x2520=5040MT) which will be having capacity for 24 hours storage each.</p> <p>ii) Bottom Ash Silo capacity-1 x 1800=1800 MT</p> <p>Bottom ash evacuation is dry type initially through closed conveyor system up to intermediate silo and from there up to bottom ash silo of capacity (1x1800=1800 MT) is by pipe line.</p> <p><u>B. Ash utilization</u></p> <p>The ash will be sold to cement / brick industries through E-auction as being followed in NCTPS Stage 1&2. The fly ash will be loaded in closed trucks / bulkers through telescopic spout assembly of Fly ash Silo and transported to cement/Brick companies. The bottom ash will be conditioned by quenching with water (18m³/hour) and will be loaded in truck and covered with tarpaulin for transporting. Hence, 100% ash Utilization will be</p>

S.No.	Additional information sought	Reply submitted by the project proponent
		<p>achieved as per MOEF &CC Notification 31.12.2021.</p> <p><u>C. Ash disposal in case of emergency</u> In case of emergency, both fly and bottom ash will be made as slurry and transported to existing NCTPS ash dyke through existing ash pipelines of NCTPS. Water required for making slurry will be around 8082 m³/day, which will be sourced from CT blow down pump and guard pond water (reject sea water). 12 Nos piezometric wells are already available in and around the existing ash dyke of NCTPS. It is assured that the ash slurry pipelines will be monitored to avoid any leakages to protect the nearby area.</p>
<p>Compliance to the recommendations of the site visit report of the sub-committee of EAC relevant to the proposal under consideration</p>		
<p>iii.</p>	<p>The EIA report including carrying capacity of existing ash pond along with remedial measures to avoid pollution wherein ash from Stage I and Stage II is being disposed and emergency ash disposal of Stage III is proposed shall be prepared.</p>	<p>The EIA report, including details of the carrying capacity of the existing ash pond, has been submitted to MOEF&CC.</p> <p>The report was prepared by M/s Cholamandalam MS Risk Services Ltd, Chennai.</p> <p>The proposed pipelines will transfer ash slurry from Stage III to the designated ash dyke pond of NCTPS.</p> <p>The ash dyke pond covers ~133 hectares (328 acres), representing a permanent land footprint.</p> <p>The pond falls within the NCTPS land area and is already used for ash disposal by Stage I & II plants.</p>
<p>iv.</p>	<p>Design report of the ash slurry pipeline corridor for the Stage III NCTPS power plant and exploring the feasibility of using the existing ash slurry pipelines of Stage I and Stage II NCTPS plant for the proposed</p>	<p>The design report for the ash slurry pipeline of NCTPP Stage III is submitted.</p> <p>It has been decided to use the existing ash slurry pipelines of NCTPS Stage I & II instead of constructing new pipelines.</p>

S.No.	Additional information sought	Reply submitted by the project proponent
	Stage III shall be prepared by NCTPS.	This decision was made to minimize environmental impact. NCTPP Stage III will dispose of ash slurry only in emergencies, as both fly ash and bottom ash are disposed of in dry form.
v.	Adequacy report from Competent Authority on existing ash dyke capacity to accommodate the proposed ash slurry from stage III NCTPS shall be submitted.	The existing ash pond of NCTPS is sufficient as wet ash will be disposed of promptly to brick industries and other works. Details of the ash pond: Area: 328 acres. (133 Ha) Capacity: 57.5 lakh m ³ (at a height of 5m). Current stock: 29 lakh m ³ . Remaining capacity: 28.5 lakh m ³ .

The above additional information was presented by the proponent along with their EIA consultant M/s. Re Sustainability Solutions Private Limited, Hyderabad [NABET Certificate No.: NABET/EIA/2225/RA 0278, Valid up to 26/09/2025]. In addition to the above, proponent informed that Hon'ble NGT(SZ) in Original Application No.122 of 2021 (SZ) with Original Application No.162 of 2021 (SZ) vide its judgement dated 31/01/2022 directed the proponent not to proceed with the work of laying the pipeline through the CRZ zone and also in the other area in violation of the Environment Clearance and CRZ Clearance granted to them in 20/01/2016, without getting necessary further clearances in this respect by filing afresh application in accordance with law. Besides, the Hon'ble NGT also imposed a compensation of Rs. 50 lakhs which has been paid by them to TNPCB on 30/3/2022. In compliance to the said judgment, proponent filed another amendment proposal bearing No: IA/TN/THE/442379/2023 was submitted to the Ministry seeking for amendment in the EC & CRZ dated 20/01/2016 for the ash slurry pipeline for stage III project. The proposal was considered by the EAC in its meeting held on 04/09/2023 and 31/10/2023 wherein the proposal was deferred and EAC recommended for site visit by a sub-committee. During the site visit, it was informed by M/s. TANGEDCO that they have decided to utilize the existing spare lines of NCTPS Stage – I & II to reduce the environment impact. In view of this, PP informed the EAC that no new ash slurry pipelines are envisaged for the stage III project and the proposal no. IA/TN/THE/442379/2023 is being withdrawn by them.

Furthermore, the proponent informed that there is another matter namely, OA No 8 of 2016 titled as R.Ravimaran (Died) & Ors. vs Union of India & Ors. tagged with OA No 198 of 2016 titled as Meenava Thanthai K.R. Selvaraj Kumar vs The Chief Secretary Government of Tamil Nadu,

Chennai & Ors., filed before the Hon'ble Tribunal (SZ), Chennai regarding illegal dumping of ash slurry and violation of conditions of Environmental Clearance and CRZ Clearance granted by dumping fly ash and draining the wastewater into the Buckingham Canal and Kosasthalaiyar River respectively.

In this regard, the Hon'ble Tribunal vide its judgment dated 05/07/2022 passed the following directions for compliance by the PP:

- i. To carry on their activities strictly in accordance with law and complying with the conditions imposed in the Environmental Clearance and the Consent granted by the State Pollution Control Board.
- ii. To replace the old ash slurry carrying pipes as undertaken by them within the time frame fixed and also take all necessary precautions of providing necessary sensor system to detect the leak immediately and also the mechanism by which production and pumping of ash slurry through the damaged pipeline can be stopped immediately, so that further pumping can be avoided so as to minimize the leak if at all if it happens in future.
- iii. To pay the compensation already assessed by the State Pollution Control Board on various occasions for the violations noticed by them and also compensation directed to be paid by this Tribunal in other related connected matters viz., Original Application Nos.122 of 2021 (SZ) and 162 of 2021 (SZ) which were already disposed of this Tribunal by giving certain directions.
- iv. To pay environmental compensation which is likely to be assessed on the basis of the study to be conducted by the agency which is going to conduct study for remediation process, apart from the compensation already imposed by various proceedings of the Tamil Nadu Pollution Control Board and directed to be paid by this Tribunal.
- v. To bear the expenses for conducting the study through the agency to be identified for preparation of DPR and also the expenses for remediation.
- vi. To undertake the remediation process and complete the same at the earliest possible time, as delay in implementation will result in further damage to the environment.
- vii. To carry out the recommendations made by the Joint Expert Committee regarding creating green cover, including plantation of mangroves and other species suggested which are conducive to environment and that will not affect the riverine and coastal zone ecology.
- viii. To take immediate steps to remove the fly ash already deposited in that area due to the breach of fly ash slurry carrying pipes without delay and after removal of the same, soil analysis will have to be conducted by the CPCB and SPCB and if further remediation will have to be conducted or further steps are required for removal of further fly ash deposit found in that area, then that also will have to be carried out by the PP.

On the above, the PP has informed that the compliance of the aforesaid order is under process.

The representatives have requested to amend the EC & CRZ dated 20/01/2016 for change of change of coal source from 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion as the 1x800 MW is ready for commissioning and trial runs have been completed.

Observations and deliberation of the EAC

18.4.3: The Committee observed and noted the following:

- i. Present proposal is for seeking amendment in EC & CRZ regarding change of coal source from 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion.
- ii. Proposal was earlier recommended by the EAC in its meeting held on 11th meeting held on 27-28th June, 2024 and the same was recommended by the EAC subject to stipulation of additional specific conditions.
- iii. Proposal was referred back by the Ministry for examining the additional information submitted by the proponent as mentioned at para no. 18.4.2. Committee deliberated on the same and found it satisfactory.
- iv. Committee noted that proposal no. IA/TN/THE/442379/2023 of M/s. TANGEDCO is being withdrawn by the project proponent.

Recommendations of the Committee

18.4.4: In view of the foregoing and after detailed deliberations, the EAC again *recommended* the proposal for amendment in the EC&CRZ dated 20/01/2016 for change of coal source from 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion as per the 11th meeting held on 27-28th June, 2024 subject to withdrawal of the proposal no. IA/TN/THE/442379/2023 of M/s. TANGEDCO and stipulation of following additional specific condition.

- i. Project proponent shall comply with all the directions passed by the Hon’ble National Green Tribunal vide its judgement dated 05/07/2022 in OA No 8 of 2016 titled as R.Ravimaran (Died) & Ors. vs Union of India & Ors. tagged with OA No 198 of 2016 titled as Meenava Thanthai K.R. Selvaraj Kumar vs The Chief Secretary Government of Tamil Nadu, Chennai & Ors. Compliance status in this regard shall be submitted to the concerned Regional Office of the MoEF&CC along with the six monthly compliance report.

18.5: Additional Agenda with the permission of the Chair: It was apprised to the EAC that the sub-committee of EAC has submitted the following site visit reports for consideration by the EAC:

S. No.	Name of the proposal and its number	Sub-committee composition	Details of site visit report
1.	Expansion in capacity of Indian coal based ultra-supercritical thermal power plant from 1200 MW to 2800 MW by adding 1600 MW (2x800 MW) by Essar Power Gujarat Limited (EPGL)	1. Shri Inder Pal Singh Matharu 2. Dr. Umesh Jagannathrao Kahalekar 3. Prof Santosh Kumar	Site visit was conducted on 27-28 th Dec. 2024. Site visit report Submitted and enclosed as Annexure III

S. No.	Name of the proposal and its number	Sub-committee composition	Details of site visit report
	Proposal No. IA/GJ/THE/471719/2024		
2.	4x600 MW unit Coal based Thermal Power Plant by M/s Jindal Power Limited (JPL) located at Village Tamnar, Taluk Gharghoda, District Raigarh, Chhattisgarh Proposal No. IA/CG/THE/472414/2024	1. Prof. Shyam Shanker Singh 2. Dr. Lalit Kapur 3. Representative of MoEF&CC	Site visit was conducted on 2-4 th January, 2025. Site visit report Submitted and enclosed as Annexure III
3.	Expansion in capacity of Sipat Super Thermal Power Project from 2980 MW (Stage-I & Stage-II) to 3780 MW by adding Stage-III (1x800 MW) Proposal No. IA/CG/THE/463369/2024	1. Prof. Shyam Shanker Singh. 2. Dr. Lalit Kapur. 3. Representative of MoEF&CC	Site visit was conducted on 5-7 January, 2025. Site visit report Submitted and enclosed as Annexure III
4.	Expansion of Kawai Thermal Power Plant by addition of 3200 (4x800) MW Ultra Super Critical Thermal Power Plant to Existing 1320 (2x660) MW Proposal No. IA/RJ/THE/467570/2024	1. Shri Inder Pal Singh Matharu 2. Dr. Vinod Agrawal 3. Dr. Umesh Jagannathrao Kahalekar	Site visit was conducted on 6-7 th January, 2025. Site visit report Submitted and enclosed as Annexure III
5.	Expansion of Kalisindh Ultra Super critical (1 X 800 MW) Coal based Thermal Power Project from 2x600 MW in an area of 555 Ha (Existing) at Village Nimoda, Tehsil Jhalara Patan, District Jhalawar (Rajasthan) by M/s Rajasthan Rajya Vidhyut Utpadan Nigam Ltd. Proposal No. IA/RJ/THE/406137/2022	1. Shri Inder Pal Singh Matharu 2. Dr. Vinod Agrawal 3. Dr. Umesh Jagannathrao Kahalekar	Site visit was conducted on 8 th January, 2025. Site visit report Submitted and enclosed as Annexure III

The site visit report of the above projects have been duly circulated to all the members of EAC. The EAC deliberated on the same and accepted the site visit report. Further, it was advised that the said site visit report shall be sent to the concerned project proponent for records and for ensuring compliance to the recommendations of the site visit report.

The meeting ended with vote of thanks to the Chair.

ANNEXURE-I

**LIST OF PARTICIPANTS OF EAC (THERMAL) IN 18th MEETING HELD ON 24TH
JANUARY, 2025 THROUGH PHYSICAL MODE**

S. No.	Name & Address	Role	24.01.2025
1.	Shri Inder Pal Singh Matharu, (I.F.S. Retd.)	Chairman	Present
2.	Shri Lalit Kapur	Member	Present
3.	Dr. Umesh Jagannathrao Kahalekar	Member	Present
4.	Dr. Santosh Kumar Hampannavar	Member	Present
5.	Shri Savalge Chandrasekhar	Member	Present
6.	Shri K. B. Biswas	Member	Present
7.	Prof. Shyam Shanker Singh	Member	Present
8.	Dr. Vinod Agrawal	Member	Present
9.	Dr Nazimuddin, Scientist - F	Representative of Central Pollution Control Board	Present
10.	Shri Mahi Pal Singh, Chief Engineer	Representative of Central Electricity Authority (CEA)	Present
11.	Shri Harmeet Sawhney	Representative of Indian Meteorological Department (IMD)	Present
12.	Prof. R M Bhattacharjee	Representative of IIT/ISM Dhanbad	Present
13.	Shri Sundar Ramanathan	Scientist 'F' & Member Secretary	Present
14.	Dr. Rajesh Prasad Rastogi	Scientist 'D'	Present

APPROVAL OF CHAIRMAN EAC

Re: REVISED DRAFT MOM OF 18 EAC THERMAL HELD ON 24/01/2025

IS Inderpal Singh Matharu <matharu0204@gmail.com>
Mon, 03 Feb 2025 10:20:46 AM +0530 •
To "Sundar Ramanathan" <r.sundar@nic.in>
Cc "RAJESH PRASAD RASTOGI" <rp.rastogi@gov.in>

Dear all,
I have gone through the final draft of 18th EAC for Thermal. Please put it on portal.
Regards
Inder Pal Singh Matharu
Chairman
EAC (Coal mining and Thermal)

On Sun, Feb 2, 2025 at 12:31 PM Sundar Ramanathan <r.sundar@nic.in> wrote:
■



Report on the Site Visit of EAC Sub-committee from 27-12-2024 to 28-12-2024 (2 days) w.r.t Proposal No. IA/GJ/THE/471719/2024 - Expansion in capacity of Indian coal based ultra-supercritical thermal power plant from 1200 MW to 2800 MW by adding 1600 MW (2x800 MW) by M/s Essar Power Gujarat Limited

Background Information:

The proposal of expansion in capacity of Indian coal based ultra supercritical Thermal power Plant from 1200 MW to 2800 MW (adding 1600 MW i.e. 2 x800 MW) by M/s Essar Power Gujrat Limited was considered in the 11th EAC meeting dated 27th and 28th June 2024 wherein EAC after detailed deliberations suggested that-

Site visit of EAC sub-committee members shall be carried out before appraisal of EC for further specific conditions in terms of marine ecology, in situ other measures for mitigation of environment pollution due to proposed Power Plant.

As per the office order number F. No. J-13011/16/2008-IA.II (T) (E-25338) dated 23rd December 2024, the Ministry formed the following sub-committee comprising of four (4) members to conduct a site visit during 27 and 28 December 2024.

1. Shri Inder Pal Singh Matharu, Chairman
2. Dr. Umesh Jagannathrao Kahalekar, Member
3. Dr. Santosh Kumar Hampannavar, Member
4. Representative of MOEFCC

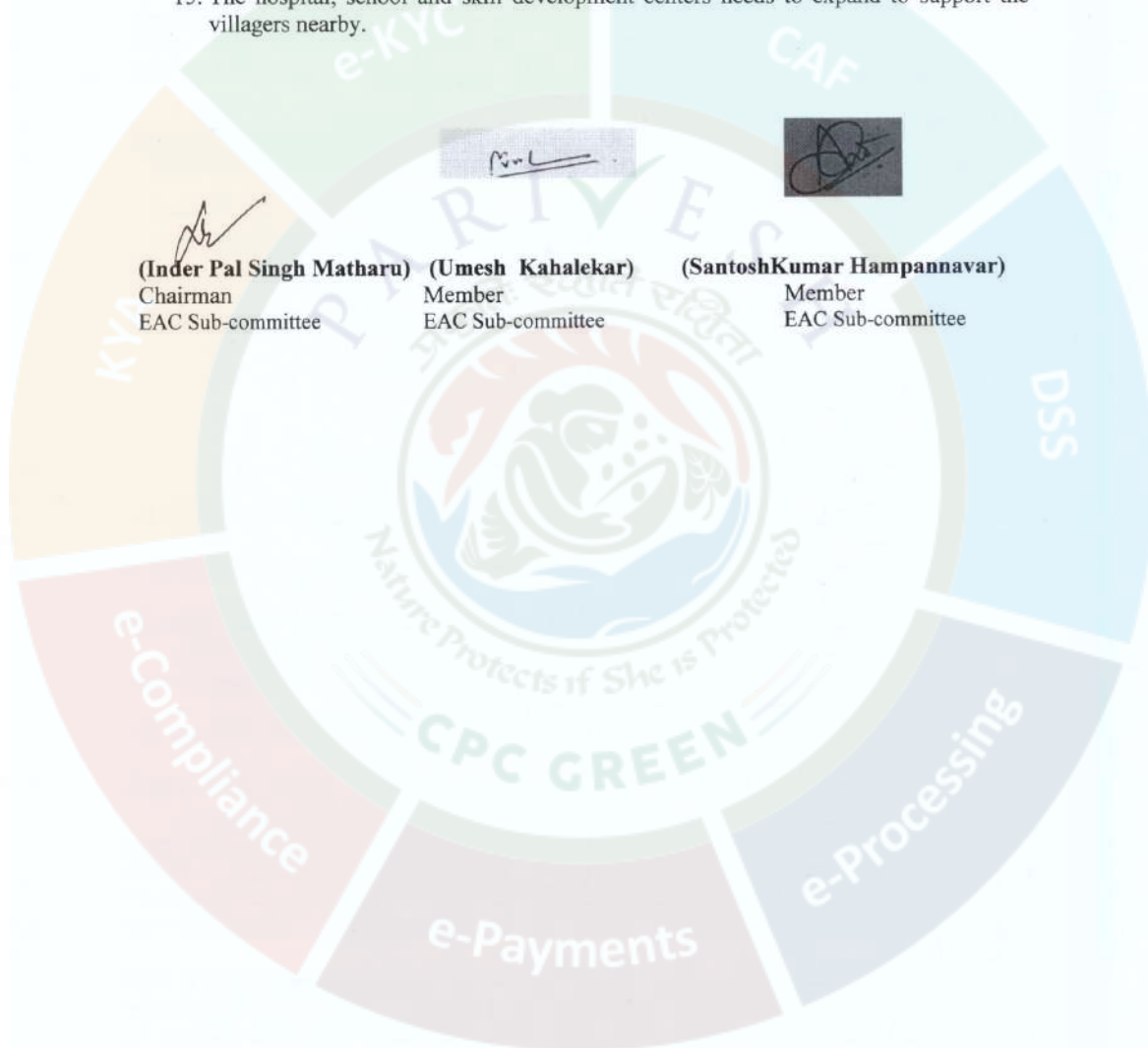
Details of the Site Visit and Observations made by the Sub-committee:

1. Housekeeping in the plant was satisfactory and roads were found to be clean inside the premises.
2. In areas like coal stock yard and handling areas, water sprinkling was observed to suppress dust.
3. The fly ash is being transported to cement industries through closed bulkers from the SILO and almost 100% ash utilization is done and as such legacy ash is minimal.
4. The density of plantation is inadequate and needs improvement. It is suggested to go for Miyawaki plantation for improving tree plantation drive.
5. The committee visited the CAAMS and the parameters viz. PM_{2.5}, PM₁₀, SO₂ and NO_x were found within prescribed limits.
6. The FGD is not yet installed in 1200 MW power plant and PP assured that it will be installed within the time limit. In the proposed 1600 MW plant FGD is proposed.
7. The coal is received through closed conveyer system from Essar Bulk Terminal Salaya Ltd. Port (EBTSL). For the proposed power plant, the same closed conveyor system will be used and this system is common for the Essar Project and Nayara Project. PP has to submit the documentary proof of prior EC for the layout of Closed Conveyor System.
8. It is reported that 311222 KLD sea water will be used for the proposed 1600 MW plant and the PP has to submit the documentary proof of prior EC (if any) for the utilization of sea water as well as laying of pipeline for the same along with intake structure for the supply of sea water for the proposed TPP. If prior EC of EBTSL does not include these aspects, the same needs to be incorporated in EIA study report for EC.
9. It is reported that blowdown colling water will be discharged in the sea. If prior EC of



EBTSL does not include the provision of laying of wastewater pipeline and/or discharge of this wastewater, the same aspect shall be included in the EIA study of proposed 1600 MW TPP.

10. The action plan for the carbon sequestration be submitted.
11. The action plan for ambient air quality monitoring be submitted.
12. The rainwater harvesting plan along with budgetary provision be submitted.
13. The action plan for achievement of SDG be submitted.
14. The internal roads which are not paved, shall have the rigid pavement.
15. The hospital, school and skill development centers needs to expand to support the villagers nearby.



(Inder Pal Singh Matharu)
Chairman
EAC Sub-committee

(Umesh Kahalekar)
Member
EAC Sub-committee

(Santosh Kumar Hampannavar)
Member
EAC Sub-committee





Report of the site visit to M/s Jindal Power Limited Tamnar, Raigarh, Chhattisgarh during 02.01.2025 to 04.01.2025.

Background

M/s Jindal Power Ltd (JPL) sought amendment in Environmental Clearance dated 18.03.2011 & 04.11.2011 and its subsequent amendments granted therein for the project namely "Expansion of 4×250MW Thermal Power Plant by addition of 4×600 MW Coal based units located at Village Tamnar, Taluk Gharghoda, District Raigarh, Chhattisgarh **for utilization of existing ash dyke of 4×250 MW for 4×600 MW TPP**

The project obtained EC from MoEF&CC on 18/03/2011 for expansion of 4×250 MW unit by addition of 2×600 MW (Unit 1 & 2). Subsequently, another expansion EC was granted on 04/11/2011 for addition of another 2×600 MW (Unit 3 & 4). Thereafter, the EC was amended by the Ministry on 10/01/2014, 27/03/2015, 26/04/2017, 28/08/2020, 28/10/2021 and 24/02/2023 for utilization of existing ash dyke of 4×250 MW for 4×600 MW TPP till construction of new dyke.

As per the present request dated 14.06.2024 M/s Jindal Power Limited has sought permission to continue the use of existing Ash Dyke of 4×250 MW for disposal of unutilized ash of 4×600 MW permanently.

The aforesaid amendment proposal was considered by the EAC-Thermal in its 11th and 13th meetings held on 27th-28th June 2024 and 1st Oct 2024 respectively.

In the 13th EAC Meeting of the (Thermal) held on 1st Oct 2024 in respect of the proposal, the EAC has recommended for site visit by a sub-committee for the on spot assessment of various environmental conditions.

In view of acceptance of the recommendation of Expert Appraised Committee (EAC) the Ministry Constituted a Sub-Committee Comprising through letter no.IA-J-13012/02/2019-IA-1(T) [E-119770] dated 19th Dec 2024 of following members for the scheduled site visit:-

1. Prof. Shyam Shankar Singh (Member of EAC)
2. Sh. Lalit Kapur (Member of EAC)
3. Representative of MoEF&CC

The Sub Committee visited M/s Jindal Power Limited, (JPL) Tamnar (Raigarh) during 2nd - 4th January 2024.

Following are the Observations of the committee:-

1. As per EC, dated 18.03.2011 a separate ash dyke near Rodapalli village was to be constructed for 4×600 MW TPP. However, the ash dyke could not be constructed as the land for the proposed ash dyke area became part of a coal block.

2. Based on the request of M/s JPL, MoEF and CC vide letter dated 26.04.2017 granted permission to construct the ash dyke for 4×600 MW on 236 Ha land at alternate location near village Dolsera.
3. The latest EC amendment dated 24.02.2023 extended permission to use existing ash dyke of 4×250 MW for disposal of unutilized ash from 4×600 MW till June 2024.
4. Simultaneously M/s JPL got the Gare Palma IV/1, Gare Palma IV/2 and IV/3 coal mines which provided the company an opportunity to backfill the available voids of the Gare Palma mines by utilizing ash from the TPP. PP informed that accordingly as per the provisions of fly ash utilization notification dated 31.12.2021 JPL started the back filling of mine voids by utilizing ash from the TPP along with the over burden in 1:3 volume to volume as per the guidelines of DGMS.
5. It was informed that in view of the regular availability of mine voids in the mines currently available with M/s JPL the back filling of ash will not a problem.
6. The ash utilization achieved by JPL during the last 5 years is given below.

FLY ASH UTILISATION FOR 4×250MW								
Year	Brick plants	Low land fillings	Cement plant /Road	Ash Dyke Raising	Mines back filling	Total Fly ash utilized	Fly ash generation	% Utilisation
2020-21	0	59005.32	8011.12		179682.42	246698.86	1582074.27	15.6
2021-22	0	624953	189173	0	740178	1554304	1834909	84.7
2022-23	1179	203144			1935851	2140174	2163291	98.9
2023-24	0	7749	0	0	2395837	2403586	2396820	100.3
2024-25*till Nov.	0	0	0	0	1432340	1432340	1663276	86.1

FLY ASH UTILISATION FOR 4×600MW								
Year	Brick plants	Low land fillings	Cement plant/Road/others	Ash Dyke Raising	Mines back filling	Total Fly ash utilized	Fly ash generation	% Utilisation
2020-21	14587.91	70552	17523.56		453355.09	556018.44	3063582.067	18.15
2021-22	2654.49		879	234800	2959887.4	3198220.86	3568815.986	89.62

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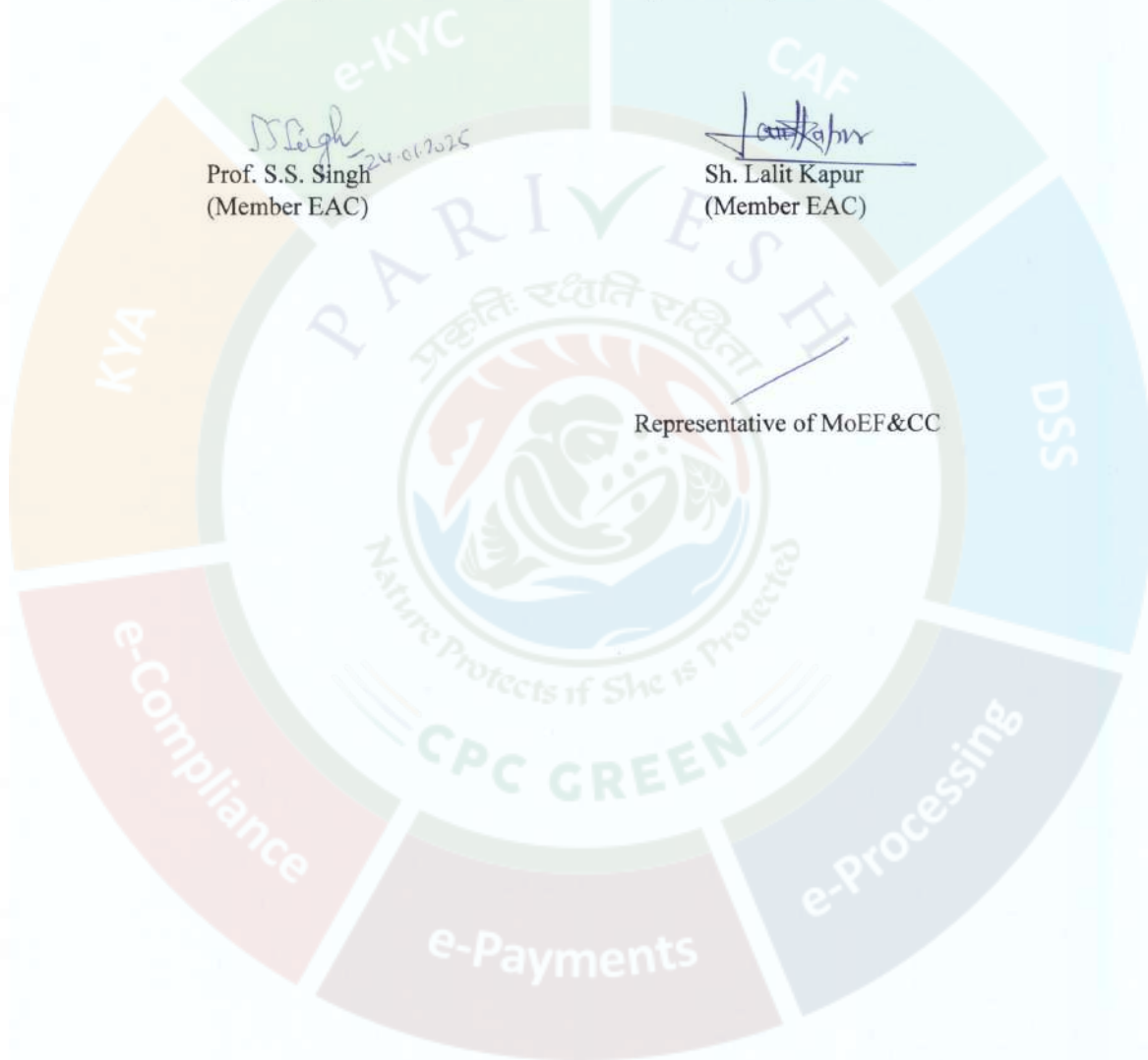
2022-23	32728	7053	87019	0	4401348	4528148	4581135	98.8
2023-24	170347	0	121450	0	5439252	5731049	5624741	101.9
2024-25* till Nov	92292		58194	0	3148585	3299071	4194353	78.7

7. M/s JPL has engaged IIT kharagpur, CIMFR, Dhanbad and NIT Raipur to analysis various studies e.g. leach ability, environmental aspects of backfilling and ash dyke stability analysis.
8. For on the spot assessment of land details the Sub Committee visited the allotted site for the ash dyke situation near Dolsera village. The allotted area for ash dyke is 236 ha. M/s JPL informed that out of 236 ha land acquisition process for 183.622 ha has been completed however the physical possession of land is pending. It was observed by the committee that the area in Dolsera village is not having any settlement. There are scattered trees growing in the undulated land with Shrubs and grasses. No farming and any construction activity was seen.
9. M/s JPL has installed total 6 no. of CAAQM stations in and around the Thermal Power Plant. These are connected to the CPCB and CECB server.
10. High efficiency Electrostatic precipitators are installed in all the 8 units to achieve the environment of 30mg MW for particulate matter emissions.
11. The over flow from Ash pond is recirculated back and used in slurry making.
12. Treated effluent from the ETP and STP is used for ash slurry preparation, dust suppression and horticulture purposes.
13. Presently ash slurry is being disposed in the existing ash pond of 198 ha.
14. Green belt/plantation has been developed by PP in the plant premises in an area of 122 ha.
15. PP has also plans to carry out plantation to cover the about 40ha area by planting 25000 plants during 2025-2025, 30,000 plants during 2026-27 and 30,000 plants during 2027-28.

Concluding remarks of Sub Committee:-

1. The PP should ensure that the back filling of mine voids in combination with over burden material is carried out under care of environmental safe guards in compliance with the guidelines of DGMS and CPCB.
2. PP should carry out regular monitoring of the area around back filling site to ensure there is no leaching or deterioration of any environmental parameter particularly w.r.t. Ground Water and Surface water sources.
3. M/s JPL should present the findings and recommendations of the studies carried out by IIT, Kharagpur, CIMFR, Dhanbad and NIT Raipur w.r.t. the impact analysis of back filling of mine voids and stope stability of Ash Dyke.

4. M/s JPL should also work to enhance the utilization of fly ash in areas such as Cement manufacturing, brick, and tiles and hollow block manufacturing and highways construction etc.
5. For control of SO₂ emissions PP should install FGD systems at the earliest as per the provisions of OM of date 30/12/2024 as issued by MoEF&CC.
6. PP should make roadside plantation along the transport route of coal.
7. Miyawaki plantation should also be done by PP in the plant area.



Photographs of EAC Sub-committee visit



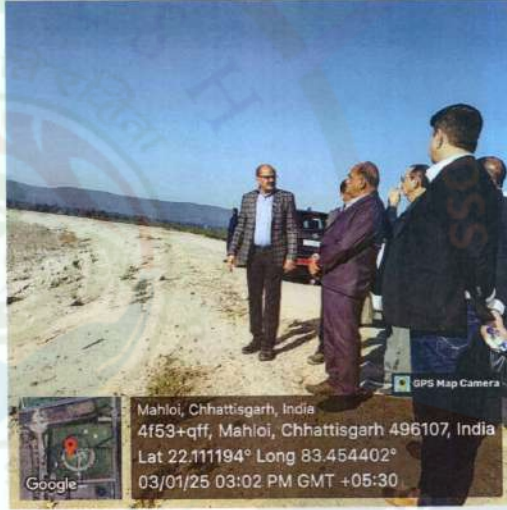
Opening meeting



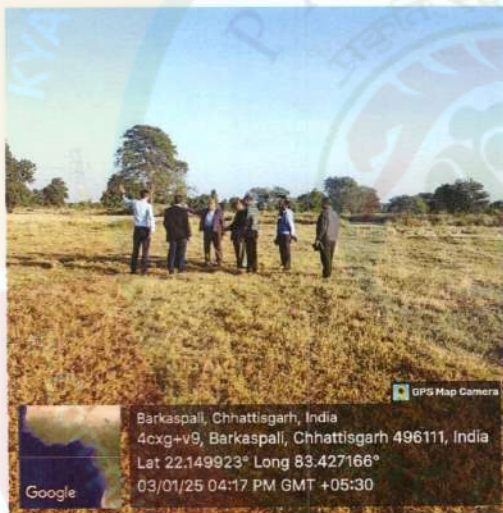
e-Payments



Plantation



Existing Ash dyke



Proposed ash dyke area of 236 Hectare at Dolsera village



Solar Park



Backfilling of void by fly ash in nearby mine (with combination of 3:1 fly ash and OB material)



Control Room



Coal Handling area

Environment Lab



Closing meeting

Report of the Site Visit to NTPC Ltd, Sipat, Bilaspur, Chhattisgarh during 05.01.2025 to 07.01.2025 Super Thermal Power Project.

NTPC Limited plans expansion in capacity of its existing coal based 2,980 MW Super Thermal Power Project (comprises of Stage-I, 3 x 660 MW and Stage-II, 2 x 500 MW) located at Village and Tehsil Sipat, District Bilaspur in Chhattisgarh State, by adding Stage-III (1 x 800 MW Ultra Super Critical Technology) in its existing premises. A proposal in this regard for obtaining Environment Clearance was submitted to MoEF & CC by NTPC Ltd.

Project proposal was considered by the Expert Appraisal Committee (Thermal) in the meetings held on 27.02.2024, 08.04.2024 and 27.06.2024.

Based on the recommendation of the EAC (Thermal), Ministry on 06.08.2024 accorded Environment Clearance to NTPC Ltd. for "Expansion in capacity of Sipat Super Thermal Project from 2980 MW (Stage-I & II) to 3780 MW by adding Stage-III (1 x 800 MW), with general and specific conditions.

As per the Environmental Clearance for the expansion project, "A sub Committee of the EAC shall visit the site post EC to recommend any further mitigation measures".

MOEF & CC vide Office Order dated 19.12.2024, constituted the following sub Committee for a site visit.

1. Prof. S. S. Singh (Member EAC)
2. Dr. Lalit Kapur, (Member EAC)
3. Representative of MoEF & CC

Accordingly, Prof. S. S. Singh and Shri. Lalit Kapur visited NTPC Ltd., Sipat Super Thermal Power Project from 05/01/2025 to 07.01.2025 for site inspection.

The committee visited Green belt area, Ash dyke area, Reservoir, Deori Pond site, Miyawaki plantation site in plant premises and also at Bhilmi and Uchchbhatti villages which are approximately within 10 km arial distance, Coal Handling Plant, ESP and other areas. The sub committee has taken note of the environmental parameters in plant area.

Sub Committee interacted with Head of the Project and concerned HoDs to understand the detailed progress on the various Environmental Clearance conditions.

The Observations of the Sub-Committee are summarised below.

1. Air Pollution Control measures:

- a) At present 3 no. CAAQMS have been installed and functioning in NTPC-Sipat premises.
- b) One CAAQMS is installed in Bilaspur city at Sanjay Taran Pushkar.
- c) Further, as mandated in EC, procurement of three more CAAQMS has been initiated under Stage-III.

(1)

- d) High efficiency ESPs more than 99.90 % efficiency have been installed at NTPC Sipat.
- e) For NOX Emission control, Combustion Modification work has been completed in all units.
- f) For reduction of SO₂, for Stage-I (3x660 MW) FGD installation has been completed in September '2024 and work is of installation progress for Stage II (2X500 MW) Units. Expected date of completion is August' 2025.
- g) Conversion of secondary fuel from HFO to LDO has been completed for all the five Units for reduction of SO₂ emission.
- h) Dust Suppression /sprinklers System are provided in dust CHP, and ash dyke etc.
- i) Water sprinkling is being done on ash haulage road.

2. Present Status of Ash pond and proposed ash pond:

- a) Presently, there are three ash ponds with supernatant re-circulation AWRS system. Total area under ash dyke is 392 ha.
- b) Existing ash dyke will be used for the upcoming unit under Stage-III.
- c) No separate ash dyke is proposed for the expansion project.

3. Status of Ash utilization and plan for 100% ash utilization:

- a) Ash Utilization in FY 2023-24: 101.26 %
- b) Ash Utilization in FY 2024-25 as on date is 88.75 %

At present, following avenues are available and work is in progress to achieve higher Ash Utilization-

- a) Supply of Ash to NHAI (Qty – 58LMT)
- b) Supply of Ash to Cement Industries (6 LMT)
- c) Low Lying area identified for Ash Filling (7LMT)
- d) MOU Signed with SECL for mines back filling at Bishrampur and Dugga Mines (Qty 53LMT).
- e) Fly Ash Bricks and Ash related products manufacturing (5LMT)

4. Water Use and Status of ZLD:

- a) In FY 2023-24, SWC (Specific Water Consumption) is 2.46 m³/MWH which is below the regulatory limit of 3.5 m³/MWH.
- b) Wastewater /effluent generated in plant, township and ash dyke is treated and reused for various purposes. Treated water from ETP is used in ash slurry system / fire extinguisher water /housekeeping and STP treated water is used for horticulture purposes.

5. Status of ETP and STP:

(2)

- a) ETP: All the effluent (wastewater) generated from plant is treated in ETPs and recycled back into the process. There are two ETPs (stage-I - 3 x 250 m³/hr and stage-II - 2 x 125 m³/hr) operational for recycling of effluent.
- b) STP: 1500 KLD capacity STP is functional for handling sewage water from township. In addition to above, there are 18 pre-fabricated STP's with a total capacity of 133 KLD are operational to treat sewage generated from various office complexes inside the plant premises. Treated water from STPs is used for horticulture.
- c) Stage-III: Effluent of 2256 KLD & 75 KLD quantity is proposed to be treated through ETP & STP respectively in Stage-III.

6. Plantation Program:

- a) Plantation of 1,16,750 No. of saplings planned in 2024-25 at a cost of Rs. 19.75 crore.
- b) NTPC Sipat also plans 1 lakh plantation every year till for the next five years. They have requested DFO, Bilaspur and District Collector Bilaspur to make land available for plantation.
- c) The Miyawaki plantation of 8 HA carried out by Sipat plant at outside of plant in the Gram Panchayat land of villages Bhilmi and uchchbhati.
- d) This miyawaki plantation is well designed and in good stage of its growth.

7. Feasibility of Underpass:

- a) PP informed that in view of the public concerns w.r.t. movement of coal through MGR system a feasibility report was sought from Rites for construction of under pass on NTPC owned PSNG-GTW rail section. NTPC should submit complete details in this regard to the Ministry.

8. Procurement of e-vehicles:

- a) It was informed that battery operated fork lifts are deployed for handling/transportation of material inside plant premises. Further 7 no. more fork lift are under procurement to replace the conventional diesel operated fork lift. NTPC also informed that an EOI for exploring transporters to deploy e-vehicles for transportation of ash is also being published.
- b) Two-battery auto rickshaw are deployed in the plant area for transportation.

9. NTPC has taken steps to deepening and beatification of village ponds around the plant.

10. NTPC Sipat has setup an in house Environment Cell along with lab.

Concluding remarks of Sub-Committee:

- NTPC Sipat should improve the management of Ash dyke by covering the dry patches either with tarpaulin covers or keep the patches wet by providing suitable water spraying in that area.
- NTPC Sipat may divide the ash dyke area in to different zone/grids so as to improve the efficiency of ash dyke management.
- During Sub Committee visit, it has been observed that there is scope of gap plantation in plant as well as project area. This will increase green belt canopy in the project area.
- NTPC should install the floating solar power plant in the water reservoir area.
- NTPC Sipat should increase more green cover in and around vicinity of plant.

SSingh 24.12.25
Prof. S.S. Singh
(Member EAC)

Lalit Kapur 24/1/25
Sh. Lalit Kapur
(Member EAC)

Representative of MoEF&CC

Photographs of site-visit conducted by

EAC sub-committee

at



NTPC Ltd., Sipat Super Thermal Power Station

from

05.01.2025 to 07.01.2025



Opening meeting with Business Unit Head and HoDs



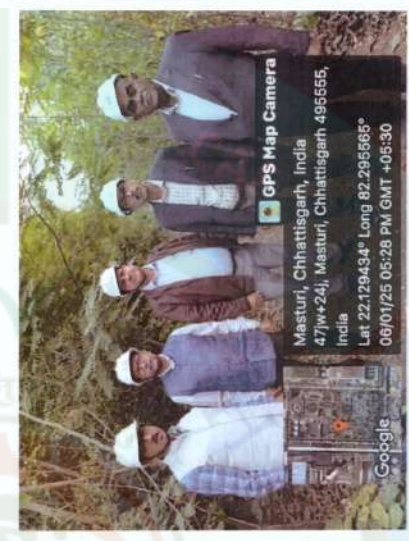
Miyawaki plantation site at Uchchabhaffi Village (Approx. within 10 kms from plant) (32,000 No.s, Area 4 ha)

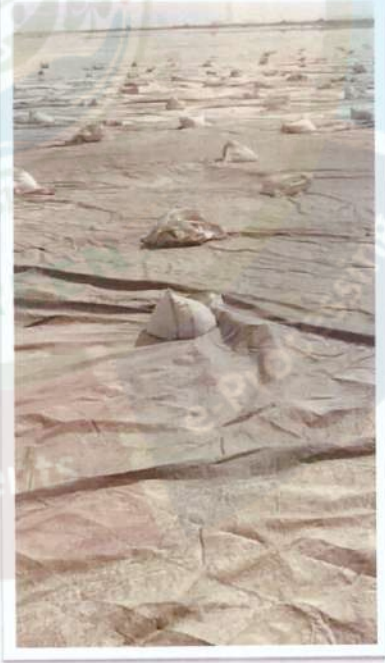
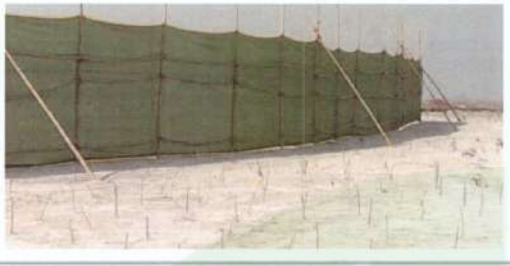


Miyawaki plantation site at Bhillmi Village (Approx. within 10 kms from plant) (32,000 No.s, Area 4 ha)



Miyawaki plantation site in Plant premises (DM Plant area, 23000 No.s, 1 ha)





Ash Dyke Visit



CHP track hopper visit



Environment Lab visit



Reservoir, site of 26 MW Floating solar plant



Environment parameter display at plant main gate



Deori village pond rejuvenated

**Report of the Site Visit from 06.01.2025 -07.01.2025 (2 days) to Adani
Power Kawai Thermal Power Project, Tehsil Atru, District Baran,
Rajasthan**

Background Information:

The site visit was organized in response to the proposal received by the MOEFCC for the grant of ToR to expansion of Kawai Thermal Power project by addition of 4X800 (3200 MW) located at Village – Kawai, Tehsil Atru, District Baran, Rajasthan by Adani Power Limited.

The proposal was considered in the 9th EAC meeting dated 07.05.2024 wherein EAC after detailed deliberations deferred the proposal and suggested that a **site visit** of sub – committee shall be conducted to physically assess the present status of project including:

- i) **Forest Land involved**
- ii) **Present Status of Plantation at the site,**
- iii) **Present status of construction of FGD at the site, and**
- iv) **Status of other environmentally sensitive areas around the project site such as schools, hospital etc.**

As per the office order number F. No. J-13012/154/2008-IA.II (T) (E-62884) dated 23rd December 2024, the Ministry formed the following sub-committee comprising of four (4) members to conduct a site visit during 6-7th January, 2025:

1. Shri Indrapal Singh Matharu, Chairman
2. Dr. Umesh J. Khalekar, Member
3. Dr. Vinod Agrawal, Member
4. Representative of MOEFCC

Details of the Site Visit and Observations made by the Sub-committee:

In compliance with the Ministry's office order, the Sub-committee visited the project site during 06 – 07th January, 2025. The Sub-committee reviewed and discussed the issues raised during the 9th EAC meeting with the Plant Head and other executives of the Kawai TPP. EAC Sub-committee also visited the plant site, Ash-Dyke (existing and proposed), Silo, Coal Handling area, Railway Siding, Hoppers, inside of the Thermal plant, nearby village and nearby school. The following specific observations were made:

(i) Forest Land involved

According to the PP, 1.758 Ha of Forest land is required for the coal conveyor system for the expansion proposal. The PP has moved the request for the FC. The sub – committee visited the proposed forest land and found that it was a strip land and there is very thin vegetation and devoid of trees (see photograph). However, a village road is passing through the strip of land.

(ii) Present Status of Plantation at the site

The actual area of Kawai TPP premises is 820.70 ha and the PP has already developed Greenbelt/ Plantation of 122 ha *inside and outside* the plant premises. Further, 167.44 ha area is proposed for Greenbelt/Plantation under Stage-II which leads to total of 35% of the total area. The sub – committee visited the plantation sites and found that satisfactory plantation and green belt development has been done. It is advised to cover the vacant areas within the plant with suitable plant species in consultation with the Agriculture / Horticulture /Forest Department (see the photographs).

(iii) Present status of construction of FGD at the site

For the existing Stage – I plant, PP has submitted that the order for EPC has been placed and basic and detailed engineering work is under progress. Erection including civil work will be completed by December 2028. Regarding the FGD, as per the MOEFCC notification dated 30th December, 2024, Kawai TPP falls under Category “C” for which timeline for installation of FGD is up to 32 December 2029.

(iv) Status of other environmentally sensitive areas around the project site such as schools, hospital etc.

Following are the names and locations of the schools and hospitals:

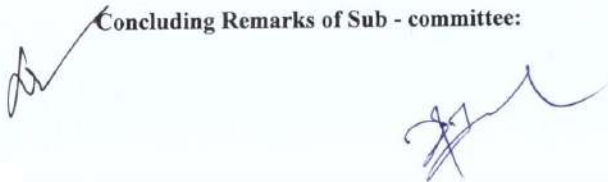
1. Govt. Adarsh Sr. Sec. School, Dara (1.12 km)
2. Govt. Public School, Nimbola (1.07 km)
3. Sahariya Awasiya School (3.8 km)
4. Pravya Health Care Centre, Salpura (4.8 km)
5. Government Hospital, Kolukhera (5.0 km)

The PP brought to the notice of the Sub-committee that the regular environmental monitoring is being carried out at different locations of these environmental sensitive areas. The sub – committee visited one of the school located near the plant site (Govt. Adarsh Sr. Secondary School, Dara). The Adani Power has included this school under his CSR activity. During the visit no coal and ash loaded vehicular movement was noticed at the site. However, the PP has directed to do intensive plantation around school and regular water fogging in nearby areas.

Other observations by Sub – Committee:

1. Housekeeping in the plant was satisfactory. Roads were found clean inside the premises.
2. In areas like coal stack yard and handling areas, water sprinkling was observed to suppress control dust.
3. At Railway siding, the coal unloading was mechanized and mist/water spraying system was being used during the unloading of coal in order to reduce the dust emissions.
4. The fly ash is being transported to cement industries through closed bulkers from the SILO. There was no spillage of fly ash noticed on the roads.
5. The PP assured the Sub-committee that the target for 100% utilization of fly ash will be achieved within three years.
6. PP has informed that 3 (three) numbers of CAAQMS installed inside and outside the plant. Sub-committee physically visited one of the CAAQMS, one located within the plant premises and noted the reading of PM10 which was found to be well within the permissible limits (65.8 µg/m³, see photograph).
7. The overflowing of ash pond and lean slurry disposal of ash is observed.

Concluding Remarks of Sub - committee:



The sub-committee members are of the opinion that the TOR may be considered by the EAC for the expansion of Kawai Thermal Power Plant by M/s Adani Power. However, the PP must give special emphasis on following issues:

1. Implementation of phase wise plan for the green belt development all along the internal roads, residential colony and gap area.
2. Ensure proper maintenance of ash pond/dyke, as per the guidelines issued by the CPCB/CEA.
3. Construction of bund and proper fencing, sign boards and plantations all around the boundary of ash ponds.
4. Provision of Wheel Washing System at the entry and exit to the plant and Ash Pond.
5. Regular monitoring system to check groundwater quality in surrounding areas and also at ash ponds.
6. Approaching road to Ash pond shall be made concrete and regular spraying of water through fog canons/fixed sprinkler to check re-suspension of dust during transportation.
7. Adequate environmental safety measures must be planned for the health and safety of the school children and villagers located in Buffer Zone.
8. As per the request of staff of Govt. Adarsh Sr. Secondary School, Dara, two class rooms and girl's toilet are required under CSR activity.
9. CAAQMS and CEMS to be connected to the server of SPCB and CPCB.
10. The lean slurry disposal of ash and overflowing of ash pond was observed. The PP should submit the action plan for improvement in concentrated slurry disposal system and utilization of legacy ash.
11. The EIA report shall cover the aspect of Intake well and water supply pipeline.
12. The action plan for carbon sequestration be submitted for proposed 4 x 800 MW plan.



(I.P.S. Matharu)
Chairman
EAC Sub-committee



(Umesh J. Khalekar)
Member
EAC Sub-committee



(Vinod Agrawal)
Member
EAC Sub-committee



(Er. Mahesh Dutt Purohit)
Member
IRO Jaipur

PHOTOGRAPHS



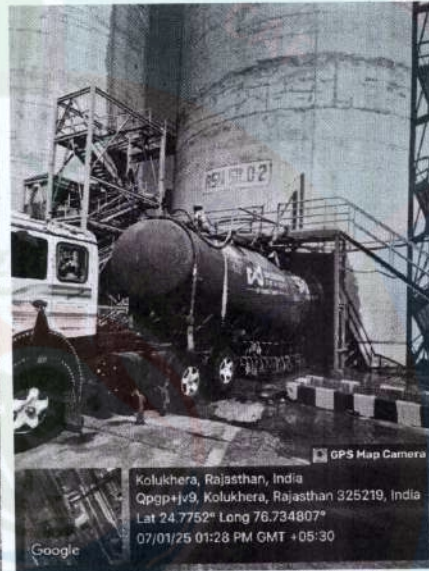
Sub – committee members with the officials of Kawai TPP during the visit



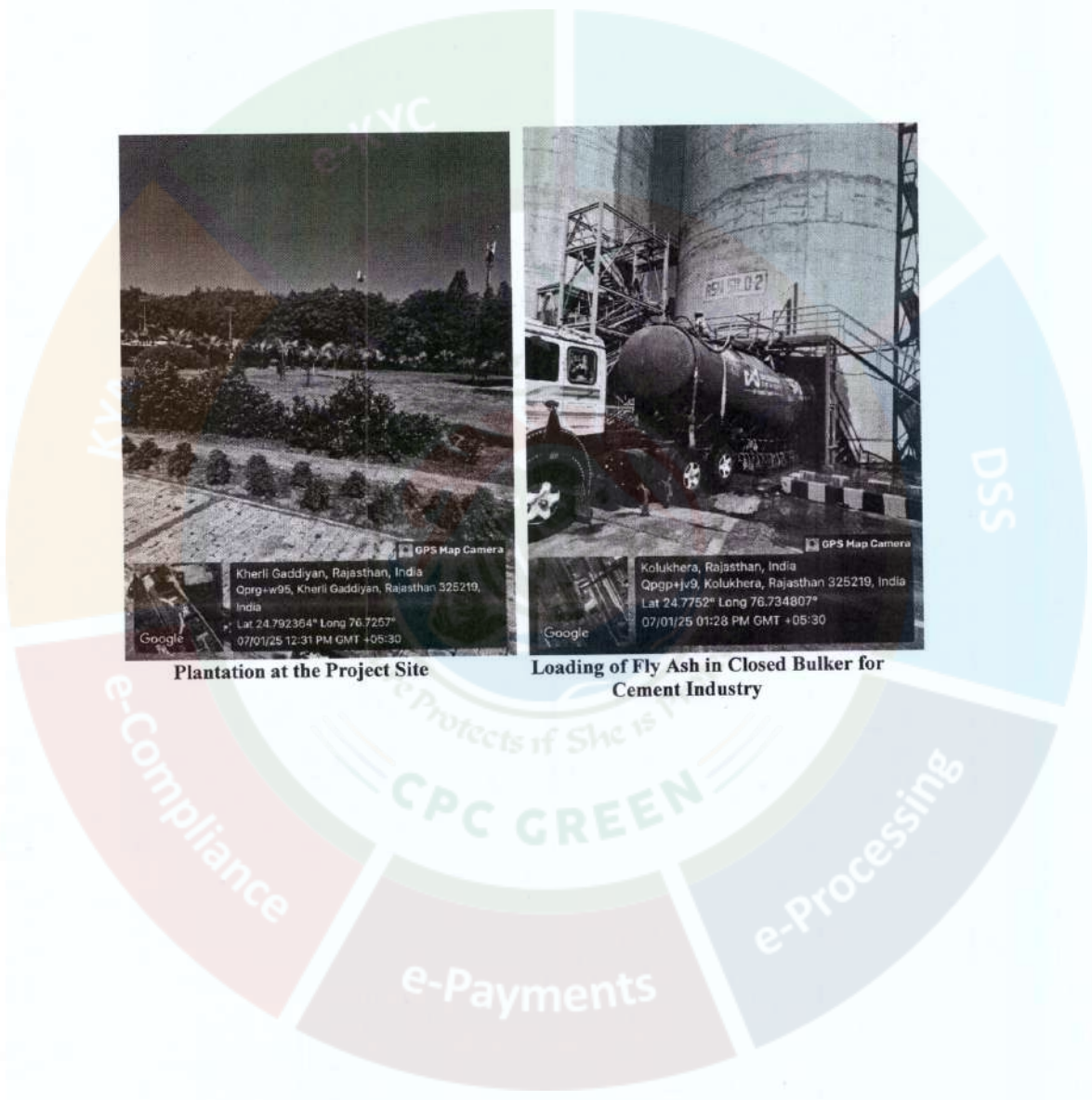
SILO and Chimney at Plant Site

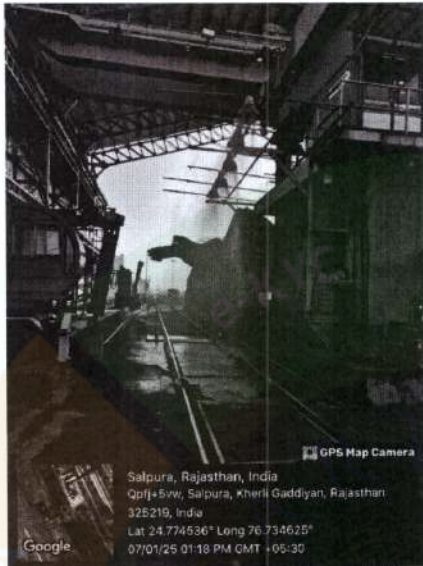


Plantation at the Project Site

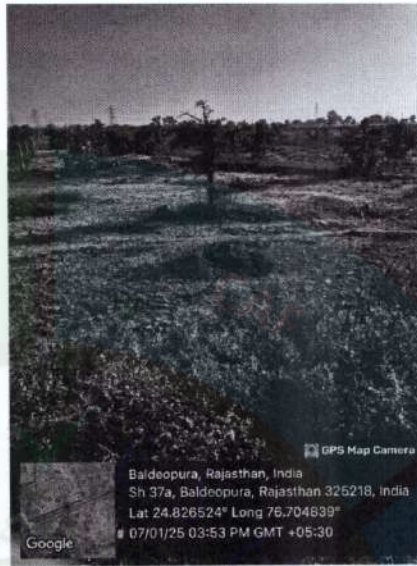


Loading of Fly Ash in Closed Bulker for Cement Industry





Water Sprinkler System at Railway Siding



Strip of Forest Land Requested for Expansion



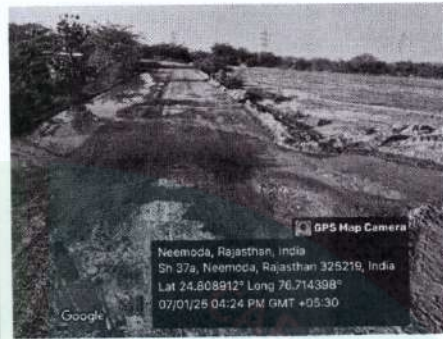
Conveyor Belt and Wind Barrier



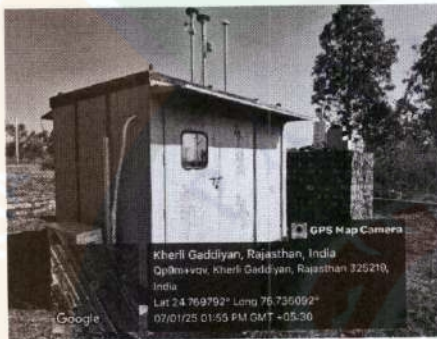
Coal Stock Yard



Existing Ash Pond



Overflowing of Ash Pond



CAAQMS at Plant Site



Reading of PM10



CSR Activities (Milk Collection Centre and Renovation of School Building)



Gap Area where Plantation is Needed



Report of the Site Visit from 08.01.2025 (1 days) to RRVUNL Kalisindh Thermal Power Project, Tehsil Jhalrapatan, District Jhalawar, Rajasthan

Background Information:

The site visit was organized in response to the proposal received by the MOEFCC for the grant of EC to expansion of Kalisindh Thermal Power project by addition of 1X800 MW located at Village – Nimboda, Tehsil Jhalrapatan, District Jhalawar, Rajasthan by RRVUNL.

The proposal was considered in the 34th and 37th EAC meetings dated 16.12.2022 and 14.02.2023 respectively, wherein EAC after detailed deliberations granted the ToR for conducting EIA studies of expansion proposal and suggested that a **site visit** of sub – committee shall be conducted before the submission of EIA/EMP report to finalize environmental safeguards for:

- i) **Ash handling**
- ii) **Coal handling, and**
- iii) **Dry Ash handling system**

The MOEFCC formed the following sub-committee comprising of three (3) members to conduct a site visit during 8 & 9 January, 2025:

1. Shri Inder Pal Singh Matharu, Chairman
2. Dr. Umesh J. Kahalekar, Member
3. Dr. Vinod Agrawal, Member

Details of the Site Visit and Observations made by the Sub-committee on above issues:

Incompliance with the Ministry's order, the Sub-committee visited the project site on 8th January, 2025. The Sub-committee reviewed and discussed the issues raised during the earlier EAC meetings with the Plant Head and other executives of the Kalisindh TPP. EAC Sub-committee also visited the plant site, Ash-Dyke (existing and proposed), Silo, Coal Handling area, Railway Siding, Hoppers, inside of the Thermal plant, nearby village and nearby school. The following specific observations were made:

(i) Ash handling including Dry Ash handling

There are four (4) SILO and fly ash in dry form is being transported to the cement, tile and brick making industries through closed bulkers from the SILOs and covered trucks/tractor trolleys from the ash pond site. Water spraying is being done during the loading of ash at SILO. Bottom ash is being collected and disposed to ash pond by wet slurry system with provision of water recovery from ash pond. According to the PP, in the year 2023 – 24, the total ash utilization was 108.18%. The PP has assured the Sub-committee that the target for 100% utilization of fly ash will be remained continues.

(ii) Coal handling

There is a railway siding and coal is being sourced from the Chattisgarh through railway. At Railway siding, the coal unloading was mechanized and mist/water spraying system was being used during the unloading of coal in order to reduce the dust emissions. There is closed conveyor system for the transfer of coal from the coal stock yard to the plant. Regular water sprinkling is being done at coal stock yard to prevent dust and spontaneous combustion.



Other observations by Sub – Committee:

1. Housekeeping in the plant was satisfactory. Roads were found to clean inside the premises.
2. PP has informed that one CAAQMS is installed inside the plant and AAQ is monitored at four different locations through RDS. Sub-committee physically visited the CAAQMS and noted the reading of PM10 which was found to be well within the permissible limits (67 µg/m³, see photograph).
3. The actual area of Kalisindh TPP premises is 589.97 ha and the PP has already developed Greenbelt/ Plantation of 96 ha *inside and outside* the plant premises. Further, 45 ha area is proposed for Greenbelt/Plantation under Stage-II which leads to total of 34.5% of the total area. The sub – committee visited the plantation sites and found that satisfactory plantation and green belt development has done. The PP was also instructed to cover the vacant areas within the plant with suitable plant species in consultation with the Agriculture / Horticulture /Forest Department (see the photographs).
4. There was one government school located closed to the plant boundary (Undal 1 km). The sub-committee visited this school. During the visit no coal and ash loaded vehicular movement was noticed at the site. However, the PP has directed to do intensive plantation around school and regular water fogging to control the particulate matters in ambient air.
5. Work of construction of FGD is under progress.

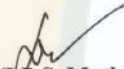
Concluding Remarks of Sub - committee:


The sub-committee members are of the opinion that the EIA/EMP report may be considered by the EAC for the expansion of Kalisindh Thermal Power Plant by M/s RRVUNL. However, the PP must give special emphasis on following issues:

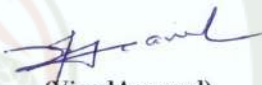
1. *Preparation and implementation of phase wise action plan for the green belt development all along the internal roads, residential colony and gap area.*
2. *Ensure proper maintenance of ash pond/dyke, as per the guidelines issued by the CPCB/CEA.*
3. *Construction of bund of adequate height be constructed to prevent overflow and leachate from ash pond. Further, proper fencing, sign boards and plantations all around the boundary of ash ponds are also needed.*
4. *Approach road to Ash Pond shall be made of rigid pavement and regular spraying of water and cleaning by mechanical sweeping machine to check re-suspension of dust during transportation.*
5. *Adequate environmental safety measures must be planned for the health and safety of the school children and villagers located in Buffer Zone.*
6. *CAAQMS and CEMS to be connected to the server of SPCB and CPCB.*
7. *There is no dedicated Environmental Lab at plant site as such PP should maintain the environmental lab with required instruments and qualified staff.*



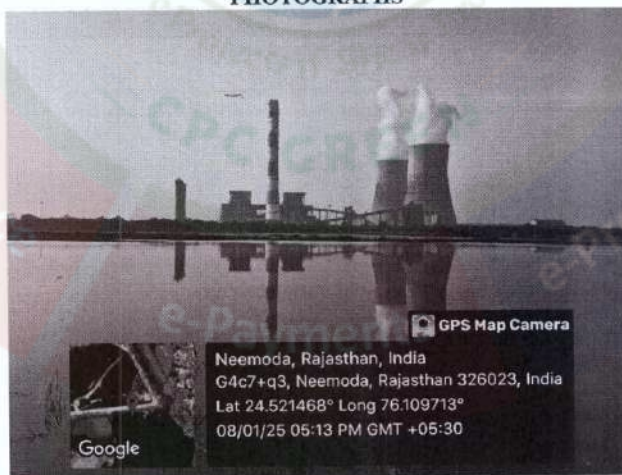
8. *The deep gullies are formed on the downstream side of existing ash bund. From stability point of view, the corrective action must be taken immediately. There is a natural pond just downstream to ash pond. The breaching of ash pond can put the natural pond in danger.*
9. *The High Concentrated Slurry Disposal system be adopted for proposed plant.*
10. *The air quality be monitored regularly at the locations where the Maximum Ground Level Concentrations in nearby villages are expected. Accordingly, the action plan for ambient air monitoring be prepared.*
11. *The CO₂ emission by plant be estimated and carbon sequestration plan be prepared.*
12. *The PP should provide sufficient budget for solar power plant.*
13. *The downstream toe of proposed ash pond shall be sufficient away from natural pond.*
14. *The activities of EMP and probable SDG attainment may be mapped.*


(I.P.S. Matharu)
 Chairman
 EAC Sub-committee


(Umesh J. Kahalekar)
 Member
 EAC Sub-committee


(Vinod Agrawal)
 Member
 EAC Sub-committee

PHOTOGRAPHS



Ash Pond and Kalisindh TPP in background



Sub – committee members with the officials of TPP during the visit at Coal Stock Yard



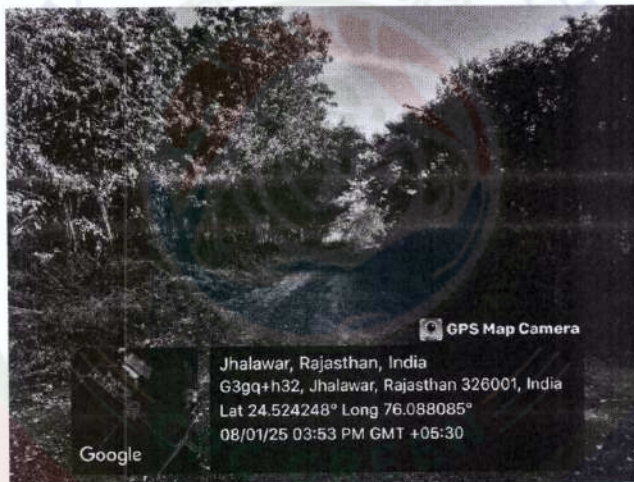
Railway siding at the site



Water Sprinkler System at Railway Siding during unloading of coal



Loading of Fly Ash in Closed Bulker for Cement Industry



Plantation at the Project Site