सत्यमेव जयते

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

Minutes of AGENDA FOR 11TH MEETING OF THE EXPERT APPRAISAL CO MMITTEE (EAC) (THERMAL POWER PROJECTS) TO BE HELD ON 27TH – 28TH JUNE, 2024 meeting Thermal Projects held from 27/06/2024 to 28/06/2024 **Date:** 16/07/2024

MoM ID: EC/MOM/EAC/871995/6/2024

Agenda ID: EC/AGENDA/EAC/871995/6/2024

Meeting Venue: N/A

Meeting Mode: Virtual

Date & Time:

27/06/2024	10:30 AM	05:30 PM
28/06/2024	10:30 AM	05:30 PM

1. Opening remarks

The 11th Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jor Bagh Road, New Delhi was held on 27th – 28th June, 2024 through Virtual Mode under the Chairmanship of Dr. Sharad Singh Negi. At the outset, the Chairman welcomed the Expert members & other participants and requested to start the proceeding as per the agenda adopted for this meeting.

2. Confirmation of the minutes of previous meeting

3. Details of proposals considered by the committee

Day 1 -27/06/2024

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Sipat Super Thermal Power Project Stage-III (1x800 MW) by **NTPC LIMITED** located at **BILASPUR,CHHATTISGARH**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity**

			(Schedule Item)
IA/CG/THE/463369/2024	J-13012/02/2019-IA.I(T)	20/02/2024	Thermal Power Plants (1(d))

3.1.2. Project Salient Features

11.1.2 The Project Proponent and the accredited Consultant M/s. Mantec Consultants Pvt Ltd, Noida made a detailed presentation on the salient features of the project and informed that:

Date of earlier EAC meetings	22.02.2019: 25th Meeting of the Expert Appraisal Committee on Thermal Power Projects –Consideration for TOR 27.03.2019: 26th Meeting of the Expert Appraisal Committee on Thermal Power Projects – Reconsideration of TOR 15.06.2022: 26th Meeting of the Expert Appraisal Committee on Thermal Power Projects – Amendment in TOR 27.02.2024: 06th Meeting of the Expert Appraisal Committee on Thermal Power Projects – Reg. Consideration for Environmental Clearance 08.04.2024: 08th Meeting of the Expert Appraisal Committee on Thermal Power Projects – Reg. reconsideration for Environmental Clearance
Category of the project	Category-A
Capacity	1 x 800 MW (for Stage-III)
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	None
Location of TPP Co-ordinate of all four corners: Average height of (a) TPP Site (b) Ash Pond Site above MSL(m)	Village - Sipat Taluk –Sipat District – Bilaspur State – Chhattisgarh PIN – 495555 The geographical co-ordinates of the site are as follows: Main Plant & Township: Latitude and Longitude • 22°07'00"N to 22°08'53"N • 82°16'43"E to 82°18'49"E Proposed Stage-III Project (1x800 MW) Latitude and Longitude Existing Ash dyke: Latitude and Longitude 286 m 270 m

<table>
<tr><td>Accredited Consultant and certificate no.</td><td>M/s. Mantec Consultants Pvt Ltd, Noida NABET/EIA/23-26/RA0305_Rev.01 dated 31.01.2024 valid till 20.04.2026</td></tr>
<tr><td>Inter- state issue involved</td><td>No</td></tr>
<tr><td>Seismic zone</td><td>Zone-II</td></tr>
<tr><td>Land Requirement:
a) TPP Site
b) Ash Pond
c) Township
d) Railway Siding & Others
e) Raw Water Reservoir
f) Green Belt
g) others
Total (if expansion state additional land requirement)</td><td>
<table>
<tr><td rowspan="2">Description of Activity / Facility</td><td colspan="3">Total Land in Possession, Ha</td></tr>
<tr><td>Area under use for Stage-I &II (Ha)</td><td>Area proposed to be used for Stage-III (Ha)</td><td>Total Area (Ha)</td></tr>
<tr><td>Main Plant</td><td>378</td><td>40.50</td><td>418.5</td></tr>
<tr><td>Ash Pond</td><td>600</td><td>0</td><td>600</td></tr>
<tr><td>Township</td><td>93</td><td>0</td><td>93</td></tr>
<tr><td>Misc & other area</td><td>535.90</td><td>7.724</td><td>543.62</td></tr>
<tr><td>Green belt Area</td><td>89.50</td><td>23.59</td><td>113.09</td></tr>
<tr><td>Total</td><td>1696.40</td><td>71.81</td><td>1768.21</td></tr>
</table>
No additional land shall be acquired for the proposed project of Stage-III.
</td></tr>
<tr><td>Status of Land Acquisition:</td><td>A total of 1768.21 Ha of land has been acquired. Approx. 1696.40 Ha land has been utilized for Stage-I & II to accommodate Main Plant, Ancillary Facilities, Township, Green Belt and Ash Units, remaining 71.81 Ha of land shall be used for Stage-III Units & Ancillary Facilities & Green Belt.</td></tr>
<tr><td>Status of the project:
If under construction phase: please specify the reasons for delay, works completed till date and balance works along with expected date of completion.
If under operation phase, date of commissioning (COD) of each unit. Whether the plant was under shutdown since commissioning, details and reasons.</td><td>The proposal is under planning stage now. The tendering of the project is under progress.
Construction of Sipat STPP Stage-III shall start after accord of Environmental Clearance of the Project and all other statutory clearances and approval by Board of NTPC.</td></tr>
<tr><td>Break-Up of land-use of T</td><td>
<table>
<tr><td>Particulars</td><td>Land (Ha)</td></tr>
<tr><td>Total</td><td>1768.211</td></tr>
</table>
</td></tr>
</table>

PP site: a. Total land required for project components b. Private land c. Government land d. Forest Land	<table><tr><td>Govt. land</td><td>564.708</td></tr><tr><td>Private land</td><td>938.512</td></tr><tr><td>Forest land</td><td>264.991</td></tr></table>
Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:	No
CRZ Clearance	NA
Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:	No

Forest Land/Protected Area/ Environmental Sensitivity Zone	Yes/ No	Details of Certificate/ letter/Remarks
Reserve Forest/Protected Forest Land	Yes	Bitkuli (Sonathi Pahar) Reserved Forest (3.7 km, NE) Dalha Protected Forest (7.0 km, ESE)
National Park	No	
Wildlife Sanctuary	No	
Archaeological sites monuments/ historical temples etc.	No	
Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites Rivers, Tanks, Reserve Forests etc. Located within 10 Km from the plant boundary:	No.	No National parks, Wildlife sanctuaries, Biosphere reserves, Archaeological Heritage sites exists within 10 Km radius

Availability of Schedule-I species in s tudy area	Yes	Schedule-I species observed in the study area: Jackal, Wild Cat, Common Brown Owl, Varanus, Russel's Viper, Red sand Boa.
If expansion, the details of ECs (inc luding amendments and extension o f validity) of existing Units etc.	Yes, A) MOEF&CC accorded EC for Stage-I (2000 MW) vid e letter J.13011/10/96-IA.II (T) dated 22.02.1999 an d amendment in EC dated 30.04.2002 for change of fuel composition and unit size for 3x660 MW. Amendment in EC as following: •On 08.09.2014 for change in coal source •On 08.02.2017 & 17.05.2018 for transportation of coal with tarpaulin covered wagons •On 09.10.2019 for waiving the condition of transportati on of coal with tarpaulin covered wagons and •On 24.12.2021 for reduce the land for brick manufactur ing infrastructure from 50 acres to 10 acres and monit oring of radio activity and heavy metals in coal and fl y ash from in-built continuous monitoring to regular/ periodic. (B) MoEF&CC had issued EC earlier vide letter no. J.13 011/5/2002.IA-II(T) dated 08.06.2004 to the existin g Stage-II Project "2 x 500 MW Sipat Thermal Po wer Plant (STPP)" •Amendment in EC on 24.12.2021 for deletion of condit ion "70 acres of additional land will be acquired by M/s NTPC for ash based units"	
Expansion / Green Field (new): (IPP / Merchant / Captive):	Expansion	
If expansion, the date of latest monit oring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the en vironmental and CRZ clearances of t he previous phases. A certified copy of the latest R.O. monitoring report s hall also be submitted.	Date of latest monitoring done by RO MOEF&CC on 0 5/10/2023 and 06/10/2023. Latest Certified EC Compliance Report Dated 13th Feb ruary, 2024	
Specific webpage address where all EC related documents (including mo nitoring and compliance related repo rts/documents) of the specific projec t under consideration are/will be avai lable. Also contact details of PP's of ficer responsible for updating this w ebpage/ information.	https://www.ntpc.co.in/about-us/corporate-functions/en vironment/status-hyc-reports Head of Project, Sipat Super Thermal Power Station Village - Sipat Taluk – Sipat District – Bilaspur State – Chhattisgarh PIN – 495555	
Cost of the Project (As per EC and r	Sipat STPP Stage-I	

evised): Cost of the proposed activity in the a mendment:	• Rs. 11125.70 Crores (As per latest cost estimate) Sipat STPP Stage-II • Rs. 3987.00 Crores (As per EC) • Rs. 3973.08 Crores (As per latest cost estimate) Proposed Sipat Stage-III Rs. 7,730.77 Crores (Estimated Cost)
Employment Potential for entire proj ect/plant and employment potential f or the proposed amendment (specify number of persons and quantitative i nformation).	• Current employment at existing power plant (Sipat STP P Stage-I&II): Permanent-764 & Temporary- approx. 2939 • The estimated employment generation from the propose d project (Stage-III) (a) During Construction- Permanent- 51 & Temprorar y-2000-3000; depending on the construction phase of the project) (b) During Operation- Permanent-203 & Temprorary- 150 However, the manpower shall be optimised and the exa ct number of manpower shall be decided during the con struction/ operation phases of the project.
Benefits of the project (specify quantitative information)	• Proposed Sipat STPP Stage-III (1x800 MW) will have S tate of Art Ultra Super Critical Technology which has better efficiency and less carbon emissions in compar ison to sub-critical technology. Installation of High ef ficiency ESP, FGD and De-Nox System will comply with the new emission norms of MOEF&CC. • The setting up of the proposed project will lead to direct and indirect benefits to the overall socio-economic de velopment of the region. These will also benefit the local population. NTPC has t aken up several community welfare and community dev elopment activities under Corporate Social Responsibili ty and this will be strengthened during commissioning o f Sipat STPP Stage-III.
Status of other Statutory Clearances	CTE & CTO shall be obtained for Stage-III
R&R Details	No R&R Issue since Total of 1768.21 Ha of land has alr eady been acquired earlier. In which Approx. 1696.40 h a of land was used to accommodate Main Plant, Towns hip, Green Belt and Ash Dyke of Stage-I&II remaining 71.81 Ha of land shall be used for Stage-III Units & An cillary Facilities & Green Belt Area.
Capacity & Unit Configurations:	Under Operation Stage-I: 1980 MW (3x660 MW) Stage-II: 1000 MW (2X500 MW) Proposed Expansion

	Stage-III:800 MW (1x800 MW)
Generation of Electricity Annually	Stage-I: 14.74 Billion Units @85% PLF Stage-II: 7.44 Billion Units @85% PLF Stage-III: 5.95 Billion Units @85% PLF
Fuel to be used:	Coal
Quantity of Fuel required per Annum	3.25 MTPA corresponding to 85% PLF
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Quantity and details of Linkage available: SLC (LT) in its meeting held on 21.02.2023 has recommended grant of co al linkage to Sipat-III (1x800 MW).
Details of mode of transportation o f coal from coal source to the plant premises along with distances	Mode of coal transportation from the coal mines to the p ower plant shall be MGR and Indian Railways. Total distance from the source by Rail: 40 km
Fly Ash Disposal System Proposed	The bottom ash shall be extracted and disposed off in dr y/wet form. The fly ash shall be conveyed in dry form fr om the electrostatic precipitator hoppers. This dry fly as h is taken to buffer hoppers for its onward transportation in dry form to storage silos near plant boundary for utili zation. In case of non-utilization, fly ash shall be taken t o HCSD system, where in it shall be mixed with water i n agitator tanks for its ultimate disposal in high concentr ation slurry form to ash disposal area. The ash management scheme for fly ash and bottom ash involves dry collection of fly ash, supply of ash to entre preneurs for utilisation, promoting ash utilisation and saf e disposal of unused ash. NTPC shall make maximum ef forts to utilise the fly ash for various purposes. Unused f ly ash and bottom ash shall be disposed off in the ash po nd. Ratio of Water and ash: 40(water): 60 (Ash)
a. Ash Pond/ Dyke (Area, Location & Co-ordinates) Average height of area above MSL(m) b. Space left in the ash dyke Area	No additional land is proposed to be acquired for expansio n project. NA The Area & Geographical co-ordinates of the site are as fo llows: Existing Ash dyke: Area: 600 Ha Latitude and Longitude 270 m
Quantity of a. Fly Ash to be generated b. Bottom Ash to be generated:	1.04 MTPA 0.26 MTPA

Fly Ash utilization percentage with details in last 5 years	<table><tr><th>Fin Year</th><th>Ash Production (LMT)</th><th>Total AU (LMT)</th><th>Total AU (%)</th></tr><tr><td>FY 2019-20</td><td>49.05</td><td>24.08</td><td>49.09</td></tr><tr><td>FY 2020-21</td><td>52.47</td><td>30.26</td><td>57.67</td></tr><tr><td>FY 2021-22</td><td>51.98</td><td>30.80</td><td>59.25</td></tr><tr><td>FY 2022-23</td><td>48.40</td><td>31.15</td><td>64.36</td></tr><tr><td>FY 2023-24</td><td>53.53</td><td>54.20</td><td>101.26</td></tr><tr><td>FY 2024-25 (till 15.06.24)</td><td>11.90</td><td>11.07</td><td>93.05</td></tr></table>
Stack Height (m) & Type of Flue	Stage-I Two stacks of height 275m each One bi-flue for (Unit-I& II) and One single flue for Unit-III. Stage-II One bi-flue stack of height 275m for (Unit-IV & V) Stage-III One single flue stacks of 150 m for Unit-VI
Source of Water:	Right Bank Canal (RBC) of Hasdeo Barrage
Quantity of water requirement:	The water requirement for Sipat-III (1x800 MW) project would be about 2340 m3/hr with ash water recirculation system.
Distance of source of water from Plant:	Approx. 30 Km (from intake point)
Whether barrage/ weir/ intake well/ jack well/ others proposed:	No. Water is being drawn from Canal.
Mode of conveyance of water:	Pipeline
Status of water linkage:	From Hasdeo Right Bank Canal. Agreement signed on 25-11-2009
(If source is Sea water) Desalination Plant Capacity	Not Applicable.
Mode / Management of Brine:	Not Applicable.
Cooling system	Water Cooled Condenser System
i. Advertisement for PH with date	25.08.2023 & 25.11.2023

ii. Details of newspaper published:	Public Hearing was initially scheduled on 27.09.2023 which was postponed to 11.12.2023 due to unavoidable circumstances. Regional Vernacular Daily: Haribhoomi (Hindi) dated 25.11.2023 National Daily: Hindustan Times (English) dated 25.11.2023
Date of Public Hearing	11.12.2023
Venue	At the sports ground of Mandanlal Shukla Government college, Sipat village & Tehsil, Bilaspur District, Chhattisgarh
Chaired by	Sh. R. A. Kuruvanshi, Additional Collector, Bilaspur
Main issues raised during PH	Employment, CSR Activities, Fugitive dust emission, water pollution etc.
Nos. of People attended	300

Any litigation/Court case pertaining to the project	Yes, details attached as Annexure-B
Is the proposal under any investigation? If so, details thereof.	No
Any violation case pertaining to the project on following: i. The Environment Protection Act, 1986 ii. The Forest (Conservation) Act, 1980. iii. The Wildlife (Protection) Act, 1972	No

AAQ parameters at 10 locations (min. & Max.)	
Incremental GLC Level	
River water samples (04 samples)	pH 7.02 to 7.62, Dissolved Oxygen: 5.2 to 7.4 mg/lit; Total Dissolved Solids: 171 to 302 mg/lit; Total Hardness (as CaCO3): 106 to 196 mg/lit

	& total Alkalinity (as CaCO3): 80 to 164 mg/lit; Calcium (as Ca): 74 to 152 mg/lit; Magnesium (as Mg) : 20 to 64 mg/lit ; Oil and grease: ND (mg/lit); Sulphate (as SO4): 12 to 37 mg/lit , Nitrate (as NO3) :7.2 to 13. 2 mg/lit; Chloride (as Cl) : 18 to 54 mg/lit; Iron (as Fe): 0.02 to 0.11 m g/lit; BOD <3.0 mg/lit; Heavy metals like Copper (as Cu): 0.02 to 0.04 mg/lit, Lead (as Pb): <0.01 mg/lit, Cadmium(as Cd): <0.01 mg/lit, ,Chr omium (as Cr): <0.05 mg/lit, Arsenic (as As): <0.01 mg/lit and Mercur y(as Hg): <0.001 mg/lit, Manganese (as Mn): BDL mg/lit
Pond water samples qua lity at 11 locations	pH: 7.1 to 7.8; Total Dissolved Solids:280 to 487 mg/lit; total Hardness (as CaCO3): 120 to 188 mg/lit; Chloride (as Cl): 20 to 80 mg/lit;
Ground Water samples a t 06 locations	pH: 6.64 to 7.42; Dissolved Oxygen: 6.2 to 8.4 mg/lit; Total Dissolved Solids: 420 to 880 mg/lit; total Hardness (as CaCO3): 258 to 612 mg/lit; Total Alkalinity (asCaCO3): 274 to 436 mg/lit; Calcium (as Ca): 67.2 to 155.2 mg/lit; Magnesium (as Mg): 21.3 to 54.4 mg/lit; Oil and grease: B DL (<1.4 mg/lit); Sulphate (asSO4): 20 to 104 mg/lit, Nitrate (as NO3): 5.4 to 9 mg/lit; Chloride (as Cl): 42 to 202 mg/lit; Iron (as Fe): 0.02-0.1 1 mg/lit; Heavy metals like Copper (as Cu):<0.01 to 0.04 mg/lit, Lead (as Pb): <0.01 mg/lit, Cadmium (as Cd): <0.003 mg/lit, Chromium (as C r): <0.05 mg/lit, Manganese (as Mn): 0.03 to 0.11 mg/lit, Arsenic (as A s): < 0.01 mg/lit and Mercury(as Hg) :<0.001 mg/lit
Noise levels Leq (Day & Night) at 15 loc ations	The Leq values for daytime was observed to be 40.8 to 55.6 dB (A) in r esidential area, while during night-time 35.8 to 45.8 dB (A).
Soil Quality at 15 Locations	Bulk density: 1.04 to 1.28 gm/cm^3; pH range 6.42 to 7.72; Electrical co nductivity (EC): 298 to 384 µmhos/cm; calcium content: 2436 to 6152 mg/kg; sodium: 68.9 to 375.6 mg/kg; potassium: 8.11 to 10.34 mg/100 gm; Nitrogen: 12.66 to 17.03 mg/100 gm; Phosphorous: 0.57 to 0.98 m g/100 gm; Cation Exchange Capacity (CEC): 9.68 to 16.88 meq/100gm; Magnesium: 162.8 to 1042 mg/kg; Sulphate: 82.6 to 216.5 mg/kg; Orga nic Matter: 0.47 to 1.41
Flora & Fauna	Schedule-I species observed in the study area: Jackal, Wild Cat, Common Brown Owl, Varanus, Russel's Viper, Red s and Boa.

Sl. No	Item Description	Total Cost in Cr
1	Electrostatic precipitator and FGD	173.25
2	Chimney	54.57
3	Cooling towers incl. civil works	134.56
4	Ash handling	397.78

5	Dust extraction & suppression system	1.00
6	DM plant waste treatment systems	2.60
7	Sewerage collection, treatment & disposal	2.10
8	Environmental laboratory equipment	1.00
9	Green Belt, afforestation & landscaping	10.00
10	FGD	283.88
Total		1060.74

11.1.3 The project proposal was considered by the Expert Appraisal Committee (Thermal) in its 06th meeting held on 27.02.2024, 08th meeting held on 08.04.2024 for grant of Environmental Clearance (EC) for the Project wherein the EAC deferred the proposal seeking additional information. PP vide its letter dated 05.06.2024 submitted the following information and the proposal is now placed in 11th EAC meeting held on 27-28 June, 2024:

Query 1: PP shall resubmit the EIA/EMP report after the plagiarism check using authenticated plagiarism software including specific details on how the check was conducted, what tools or methods were used, and what the results were in terms of percentage or accuracy certificate.

Reply: Revised EIA/EMP report after Plagiarism check is uploaded at Parivesh Portal. PP informed that 10%-13% similarity was observed.

Query 2: As there is a change in consultant, point-wise compliance with the NABET's scheme for validation of the EIA Report shall be submitted.

Reply: Point-wise compliance with the NABET's scheme for validation of the EIA Report is prepared as an Addendum to Final Comprehensive Environment Impact Assessment Report and has been submitted.

Query 3: PP shall submit the latest data from the CGWB data regarding groundwater levels and based on the same submit a rainwater harvesting and groundwater recharge plan with budgetary provisions, proposed locations and a defined timeline.

Reply:

- As per CGWB GROUND WATER YEARBOOK OF CHHATTISGARH 2021-22 more than 78 % of the observations wells water table is below 10 meters in Bilaspur District.
- Conducted a consultancy Project "RAINWATER HARVESTING POTENTIAL ASSESSMENT AND DESIGN OF RAINWATER HARVESTING SYSTEMS to National Institute of Hydrology (NIH), Roorkee.
- As per report submitted in February 2023, ground Water table in the project area is in the range of 1.33 meter to 3.15 meter.
- Therefore, NIH has advised not to install artificial recharge structures like recharge shaft or injection wells in the plant area, as further build-up in the ground level will create adverse condition in the plant area including uplift pressure on the installations like plant and machinery and water logging conditions which area not advisable in electricity generating installations, as cables are mostly laid underground.
- NTPC Sipat has installed rainwater harvesting from surface run off through storm water drain. Surface run-off water is pumped through gravity / pressure sand filters and used as CW makeup water.
- 0.52 MCM of Rainwater has been harvested during 2023-24 through four RWH structure installed in Plant area.
- Further, NTPC Sipat has planned to double the surface run-off pumping capacity during 2024-25.
- Another facility is being developed in township area to capture 0.16 MCM surface run off. Total estimated quantity of harvested Rainwater during 2024-25 will be 1.2 MCM (approx.).

Query 4: PP shall submit SDG's goal aligned with the proposed expansion project of Sipat Stage –III.

Reply: SDG's goal aligned with the proposed expansion project of Sipat Stage –III is prepared and

submitted.

Goal Detail	Activities Proposed:
No Poverty	Provision of Rs. 25 lakh kept in capital Budget of Sipat-III to be undertaken under CER / CD : Activities under CER: • Welfare/Skill Development: Skill development trainings for increasing employability. Further, an expenditure of Rs. 90 lakhs is proposed to be incurred every year after commissioning of the Stage-III. The exact activities to be decided based on need and stakeholder consultation on annual basis.
Good Health and Well Being	Provision of Rs. 252 Lakh kept in capital Budget of Sipat-III to be undertaken under CER/CD to address issues raised during Public Hearing: • Development of Stadium/Sports Ground in Sipat • Development of Stadium/Sports Ground in Baniyadih • Medical Infrastructure in Sipat Community Health Centre • Providing Taekwondo promotion and support/ infrastructure in Janji village Activities under CER: Health: • Developing health infrastructure, conduct of medical camps etc. • Further an expenditure of Rs. 110 Lakh is proposed to be incurred every year after commissioning of the Stage-III . The exact activities to be decided based on need assessment and stakeholder consultation on annual basis.
Quality Education	Provision of Rs. 150 Lakh kept in capital Budget of Sipat-III to be undertaken under CER/CD to address issues raised during Public Hearing: Ø Renovation of School in Eramsahi village Ø Development of School Education Infrastructure in affected villages Activities under CER/CD: Education: Construction/ Renovation of school buildings, classrooms/smart class/labs/ parking shed, playground, furniture etc. in PAVs and vicinity areas. Further an expenditure of Rs.150 Lakh is proposed to be incurred every year after commissioning of the Stage-III. The exact activities shall be decided based on need assessment and stakeholder consultation on annual basis.
Clean Water and Sanitation	Provision of Rs. 178 Lakh kept in capital Budget of Sipat-III to be undertaken under CER/CD to address issues raised during Public Hearing : Ø Installation of Handpump in Darripara village Ø Rejuvenation of Pond in Eramsahi village Ø Development of Drinking Water infrastructure, Rainwater harvesting and Rejuvenation of Ponds in affected villages including Bandhua Talao in Rank village. Activities under CER/CD: Sanitation: Construction/ Repair of drains, Toilets and related infrastructure. Water: Augmentation of drinking Water facilities, Pond rejuvenation. Further, an expenditure of Rs. 100 Lakh is proposed to be incurred every year after commissioning of the Stage-III. The exact activities shall be decided based on need assessment and stakeholder consultation on annual basis.
Affordable an	Provision of Rs. 90 Lakh kept in capital Budget of Sipat-III to be undertaken under

d Clean Energy	CER/CD to address issues raised during Public Hearing : Ø Installation of Solar Street/High mast Light in Sipat, Karra and other affected villages Further an expenditure of Rs. 50 Lakh is proposed to be incurred every year after commissioning of the Stage-III. The exact activities to be finalized later.
Industry, Innovation and Infrastructure	Provision of Rs. 1100 Lakh kept in capital Budget of Sipat-III to be undertake under CSR & CER. Activities covered are: Ø Construction of Road from Bazaar Chowk to Lilagar River in Darrabhata village Ø Construction of culvert in Darrabhata village Ø Cement Concrete Roads in affected villages Ø Development of Crematorium Sheds and Boundary Wall of existing Crematorium in Karra, Janji, Sipat, Deori and Kaudiya villages Ø Development of Boundary Wall of Gothan, Panchayat Bhawan in Karra, Janji and Deori Villages. Ø Development of Community Hall, Changing Room near Talab and Rangmanch in Karra, Sipat and Deori villages. Activities under CER: Infrastructure Development: • Construction/renovation of community center buildings, boundary wall, Sanskritik Manch, Market Sheds, Parking Sheds, Cremation Grounds etc. in project affected villages • Roads: Cement Concretization of existing village roads. Further, an expenditure of Rs. 250 Lakh is proposed to be incurred every year after commissioning of the Stage-III . The exact activities to be finalized later.
Responsible Consumption and Production	Reducing specific coal and water consumptions with adoption of state-of-the-art technologies Proposed Stage-III is " Ultra super technology" for higher efficiency leading to lesser emission of CO2 (12-13 % less) ● Minimising production of waste and recycling/ re-use of wastes: Ash is being used for production of Bricks, Light weight aggregate and Geopolymer based concrete. ● Zero liquid discharge plant and all treated effluents are being recycled back in plant.
Climate Action	● Proposed Stage-III is " Ultra super technology" for higher efficiency leading to lesser emission of CO2 (12-13 % less). ● Use of Low Nox burner will reduce Nox. ● Use of Wet FGD will reduce the SPM and Sox as well as low flue gas exit temperature, thus improve climatic conditions.
Life below Water	● Proposed Stage-III is "Ultra super technology" for higher efficiency with reduced usage of water and coal. ● Less usage of water for power generation will enhance life below water. ● Rejuvenation of ponds will also enhance aquatic life.
Life on Land	● Proposed Stage-III is "Ultra super technology" for higher efficiency with reduced usage of water and coal. ● Clean Power with less pollutant and cost economics will improve life on land.

	● 40,000 to 50,000 Plantation is carried out every year. Plantation not only improves the environment but also provide habitat to the birds/insects and other creatures.

Query 5: PP shall get the WLCP prepared with a reputed institute/NABET Accredited consultant having expertise for preparation of the same and accordingly propose the budgetary provisions.

Reply: Revised Wildlife Conservation Plan prepared through NABET accredited agency and submitted to DFO Bilaspur for validation on 14.05.2024 and DFO has forwarded to CCF, Bilaspur for further approval.

A budget of Rs 135.00 lakhs has been earmarked for wildlife conservation.

Query 6: PP shall provide the quantum of legacy ash. How the net utilization can be made more than 100%? Further, point-wise compliance with various notifications issued by the Ministry w.r.t Thermal Power Plant including fly ash shall also be provided.

Reply:

Fin Year	Target for Total AU (%) as per MoEF&CC Notification	Actual / Planned Total AU (%)	Compliance as per MoEF&CC Notification	Remark
FY 22-23	No Minimum Target	64.36 (Actual)	Yes	100% Ash Utilization as per MoEFCC Notification for Station Category with Ash Utilization less than 60% in FY 2021-22
FY 23-24	No Minimum Target	101.25 (Actual)	Yes	
FY 24-25	Minimum 80 %	114 (Planned) 93.67 % upto 15.06.2024	Yes	

FY 25-26	Minimum 80 %	115.44 (Planned)	Yes	
FY 26-27	Minimum 80 %	116.97 (Planned)	Yes	
FY 27-28	Minimum 80 %	120.64 (Planned)	Yes	Completion of Utilization of 20.47 MT of stored ash in top raising.
FY 28-29	Minimum 80 %	105.24 (Planned)	Yes	

Query 7: PP shall demarcate the area identified for plantation i.e. where plantation has to be done to ensure a 33% green plantation within plant premises in case of any land issue then outside the plant premises, on a surface plan/kml file. Further, geotagged photographs of the same may also be submitted. Based on the area identified a plantation plan needs to be submitted with a defined timeline and budgetary provisions.

Reply:

Details of plantation carried out over the years within NTPC land and outside NTPC land

Summary of the Plantation carried out by NTPC within NTPC Land and outside							
NTPC Land		Outside NTPC Land					
Number of plantations	Calculated area of plantation -considering a density of 2000 trees per hectare (a)	Number of plantations	Calculated area of plantation -considering a density of 2000 trees per hectare (b)	Deemed area of plantation (in hectare)	Area of the land acquired/ allotted/ diverted for NTPC-Sipat (in hectare)	33% of the total land- 1768.209 X 33%	Calculated % of the land where plantation has been done (603.462/1768.209)
458982	229.491	747942	373.971	603.462	1768.209	583.509	34.13%

Query 8: PP shall submit the consolidated list of all the EC conditions with their compliance,

comparison, duplication etc. to further deliberate on the same.
Reply: The consolidated list of all the EC conditions with their compliance, comparison, duplication etc. are prepared and submitted.
Query 9: A survey of E-vehicles and battery-operated vehicles shall be carried out within the plant area and an action plan with a timeline for switching over to renewable sources shall be submitted.
Reply: E-Vehicles: Presently in NTPC Sipat STPP
Query 10: Segregation and processing of solid waste generated within the plant shall be submitted along with supporting documents.
Reply: Segregation of wastes generated at NTPC-Sipat is being done. Waste management at NTPC-Sipat is presented as per the flow chart given below-
Query 11: Current status of court cases pending in Hon'ble Supreme Court and PIL case shall be submitted.
Reply:

Nature of cases	Hon'ble Supreme Court of India	Status
Pollution / Environmental cases	1	Matter related to Ash Utilization. SLP arose out of impugned Judgement dt d. 07.07.2023 passed by High Court of Ch hattisgarh in CRMP 1681 of 2017. Last heard by SC held on 02.02.24. Next h earing date not scheduled.
Nature of cases	Hon'ble High Court of CG	Status
PIL (Cases to all TPP s)	1	Taking Cognizance of Hon'ble SC Order, HC of CG issued notice to all TPPs of CG, regarding health hazards of the workers wo rking in coal fired thermal power plants sin ce year 2016. The case impleaded all the thermal power plants of Chhattisgarh including NTPC Sip at, Korba and Lara. Next hearing scheduled on 15.07.2024.

Query 12: Data for specific health checkups carried out by NTPC in the Sipat Area in the last three years shall be submitted.
Reply:

FY 2021-22	FY 2022-23	FY 2023-24
3008	3029	3113

Jun.'22-Mar.'23	Apr.'23-Mar.'24	Apr.'24-15.05.24
11,202	13,792	1,776

Query 13: Anticipated quantity of effluent generation shall be submitted including their treatment and utilization into the plant premises.
Reply:
Anticipated Quantity of Effluents are: -
(1) Wastewater Generation - 2256 KLD
(2) Domestic Wastewater (Sewage) Generation- 600 KLD
Effluent Treatment Facilities and Sewage Treatment Facility shall be provided. The treated effluent shall be recycled

and reuse within plant for various purposes, i.e.-In Ash Handling, Service Water, Dust suppression etc. Treated sewage shall be reused for horticulture purposes. The plant will be based on Zero Liquid Discharge (ZLD) System

Query 14: Proposed area of the ash dyke is too large therefore a detailed plan shall be submitted to reduce the size of it. A detailed plan with a demarcated location for the Green plantation shall be submitted.

Reply:

- No additional ash dyke is proposed for Stage-III (1 X 800MW).
- Existing ash dyke of Stage-I (Dyke-I & II) and Stage-II (Dyke-III) shall be used for ash disposal for ash produced under Stage-III. All these dykes are operational, therefore there is no plan to abandon any of these ash dykes at present for tree plantation.
- Total area of Existing Ash Dykes under Stage-I & Stage-II is 600 Ha for 2980 MW.
- NTPC Sipat has identified 27.65 ha. of land within Plant and Ash Pond premises for future Greenbelt development.
- NTPC will explore with gram panchayats of villages surrounding ash dyke to make land available for plantation.
- A request has been received from Rank village for roadside plantation, NTPC will do plantation during current monsoon.

3.1.3. Deliberations by the committee in previous meetings

Date of EAC 1 :08/04/2024

Deliberations of EAC 1 :

8.2.3 The EAC during deliberations noted the following:

8.2.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **deferred** the proposal seeking the following additional information:

iv. PP shall submit SDG's goal aligned with the proposed expansion project of Sipat Stage -III

v. PP shall get the WLCP prepared with a reputed institute/NABET Accredited consultant having expertise for preparation of the same and accordingly propose the budgetary provisions.

vi. PP shall provide the quantum of legacy ash. How the net utilisation can be made more than 100%. Further, point-wise compliance with various notifications issued by the Ministry w.r.t Thermal Power Plant including fly ash shall also be provided.

vii. PP shall demarcate the area identified for plantation i.e. where plantation has to be done to ensure a 33% green plantation within plant premises in case of any land issue then outside the plant premises, on a surface plan/kml file. Further, geo-tagged photographs of the same may also be submitted. Based on the area identified a plantation plan needs to be submitted with a defined timeline and budgetary provisions.

viii. PP shall submit the consolidated list of all the EC conditions with their compliance, comparison, duplication etc. to further deliberate on the same.

ix. A survey of E-vehicles and battery-operated vehicles shall be carried out within the plant area and an action plan with a timeline for switching over to renewable sources shall be submitted.

x. Segregation and processing of solid waste generated within the plant shall be submitted along with supporting documents.

xi. Current status of court cases pending in Hon'ble Supreme Court and PIL case shall be submitted.

xii. Data for specific health checkups carried out by NTPC in the Sipat Area in the last three years shall be submitted.

xiii. Anticipated quantity of effluent generation shall be submitted including their treatment and utilization into the plant premises.

xiv. The proposed area of the ash dyke is too large therefore a detailed plan shall be submitted to reduce the size of it. A detailed plan with a demarcated location for the Green plantation shall be submitted.

Date of EAC 2 :27/02/2024

Deliberations of EAC 2 :

6.6.3 The EAC during deliberations noted the following:

The proposal is for grant of Environmental Clearance to the project Expansion of existing 2980 MW (Stage-I & Stage-II) by adding 1x800 MW (Stage-III) Ultra Super Critical Technology Project in an are of 4369.34 acres (acquired) in Village Sipat, Tehsil Masturi, District Bilaspur, Chhattisgarh by M/s NTP Ltd.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended as the power generation capacity of the proposed expansion is beyond the threshold capacity of 500MW i.e. 800 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

TOR for Sipat STPP, Stage-III (1X800 MW) was accorded by MoEF&CC vide letter No J-13012/02/2019-IA. I(T) dated 03.05.2019 and TOR amendment vide letter dated 08.08.2022.

TOR is valid for the period of 5 year from 03.05.2019 to 02.05.2024, which included zero period which was not considered for the purpose of calculation of the period of validity of Terms of Reference granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19) i.e (1st April 2020 to 31st March2021) as per MOEF&CC Notification S.O. 221(E) Dated 18th January 2021.

The Advertisement for Public Hearing was published in Haribhoomi, Bilaspur & in the main edition of the national newspaper Hindustan Times, New Delhi on 25.08.2023 which was scheduled on 27.09.2023 however as reported by PP due unavoidable reasons public hearing was not conducted & second advertisement published on 25.11.2023 and Public Hearing was conducted on 11.12.2023. The PH was chaired by Sh. R. S. Kuruvanshi, Additional Collector, Bilaspur and main issues raised during PH were Employment, CSR Activities, Fugitive dust emission, water pollution etc.

The EAC noted that RO MOEF&CC has visited the site on 05/10/2023 and 06/10/2023 and certified compliance report submitted vide letter F.No.4-2/2004(Env)/1565 Dated 13th February, 2024, in the said report there were several non-compliance noted by the RO accordingly, NTPC has submitted its action plan vide letter no NTPC-Sipat/Envt.Mgmt./2024/ dated 16.02.2024.

The Committee deliberated on the proposal, EIA/EMP report, ash utilization, CCR report, issues raised during PH etc. and noted the following:

1) The Committee noted that wind rose diagram the legend colures are different and the same are not shown on the wind rose diagram and PP is required to correct the same.

2) The water requirement will be about 2340 m3/hr with ash water recirculation, which is proposed to be drawn from the Right Bank Canal (RBC) originating from Hasdeo barrage pondage. No additional water commitment is required for the expansion project. The water requirement for Stage-II unit will be met from the available committed quantity of 120 MCM from WRD, Govt. of Chhattisgarh accorded vide letter dated 26.11.2001 for Sipat STPS. Water Allocation reduced to 93 MCM from 120 MCM vide letter dated 31.03.2018. Surplus water available is 23 Cusec. The Committee is of the view that PP shall explore the alternate source of water though rain water harvesting measures and other technological improvements and submit a time bound action for further reduction of water. The capital and recurring expenditure to be incurred needs to be submitted.

3) The Committee observed that PP in its presentation proposed for ETP and STP and shall explain the quantity of the effluent and sewage to be generated from the plant including expansion and whether the existing ETP and STP are of enough capacity to take the additional load or PP is required to increase the capacity of the same.

4) Committee observed that a total six (06) species belong to Schedule-I as per Wildlife Amendment Act, 2022 recorded in the study area. A Wildlife Conservation Plan has been prepared for 5 years and submitted to DO-Bilaspur for approval. Budget allocation of Rs.80 Lakhs for Wildlife Conservation in WCP. The Committee is of the view that PP shall submit the status of approval of WLCP and whether there are any changes proposed by the CWLW in the same.

5) PP presented the Ash generation and utilization plan but it is not clear what would be scenario post. Therefore, the same needs to be provided including the expansion needs to be provided.

6) PP shown the plantation photographs the same needs to be geotagged. Further, PP should submit the detailed plan in tabular format (year-wise for life of project) for afforestation and green belt development in and around the project site. The PP should submit the number of saplings to be planted, 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.

7) Committee observed that PP has presented the CSR activities but is of the view that. PP needs to submit the time bound activity wise action plan for implementation of CSR and Socio Economic Activities. Further, 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. 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 person to be engaged for implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.

8) The Committee observed that in the CCR the observation of RO is regarding, fly ash utilization, implementation of R&R, suggestion for amendment in specific conditions and also issuance of single EC after superseding earlier ECs, social audit, plantation around ash pond, rain water harvesting etc. The Committee is of the view that PP shall comply with the short term conditions and for long term/recurring in nature conditions submit a time bound action plan. Further, PP shall submit a comparative of all the ECs conditions so that proposing of the consolidated EC conditions may be discussed.

The Committee observed that due to technical issues at the PP's end, they have opted to present physically but could not reach on time, and Committee was required to wait for more than 2 hrs even though the project team was physically present in Delhi NCR region and had been given more than sufficient time to be present physically. The Committee expressed its displeasure for the same. The Committee is of the view that due to paucity of time and above shortcomings the proposal needs further deliberation. The Committee therefore, **deferred** the proposal for submission of the information.

1) The Committee noted that wind rose diagram the legend colurs are different and the same are not shown on the wind rose diagram and PP is required to correct the same. 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) The water requirement will be about 2340 m3/hr with ash water recirculation, which is proposed to be drawn from the Right Bank Canal (RBC) originating from Hasdeo barrage pondage. No additional water commitment is required for the expansion project. The water requirement for Stage-II unit will be met from the available committed quantity of 120 MCM from WRD, Govt. of Chhattisgarh

accorded vide letter dated 26.11.2001 for Sipat STPS. Water Allocation reduced to 93 MCM from 120 MCM vide letter dated 31.03.2018. Surplus water available is 23 Cusec. The Committee is of the view that PP shall explore the alternate source of water though rain water harvesting measures and other technological improvements and submit a time bound action for further reduction of water. The capital and recurring expenditure to be incurred needs to be submitted.

5) The Committee observed that PP in its presentation proposed for ETP and STP and shall explain the quantity of the effluent and sewage to be generated from the plant including expansion and whether the existing ETP and STP are of enough capacity to take the additional load or PP is required to increase the capacity of the same.

6) Committee observed that a total six (06) species belong to Schedule-I as per Wildlife Amendment Act, 2022 recorded in the study area. A Wildlife Conservation Plan has been prepared for 5 years and submitted to DO-Bilaspur for approval. Budget allocation of Rs.80 Lakhs for Wildlife Conservation in WCP. The Committee is of the view that PP shall submit the status of approval of WLCP and whether there are any changes proposed by the CWLW in the same.

7) PP presented the Ash generation and utilization plan but it is not clear what would be scenario post. Therefore, the same needs to be provided including the expansion needs to be provided.

8) PP shown the plantation photographs the same needs to be geotagged. Further, PP should submit the detailed plan in tabular format (year-wise for life of project) for afforestation and green belt development in and around the project site. The PP should submit the number of saplings to be planted, 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) Committee observed that PP has presented the CSR activities but is of the view that. PP needs to submit the time bound activity wise action plan for implementation of CSR and Socio Economic Activities. Further, 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.

10) 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 person to be engaged for implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.

11) 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. 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 machineries and trucks for operation and transportation of washed coal.

12) The Committee observed that in the CCR the observation of RO is regarding, fly ash utilization, implementation of R&R, suggestion for amendment in specific conditions and also issuance of single EC after superseding earlier ECs, social audit, plantation around ash pond, rain water harvesting etc. The Committee is of the view that PP shall comply with the short term conditions and for long term/recurring in nature conditions submit a time bound action plan. Further, PP shall submit a comparative of all the ECs conditions so that proposing of the consolidated EC conditions may be

discussed.

13) PP shall submit the action plan to adhere the Plastic Waste Management Rules 2016 and to adhere Ministry's OM dated 18/07/2022.

14) PP shall submit details of court cases and its status for the project.

15) Drone videography of current green belt area and land area where project is proposed shall be presented. Copy of the same need not be submitted to the Ministry as the same was requested by the PP.

16) PP shall submit incremental GLC value of Air Pollutants.

17) PP shall submit original lab test reports through which EIA/EMP has prepared.

18) The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.

19) PP shall submit plan for installation of renewable energy system and rain water harvesting.

3.1.4. Deliberations by the EAC in current meetings

S. No.	Proposed works to address the issues raised during PH	Estimated cost (In lakhs)	Estimated time from the Award of the Project
1	Construction of Road from Bazaar Chowk to Lilagarh River in Darrabhata village	60	02 years
2	Construction of Culvert in Darrabhata village	25	01 years
3	Development of Stadium/Sports Ground in Sipat	45	02 years
4	Development of Stadium/Sports Ground in Baniyadih	05	01 year
5	Installation of Solar Street/High Mast Light in Sipat, Karra and other affected villages	90	03 years
6	Installation of Handpump in Darripara village	03	01 year
7	Medical Infrastructure in Sipat Community Health Centre (Upgradation of 100 Bed Hospital already built by State Govt.)	100	02 years

8	Renovation of School in Era msahi village	10	01 year
9	Rejuvenation of Pond in Era msahi village	10	01 year
10	Cement Concrete Roads in af fected villages	140	03 years
11	Development of School Educ ation Infrastructure in affecte d villages	40	02-04 years
12	Development of Drinking W ater infrastructure, Rain Wate r Harvesting and Rejuvenatio n of Ponds in affected village s including Bandhwa Talao i n Raank village.	40	02 years
13	Providing Taekwondo promo tion support/infrastructure to Janji village	02	01 year
14	Development of Community Infrastructure in affected vill ages	280	02-04 years
	Total (Lakhs)	850	

The Committee observed that based on discussions during EAC Meeting held on 27.06.2024 & 08.04.2024 & 27.02.2024, In addition to above, following measures have been envisaged as below for Sipat STPP, Stage – III (1x800 MW) to address the issue raised during PH:

S. No.	Proposed works	Estimated cost (In lakhs)	Estimated time from th e Award of the Project
1	Infrastructure Development – construction/renovation of co mmunity center buildings, bou ndary wall, Sanskritik Manch, Market Sheds, Parking Sheds, Cremation Grounds etc. in pro ject affected villages	330	02-04 years
2	Roads – Cement Concretizatio n of existing village roads	200	02-04 years
3	Sanitation – Construction/Rep air of drains, Toilets and relate d infrastructure	50	01-03 years

4	Water – Augmentation of Drin king Water facilities, Pond rej uvenation	100	01-05 years
5	Health – Developing health inf rastructure, conduct of medica l camps etc.	100	02-04 years
6	Education – Construction/Ren ovation of school buildings, cl assrooms, labs, parking sheds, playground, smart class, furnit ure etc.	150	02-04 years
7	Welfare/Skill Development – Skill development trainings fo r increasing employability	25	01-03 years
8	Rainwater Harvesting in Publi c Building	107.5	01-05 years
9	Additional Pond rejuvenation	591.43	01-05 years
10	Additional Skill Development	200	02-05 Years
	Total (Lakhs)	1853.93	

Regular Expenditure on Activities Planned under CSR for Sipat STPP, Stage-I, II and III. NTPC is already incurring annual expenditure of Rs. 6 Cr./ Annum in CSR activities every year. This will continue during construction phase of Stage-III. After commissioning of Stage-III (after 2029-30), the above expenditure shall be enhanced to Rs. 8 Crore per annum. The activities proposed are tentative and shall be decided in consultation with District Administration and local stakeholders based on need and requirements under the ambit of Schedule-VII of Companies Act (2013).

S. No.	Proposed works under CSR /CER	Estimated Annual Ex penditure (In lakhs)
1	Education Infrastructure	100
2	Education - Improving Learning Level	50
3	Medical – Mobile Medical Unit and Maternal a nd Child Health Care	60
4	Sanitation	50
5	Water/	50
6	Infrastructure (other than road & drains)	150

7	Roads (Strategic)	100
8	Renewables (Strategic)	50
9	Sports, Cultural & Arts	50
10	Skill Development/Livelihood Promotion	50
11	Differently Abled Support & Assistance	30
12	Need Assessment Survey / Social Impact Evaluation Survey	10
13	Miscellaneous	50
	Total (Lakhs)	800

8) The EAC observed that under CER activities and issue raised in public hearing regarding health infrastructure therefore committee asked PP to provide data for specific health checkups carried out by NTPC in the Sipat Area in the last three years. PP in its ADS reply submitted that 9000+ health check-ups of contractor's workers done in last 3 yrs as per factory Act, Occupational Heath Centre fully functional complying to factory rule 131 of CG Government, 2 nos. BLS (Basic Life support) and 01 ACLS ambulance are available, Mobile health clinic services are operational in 36 surrounding villages with total beneficiaries is 26,770. After the deliberation the committee asked PP to submit the details regarding % population covered under mobile health care services to which PP vide email dated 7.07.2024 submitted that Mobile Health Care services is available for entire population (100%) of the affected 36 villages. Additionally, efforts are being made to spread the information about availability of Mobile Health clinic at Village doorstep. Further it is submitted that health care facilities available in NTPC Sipat Hospital is accessible to Project Affected population at a very nominal charge. The Committee is of the view that analysis of population covered needs to be done and awareness needs to be created so that more people come forward for health check-up.

9) PP submitted that EIA is re-validated as per NABET Scheme by new consultant.

10) Regarding combining of EC conditions the Committee is of the view that PP shall apply separately for the same with fresh CCR.

11) The EAC noted that the total area of Existing Ash Dykes under Stage-I & Stage-II is 600 Ha for 2980 MW in the total project area 1768.21 Ha. For the proposed expansion there is no additional ash pond is required. All existing dykes are operational, therefore there is no plan to abandon any of these ash dykes at present for tree plantation. The committee observed that in its ADS reply PP has provided the ash utilization percentage as per which there was 100% ash utilization in financial year 2023-24 and 93.67% has been achieved upto 15.06.2024. The Committee also discussed about the legacy Ash and noted that the ash quantity stored in the ash dykes below the current raising is 390 LMT, which is not usable due to safety considerations. The ash quantity in top raising, which can be evacuated and used is 20.47 LMT, which can be utilized. The Committee asked about the Ground water quality submission of report of last 5 years of ground water monitoring around ash dyke area and nearby villages. The PP vide email dated 7.07.2024 submitted that *the ground water quality is being monitored through MoEF&CC approved third party consultant on monthly basis in the villages around Plant and Ash Dyke. Ground water quality (physico-chemical parameters) data for last five years (05 Yrs) from 2019-20 to 2024-25 (May'24) has been compiled and attached as Annexure- 2A. Values are within limit as per Drinking water standard IS:10500:2012. Further, IIT Hyderabad has been consulted to carry out the study to assess the impact of NTPC Ash Dykes on ground water in the surrounding villages and also suggest remedial measures in case of observation, if any. The email communication from IIT Hyderabad dated 03.07. 2024 is attached as Annexure - 2 B. We are initiating the proposal for the study, and it is expected that study will be completed within four months' time which includes finalization of scope of work, getting budgetary offer, award and submission of report. NTPC Sipat is agree to implement the recommendation of the study in phased and time bound manner.* The Committee is of the view that PP shall get the study done from IIT Hyderabad within the next 6 months and recommendations of the same shall be implemented. In addition to this as the village is near to the ash pond, in addition to water spraying, PP shall utilise the maximum ash, provide the 15 mt height wind barrier around the ash pond area and also carry plantation around the same.

12) The committee observed that the baseline data collected by PP is well within the range. The EAC asked the PP to

provide the details and proof regarding fugitive dust emission control measures from Ash Dykes i.e.- Wind barriers, Sprinkling by tankers, Sprinklers on ash dyke. PP vide email dated 07.07.2024 submitted that for dust suppression at Ash Dykes the actions have been taken which includes 1.Water Cover is being maintained in operational dyke, 2. Water Sprinters (Low range) and rain guns (high range) are installed as per requirement, 3. Water sprinkling on connecting roads, 4. Beshram (Ipomoea Carnea) plantation done in the inside periphery of ash dyke, 5. Tarpaulin cover is provided on dry patches in the dyke, 6. Wind barriers to stop the fugitive dust. PP committed to enhance the control measures so that there is no fugitive emission from ash dyke area in future. Operational ash dyke will be kept water submerged /wet during operation. Concrete steps to prevent fugitive emission from ash dyke along with budget provision of Rs. 270 lakhs with activities such as Additional 3000 No.s sprinklers will be installed, Additional 290 rain guns –(40 m & 12 m radius), Tarpaulin covering – (2,30,000 Sq m), Beshram plantation on ash dyke, Hessian cloth covering, Plantation around the periphery of ash dyke, wherever NTPC land is available. The Committee is of the view that in addition to regular monitoring PP shall collect the ground water samples from the area falling within 500 meters of the ash dyke analyse the same and take corrective measures.

Sr	*Financial Year*	*Description*	*Envisaged per unit cost (in Rupees lakh)*	*No. of Public Building*	*Amount Rs. Lakh*
1	*2024-25*	*Rainwater Harvesting System in Public Building*	*4*	*5*	*20*
2	*2025-26*		*4*	*5*	*20*
3	*2026-27*		*4.5*	*5*	*22.5*
4	*2027-28*		*4.5*	*5*	*22.5*
5	*2028-29*		*4.5*	*5*	*22.5*
Total amount in rupees lakhs					*107.5*

Sr	*Financial Year*	*Description*	*No. of Ponds*	*Amount (rupees lakh)*
1	*2024-25*	*Pond Rejuvenation in near by villages*	*6*	*184.99*
2	*2025-26*		*5*	*106.44*
3	*2026-27*		*4*	*136*
4	*2027-28*		*4*	*126*
5	*2028-29*		*5*	*138*
Total amount in rupees lakhs				*691.43*

Bandhua Talao in Rank village has already been taken up for rejuvenation and beautification, work is in progress (Awarded contract value- Rs. 40 lakhs). The Committee observed that activities to be carried out under pond rejuvenation includes i) Construction of Embankment, ii) Brick pitching and iii) Construction of bathing ghats. Further, PP has submitted that maintenance of ponds will be taken up as and when required on the request of respective Gram Panchayat. Further, PP submitted that Plantation and seating arrangement will be made in this FY and NTPC Sipat will provide funds for infrastructure required in consultation with Gram Panchayat/District authority/ State Govt. authority for development of Bandhua talab as a picnic spot. The Committee observed that budget is revised from 110 Lakhs to 691.43 Lakhs. The EAC

is of the view that PP shall submit a report of implementation to Regional Office in its six monthly compliance report.

16) The Committee also deliberated on the SDGs and is of the view that SDG Goals Budget allocation to be increased as Rs.25 lakhs very low for skill development. PP vide email dated 7.07.2024 submitted that in the year 2023-24, Skill Development in the area of Retails Sales associate was conducted for a batch of 60 youths, out of which 57 were placed in different companies. In addition to this, Stitching and Embroidery Skill development training program for a batch of 30 women is ongoing which will be completed in this FY 2024-25. In the FY-2024-25, contract has been awarded for Skill Development of 60 youths (in 02 batches of 30 each) in the area of High-pressure Welding and 60 youths (in 02 batches of 30 each) in the area of Mobile repairing. Both these Skill Development programs will start in July,24. Besides this, contract has been awarded for Skill Development of 30 women in the area of Masala making and 90 women (in 03 batches of 30 each) in the area of Dona Pattal making. In current financial year budget allocation for Skill development programme is Rs.25 Lakhs and from next year onwards during construction phase of Stage-III Rs.50 Lakhs will be allocated on skill development subjected to availability of interested/suitable candidates. The NTPC Sipat Stage-III activities aligned with SDG Goal and the expenditure is already taken in Public Hearing issues, CER and CSR/CD activities.

S.No	Name of hazardous waste	Mode of Disposal
1	Used Oil	Sale through approved (MOEF&CC/SPCB/CPCB) recycler
2	Empty chemical /oil barrels/containers	Sale through approved (MOEF&CC/SPCB/CPCB) recycler
3	Silica gel	Disposal through TSDF at Pithampur, MP
4	Glass Mineral Wool(Insulation waste)	Disposal through TSDF at Pithampur, MP
5	Ion Exchange Resin	Disposal through TSDF at Pithampur, MP
S.No	Name of hazardous waste	Mode of Disposal
1	Ferrous waste	Auction to Recyclers
2	Non-Ferrous waste	Auction to Recyclers
3	HDPE Tarpaulin	Auction to Recyclers
S.No	Name of hazardous waste	Mode of Disposal
1	Bio-Medical waste	Disposed through common BMW treatment facility operator M/s Everc are International (Chhattisgarh
2	E Waste	Disposed through Authorized Recyclers

3	Battery waste	Disposed through Authorized Recyclers
4	Wood	Auction to Recyclers
5	Municipal Solid waste (Bio-degradable)	Used in Bio-Methanation Plant with in premises
6	Municipal Solid waste (Non-Bio-degradable)	Disposed through recyclers
7	Plastic Waste	Sent for co-processed in Cement Kiln of Ambuja Cements Limited Bhatapara.

	Additional Mass Plantation #		
Total (In Crores)			

3.1.5. Recommendation of EAC

Recommended

3.1.6. Details of Environment Conditions

3.1.6.1. Specific

[A] Environmental Management	
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10.	As committed by the PP Zero liquid discharge shall be adopted.
11.	
12.	
13.	
14.	
15.	24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system. The real time data so generated from CAQMS shall be uploaded on company website and linked it with website of CPCB &SPCB. In addition to this, one more CAQMS is required to be installed at 4-5 km away near local market site where population are residing. Further, LED display of air quality (Continuous Online monitoring) shall be installed at prominent locations preferably outside the plant's main entrance for public viewing and in administrative complex. and maintenance of devices shall be done regularly.
16.	PP shall install at least three portable " Weather Monitoring Stations " in and around the plant for continuous weather monitoring.
17.	
18.	
19.	
20.	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.
21.	

22.	
23.	
24.	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
25.	PP shall ensure that all types of plastic waste generated from the plant shall be stored separately in isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016 (as amended). In pursuant to the Ministry's OM dated 18/07/2022 PP shall also create awareness among the people working in the project area as well as in its surrounding area on the ban on Single Use Plastic (SUP) in order to ensure compliance of Ministry's Notification published by the Ministry on 12/08/2021. A report along with photograph on the measures taken shall also be included in the six monthly compliance report being submitted by PP.
26.	PP is advised to implement the 'Ek Ped Maa Ke Naam' Campaign which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than Green belt development. The action in this regard shall be submitted concerned RO in six monthly report.
[B] Socio-economic	
1.	A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area, creation of sacred groves etc. 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 27.0393 (8.5 Cr and 18.5393 Cr). In addition to this PP has proposed a budget of Rs 8 Cr under CSR after commissioning of the project. The budget proposed shall be kept in a separate account and audited annually. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), status of implementation of PH action plan submitted during the meeting etc. in six monthly compliance report.
4.	PP shall provide the health services and organize medical camps for residents of the surrounding villages as committed during the meeting. PP shall carry out the analysis of the data of medical camp and take all necessary steps so as to cover maximum number of persons.
5.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
6.	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.
7.	PP shall take up the matter with SECR Railway Authorities for the feasibility of construction of underpass/overpass based on utility at railway crossing which is causing long waiting period to the general public. Meanwhile PP shall provide two sheds (one on each side) on Railway MGR Gatora connecting line crossing by July 25 with approximate cost Rs. 10-15 lakhs. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), number of sheds provided etc. in six monthly compliance report.
[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.
4.	A sub Committee of the EAC shall visit the site post EC to recommend any further mitigation measures.

3.1.6.2. Standard

1(d)	**Thermal Power Plants**
Statutory compliance	
1.	Emission Standards for Thermal Power Plants as per Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593(E) dated 28.6.2018 and as amended from time to time shall be complied.
2.	Part C of Schedule II of Municipal Solid Wastes Rules, 2016 dated 08.04.2016 as amended from time to time shall be complied for power plants based on Municipal Solid Waste.
3.	MoEF&CC Notification G.S.R 02(E) dated 2.1.2014 as amended time to time regarding use of raw or blended or beneficiated/washed coal with ash content not exceeding 34% shall be complied with, as applicable.
4.	MoEF&CC Notifications on Fly Ash Utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 as amended from time to time shall be complied.
5.	Thermal Power Plants other than the power plants located on coast and using sea water for cooling purposes, shall achieve specific water consumption of 2.5 m3/MWh and Zero effluent discharge.
6.	The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.
7.	No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.
8.	Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction, necessary permission be obtained from CGWA.
Ash content/mode of transporatation of coal	
1.	EC is given on the basis of assumption of ____% of ash content and ____km distance of transportation in rail/road/conveyor/any other mode. Any increase of %ash content by more than 1 percent, and/or any change in transportation mode or increase in the transport distance (except for rail) require application for modifications of EC conditions after conducting the 'incremental impact assessment' and proposal for mitigation measures.
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 of 100 mg/Nm3.

2.	Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NOX emission standard of 100 mg/Nm3.
3.	High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm3.
4.	Stacks of prescribed height ____m shall be provided with continuous online monitoring instruments for SOX, 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, PM2.5, SO2, NOXwithin the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.
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.	Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases.
3.	Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant.
4.	Sewage Treatment Plant shall be provided for domestic wastewater.
Water quality monitoring and Management	
1.	Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 2.5 m3/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with

	minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.
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.	Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area.
5.	Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities.
6.	The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. conforming to the prescribed standards shall be re-circulated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.
7.	Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water.
8.	Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project, the treated sewage of ……..KLD from STP ….. (name) shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies.
9.	Wastewater generation of …….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;
10.	Sewage generation of …….KLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number):<1000 per 100 ml.
Risk Mitigation and Disaster Management	
1.	Adequate safety measures and environmental safeguards shall be provided in the plant area to control spontaneous fires in coal yard, especially during dry and humid season.
2.	Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made as per the extant rules in the plant area in accordance with the directives of Petroleum & Explosives Safety Organisation (PESO). Sulphur Content in the liquid fuel should not exceed 0.5%.
3.	Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
4.	Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary.
5.	Regular mock drills for on-site emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situations.

Green belt and Biodiversity conservation	
1.	Green belt shall be developed in an area of 33% of the total project with indigenous native tree species in accordance with CPCB guidelines. The green belt shall inter-alia cover an entire periphery of the plant.
2.	In-situ/ex-situ Conservation Plan for the conservation of flora and fauna should be prepared and implemented.
3.	Suitable screens shall be placed across the intake channel to prevent entrainment of life forms including eggs, larvae, juvenile fish, etc., during extraction of seawater.
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 and amendment thereto. By the end of 4th year, 100% fly ash utilization should be ensured. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry. Mercury and other heavy metals (As, Hg, cr, Pb, etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. Flyash utilization details shall be submitted to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.
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.
6.	In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up: i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled. ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.
Monitoring of compliance	
1.	Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.
2.	Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.
3.	Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.
4.	Monitoring of Carbon Emissions from the existing power plant aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
5.	Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
6.	Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.

7.	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 OM No. 22-65/2017-IA.III dated 30.9.2020 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.
Marine facilities	
1.	As the seawater intake systems are required for the plant fall in CRZ area, recommendations from State Coastal Zone Management Authority (SCZMA) as per CRZ Notification shall be implemented.
2.	Marine intake and outfall pipelines shall be located as per the recommendations State Coastal Zone Management Authority (SCZMA).
Sea Water Intake	
1.	Seawater intake system shall be so designed and constructed to ensure sufficient sweater in terms of quantity and quality.
2.	The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.
3.	In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.
Effluent Release	
1.	At the effluent release point, maximum temperature of the discharge water shall not be more than 5oC and salinity shall not exceed 50 ppt with respect to that of the ambient seawater.
2.	Use of antifouling agents like chlorine / hypochlorite, shall be carefully controlled. The chlorine concentration shall not exceed 0.2 ppm at the effluent release point.
3.	The effluent when released at the selected location shall attain sufficient dilution so that near ambient water quality (particularly temperature and salinity) is attained within 500 m from the release location, at low tide.
4.	The location of the diffuser shall be marked with a solar lighted buoy to avoid accidents.

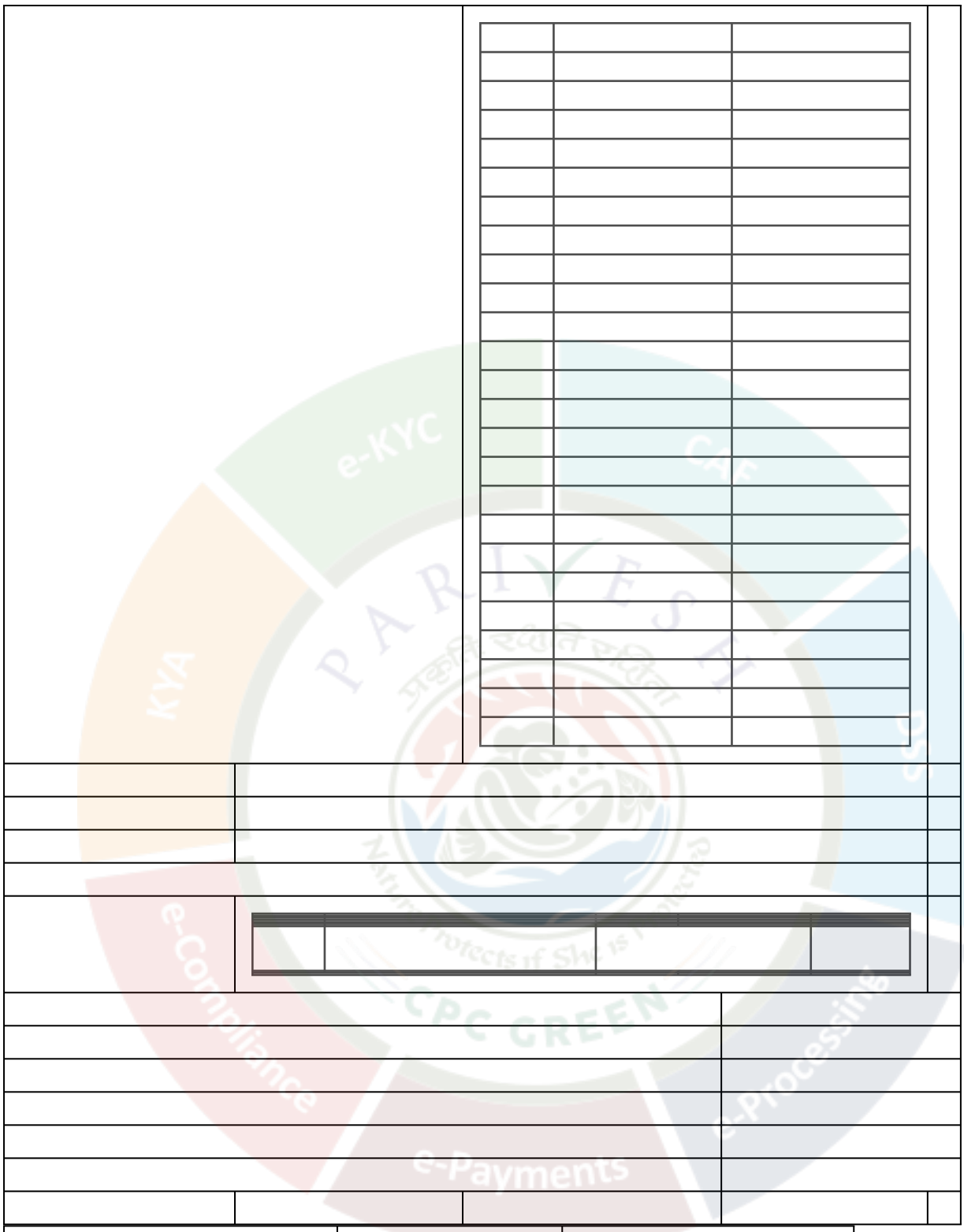
5.	The site selected based on mathematical modeling shall ensure absence of recirculation of the effluent plume in the seawater intake area under all tidal conditions.
6.	The effluent shall be released through a properly designed multiport diffuser above the seabed to facilitate its efficient initial mixing with the receiving seawater.
7.	Efficacy of the diffuser shall be ascertained at least once in 2 years through scientific studies and corrective actions such as cleaning of the diffuser from marine growth, removal of silt deposits, etc. shall be taken up, if warranted.
8.	Continuous online monitoring system for Temperature and Salinity shall be installed to monitor the quality of effluent.
Common to intake and effluent	
1.	The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafloor strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surf and intertidal zones, the pipeline shall be buried below the maximum scour level.
2.	In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).
3.	If the substratum is rocky the pipeline may be anchored to the rock provided the geology of the area satisfactorily supports the structure which shall be ascertained through geo-technical investigations.
4.	Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.
5.	The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.
6.	Marine / Sea water quality shall be monitored at effluent release location at the center. Parameters to be monitored shall be as follows: a. Physico-chemical: Temperature, Salinity, pH and Dissolved Oxygen. b. Biological: Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophytin, Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).
7.	In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area of ……ha, along the coast/ on the banks of …… Estuary.

3.2. Agenda Item No 2:

3.2.1. Details of the proposal

Expansion of Existing 1200 MW by adding 1600 MW by **ESSAR POWER GUJARAT LIMITED** located at **DEV BHUMI DWARKA,GUJARAT**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/GJ/THE/471719/2024	J-13011/16/2008-IA.II(T)	09/06/2024	Thermal Power Plants (1(d))

3.2.2. Project Salient Features



3.2.3. Deliberations by the committee in previous meetings

N/A

3.2.4. Deliberations by the EAC in current meetings

3.2.5. Recommendation of EAC

Recommended

3.2.6. Details of Terms of Reference

3.2.6.1. Specific

[A] Environmental Management and Biodiversity Conservation	
1.	Necessary documents/clearance obtained by the Group Company for extracting the water from the sea to be submitted by the PP in the EIA/EMP.
2.	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.
3.	Submission of cumulative permission for extraction and discharge available with Group Company and number of user's dependent on the group company to meet their requirement. If the permission is not available with Group Company, required amendment shall be obtained by the Group company for extracting sea water for the proposed expansion, before the submission of EC application.
4.	Impact on marine life due to cumulative extraction of sea water and discharge shall be studied by a reputed institute.
5.	Brine disposal and Management plan shall be studied and to be incorporated in EIA/EMP study.
6.	Impact of release of cooling tower water on marine life need to be studied by reputed govt. institute and measures implemented.
7.	Additional mitigation measures need to be prepared and incorporated in EIA/EMP report for higher particulate matter.
8.	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.
9.	A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.
10.	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.
11.	Action plan for development of Three tier plantation programme (33% of total project cover area) along the periphery of the project boundary shall be provided. Plan shall be dully approved by the local forest department.
12.	A detailed plan need to be submitted for undertaking extensive green plantation within 10 km radius of the plant focusing on water reservoir, school, hospital and other institutional area and same need to be incorporated in EIA/EMP report.
13.	Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed and existing units and shall be incorporated in EIA/EMP report.
14.	Details of Ash management of 5-year plan for 100 % ash utilization for proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.

15.	Details of Dry Ash handling system along with the supplementary coal handling system shall be submitted.
16.	Proper protection measures like 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 under-construction ash pond. A high-density Slurry disposal plan shall be prepared.
17.	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.
18.	Details pertaining to water source, treatment and discharge should be provided.
19.	Liquid Discharge plan shall be submitted so as treated water can be use by the nearby people.
20.	PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
21.	Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
22.	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.
23.	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 a time bound action plan for this.
24.	PP shall submit the proper justification for high quantity of sea water and also explore the possibility of reducing the same by adopting suitable technology.
25.	PP shall provide the details of transportation of flyash 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.
26.	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.
27.	Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.
28.	PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.
[C] Socio-economic Study	
1.	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.
2.	Demographic details in 10 km area shall be submitted.
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.
[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 previous public hearing conducted and fresh Public Hearing 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.	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.
12.	In case the EC/CRZ clearance granted to Group Company needs any amendment in EC/CRZ then PP shall obtain the same.
13.	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.

14.	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.
15.	The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.
16.	All the certificates viz. Involvement of Forest land, 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.

3.2.6.2. Standard

1(d)	**Thermal Power Plants**
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.	Latest compliance report duly certified by the Regional Office of MoEF&CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.
Details of the Project and Site	
1.	The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
2.	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.
3.	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.
4.	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.
5.	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
6.	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.
7.	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.
8.	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.
9.	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
10.	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.
11.	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.
Ecology biodiversity and Environment	
1.	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.
2.	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.
3.	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.
4.	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.
5.	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.
6.	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.
7.	Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted
8.	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.
9.	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.

10.	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.
11.	Feasibility of near zero discharge concept shall be critically examined and its details submitted.
12.	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
13.	Plan for recirculation of ash pond water and its implementation shall be submitted.
14.	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.
15.	Hazards Characterization: Past incidents of hazard events within 10km radius of project area with detailed analysis of causes and probability of reoccurrence
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 analysisand 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.	A list of industries existing and proposed in the study area shall be furnished.
4.	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.
5.	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
6.	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
7.	Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
8.	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.
9.	For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
10.	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.
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.	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 CO2 and other gaseous pollutants and hence a stratified green belt should be developed.
2.	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
Socio-economic activities	
1.	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.
2.	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.
3.	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.

4.	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.
5.	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). CERdetails done in the past should be clearly spelt out in case of expansion projects.
6.	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.
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.	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-conducive 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.
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 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.
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 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.
Miscellaneous	
1.	All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.
2.	Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.
3.	In case any dismantling of old plants are envisaged, the planned land use & land reclamation of dismantled area to be furnished.
Additional TOR for Coastal Based Thermal Power Plants Projects (TPPs)	

1.	Low lying areas fulfilling the definition wetland as per Ramsar Convention shall be identified and clearly demarcated w.r.t the proposed site.
2.	If the site includes or is located close to marshy areas and backwaters, these areas must be excluded from the site and the project boundary should be away from the CRZ line. Authenticated CRZ map from any of the authorized agencies shall be submitted.
3.	The soil levelling should be minimum with no or minimal disturbance to the natural drainage of the area. If the minor canals (if any) have to be diverted, the design for diversion should be such that the diverted canals not only drains the plant area but also collect the volume of flood water from the surrounding areas and discharge into marshy areas/major canals that enter into creek. Major canals should not be altered but their embankments should be strengthened and desilted.
4.	Additional soil required for levelling of the sites should as far as possible be generated within the site itself in such a manner that the natural drainage system of the area is protected and improved.
5.	Marshy areas which hold large quantities of flood water to be identified and shall not be disturbed.
6.	No waste should be discharged into Creek, Canal systems, Backwaters, Marshy areas and seas without appropriate treatment. Wherever feasible, the outfall should be first treated in a Guard Pond and then only discharged into deep sea (10 to 15 m depth). Similarly, the Intake should be from deep sea to avoid aggregation of fish and in no case shall be from the estuarine zone. The brine that comes out from Desalinization Plants (if any) should not be discharged into sea without adequate dilution.
7.	Mangrove conservation and regeneration plan shall be formulated and Action Plan with details of time bound implementation shall be specified, if mangroves are present in Study Area.
8.	A common Green Endowment Fund should be created by the project proponents out of EMP budgets. The interest earned out of it should be used for the development and management of green cover of the area.
9.	Impact on fisheries at various socio economic level shall be assessed.
10.	An endowment Fishermen Welfare Fund should be created out of CER grants not only to enhance their quality of life by creation of facilities for Fish Landing Platforms / Fishing Harbour / cold storage, but also to provide relief in case of emergency situations such as missing of fishermen on duty due to rough seas, tropical cyclones and storms etc.
11.	Tsunami Emergency Management Plan shall be prepared wherever applicable and Plan submitted prior to the commencement of construction work.
12.	There should not be any contamination of soil, ground and surface waters (canals & village pond) with sea water in and around the project sites. In other words necessary preventive measures for spillage from pipelines, such as lining of Guard Pond used for the treatment of outfall before discharging into the sea and surface RCC channels along the pipelines of outfall and intake should be adopted. This is just because the areas around the projects boundaries could be fertile agricultural land used for paddy cultivation.

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

Neyveli New Thermal Power Station (2x500 MW) by **NLC INDIA LIMITED** located at **CUDDALORE,TAMIL NADU**			
Proposal For		Amendment in EC	
Proposal No	**File No**	**Submission Date**	**Activity**

			(Schedule Item)
IA/TN/THE/466123/2024	J-13012/250/2007-IA.II(T)	14/06/2024	Thermal Power Plants (1(d))

3.3.2. Project Salient Features

S. No	Para of EC issued by MoE F&CC	Details as per the EC	To be revised/ read as	Justification/ Reasons
1	Specific Condition (Xxiv)	An amount of Rs 22.40 Crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs 4.5 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation	May be deleted	NLCIL spends 2% of the average net profits made during the preceding three financial years. Hence, these conditions may be waived of.
2	Specific Condition (Xxv)	While identifying CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.		
3	Specific Condition (Xxvi)	It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to ti		

S. No	Para of EC issued by MoE F&CC	Details as per the EC	To be revised/ read as	Justification/ Reasons
		me		
4	General Conditions Sr.no (i)	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon	The treated effluents conforming to the prescribed standards may be discharged outside the plant premises for irrigation purpose.	Project affected persons had given their representation to let out the treated water from NNTPS to their Agricultural lands for their livelihood

3.3.3. Deliberations by the committee in previous meetings

N/A

3.3.4. Deliberations by the EAC in current meetings

The EAC while observing the treated effluent quality parameters expressed their dissatisfaction towards the analysis carried out by the PP as BOD and COD values area not sufficient. Additionally, it was noted that pH of treated water is towards acidic and as TPP is using mineral acid including HCL the treated water is not suitable for agricultural crops. EAC also interacted with the expert of TNAU who have conducted a study of productivity of crops by using effluent water. The Committee is not satisfied with reply submitted and is of the view that PP needs to carry out further studies from any reputed government agency to ascertain the impact of this water (effluent discharge outside the plant) on the food chain and underground water.

The EAC after detailed deliberation on the information submitted and as presented during the meeting **deferred** the proposal seeking the following additional information:

1) PP shall carry out detailed analysis of water including inorganic, organic and heavy metals of treated effluent water. Also, a pilot-based study of effect of treated effluent water on native agricultural crops shall be carried out. Further, the crops may also be tested for human consumption and presence of heavy metals.

2) Additional studies need to be done for assessing the possibility of contamination of ground water particularly with respect to heavy metals since HCL is being used in the plant and the affluent is mildly acidic.

3) The PP needs to carry out further studies from any reputed government institute to ascertain the impact of this water (effluent discharge outside the plant) on the food chain and underground water.

4) PP needs to inform that on what activities corresponding to capital investment of Rs 22.40 cr have been spent from the CSR budget to mitigate the effects of this particular project rather than by NCL as whole.

5) PP needs to inform the source of recurring cost (Rs 4.50 cr) for future expenditure towards maintenance of activities done against the capital investment.

6) PP needs to provide the issues raised during PH and commitment made by PP including budget provision. The activities which are already completed and amount spent on the same. The activities which are yet to be completed and amount to be spent.

7) PP shall carry out the plantation and submit the status of compliance of EC condition related to the same.

3.3.5. Recommendation of EAC

Deferred for ADS

3.4. Agenda Item No 4:

3.4.1. Details of the proposal

Amendment in EC of 4X600 MW Thermal Power Plant of M/s Jindal Power Ltd. at Village Tamnar, Taluk Gharghoda, District Raigarh (Chhattisgarh) by **JINDAL POWER LIMITED** located at **RAIGARH,CHHATTISGARH**

Proposal For		Amendment in EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/CG/THE/472414/2024	J-13012/117/2008-IA.II(T)	14/06/2024	Thermal Power Plants (1(d))

3.4.2. Project Salient Features

S No	**Units**	**EC date**	**COD**
1.	2x250 MW (Phase I)	24.09.1997	08.12.2007 & 15.06.2007
2.	2x250 MW (Phase II)	08.06.2006	16.04.2008 & 05.09.2008
3.	2x600 MW (Units#1&2)	18.03.2011	27.08.2014 & 09.11.2014
4.	2x600 MW (Units#3&4)	04.11.2011	

S. no	**Para of EC issued by MoEF&CC**	**Details as per the TOR/ EC**	**To be revised/ read as**	**Justification/ reason**
	Para no 3, 4 & 5 EC amendment granted vide letter no. J-13012/117/2008-IA.II(T) dated 24.02.2	Permission to use existing ash dyke of 4x250 MW for unutilized ash/ bottom ash of 4x600 MW	Permission to continue use existing ash dyke of 4x250 MW for unutilized ash of 4x600 MW per	• To conserve the land and maximize ash utilization, the Company has planned to not construct the new ash dyke for 4X600 MW on an area of 236 ha which was permitted by Mo

	023.	has been granted till June 2024.	manently	EF&CC. • As the Company is utilizing about 100% ash in coal mine backfilling along with Overburden, road making, cement, fly ash brick making etc., the existing ash dyke volume will be adequate to continue bottom ash disposal from 4x250 MW and 4 x600 MW TPPs.

			Sent to authorized vendors	
			Sent to authorized vendors	By road
			Sent to authorized vendors	By road
				By road

Court Name	Bench	Case Category	Status	Order direction
NGT	Central bench	OA No. 70/2023 (CZ)	Pending	Matter is at the stage of completion of pleadings

S No	EC/EC amendment Date	Remarks
1.	18.03.2011	EC granted for 2x600 MW (Unit#1 & Unit#2)
2.	04.11.2011	EC granted for 2x600 MW (Unit#3 & Unit#4)

3.	10.01.2014	Amendment in EC w.r.t. transportation of coal, utilization of existing ash dyke of 4x250 MW for 4x600 MW TPP for 03 y ears.
4.	26.04.2017	Amendment in EC w.r.t. transportation of coal, utilization of existing ash dyke for 4x600 MW TPP for 02 more years till construction of new dyke & change in coal source from imp orted to domestic, change in location of proposed dyke.
5 .	28.08.2020	Amendment in EC for extension of permission for transporta tion of coal, utilization of existing ash dyke for 4x600 MW T PP till October, 2021.
6.	28.10.2021	Amendment in EC for extension of permission utilization of existing ash dyke for 4x600 MW TPP till December, 2022.
7.	24.02.2023	Amendment in EC for extension of permission utilization of existing ash dyke for 4x600 MW TPP till June 2024.

3.4.3. Deliberations by the committee in previous meetings

N/A

3.4.4. Deliberations by the EAC in current meetings

3.4.5. Recommendation of EAC

Recommended

3.4.6. Details of Environment Conditions

3.4.6.1. Specific

Additional specific environmental safeguard conditions:	
1.	PP shall expedite the planation activities and plantation shall be done in this monsoon.
2.	PP shall submit the fresh Certified EC compliance report from RO, MoEF&CC, along with ATR and comments of RO.
3.	PP shall expedite to start construction of nearby roads, geotagged pictures of before and after construction of the road shall be submitted.
4.	PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM. Sprinkling on the road side shall be carried out regularly (twice in a day) and data shall be maintained mentioning about its functionality.
5.	All other conditions mentioned in the EC dated 18.03.2011 and its amendment therein shall remain unchanged.
6.	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 to concerned RO.

Day 2 -28/06/2024

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Amendment of Environmental Clearance for 1X800 MW (Stage-III), North Chennai TPP and CRZ Clearance fo r foreshore facilities at Villages Ennur & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO). by **TANGEDCO** located at **THIR UVALLUR,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))

3.1.2. Project Salient Features

vi. **Baseline Environmental Scenario:**

Period	**From September 2022 to October 2022**
AAQ parameters at 9 loca tions	• PM_{10} = 38.4 to 120.0 µg/m^3 • $PM_{2.5}$ = 16.8 to 87.5 µg/m^3 • SO_2 = 3.3 to 25.1 µg/m^3 • Nox = 7.6 to 42.6 µg/m^3 • CO = BDL(DL:1.15) • NH_3= 7.5 to 66.0 µg/m^3 • Pb= BDL (DL:0.1) to 0.226 µg/m^3 • As = BDL (DL:1.0) • Ni= BDL (DL:5.0) to 12.2
Incremental GLC Level	• PM = Max. GLC: 96.81 µg/m^3 • SO_2 = Max GLC: 26.18 µg/m^3 • Nox = Max GLC: 43.68 µg/m^3 *Remark: Maximum PM value recorded at project site is 120 µg/m^3 du e to ongoing construction activities hence average maximum value i s considered for Air modelling.*
River water samples (7 samples)	Not Applicable
Pond water samples quali ty at 7 locations	

vii. **Ash Pond area:** The existing ash pond of NCTPS complex located 5Kms away from the project site will be utilised for dumping of bottom ash from this proposed power plant at the time of emergency only, since, this power plant is proposed with the 100% disposal of bottom ash also.

viii. **Water Requirement:** The potable water required for the construction of project will be met from Chennai Metro Water Supply & Sewerage Board (CMWSSB) for about 2 MGD (9092 m3). For operation purpose, potable water will be produced from sea water by treating in RO based desalination plant, proposed within the power plant.

ix. **Details of Coal Linkage:** Environmental Clearance for the project was issued based on the use of Imported coal of 2.09 MTPA which was planned to source from MMTC, New Delhi. FSA/MoU for imported coal was signed between MMTC Limited and TANGEDCO on 25th May, 2015 for supply of 2.51 MTPA of coal for the project. Now, TANGEDCO is planning to change from use of 100% imported coal to use of domestic coal as well as Imported coal in the equal proportion. Domestic coal will be made available from the Kalinga block of Talcher, Mahanadhi, IB Valley Coal Fields. Total 2.69 MTPA of mixed coal will be required for the project.

x. Details of Certified compliance report submitted by RO, MoEF&CC: Certified Copy of EC Compliance is secured Vide Diary No 046 dated 13.01.2023.

3.1.3. Deliberations by the committee in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

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 i) ESP ii) Dust suppression system for coal handling	192.00 3.50	48.0	192.00 3.50	98	No change
2	Chimney	88.90		88.90		
	FGD, De NOx burners etc.	0		615.0		Increased
3	Water treatment plant including clarifier, UF, RO, DM, Electrical and Instrumentation	42.24		42.24		No change
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	Increased

3.1.5. Recommendation of EAC

Recommended

3.1.6. Details of Environment Conditions

3.1.6.1. Specific

Additional Specific Conditions:	
1.	PP shall obtain the amendment in CTO from SPCB as applicable in the instant case for the proposed amendments.
2.	PP shall implement the protective measures proposed in EMP in a time-bound manner. The budget earmarked for the same is Rs 1,185.21crores (Capital) and Rs 98 crores(recurring) and should be kept in separate accounts and audited annually. The implantation 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.
3.	Regular monitoring of Fly Ash Pond shall be carried out and inspection should be done to avoid any chance of failure of bunds or leakage from the Ash Pond. The Pipe line carrying the fly ash shall also be inspected for any leakage at regular intervals. In case of any leakage immediate corrective measures needs to be taken and concerned authorities shall be informed. PP shall also keep a record of inspection.
4.	Fly ash handling shall be done strictly as per extent rules/regulations of the Ministry/CPCB issued from time to time including Ministry's Notification No. S.O.5481(E) dated 31st December, 2021. No coal shall be transported through road shall be allowed.
5.	The transportation of Ash from the Thermal Power Plant to other Industries (Cement/brick) shall be through closed bulkers only.
6.	Water Sprinkling on roads shall be done in at regular interval on the roads atleast within 1 km range approaching the plant. A logbook shall be maintained for the activity and be in six monthly compliance report.
7.	PP shall ensure that roads for transportation shall be maintained and keep in good condition to avoid fugitive emissions.
8.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
9.	PP shall provide regular health monitoring services and health services free of cost to people living in 10 km radius.
10.	PP shall establish an Environment Management Cell and ensure to engage sufficient staff having environment related qualification for its smooth its functioning.
11.	Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
12.	Use of Diesel operated transportation vehicles shall be avoided as far as possible and BS-VI complaint vehicle shall be purchased and preference shall be given to EV/CNG/LNG based trucks for transportation raw materials, coal and disposal. Change to EV/CNG/LNG be done in a time bound manner
13.	PP shall ensure that all types of plastic waste generated from the plant shall be stored separately in isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016 (as amended). In pursuant to the Ministry's OM dated 18/07/2022 PP shall also create awareness among the people working in the project area as well as in its surrounding area on the ban on Single Use Plastic(SUP) in order to ensure compliance of Ministry's Notification published by the Ministry on 12/08/2021. A report along with photograph on the measures taken shall also be included in the six monthly compliance report being submitted by PP.

14.	Monitoring for heavy metals and fluoride in ground water and surface water shall be undertaken along with the regular monitoring and results/findings submitted along with half yearly monitoring report.
15.	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 concerned RO.

3.2. Agenda Item No 2:

3.2.1. Details of the proposal

Ongoing 2x660 MW Udangudi Supercritical Thermal Power Project Stage-1 at Udangudi Village, Tiruchendur Taluk, Tuticorin District, Tamil Nadu by **TANGEDCO** located at **TUTICORIN,TAMIL NADU**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/TN/THE/468592/2024	J-13012/19/2008-IA.II(T)	14/06/2024	Thermal Power Plants (1(d))

3.2.2. Project Salient Features

i. The proposal is for ToR to the project for Ongoing 2x660 MW Udangudi Supercritical Thermal Power Project Stage-1 located at Udangudi Village, Tiruchendur Taluk, Tuticorin District, Tamil Nadu by M/s. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

ii. The EC had been obtained for the 2 x 800 MW (1600 MW) Udangudi Super Critical with Imported Coal based Thermal Project and amended to 2 x 660 MW MoEF&CC vide MOEF/GOI's Lr.No.13012/199/2008—IA II(T), dt 26.04.2017. The validity of EC was extended through subsequent validity extension and finally all the projects on account of Covid-19 pandemic (vide MoEF&CC OM F.No.22-25/2020-IA.III dated: 18.1.2021), the validity of EC for Udangudi Super Critical Thermal Power Plant is deemed to be valid till 13.10.2024.

iii. Presently, the physical work progress is completed to the tune of 82.85% for which EC was granted. As the validity of EC is nearing completion, it is planned to obtain fresh EC for the project.

iv. Further, TANGEDCO had planned to reduce the imported coal according to guidelines issued by MoEF&CC OM's issued vide circular. No. J13012/8/2009-IA. II (T), dt.6.12.2023. which is also planned to be sought in this fresh EC. In view EC nearing to completion, a fresh ToR is proposed to be obtained for ongoing 2 x 660 MW Supercritical Thermal Power Project stage-1 at Udangudi village, Thoothukudi District, Tamil Nadu.

v. The salient features of the project are as under:-

- **EAC Meeting Details:**

Date of earlier EAC Meetings	January 11-12, 2010, April 30-May 01, 2010 a nd May 20-21,2013 (for issuing Original EC), 4th meeting held on 16.3.2017 (for issuing EC amendment) and meeting on 28.7.2020 (for EC Extn.)
Category of the project	Category A

Capacity	2x660 MW
Attracts the General Conditions	Yes
Additional Information (if any)	The Public Hearing was conducted on 07.02.2009 at Tiruchendur for the proposed 2x800 MW super critical thermal power project at Udangudi. Presently, the work is completed more than 82.85% and the project proponent is planned to obtain fresh EC for the ongoing 2x660 MW thermal power plant, the fresh Public Hearing would not be required as per OM notification dt. 18.03.2021 by MoEF&CC. Hence, it is requested to exempt the Public Hearing for the project. As stated earlier, it is planned to prepare fresh Rapid Terrestrial EIA report based on one season monitoring. The baseline data pertaining to Marine environment was carried out during the year June – September, 2021 and having the validity upto 3 years (i.e. September 2024). Hence, permission may please be given to use the same data in the EIA report planned for the project.

Location of TPP	
Village:	Udangudi
Taluk:	Tiruchendur Taluk
District:	Tuticorin
State:	Tamil Nadu
Co-ordinates of all four corners:	South Side - 8°25’ 20.50” N 78°03’ 05.85” E North Side - 8°26’ 49.26” N 78°04’ 13.07” E East Side - 8°26’ 04.94” N 78°03’ 51.40” E West Side - 8°26’ 23.62” N 78°03’ 27.27” E
Average height of (a) TPP site	23 m above MSL
(b) ash pond site	24 m above MSL
(c) Township	26 m above MSL
Accredited Consultant and certificate no.	ABC Techno Labs India Private Limited NABET/EIA/2225/RA 0290

Inter-state issue involved	No
Seismic zone	Zone II (Low risk Zone)
Land requirement	
	164.38
	48.562
	Nil
	Nil
	Nil
	167.058
	Nil
Total (if expansion state additional land requirement)	380
Status of land Acquisition:	Completed under the possession of TANGEDCO.
Status of the project: If under construction phase: please specifythe reasons for delay, works completed tilldate and balance works along withexpected date of completion.	Presently, the work is completed more than 82.85% and the project proponent is planned to obtain fresh EC for the ongoing 2x660 MW thermal power plant. Expected date of completion is 14/10/2027.
Break-up of Land-use of TPP site:	
	380 Ha
	Nil
	380
	Nil
Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:	Nil
CRZ Clearance	CRZ clearance is not applicable for Main plant side. However, interlinked project of coal J

	etty had separate EC + CRZ Clearance MoE F&CC vide EC ID - EC22A004TN156490, a nd File No. 10-66/2020 -IA.III dt. 03.08.202 2.
Whether the project is in the Critic ally Polluted Area (CPA)/Severally Polluted Area (SPA) or within 10 k m of CPA. If so, the details thereo f:	No,

Forest Land/ Protected Area/ E nvironmental Sensitivity Zone	**Yes/No**	**Details of Certificate / lett er / Remarks**
Reserve forest / Protected Forest Land	Yes	Kuthiraimozhi Theri R.F – 7.8 km. During EC, letter will be o btained.
National Park	No	Nil within 10 km radius
Wildlife Sanctuary	No	Nil within 10 km radius
Archaeological sites monuments/h istorical temples etc	Yes	1.Archaeological site - Nil within 10 km radius 2.Monuments – Nil 3. Historical temples – Tirc hendhur Temple,Tuticorin -8 km
Names & distance of National par ks, Wildlife sanctuaries, Biospher e reserves, Heritage sites Rivers, Tanks, Reserve Forests etc.Locate d within 10 Km from the plant bo undary:	Yes	Biosphere reserves - Kuthir aimozhi Theri R.F – 7.8 k m (NW)
Availability of Schedule-I species in study area	Yes	Indian Peafowl (Pavo crista tus), and avifaunal species such as Black Kite (Milvus migrans), Shikra (Accipiter badius), and Brahminy kite (Halisterindus) belonging t o the family, Accipitridae u nder Schedule-I of the Indi an Wildlife Protection Act 1972 were recorded from t he study area.

If expansion, the details of ECs(includ ing amendments and extension of vali dity) of existing Units etc.	Not applicable

Chronology of the Project	**Enclosed as Annexure II**
Amendments granted, if Yes details	Yes. TANGEDCO obtained amendment to the above mentioned Environmental Clearance for reduction of unit sizes from 2 x 800 MW to 2 x 660 MW, vide MOEF/GOI's Lr.No.13012/199/2008—IA II(T), dt 26.04.2017.
Expansion / Green Field (new): (IPP / Merchant / Captive):	New
If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the environmental and CRZ clearances of the previous phases.	Not applicable
Specific web page address where all EC related documents (including monitoring and compliance related reports/documents) of the specific project under consideration are/will be available. Also contact details of PP's officer responsible for updating this webpage/information.	https://www.tnebnet.org
Cost of the Project (As per EC and revised);	Rs.13,076.705 Crore
Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).	The Project will require direct employment of about 114 persons (permanent) and contractual workers of about 500 persons during construction period for supervision and execution. After construction of the project, plant will require about 545 persons for operation and maintenance of the plant.
Benefits of the project (specify quantitative information)	The ongoing 2 X 660 MW Power plant will result in improvement of infrastructure as well as up-liftment of social infrastructure in the area. The people residing in the nearby areas will be benefited directly and indirectly through employment opportunity likely to be arise due to the project. It will also help in sustainable development of this area including development of physical Infrastructural facilities such as road transport facilities, educational facilities and water supply and sanitation.

	It is anticipated that the ongoing power p lant will provide benefits to the locals in two phases i.e. during construction phase as well as during operational stage of the plant.
Status of other statutory clearances	CTE for Air and Water act valid upto 13. 10.2024
R&R details	R&R is not applicable.

- **Electricity generation capacity:**

Capacity & Unit Configurations:	1320 MW
Generation of Electricity Annually	87,12,000 MW
Fuel to be used:	**Coal**
Quantity of Fuel required per Annum:	Imported coal is 2.246 MTPA from In donesia and Indigenous coal is 3.647 MTPA from Odisha.
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of t he Block)	Quantity and details of Linkage availa ble: TANGEDCO considered importe d/indigenous coal from Indonesia/Odis ha (Talcher) as the primary fuel for the ongoing plant. TANGEDCO has enter ed agreement with MMTC for the sup ply of imported coal from Indonesia. As per MoEF&CC requirement, calori fic value of imported coal will be mini mum 6000 kcal/kg. TANGEDCO is ap proaching MoEF&CC for necessary m odification in the MoEF&CC clearanc e for blending of coal planned to be us ed for the project. The method of obtaining remaining co al: Ash content in coal 26(%) Sulphur in coal 0.515% Moisture 16.25% GCV in coal 4350 Kcal/Kg
Details of mode of transportation of coal from coal source to the plant premises al ong with distances	Udangudi site is located at a distance o f about 1.2km from sea front and coal will be transported through a captive j etty and conveyed to the plant site by t he pipe conveyors.
Fly Ash Disposal System Proposed	High concentration slurry. Ratio of water and ash - 1:8

a. Ash Pond / Dyke: (Area, Location & Co-ordinates) Average height of area above MSL (m)	Area – 48.562 Ha Location – Udangudi village Co-ordinates-8°25'40.81"N78°3'18.63"E Average height of area – 24 m above MSL
b. Space left in ash dyke area	Entire area is used for ash dyke.
Quantity of Fly Ash to be generated	1.054 million TPA
b. Bottom Ash to be generated:	0.26 million TPA
Fly Ash utilization percentage with details in last 5 years :	Plant yet to be started
Stack Height (m) & Type of Flue	275 m (new or existing) Multiple flue
Source of Water:	Sea (Bay of Bengal) (Downstream) HFL –3.77 km Karumeni river
Quantity of water requirement:	13,063 m^3/hr
Distance of source of water from Plant:	1.2 km
Whether barrage/ weir/ intake well/ jack well/ others proposed:	Nil
Mode of conveyance of water:	Pipe line from desalination plant located at plant site.
Status of water linkage:	Nil
(If source is Seawater) Desalination Plant Capacity	16 MLD
Mode / Management of Brine:	No treatment is necessary as the TDS is of brine is higher than 45,000 mg/l – Disposed to Sea
Cooling system	Natural Draft Cooling system
Any litigation/Court Case pertaining to the project	Nil
Is the proposal under any investigation? If so, details thereof.	No

Any violation case pertaining to the project on following: i. The Environment Protection Act, 1986 ii. The Forest (Conservation)Act, 1980. iii. The Wild Life (Protection)Act, 1972	No
Additional information (if any)	Nil

vi. The estimated project cost is Rs.13,076.705 Crore. Total capital cost earmarked towards environmental pollution control measures is Rs. 393 Crore and the Recurring cost (operation and maintenance) will be about Rs. 48.8 Crore per annum.

vii. Total Employment will be 545 persons as direct & indirect after expansion. Industry proposes to allocate Rs. 32.694 @ of 0.25 % towards CER.

viii. Effluent of 720 KLD quantity will be treated through ETP and 40 KLD of sewage will be treated by STP.

ix. Power requirement after commissioning will be 92 MW which will be supplied by plant.

x. Proposed unit has 2340 TPH coal fired boiler. Multi cyclone separator/ bag filter with a stack of height of 275 m will be installed for controlling the particulate emissions within the statutory limit for the proposed boilers.

xi. Details of Solid waste/ Hazardous waste generation and its management

Solid waste:

Ash will be the major solid waste generated from the power project. An ash management scheme will be implemented consisting of dry collection of ash, supply of ash to entrepreneurs for utilization and promoting ash utilization to maximum extent and safe disposal of unused ash. Unlike other process industries, power project does not handle and generate any major flammable materials (Class A and Class B Flammable material) except small quantities of furnace oil for boiler start up conditions. Other hazardous materials that will be handled at the power plant will be small quantities of Chlorine used as biocide in the cooling tower. In general, about 2 to 5ppm of Chlorine is doped in the cooling water circulation line for this purpose. Both Hydrochloric acid and Sodium Hydroxide will be used for regeneration of the De-Mineralization Plant resin beds. The solid waste (effluent) generated in DM & PT plant shall be disposed of in ash disposal area.

Solid waste generation

Description	Ash Generation
Total Ash generation for two units	175.2 T/h
Annual ash generated for two units	1.31 million TPA
Annual Bottom ash generated for two units	0.26 million TPA
Annual Fly ash generated for two units	1.054 million TPA

The estimated Municipal solid waste is about 109 kg/day. Out of this, 40% that is about 43.6 kg/day is Bio-degradable waste. The non Bio-degradable waste 60% is estimated to be 65.4 kg/day. As the plastic waste recirculation is maximized and usage of plastic is reduced the expected plastic waste is about 20% of 65.4 kg/day that is 13.08 kg/day.

Hazardous waste

Hazardous material to be stored at site during construction include petrol, diesel welding gas, weld inspection material, radiographic material, paints, chemicals, DM plant chemicals etc. These materials will be stored in accordance with prescribed safety norms in ventilated

enclosures. Safety instructions and signage will prominently be displayed at appropriate points/locations.

Name of the waste	Source	Qty (TPA)	Mode of disposal	Mode of transport
Resin	DM Plant	2	TSDF site	Road
Glass Wool	Overhauling	1.3	TSDF site	Road
Waste oil	Maintenance	1.6	TSDF site	Road

i. Advertisement for PH with date	31.12.2008
ii. Details of newspaper published:	THINA THANTHI
Date of PH	7.2.2009
Venue	Arulmigu Senthil Aandavar government boys higher secondary school, Tiruchendur, Tuticorin – 628 215
Chaired by	District Collector

xiii. The total water requirement for boiler and cooling water for the proposed plant would be about 13,063 m^3 /hr and the source is seawater. Water requirement for the operation phase will be met through captive desalination plant of 16 MLD capacity. The RO reject from the desalination plant will be about 36840 m^3 /day. This reject will be diluted with blow down water and let into the sea.

xiv. Details of Coal Linkage: The present coal linkage of proposed thermal power plant is from Indonesia. MOU/permission for 2.246 MTPA of coal has been obtained. Balance of about 3.647 MTPA from Odisha. TANGEDCO considered imported/indigenous coal from Indonesia/Odisha (Talcher) as the primary fuel for the ongoing plant. TANGEDCO has entered agreement with MMTC for the supply of imported coal from Indonesia. As per MoEF&CC requirement, calorific value of imported coal will be minimum 6000 kcal/kg. TANGEDCO is approaching MoEF&CC for necessary modification in the MoEF&CC clearance for blending of coal planned to be used for the project.

3.2.3. Deliberations by the committee in previous meetings

N/A

3.2.4. Deliberations by the EAC in current meetings

- The total water consumption for thermal power plants as per MoEF&CC vide Notification S.O. 3305 (E) dated 07.12.2015 for all existing CT based plants upto maximum of 3.5 m3/MWh and as per MoEF&CC stipulated norms vide Notification GSR 593 (E) dated 28.06.2018 water allocated to the thermal power plant is 3 m^3/MWhr for new plants installed after the 1st January, 2017. However, TPP using sea water, water consumption limit is not applicable as per notification dated 28.06.2018. The total water requirement for boiler and cooling water for the proposed plant would be about 13,063 m3/hr and the source is seawater.

3.2.5. Recommendation of EAC

Recommended

3.2.6. Details of Terms of Reference

3.2.6.1. Specific

[A] Environmental Management and Biodiversity Conservation	
1.	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.
2.	Detailed Impact assessment shall be carried out due to change in source of coal along with proper mitigation measure and EMP budget.
3.	Impact of release of cooling tower water on marine life need to be studied by reputed govt. institute and measures implemented.
4.	Brine disposal and Management plan shall be studied and to be incorporated in EIA/EMP study.
5.	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.
6.	A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.
7.	Certified compliance report shall be submitted along with ATR and comments of RO on the existing EC.
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 shall be provided. Plan shall be dully approved by the local forest department.
10.	A detailed plan need to be submitted for undertaking extensive green plantation within 10 km radius of the plant focusing on water reservoir, school, hospital and other institutional area and same need to be incorporated in EIA/EMP report.
11.	Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed and existing units and shall be incorporated in EIA/EMP report.
12.	Details of Ash management of 5-year plan for 100 % ash utilization for proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.

13.	Details of Dry Ash handling system along with the supplementary coal handling system shall be submitted.
14.	Proper protection measures like 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 under-construction 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.	Liquid Discharge plan shall be submitted so as treated water can be use by the nearby people.
18.	PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
19.	Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
20.	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.
21.	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.
22.	PP shall provide the details of transportation of flyash 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.
23.	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.
24.	Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.
25.	PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.
[C] Socio-economic Study	
1.	Public consultation (Written submission only) shall be conducted as per the provisions of EIA Notification, 2006 and as amended i.e PP shall obtain responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity by publicizing the draft EIA/EMP report/Summary on the SPCB website, following the provisions mentioned in the EIA Notification, 2006 and as amended.
2.	As per the Ministry's OM dated 30.09.2020/20.10.2020, to address the concern submitted against the written submission, 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
3.	Further, incase no or few response is received, PP shall also do the need base assessment survey. Based on the

	survey, PP is required to take up physical activities in time bound manner with year-wise budgetary provision (Capital and recurring). Activities proposed shall be part of EMP.
4.	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.
5.	Demographic 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 previous 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.
1	The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions

3.	published by the Ministry.
14.	All the certificates viz. Involvement of Forest land, 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.

3.2.6.2. Standard

1(d)	**Thermal Power Plants**
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.	Latest compliance report duly certified by the Regional Office of MoEF&CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.
Details of the Project and Site	
1.	The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
2.	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.
3.	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.
4.	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.
5.	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
6.	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.
7.	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.
8.	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.
9.	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.

10.	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.
11.	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.
Ecology biodiversity and Environment	
1.	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.
2.	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.
3.	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.
4.	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.
5.	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.
6.	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.
7.	Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted
8.	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.
9.	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.
10.	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.
11.	Feasibility of near zero discharge concept shall be critically examined and its details submitted.

12.	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
13.	Plan for recirculation of ash pond water and its implementation shall be submitted.
14.	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.
15.	Hazards Characterization: Past incidents of hazard events within 10km radius of project area with detailed analysis of causes and probability of reoccurrence
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 analysisand 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.	A list of industries existing and proposed in the study area shall be furnished.
4.	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.
5.	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
6.	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
7.	Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
8.	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.
9.	For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.

10.	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.
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.	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 CO2 and other gaseous pollutants and hence a stratified green belt should be developed.
2.	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
Socio-economic activities	
1.	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.
2.	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.
3.	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.
4.	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.
5.	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). CERdetails done in the past should be clearly spelt out in case of expansion projects.
6.	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.
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.	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-conducive 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.
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 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.
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 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.
Miscellaneous	
1.	All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.
2.	Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.
3.	In case any dismantling of old plants are envisaged, the planned land use & land reclamation of dismantled area to be furnished.
Additional TOR for Coastal Based Thermal Power Plants Projects (TPPs)	
1.	Low lying areas fulfilling the definition wetland as per Ramsar Convention shall be identified and clearly demarcated w.r.t the proposed site.
2.	If the site includes or is located close to marshy areas and backwaters, these areas must be excluded from the site and the project boundary should be away from the CRZ line. Authenticated CRZ map from any of the authorized agencies shall be submitted.

3.	The soil levelling should be minimum with no or minimal disturbance to the natural drainage of the area. If the minor canals (if any) have to be diverted, the design for diversion should be such that the diverted canals not only drains the plant area but also collect the volume of flood water from the surrounding areas and discharge into marshy areas/major canals that enter into creek. Major canals should not be altered but their embankments should be strengthened and desilted.
4.	Additional soil required for levelling of the sites should as far as possible be generated within the site itself in such a manner that the natural drainage system of the area is protected and improved.
5.	Marshy areas which hold large quantities of flood water to be identified and shall not be disturbed.
6.	No waste should be discharged into Creek, Canal systems, Backwaters, Marshy areas and seas without appropriate treatment. Wherever feasible, the outfall should be first treated in a Guard Pond and then only discharged into deep sea (10 to 15 m depth). Similarly, the Intake should be from deep sea to avoid aggregation of fish and in no case shall be from the estuarine zone. The brine that comes out from Desalinization Plants (if any) should not be discharged into sea without adequate dilution.
7.	Mangrove conservation and regeneration plan shall be formulated and Action Plan with details of time bound implementation shall be specified, if mangroves are present in Study Area.
8.	A common Green Endowment Fund should be created by the project proponents out of EMP budgets. The interest earned out of it should be used for the development and management of green cover of the area.
9.	Impact on fisheries at various socio economic level shall be assessed.
10.	An endowment Fishermen Welfare Fund should be created out of CER grants not only to enhance their quality of life by creation of facilities for Fish Landing Platforms / Fishing Harbour / cold storage, but also to provide relief in case of emergency situations such as missing of fishermen on duty due to rough seas, tropical cyclones and storms etc.
11.	Tsunami Emergency Management Plan shall be prepared wherever applicable and Plan submitted prior to the commencement of construction work.
12.	There should not be any contamination of soil, ground and surface waters (canals & village pond) with sea water in and around the project sites. In other words necessary preventive measures for spillage from pipelines, such as lining of Guard Pond used for the treatment of outfall before discharging into the sea and surface RCC channels along the pipelines of outfall and intake should be adopted. This is just because the areas around the projects boundaries could be fertile agricultural land used for paddy cultivation.

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

Proposed Expansion of Kawai Thermal Power Plant under Phase–II by adding 3200 (4x800) MW Ultra Super Critical Thermal Power Plant to Existing 1320 (2x660) MW at Village Kawai, Tehsil Atru, District Baran, Rajasthan by Adani Power Limited, Kawai by **Adani Power Ltd.** located at **BARAN,RAJASTHAN**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/RJ/THE/467570/2024	J-13012/154/2008-IA.II (T)	13/04/2024	Thermal Power Plants (1(d))

3.3.2. Project Salient Features

i. APL, Kawai proposes to set up an Ultra Super-Critical Thermal Power Project, under Phase-II expansion, with configuration of four units of 800 MW each deploying the state-of-the-art technology in the field, to have an installed capacity of 3200 MW. The proposed project is envisaged as an expansion of the existing 1320 (2x660) MW capacity catering total capacity of 4520 MW.

ii. The Ministry had issued EC earlier vide letter no. J-13012/154/2008-IA.II(T) dated 04.05.2011 to the existing project i.e. 1320 (2x660) MW Coal based thermal power plant situated at village Kawai, in Atru the existing Taluk, in Baran District in Rajasthan in favour of M/s. Adani Power Rajasthan Limited (APRL) and subsequently, EC amendment was granted on 13.03.2014 and EC was transferred from Adani Power Rajasthan Limited (APRL) to Adani Power Limited (APL, Kawai) on 24.04.2023 by MoEF&CC.

iii. Subsequently, Consent to Operate (CTO) for operation 1320 (2x660) MW issued with validity up to 28.02.2029 from Rajasthan State Pollution Control Board (RSPCB), Jaipur, Rajasthan. APL, Kawai (2x660) MW units are operational Unit-1 from 31.05.2013 and Unit – 2 from 31.12.2013.

iv. The salient features of the project are as under: -

Date of earlier EAC meetings	9th EAC Meeting held on 07th May'2024 Fresh ToR of Proposed Expansion of Kawai TPP

Category details:

Category of the project	A
Capacity	**3200 (4x800) MW** (expansion of TPP under Phase - II)
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

Project details:

Location of TPP Village : Taluk : District : State : Co-ordinates of all four corners: a) TPP site; b) Ash pond site; c) township etc. Average height of (a) TPP site, (b) ash pond site etc above MSL (m)	Kawai Atru Baran Rajasthan Site Coordinates of TPP including Ash Pond, Township etc.

Latitude	Longitude
24°48'49.45"	76°43'52.90"
24°49'52.57"	76°43'13.78"
24°49'18.09"	76°43'9.64"
24°50'16.91"	76°42'16.70"
24°50'17.26"	76°41'49.49"
24°48'52.21"	76°42'36.87"
24°48'12.53"	76°43'23.90"
24°48'7.23"	76°43'44.16"
24°47'20.05"	76°43'34.43"
24°47'17.07"	76°43'58.42"
24°47'2.40"	76°44'42.01"
24°45'43.52	76°44'29.90"

	a) 309 m above MSL. b) 310 m above MSL. The average altitude of site is ranging 308m to 313m a bove MSL.
Accredited Consultant and certificate n o.	Gaurang Environmental Solutions Pvt. Ltd. NABET Accreditation No.: NABET / EIA / 2023/SA0 203
Inter- state issue involved	Yes Rajasthan-Madhya Pradesh inter-state boundary at a bout 7.5 km in East direction
Seismic zone	Zone-II as per IS 1893.

- **Land Area Breakup:**

Land Requirement: a) TPP Site b) Ash Pond c) Township d) Railway Siding/Coal conveyor belt & Others e) Raw Water Reservoir f) Green Belt g) others Total (if expansion state additional la nd requirement)	**822.541** (*Includes 1.8414 Ha. Forest Area outside power plant area for proposed Coal Conveyor*) 208 117.06 30 1.8414 (*Forest Area outside power plant area for prop osed Coal Conveyor)* 65 289.44 111.2 (105.2+6) 822.541 ha (Existing-350+ Proposed 470.7)
Status of Land Acquisition:	For proposed expansion, land is already under posses sion with Adani Power Limited.
Status of the project: If under construction phase: please sp ecify the reasons for delay, works co mpleted till date and balance works a long with expected date of completio n. If under operation phase, date of com missioning (COD) of each unit. Whet her the plant was under shutdown sin ce commissioning, details and reason s.	**Phase-I:** 1320 (2x660) MW is commissioned and o perational. **Phase-II:** Proposed Expansion of Kawai Thermal P ower Plant by addition of 3200 (4x800) MW Ultra S uper Critical Thermal Power Plant.
Break-Up of land-use of TPP site: a. Total land required for project co mponents. b. Private land c. Government land Forest Land	**Total Project Land:822.541 ha** • Private Land: 820.7 ha • Forest Land: 1.8414 ha (Forest Land is *Outside power plant area for proposed Coal Conveyor* - [FC Proposal No. FP/RJ/OTHERS/467 838/2024]

Whether the project is in the Criticall y Polluted Area (CPA) or within 10 k m of CPA. If so, the details thereof:	No, the district doesn't fall under CPA.
CRZ Clearance	Not Applicable
Whether the project is in the Criticall y Polluted Area (CPA)/Severally Poll uted Area (SPA) or within 10 km of CPA. If so, the details thereof:	No, the district doesn't fall under CPA.

- **Presence of Environmentally Sensitive areas in the study area:**

Forest Land/ Protected Area/En vironmental Sensitivity Zone	**Yes/No**	**Details of Certificate/letter/Remarks**
Reserve Forest/Protected Forest Land	Yes	RF (Kheldi Birdaggiyan) is Adjacent to Pl ant Boundary. PF (Dense Mixed Jungle) is about 0.23 km in SE direction. No National Park, Sanctuary, Elephant/Tig er Reserve, or migratory routes/wildlife co rridor exists within 15 km of the power sta tion.
National Park	No	
Wildlife Sanctuary	No	
Archaeological sites monuments/ historical temples etc	No	
Names & distance of National pa rks, Wildlife sanctuaries, Biosph ere reserves, Heritage sites River s, Tanks, Reserve Forests etc. Lo cated within 10 Km from the pla nt boundary:	No	
Availability of Schedule-I specie s in study area	No	-
Additional information (if any)	-	-

- **Project description:**

If expansion, the details of ECs (including a mendments and extension of validity) of exis ting Units etc.	Environmental Clearance (EC) was granted by MoEFCC, New Delhi vide File no. J-13012/15 4/2008-IA.II(T) dated 04.05.2011 to Kawai Th ermal Power Plant at Baran District, Rajasthan. Subsequently, EC amendment was granted on 13.03.2014 and EC was transferred from Adan i Power Rajasthan Limited (APRL) to Adani P ower Limited (APL, Kawai) on 24.04.2023 by MoEFCC.
Chronology of the Project	• APL, Kawai owns and operates 1320 (2x660) MW Coal based thermal power plant situat ed at village Kawai, in Atru the existing Ta

<table>
<tr><td></td><td>luk, in Baran District in Rajasthan.
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<tr><td>Amendments granted, if Yes details</td><td>EC amendment was granted on 13.03.2014</td></tr>
<tr><td>Expansion / Green Field (new):
(IPP / Merchant / Captive):</td><td>Expansion – 3200 (4x800) MW
(IPP)</td></tr>
<tr><td>If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the environmental and CRZ clearances of the previous phases.</td><td>EC Certified by Integrated Regional Office of MoEFCC, Jaipur vide File No. IV/ENV/R/THE-44/821/2011 dated: 26.05.2013.</td></tr>
<tr><td>Specific webpage address where all EC related documents (including monitoring and compliance related reports/documents) of the specific project under consideration are/will be available. Also contact details of PP’s officer responsible for updating this webpage/information.</td><td>https://www.adanipower.com/
&
https://parivesh.nic.in/</td></tr>
<tr><td>Co-ordinates of all four corners of TPP Site:</td><td>Site Coordinates of TPP including Ash Pond, Township etc.
<table><tr><th>Latitude</th><th>Longitude</th></tr><tr><td>24°48'49.45"</td><td>76°43'52.90"</td></tr><tr><td>24°49'52.57"</td><td>76°43'13.78"</td></tr><tr><td>24°49'18.09"</td><td>76°43'9.64"</td></tr><tr><td>24°50'16.91"</td><td>76°42'16.70"</td></tr><tr><td>24°50'17.26"</td><td>76°41'49.49"</td></tr><tr><td>24°48'52.21"</td><td>76°42'36.87"</td></tr><tr><td>24°48'12.53"</td><td>76°43'23.90"</td></tr><tr><td>24°48'7.23"</td><td>76°43'44.16"</td></tr><tr><td>24°47'20.05"</td><td>76°43'34.43"</td></tr><tr><td>24°47'17.07"</td><td>76°43'58.42"</td></tr><tr><td>24°47'2.40"</td><td>76°44'42.01"</td></tr></table></td></tr>
</table>

	24°45'43.52 | 76°44'29.90"
Average height of: (a) TPP site, (b) ash pond site etc. above MSL	a. 309 m above MSL. b. 310 m above MSL. The average altitude of site is ranging 308m to 313m above MSL.
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendme nt:	Rs. 7000 Cr. Rs.36,600 Crores
Employment Potential for entire project/plant and employment potential for the proposed a mendment (specify number of persons and qu antitative information).	Employment during construction phase (4 x 80 0 MW) is estimated to be around 8000 Nos. (D irect employment approx. 500 Nos and approx. 7500 Nos Indirect). Employment required for operation of 4 x 800 MW Units in addition to existing O&M staff is estimated around Approx. 550 Nos Direct and 1500 Nos Indirect.
Benefits of the project (specify quantitative in formation)	The proposed expansion project will improve the power supply position in the state as well as in India, which is vital for economic growt h as well as improving the quality of life. • Infrastructure development. • Direct & indirect employment opportunity. • Revenue generation to central & state govern ment. • Trickledown effect of enhance profitability to the local populace. • Skill development and capacity building like vocational training, income generation pro grammes and entrepreneurship developmen t program • Awareness programme and community activi ties, like health camps, medical aides, fami ly welfare camps, sanitization/ cleanliness awareness programme, immunization cam p, sports & cultural activities, plantation, et c. • Awareness about water borne diseases and pa ndemic diseases etc. will be done to local v illagers. • The project will also attract the high-income groups to invest in the region and thus brin g about economic growth of the region.
Status of other statutory clearances	APL has already applied for Forest clearance/ap proval for Land Diversion of 1.8414 Ha
R&R details	Not applicable

- **Details of fuel and Ash disposal:**

Fuel to be used:	Coal and Auxiliary Fuel
Quantity of Fuel required per Annum:	For the Proposed Power Project of 3200 MW, the a nnual fuel requirement is estimated at about 12.9 M TPA at 85% plant load factor with Design Coal GC V of 3200-4300 KCal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum is about 30000 kilo liters.
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of th e Block)	Coal from Commercial Coal Mines (GCV 3200-43 00 Kcal /Kg) – Jitpur Coal Mines (>1200 km), Ram pia Coal Mines (>900 km) & Gondbahera Ujheni C oal Mines (>700 km) & e-auction.
Details of mode of transportation of coal f rom coal source to the plant premises alon g with distances	Coal shall be received from Mine to TPP through R ail.
Fly Ash Disposal System Proposed a. Ash Pond / Dyke: (Area, Location & Co-ordinate s) Average height of area abov e MSL (m) Space left in ash dyke area	Fly ash will be collected in dry form for utilization, while bottom ash will be collected in wet form. The re would be provision for dry disposal of fly ash fro m storage silos to closed tankers for utilization in c ement industries, abandoned mine reclamation, roa d construction, aggregate replacement in concrete, f or manufacturing bricks, etc. as per Fly Ash Notific ation, 31st December'2021 and amendments. Provision would be kept for HCSD disposal of both bottom and fly ash to ash pond in case of exigency. In this case, both bottom ash and fly ash will be dis posed through HCSD system to the proposed ash d yke.
Quantity of a. Fly Ash to be generated. b. Bottom Ash to be generated:	6.2 MMTPA 16,057 T/day 4,014 T/day
Fly Ash Utilization percentage with detail s in last 5 years:	(MoU with Cement/Brick Manufactures/ Others) MoU for 100% Utilization of Ash will be provided along with EC application.
Stack Height (m) & Type of Flue	120 (m) (new) Bi Flue

- **Water Requirement:**

Source of Water:	Parwan River/Dam
Quantity of water requirement:	56 MCM
Distance of source of water from Plant:	18.4 Km (as proposed from existing intake water s ystem.)

Whether barrage/ weir/ intake well/ jack wel l/ others proposed:	No. After engineering & re-evaluating the existing infra structure facilities for water withdrawal for propose d expansion of 4x800 MW, the existing infrastructu re will be adequate.
Mode of conveyance of water:	Pipeline
Status of water linkage:	WRD Permission
(If source is Sea water) Desalination Plant Capacity	Not Applicable
Mode / Management of Brine:	Not Applicable
Cooling system	Induced draft

- **Court case details/violation:**

Any violation case pertaining to the project on following: i. The Environment Protection Act, 1986 ii. The Forest (Conservation) Act, 1980. iii. The Wild Life (Protection) Act, 1972	

v. The estimated project cost is Rs. 44864.59 Cr (proposed expansion- 36,600 Cr.) including existing investment of Rs 8264.59 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 5,992.94 Cr. and the Recurring cost (operation and maintenance) will be about Rs. 5. 2 Cr per annum considering EMP.

vi. Total Employment will be 850 persons as direct & 350 persons indirect after expansion. Industry proposes to allocate Rs 100 Cr. @ of 0.27 % towards CER (as per Ministry's OM dated 01.05.2018 & 30.09.2020).

vii. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. River Parbati is flowing at 2.93 km in NE direction.

viii. Effluent of 2000 KLD quantity will be treated through STP & ETP. The plant will be based on Zero Liquid discharge system.

ix. Power requirement after expansion will be 22000 KVA including existing 7000 KVA and will be met from self-generation, i.e AUX consumption. Existing unit has no DG sets of capacity, additionally no DG sets are used as standby during power failure. Stack (height-movable DG sets) will be provided as per CPCB norms to the proposed DG sets.

x. Existing/Proposed unit has 467 TPH Coal fired boiler. Additionally, 585 TPH Coal fired boiler will be installed. Electrostatic precipitator (ESP), No_x Control system and Flue gas desulphurisation system (FGD) with a stack height of 120 m will be installed for controlling particulate emissions within the statutory limit of 30 mg/Nm^3 for proposed boilers.

xi. Details of Solid waste/Hazardous waste generation and its management:

xii. **Details of Coal Linkage:** Coal for Proposed TPP Expansion will be Domestic coal from commercial Coal Mines - Jitpur Coal Mines, Rampia Coal Mines, Gondbahera Ujheni Coal Mines & e-auction.

xiii. **Details of Coal Sourcing:** Coal (proposed expansion) will be sourced from commercial coal mines - Jitpur Coal Mines & Rampia Coal Mines, Gondbahera Ujheni Coal Mines & e-auction. (GCV-3200-4300 Kcal/Kg).

xiv. Details of Certified compliance report submitted by RO, MoEF&CC.

EC Certified by Integrated Regional Office of MoEFCC, Jaipur vide File No. IV/ENV/R/THE-44/821/2011 dated: 26.05.2013 & 09.10.2015. MoEFCC, Lucknow Office had visited the Kawai TPP dated 23rd and 24th November in 2020.

xv. Status of Litigation Pending against the proposal, if any.

xvi. **Ash Pond area:** As per MoEF&CC Notification S.O. 5481(E) dated 31.12.2021 and amendments stipulated ash pond area for thermal power plant 0.1 hectare per Mega Watt (MW). The proposed power plant has total ash pond area 117.06 Ha i.e. 14.2 % of the total project area 822.54 Ha (for proposed expansion - 57.06 Ha.)

3.3.3. Deliberations by the committee in previous meetings

Date of EAC 1 :07/05/2024

Deliberations of EAC 1 :

1) The proposal is for grant of Terms of Reference (ToR) to Expansion of Kawai Thermal Power Plant by addition of 3200 (4x800) MW Ultra Super Critical Thermal Power Plant to Existing 1320 (2x660) MW in an area of 822.54 Ha located at Village Kawai, Sub District Atru, District Baran (Rajasthan) by M/s Adani Power Limited. Earlier, EC was granted by grant MoEF&CC vide letter dated 04.05.2011 to the existing project i.e. 1320 (2x660) MW to M/s Adani Power Rajasthan Limited (APRL) and subsequently, EC amendment was granted on 13.03.2014 and EC was transferred from Adani Power Rajasthan Limited (APRL) to Adani Power Limited (APL, Kawai) on 24.04.2023.

9.3.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting ***deferred*** the proposal seeking the following additional information:

i. Complete project proposal including the land requirement for infrastructure proposed outside the TPP (Water Pipeline (ROW/ROU) shall be submitted. During the survey for the water pipeline, forest areas in part or complete, may be avoided. Final alignment of the proposed water pipeline and railway line along with land details shall be submitted.

ii. A copy of the agreement (MoU) for coal linkage from Commercial coal mines shall be submitted.

iii. The school and health centre are located near the boundary to the proposed expansion, therefore detailed plan to relocate them shall be submitted.

v. Status on permission for Water allocation of 56 MCM from Parwan River/Dam from WRD Jaipur, Rajasthan shall be submitted.

vi. Alternative site location, bypassing forest area for conveyor belt and other infrastructure proposed outside the TPP shall be explored and submitted.

vii. PP shall align its proposed activities to one/few of the Sustainable Development Goals (SDG) and start working on the mission of net zero by 2050.

viii. Explore the possibility of using the existing Ash Pond for proposed expansion or justify specific reasons for not using it. Geotagged images for the existing Ash Pond along with mitigation measures in place shall be submitted.

ix. Details of 10 years of satellite image data shall be submitted w.r.t forest area, land use and land pattern of 10km radius from the plant boundary.

x. Water balance chart with water conservation measures in place and proposed for expansion to be submitted.

xi. Details of 17 court cases shall be submitted. Cases filed and involving environmental implications should be highlighted.

3.3.4. Deliberations by the EAC in current meetings

Query 1 Complete project proposal including the land requirement for infrastructure proposed outside the TPP (Water Pipeline (ROW/ROU) shall be submitted. During the survey for the water pipeline, forest areas in part or complete, may be avoided. Final alignment of the proposed water pipeline and railway line along with land details shall be submitted.

Reply: The infrastructure facilities like water pipeline & intake already exists for operational 1320 MW TPP. After re-evaluating the infrastructure facilities for water withdrawal requirement for proposed expansion of 4x800 MW, the existing infrastructure are adequate. Hence, existing facility for water withdrawal i.e. water pipeline will be used for proposed expansion. Applicable approvals/permissions, if any will be obtained from concerned authorities before construction of project.

Observation of EAC: *The Committee observed that PP shall use the existing facilities and asked*

whether the same are in forest land. PP informed that these are on non-forest land.

Query 2 A copy of the agreement (MoU) for coal linkage from Commercial coal mines shall be submitted.

Reply: Coal/Fuel Supply Agreement was executed between Adani Power Limited & Terri Mining Private Limited (Jitpur Coal Mine) for 1.75 million MTPA on 02.03.2024, Jhar Mineral Resources Pvt. Ltd. (Rampia Coal Mine) for 3.75 million MTPA on 02.03.2024 and MP Natural Resources Pvt. Ltd. (Gondbahera Ujheni coal mine) for 1.75 million MTPA on 28.03.2024 and balance requirement will be met through e-auction. Complete details will be submitted along with EC application.

Observation of EAC: *The Committee is of the view than PP shall submit the compliance of comply with OM dated 15.03.2017.*

Query 3 The school and health centre are located near the boundary to the proposed expansion, therefore detailed plan to relocate them shall be submitted.

Reply: The proposed Main plant/ BTG of APL, Kawai is about 754.49 meters away from nearest Govt School and Health Center which lies beside the school at Dara Village. However, APL, Kawai has approached Government of Rajasthan, (The Hon'ble District Collector, Baran District, Rajasthan) vide letter no. APL/Kawai/05062024/1 dated 05.06.2024 for relocation of Govt School and Health Center of Village Dara falling in proximity of the proposed TPP to a suitable location at a safer distance. Upon grant of permission for relocation, the same will be taken up in consultation with Local/Concerned Authorities and villages before commissioning of the Project, Undertaking is enclosed regarding the same. A copy of the request letter to the District Collector has been submitted.

Observation of EAC: *The Committee is of the view that EIA report shall include all these details and accordingly budget needs to be planned.*

Query 4 Status on development of the Three-tier plantation programme (33% of total project cover area) along the periphery of the project boundary shall be provided for the existing unit. Green belt Development plan for the proposed project shall also be submitted.

Reply: In existing TPP, Three-tier plantation plan/program of 33% of total project cover area along the periphery of project boundary is taken up and will be maintained. The details regarding the same is enclosed. The Green belt development plan for the proposed project covering 33% of project area will be submitted along with Final EIA & EMP Report with EC Application.

Observation of EAC: *The Committee asked that PP shall submit the geo-tagged phots of the plantation. PP vide letter dated 28.06.2024 submitted the same. The Committee is of the view that a site visit is planned for the said plant and the same may be seen during the visit. However, till that time PP shall carry out extensive plantation activities during the coming monsoon.*

Query 5 Status on permission for Water allocation of 56 MCM from Parwan River/Dam from WRD Jaipur, Rajasthan shall be submitted.

Reply: The water requirement for the proposed expansion 3200 (4x800) MW is optimized as 56 MCM/year (6400 m3/hr) sourced from Parwan River/ Dam through existing infrastructure facilities. Water Resource Department (WRD), Jaipur, Rajasthan has already allocated 34 MCM/Year water for existing operational 1320 (2x660) MW TPP from Parwan River/Dam. APL, Kawai has applied for Water allocation of 52 MCM/Year water to Water Resource Department (WRD), Jaipur, Rajasthan and balance quantity will be met through existing permission. Water Permission Letter will be submitted along with the final EIA & EMP report.

Observation of EAC: *The Committee is of the view that PP is in process of obtaining the same and shall provide the same in EIA.*

Query 6 Alternative site location, bypassing forest area for conveyor belt and other infrastructure proposed outside the TPP shall be explored and submitted.

Reply: During site selection alternative locations were examined for Coal Conveyor corridor routes, the following points were taken into consideration:

The proposed forest area is the minimum area & unavoidable area.

Query 7 PP shall align its proposed activities to one/few of the Sustainable Development Goals (SDG) and start working on the mission of net zero by 2050.

Reply: APL at Business level is committed for SDG's and exploring net zero target in line with

Nation Commitment.

Query 8 Explore the possibility of using the existing Ash Pond for proposed expansion or justify specific reasons for not using it. Geotagged images for the existing Ash Pond along with mitigation measures in place shall be submitted.

Reply: The existing ash pond of 60 Ha is being used for unutilized Ash from Ph-I (2x660 MW). For the proposed expansion as Phase-II, (4x800 MW) minimum Ash dyke area of 57.06 Ha is envisaged, which is much lesser and only about 18% of 320 Ha allowed as per Fly Ash Notification dated 31.12.2021 (i.e. 0.1 Ha/MW) for unutilized ash in case of emergency & during rainy season. APL, Kawai shall ensure 100% ash utilization to meet MoEF&CC guidelines.

Observation of EAC: *The Committee asked the PP why the existing ash pond area is not enough for the proposed expansion. PP vide letter dated 28.06.2024 submitted that the proposed area is in line with notification dated 31.12.2021 and they are agreeing to any direction of Hon'ble EAC in this regard. The Committee is of the view that quantum of area is one part and location of the same is another issues. The Committee therefore is of the view that PP shall get the detailed study done to accommodate the ash from the proposed expansion project to existing ash pond area to avoid setting up of a new pond near habitation.*

Query 9 Details of 10 years of satellite image data shall be submitted w.r.t forest area, land use and land pattern of 10km radius from the plant boundary.

Reply: Details of Satellite images has been submitted.

Observation of EAC: *The Committee observed that 10-year data is not analyzed properly for which PP submitted that they have requested NRSC for the same. The Committee asked for details of the communication. PP vide letter dated 28.06.2024 submitted the email sent to nrsc on 7/06/2024 for providing images.*

Query 10 Water balance chart with water conservation measures in place and proposed for expansion to be submitted.

Reply: The Water Balance Chart having provision of Water conservation measures has been submitted.

Query 11 Details of 17 court cases shall be submitted. Cases filed and involving environmental implications should be highlighted.

Reply: Details of 17 court cases are enclosed and cases are not related to the Environment/Forest, hence there is no implication. Details regarding the same has been submitted.

3.3.5. Recommendation of EAC

Recommended

3.3.6. Details of Terms of Reference

3.3.6.1. Specific

[C] Socio-economic Study	
1.	The Public Health Delivery 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.	Demographic details in 10 km area shall be submitted.
4.	PP shall prepare budget wise time bound action plan for relocation of Govt School and Health Center of village falling in proximity of the proposed TPP to a suitable location at a safer distance and details of the same shall be included in EIA/EMP report.
5.	To ascertain the need of the local people a need based assessment to be done and an action plan on its recommendations may also be submitted with budgetary provisions.
[A] Environmental Management and Biodiversity Conservation	
1.	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.
2.	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.
3.	A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.
4.	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.
5.	PP shall carry out extensive plantation activities during the coming monsoon and details of the same shall be presented during appraisal of EC proposal along with geo tagged photos.
6.	Action plan for development of Three tier plantation programme (33% of total project cover area) along the periphery of the project boundary shall be provided. Plan shall be dully approved by the local forest department.
7.	A detailed plan need to be submitted for undertaking extensive green plantation within 10 km radius of the plant focusing on water reservoir, school, hospital and other institutional area and same need to be incorporated in EIA/EMP report.
8.	Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed and existing units and shall be incorporated in EIA/EMP report.
9.	Details of Ash management of 5-year plan for 100 % ash utilization for proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.
10.	PP shall get the detailed study done to accommodate the ash from the proposed expansion project to existing ash pond area to avoid setting up of a new ash pond.
11.	Detailed plan for 100% utilization of total ash including legacy ash, if any shall be submitted. Details of Dry Ash handling system along with the supplementary coal handling system shall be submitted.
1	Proper protection measures like HDPE lining, appropriate height of bund and adequate distance between the

2.	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 under-construction ash pond. A high-density Slurry disposal plan shall be prepared.
13.	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.
14.	Details pertaining to water source, treatment and discharge should be provided. Water allocation of 52 MCM/Year water to Water Resource Department (WRD), Jaipur, Rajasthan shall be submitted.
15.	PP shall provide details of infrastructure facilities like water pipeline & intake to be used for already exists for operational TPP.
16.	PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
17.	Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
18.	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.
19.	PP shall provide the details of transportation of flyash 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.
20.	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.
21.	Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.
22.	PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.
23.	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 a time bound action plan.
[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 previous public hearing conducted and fresh Public Hearing with defined timeline and budgetary provisions.
10.	PP shall submit detailed plan to reallocate of nearby school, hospital and/or other sensitive infrastructure.
11.	PP shall submit land use change within 10 kms radius in time series using satellite imageries.
12.	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.
13.	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.
14.	The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.
15.	All the certificates viz. Involvement of Forest land, 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.
16.	Aerial view video of project site and transportation route proposed for this project shall be recorded through drone and be submitted.
17.	PP shall comply with norms of OM J-13011/18/2014-IA. I (T) dated 15.03.2017.
18.	A sub-committee of the EAC shall visit the site prior to appraisal.
19.	PP shall submit 10 years of satellite image data shall be submitted w.r.t forest area, land use and land pattern of 10km radius from the plant boundary after analyzing the same.

3.3.6.2. Standard

1(	**Thermal Power Plants**

d)	
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.	Latest compliance report duly certified by the Regional Office of MoEF&CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.
Details of the Project and Site	
1.	The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
2.	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.
3.	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.
4.	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.
5.	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
6.	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.
7.	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.
8.	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.
9.	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
10.	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.
11.	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.

Ecology biodiversity and Environment	
1.	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.
2.	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.
3.	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.
4.	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.
5.	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.
6.	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.
7.	Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted
8.	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.
9.	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.
10.	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.
11.	Feasibility of near zero discharge concept shall be critically examined and its details submitted.
12.	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
13.	Plan for recirculation of ash pond water and its implementation shall be submitted.
14.	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.
15.	Hazards Characterization: Past incidents of hazard events within 10km radius of project area with detailed analysis of causes and probability of reoccurrence
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 analysisand 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.	A list of industries existing and proposed in the study area shall be furnished.
4.	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.
5.	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
6.	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
7.	Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
8.	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.
9.	For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
10.	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.
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.	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 CO2 and other gaseous pollutants and hence a stratified green belt should be developed.
2.	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
Socio-economic activities	
1.	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.
2.	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.
3.	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.
4.	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.
5.	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). CERdetails done in the past should be clearly spelt out in case of expansion projects.
6.	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.

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.	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-conducive 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.
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 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.
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 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.
Miscellaneous	
1.	All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.
2.	Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.
3.	In case any dismantling of old plants are envisaged, the planned land use & land reclamation of dismantled area to be furnished.
Additional TOR for Coastal Based Thermal Power Plants Projects (TPPs)	
1.	Low lying areas fulfilling the definition wetland as per Ramsar Convention shall be identified and clearly demarcated w.r.t the proposed site.
2.	If the site includes or is located close to marshy areas and backwaters, these areas must be excluded from the site and the project boundary should be away from the CRZ line. Authenticated CRZ map from any of the authorized agencies shall be submitted.
3.	The soil levelling should be minimum with no or minimal disturbance to the natural drainage of the area. If the minor canals (if any) have to be diverted, the design for diversion should be such that the diverted canals not only drains the plant area but also collect the volume of flood water from the surrounding areas and discharge into marshy areas/major canals that enter into creek. Major canals should not be altered but their embankments should be strengthened and desilted.
4.	Additional soil required for levelling of the sites should as far as possible be generated within the site itself in such a manner that the natural drainage system of the area is protected and improved.
5.	Marshy areas which hold large quantities of flood water to be identified and shall not be disturbed.

6.	No waste should be discharged into Creek, Canal systems, Backwaters, Marshy areas and seas without appropriate treatment. Wherever feasible, the outfall should be first treated in a Guard Pond and then only discharged into deep sea (10 to 15 m depth). Similarly, the Intake should be from deep sea to avoid aggregation of fish and in no case shall be from the estuarine zone. The brine that comes out from Desalinization Plants (if any) should not be discharged into sea without adequate dilution.
7.	Mangrove conservation and regeneration plan shall be formulated and Action Plan with details of time bound implementation shall be specified, if mangroves are present in Study Area.
8.	A common Green Endowment Fund should be created by the project proponents out of EMP budgets. The interest earned out of it should be used for the development and management of green cover of the area.
9.	Impact on fisheries at various socio economic level shall be assessed.
10.	An endowment Fishermen Welfare Fund should be created out of CER grants not only to enhance their quality of life by creation of facilities for Fish Landing Platforms / Fishing Harbour / cold storage, but also to provide relief in case of emergency situations such as missing of fishermen on duty due to rough seas, tropical cyclones and storms etc.
11.	Tsunami Emergency Management Plan shall be prepared wherever applicable and Plan submitted prior to the commencement of construction work.
12.	There should not be any contamination of soil, ground and surface waters (canals & village pond) with sea water in and around the project sites. In other words necessary preventive measures for spillage from pipelines, such as lining of Guard Pond used for the treatment of outfall before discharging into the sea and surface RCC channels along the pipelines of outfall and intake should be adopted. This is just because the areas around the projects boundaries could be fertile agricultural land used for paddy cultivation.

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	
2	Dr Santoshkumar Hampannavar	Member (EAC)	san**********@yahoo.com	
3	Shri K B Biswas	Member (EAC)	bis*********@gmail.com	
4	Dr Nazimuddin	Member (EAC)	naz*******@nic.in	
5	Shri Mahi Pal Singh	Member (EAC)	mps********@nic.in	
6	Amit Vashishtha	Scientist E	ami**********@nic.in	
7	Sh Inder Pal Singh Matharu IFS	Member (EAC)	mat********@gmail.com	
8	Sh Lalit Kapur	Member (EAC)	lka********@yahoo.com	
9	Dr Umesh Jagannathrao Kahalekar	Member (EAC)	uka*******@gmail.com	
10	Sh Savalge Chandrasekhar	Member (EAC)	sav*****@gmail.com	

11	Prof Shyam Shanker Singh	Member (EAC)	sin********@gmail.com	
12	Dr Vinod Agrawal	Member (EAC)	vin*****@yahoo.com	
13	Prof R M Bhattacharjee	Member (EAC)	rmb**********@iitism.ac.in	Absent
14	Shri Harmeet Sahaney	Member (EAC)	har**********@imd.gov.in	Absent

MINUTES OF THE 11TH MEETING OF THE EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 27TH – 28 TH JUNE, 2024.

The 11th Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Aliganj, Jor Bagh Road, New Delhi was held on 27th – 28th June, 2024 through Virtual Mode under the Chairmanship of Dr. Sharad Singh Negi. At the outset, the Chairman welcomed the Expert members & other participants and requested to start the proceeding as per the agenda adopted for this meeting. The list of Members who participated in the meeting is at **Annexure I.** The Standard/Generic EC & ToR conditions shall be system generated through the PARIVESH Portal.

Confirmation of the Minutes of the 10th EAC meeting

The Minutes of the 10th EAC (Thermal Power) meeting held on 10.06.2024 were confirmed in the meeting.

Agenda Item No. 11.1

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), located in Village Sipat, Tehsil Masturi, District Bilaspur, Chhattisgarh by NTPC Ltd – Reconsideration of EC - Reg

[Proposal No. IA/CG/THE/463369/2024; F. No. J-13012/02/2019-IA.I(T)]

11.1.1 The proposal is for the grant of fresh Environmental Clearance for the project 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), located in Village Sipat, Tehsil Masturi, District Bilaspur, Chhattisgarh by NTPC Ltd.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of EIA Notification 2006 (as amended) as the power generation capacity of the proposed project is beyond the threshold capacity of 500MW i.e. 3780 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

11.1.2 The Project Proponent and the accredited Consultant M/s. Mantec Consultants Pvt Ltd, Noida made a detailed presentation on the salient features of the project and informed that:

i. The proposal is for Environmental Clearance (EC) for Sipat Super Thermal Power Project, Stage-III (1X800 MW) located at Village Sipat, Tehsil Sipat in Bilaspur district of Chhattisgarh by M/s. NTPC Limited.

ii. The ToR has been issued by Ministry vide letter No J.13012/02/2019.IA-I(T) dated 03.05.2019 and Amendment in TOR granted vide letter No J.13012/02/2019.IA-I(T) dated 08.08.2022.

iii. The Ministry had issued EC earlier vide letter no. J.13011/10/96-IA.II (T) dated 22.02.1999 to the existing Stage-I Project "2000 MW Sipat Super Thermal Power Project Stage-I" and amendments in Stage-I EC vide letter dated 08.09.2014, 08.02.2017, 17.05.2018, and 09.10.2019. MoEF&CC had earlier also issued EC vide letter no. J.13011/5/2002.IA-II(T) dated 08.06.2004 to the existing Stage-II Project "2 x 500 MW Sipat Thermal Power Plant (STPP)" and amendment in EC dated 24.12.2021 for deletion of condition "70 acres of additional land will be acquired by M/s. NTPC for ash-based units".

iv. The salient features of the project are as under: -

- **EAC Meeting Details:**

Date of earlier EAC meetings	22.02.2019: 25th Meeting of the Expert Appraisal Committee on Thermal Power Projects –Consideration for TOR 27.03.2019: 26th Meeting of the Expert Appraisal Committee on Thermal Power Projects – Reconsideration of TOR 15.06.2022: 26th Meeting of the Expert Appraisal Committee on Thermal Power Projects – Amendment in TOR 27.02.2024: 06th Meeting of the Expert Appraisal Committee on Thermal Power Projects – Reg. Consideration for Environmental Clearance 08.04.2024: 08th Meeting of the Expert Appraisal Committee on Thermal Power Projects – Reg. reconsideration for Environmental Clearance

- **Category details:**

Category of the project	Category-A
Capacity	1 x 800 MW (for Stage-III)

Attracts the General Conditions (Yes/No)	No
Additional information (if any)	None

- **Project details:**

Location of TPP	Village - Sipat Taluk –Sipat District – Bilaspur State – Chhattisgarh PIN – 495555
Co-ordinate of all four corners: Average height of (a) TPP Site (b) Ash Pond Site above MSL(m)	The geographical co-ordinates of the site are as follows: **Main Plant & Township:** **Latitude and Longitude** • 22°07'00"N to 22°08'53"N • 82°16'43"E to 82°18'49"E **Proposed Stage-III Project (1x800 MW)** Latitude and Longitude • 22° 07' 37" to 22° 07' 06" N • 82° 17' 14" to 82° 16' 47" E **Existing Ash dyke:** Latitude and Longitude • 22° 03' 39" N to 22°06'34" N • 82° 16' 27" E to 82° 17' 40" E 286 m 270 m
Accredited Consultant and certificate no.	M/s. Mantec Consultants Pvt Ltd, Noida NABET/EIA/23-26/RA0305_Rev.01 dated 31.01.2024 valid till 20.04.2026
Inter- state issue involved	No
Seismic zone	Zone-II

1) Land Area Breakup:

Land Requirement:	

<table>
<tr>
<td>a) TPP Site
b) Ash Pond
c) Township
d) Railway Siding & Others
e) Raw Water Reservoir
f) Green Belt
g) others
Total (if expansion state additional land requirement)</td>
<td>
<table>
<tr><td rowspan="2">Description of Activity / Facility</td><td colspan="3">Total Land in Possession, Ha</td></tr>
<tr><td>Area under use for Stage-I &II (Ha)</td><td>Area proposed to be used for Stage-III (Ha)</td><td>Total Area (Ha)</td></tr>
<tr><td>Main Plant</td><td>378</td><td>40.50</td><td>418.5</td></tr>
<tr><td>Ash Pond</td><td>600</td><td>0</td><td>600</td></tr>
<tr><td>Township</td><td>93</td><td>0</td><td>93</td></tr>
<tr><td>Misc & other area</td><td>535.90</td><td>7.724</td><td>543.62</td></tr>
<tr><td>Green belt Area</td><td>89.50</td><td>23.59</td><td>113.09</td></tr>
<tr><td>Total</td><td>1696.40</td><td>71.81</td><td>1768.21</td></tr>
</table>
No additional land shall be acquired for the proposed project of Stage-III.
</td>
</tr>
<tr>
<td>Status of Land Acquisition:</td>
<td>A total of 1768.21 Ha of land has been acquired. Approx. 1696.40 Ha land has been utilized for Stage-I & II to accommodate Main Plant, Ancillary Facilities, Township, Green Belt and Ash Units, remaining 71.81 Ha of land shall be used for Stage-III Units & Ancillary Facilities & Green Belt.</td>
</tr>
<tr>
<td>Status of the project:
If under construction phase: please specify the reasons for delay, works completed till date and balance works along with expected date of completion.
If under operation phase, date of commissioning (COD) of each unit. Whether the plant was under shutdown since commissioning, details and reasons.</td>
<td>The proposal is under planning stage now. The tendering of the project is under progress.
Construction of Sipat STPP Stage-III shall start after accord of Environmental Clearance of the Project and all other statutory clearances and approval by Board of NTPC.</td>
</tr>
</table>

<table>
<tr><td>Break-Up of land-use of TPP site:
a. Total land required for project components
b. Private land
c. Government land
d. Forest Land</td><td><table><tr><th>Particulars</th><th>Land (Ha)</th></tr><tr><td>Total</td><td>1768.211</td></tr><tr><td>Govt. land</td><td>564.708</td></tr><tr><td>Private land</td><td>938.512</td></tr><tr><td>Forest land</td><td>264.991</td></tr></table></td></tr>
<tr><td>Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:</td><td>No</td></tr>
<tr><td>CRZ Clearance</td><td>NA</td></tr>
<tr><td>Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:</td><td>No</td></tr>
</table>

2) Presence of Environmentally Sensitive areas in the study area

Forest Land/Protected Area/ Environmental Sensitivity Zone	**Yes/ No**	**Details of Certificate/ letter/Remarks**
Reserve Forest/Protected Forest Land	Yes	Bitkuli (Sonathi Pahar) Reserved Forest (3.7 km, NE) Dalha Protected Forest (7.0 km, ESE)
National Park	No	
Wildlife Sanctuary	No	
Archaeological sites monuments/ historical temples etc.	No	

Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites Rivers, Tanks, Reserve Forests etc. Located within 10 Km from the plant boundary:	No.	No National parks, Wildlife sanctuaries, Biosphere reserves, Archaeological Heritage sites exists within 10 Km radius
Availability of Schedule-I species in study area	Yes	Schedule-I species observed in the study area: Jackal, Wild Cat, Common Brown Owl, Varanus, Russel's Viper, Red sand Boa.

3) Project Description:

If expansion, the details of ECs (including amendments and extension of validity) of existing Units etc.	Yes, **A)** MOEF&CC accorded EC for Stage-I (2000 MW) vide letter J.13011/10/96-IA.II (T) dated 22.02.1999 and amendment in EC dated 30.04.2002 for change of fuel composition and unit size for 3x660 MW. Amendment in EC as following: • On 08.09.2014 for change in coal source • On 08.02.2017 & 17.05.2018 for transportation of coal with tarpaulin covered wagons • On 09.10.2019 for waiving the condition of transportation of coal with tarpaulin covered wagons and • On 24.12.2021 for reduce the land for brick manufacturing infrastructure from 50 acres to 10 acres and monitoring of radio activity and heavy metals in coal and fly ash from in-built continuous monitoring to regular/ periodic. **(B)** MoEF&CC had issued EC earlier vide letter no. J.13011/5/2002.IA-II(T) dated 08.06.2004 to the existing Stage-II Project "2 x 500 MW Sipat Thermal Power Plant (STPP)" • Amendment in EC on 24.12.2021 for deletion of condition "70 acres of additional

	land will be acquired by M/s NTPC for ash based units"
Expansion / Green Field (new): (IPP / Merchant / Captive):	Expansion
If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the environmental and CRZ clearances of the previous phases. A certified copy of the latest R.O. monitoring report shall also be submitted.	Date of latest monitoring done by RO MOEF&CC on 05/10/2023 and 06/10/2023. Latest Certified EC Compliance Report Dated 13th February, 2024
Specific webpage address where all EC related documents (including monitoring and compliance related reports/documents) of the specific project under consideration are/will be available. Also contact details of PP's officer responsible for updating this webpage/ information.	https://www.ntpc.co.in/about-us/corporate-functions/environment/status-hyc-reports Head of Project, Sipat Super Thermal Power Station Village - Sipat Taluk – Sipat District – Bilaspur State – Chhattisgarh PIN – 495555
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:	**Sipat STPP Stage-I** • Rs. 11125.70 Crores (As per latest cost estimate) **Sipat STPP Stage-II** • Rs. 3987.00 Crores (As per EC) • Rs. 3973.08 Crores (As per latest cost estimate) **Proposed Sipat Stage-III** Rs. 7,730.77 Crores (Estimated Cost)
Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).	• Current employment at existing power plant (Sipat STPP Stage-I&II): Permanent-764 & Temporary- approx. 2939 • The estimated employment generation from the proposed project (Stage-III) (a) During Construction- Permanent- 51 & Temprorary-2000-3000; depending on the construction phase of the project)

	(b) During Operation- Permanent-203 & Temprorary-150 However, the manpower shall be optimised and the exact number of manpower shall be decided during the construction/ operation phases of the project.
Benefits of the project (specify quantitative information)	• Proposed Sipat STPP **Stage-III** (1x800 MW) will have State of Art Ultra Super Critical Technology which has better efficiency and less carbon emissions in comparison to sub-critical technology. Installation of High efficiency ESP, FGD and De-Nox System will comply with the new emission norms of MOEF&CC. • The setting up of the proposed project will lead to direct and indirect benefits to the overall socio-economic development of the region. These will also benefit the local population. NTPC has taken up several community welfare and community development activities under Corporate Social Responsibility and this will be strengthened during commissioning of Sipat STPP Stage-III.
Status of other Statutory Clearances	CTE & CTO shall be obtained for Stage-III
R&R Details	No R&R Issue since Total of 1768.21 Ha of land has already been acquired earlier. In which Approx. 1696.40 ha of land was used to accommodate Main Plant, Township, Green Belt and Ash Dyke of Stage-I&II remaining 71.81 Ha of land shall be used for Stage-III Units & Ancillary Facilities & Green Belt Area.

4) Electricity generation capacity:

Capacity & Unit Configurations:	**Under Operation** Stage-I: 1980 MW (3x660 MW) Stage-II: 1000 MW (2X500 MW) **Proposed Expansion** Stage-III:800 MW (1x800 MW)

Generation of Electricity Annually	Stage-I: 14.74 Billion Units @85% PLF Stage-II: 7.44 Billion Units @85% PLF Stage-III: 5.95 Billion Units @85% PLF

5) Details of fuel and Ash disposal

Fuel to be used:	Coal
Quantity of Fuel required per Annum	3.25 MTPA corresponding to 85% PLF
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Quantity and details of Linkage available: SLC (LT) in its meeting held on 21.02.2023 has recommended grant of coal linkage to Sipat-III (1x800 MW). 1) Ash content in coal-39 % 2) GCV in coal- 4000 Kcal/Kg 3) Sulphur in coal-0.36%(max) 4) Moisture in coal-15.00%(max)
Details of mode of transportation of coal from coal source to the plant premises along with distances	Mode of coal transportation from the coal mines to the power plant shall be MGR and Indian Railways. Total distance from the source by Rail: 40 km
Fly Ash Disposal System Proposed	The bottom ash shall be extracted and disposed off in dry/wet form. The fly ash shall be conveyed in dry form from the electrostatic precipitator hoppers. This dry fly ash is taken to buffer hoppers for its onward transportation in dry form to storage silos near plant boundary for utilization. In case of non-utilization, fly ash shall be taken to HCSD system, where in it shall be mixed with water in agitator tanks for its ultimate disposal in high concentration slurry form to ash disposal area. The ash management scheme for fly ash and bottom ash involves dry collection of fly ash, supply of ash to entrepreneurs for utilisation, promoting ash utilisation and safe disposal of unused ash. NTPC shall make maximum efforts to utilise the fly ash for various purposes. Unused fly ash and bottom ash shall be disposed off in the ash pond.

<table>
<tr><td></td><td>Ratio of Water and ash: 40(water): 60 (Ash)</td></tr>
<tr><td>a. Ash Pond/ Dyke (Area, Location & Co-ordinates)

Average height of area above MSL(m)

b. Space left in the ash dyke Area</td><td>No additional land is proposed to be acquired for expansion project.

NA
The Area & Geographical co-ordinates of the site are as follows:

Existing Ash dyke:
Area: 600 Ha
Latitude and Longitude
22° 03' 39" N to 22°06'34" N
82° 16' 27" E to 82° 17' 40" E

270 m

Total Capacity (up to 4th Raisings):712.95 Lakh M3
Quantity of ash disposed (as on 31.03.2024): 410.47 LMT
Quantity of ash which can be disposed in available Space: 373.78 LMT</td></tr>
<tr><td>Quantity of
a. Fly Ash to be generated
b. Bottom Ash to be generated:</td><td>1.04 MTPA
0.26 MTPA</td></tr>
<tr><td>Fly Ash utilization percentage with details in last 5 years</td><td>
<table>
<tr><th>Fin Year</th><th>Ash Production (LMT)</th><th>Total AU (LMT)</th><th>Total AU (%)</th></tr>
<tr><td>FY 2019-20</td><td>49.05</td><td>24.08</td><td>49.09</td></tr>
<tr><td>FY 2020-21</td><td>52.47</td><td>30.26</td><td>57.67</td></tr>
<tr><td>FY 2021-22</td><td>51.98</td><td>30.80</td><td>59.25</td></tr>
<tr><td>FY 2022-23</td><td>48.40</td><td>31.15</td><td>64.36</td></tr>
<tr><td>FY 2023-24</td><td>53.53</td><td>54.20</td><td>101.26</td></tr>
<tr><td>FY 2024-25 (till 15.06.24)</td><td>11.90</td><td>11.07</td><td>93.05</td></tr>
</table>
</td></tr>
<tr><td>Stack Height (m) & Type of Flue</td><td>Stage-I
Two stacks of height 275m each One bi-flue for (Unit-I&II) and One single flue for Unit-III.
Stage-II
One bi-flue stack of height 275m for (Unit-IV & V)
Stage-III</td></tr>
</table>

	One single flue stacks of 150 m for Unit-VI

- **Water Requirement:**

Source of Water:	Right Bank Canal (RBC) of Hasdeo Barrage
Quantity of water requirement:	The water requirement for **Sipat-III** (1x800 MW) project would be about 2340 m3/hr with ash water recirculation system.
Distance of source of water from Plant:	Approx. 30 Km (from intake point)
Whether barrage/ weir/ intake well/ jack well/ others proposed:	No. Water is being drawn from Canal.
Mode of conveyance of water:	Pipeline
Status of water linkage:	From Hasdeo Right Bank Canal. Agreement signed on 25-11-2009
(If source is Sea water) Desalination Plant Capacity	Not Applicable.
Mode / Management of Brine:	Not Applicable.
Cooling system	Water Cooled Condenser System

5) **Public Hearing:**

i. Advertisement for PH with date	25.08.2023 & 25.11.2023 Public Hearing was initially scheduled on 27.09.2023 which was postponed to 11.12.2023 due to unavoidable circumstances.
ii. Details of newspaper published:	Regional Vernacular Daily: Haribhoomi (Hindi) dated 25.11.2023 National Daily: Hindustan Times (English) dated 25.11.2023
Date of Public Hearing	11.12.2023
Venue	At the sports ground of Mandanlal Shukla Government college, Sipat village & Tehsil, Bilaspur District, Chhattisgarh

Chaired by	Sh. R. A. Kuruvanshi, Additional Collector, Bilaspur
Main issues raised during PH	Employment, CSR Activities, Fugitive dust emission, water pollution etc.
Nos. of People attended	300

6) **Court case details/violation:**

Any litigation/Court case pertaining to the project	Yes, details attached as **Annexure-B**
Is the proposal under any investigation? If so, details thereof.	No
Any violation case pertaining to the project on following: i. The Environment Protection Act, 1986 ii. The Forest (Conservation) Act, 1980. iii. The Wildlife (Protection) Act, 1972	No

v. The estimated project cost is Rs. 22,829.55 Crores including existing investment of Rs. 7,730.77 Crores. Total tentative capital cost earmarked towards environmental pollution control measures is Rs. 1,060.74 Crores and the Recurring cost (operation and maintenance) will be about Rs. 21.00 Crores per annum in Stage-III.

vi. Effluent of 2256 KLD & 600 KLD quantity will be treated through ETP & STP respectively in Stage-III. The plant will be based on Zero Liquid discharge system.

vii. Water Requirement & its Source:

- The water requirement is estimated to be about 23 cusecs which is proposed to be drawn from the Right Bank Canal (RBC) originating from Hasdeo Barrage pondage. No additional water commitment is required for the expansion project.

- The water requirement for Sipat STPP Stage-III unit will be met from the available committed quantity of 120 MCM (134 Cusecs) from WRD, Govt. of Chhattisgarh accorded vide letter dated 26.11.2001 for Sipat STPS. Central Water Commission (CWC) vide letter dated 02.01.2002 had given its

concurrence for 120 MCM water for Sipat STPP. The water commitment was later modified to 93 MCM (104 Cusecs).

viii. Power requirement after expansion will be 240 MW including existing 194 MW and will be met from Sipat STPP Stage-I &II. Existing units has eight DG sets of DG: 1250 KVA (03Nos)/ 1500KVA (04 Nos)/62.5 KVA (01 No) capacity, additionally 02 DG sets shall be installed for Stage-III one for use and one for standby during power failure. Stack (height 30 m) will be provided as per CPCB norms to the proposed DG sets.

ix. Existing unit has 2225 TPH for Stage-I & 1625 TPH for Stage-II fired boiler. Additionally, 2580 TPH pulverized coal fired boiler will be installed. ESP with a stack of height of 150 m will be installed for controlling the particulate emissions within the statutory limit of 30 mg/Nm3 for the proposed boilers.

x. Details of Solid waste/ Hazardous waste generation and its management: Municipal waste from Township & Plant Canteen shall be disposed through composting. And Hazardous waste from Plant shall be disposed through Authorized Recyclers/agencies.

xi. The Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 11.12.2023. The main issues raised during the public hearing are related to Employment, CSR Activities, Fugitive dust emission, water pollution etc.

xii. Details of Coal Linkage: The SLC (LT) in its meeting held on 21.02.2023 has recommended grant of coal linkage to Sipat-III (1x800 MW).

xiii. Details of Certified compliance report submitted by RO, MoEF&CC.: IRO MOEF&CC has visited the site on 05/10/2023 and 06/10/2023 and certified compliance report submitted vide letter F.No.4-2/2004(Env)/1565 Dated 13th February, 2024. NTPC has submitted action plan vide letter no. NTPC-Sipat/Envt.Mgmt./2024/ dated 16.02.2024. Further updates on compliance of IRO observations has been submitted vide letter no. NTPC-Sipat/Envt.Mgmt./2024/2000 dated 02.04.2024 and letter no. NTPC-Sipat/Envt.Mgmt./2024/2029 dated 08.06.2024.

xiv. **Baseline Environmental Scenario:** As given bellow in table

Period	From Mar 2023 to May 2023
AAQ parameters at 10 locations (min. & Max.)	• PM_{10} = 46 to 76 µg/ m^3 • $PM_{2.5}$ = 23 to 51 µg/ m^3 • SO_2 = 04 to 26 µg/ m^3

	• NOx = 12 to 37 µg/ m^3 • CO = 0.58 to 0.83 mg/ m^3 • NH_3= 22 to 34 µg/ m^3 • Pb= BDL • As = BDL • Ni = BDL
Incremental GLC Level	• PM = Max. GLC: 76.74 (76 + 0.74) µg/ m^3 • SO_2 = Max GLC: 28.48 (26 + 2.48) µg/m^3 • NOx = Max GLC: 39.48 (37+2.48) µg/ m^3
River water samples (04 samples)	pH 7.02 to 7.62, Dissolved Oxygen: 5.2 to 7.4 mg/lit; Total Dissolved Solids: 171 to 302 mg/lit; Total Hardness (as CaCO3): 106 to 196 mg/lit & total Alkalinity (as CaCO3): 80 to 164 mg/lit; Calcium (as Ca): 74 to 152 mg/lit; Magnesium (as Mg) : 20 to 64 mg/lit ; Oil and grease: ND (mg/lit); Sulphate (as SO4): 12 to 37 mg/lit , Nitrate (as NO3) :7.2 to 13.2 mg/lit; Chloride (as Cl) : 18 to 54 mg/lit; Iron (as Fe): 0.02 to 0.11 mg/lit; BOD <3.0 mg/lit; Heavy metals like Copper (as Cu): 0.02 to 0.04 mg/lit, Lead (as Pb): <0.01 mg/lit, Cadmium(as Cd): <0.01 mg/lit, ,Chromium (as Cr): <0.05 mg/lit, Arsenic (as As): <0.01 mg/lit and Mercury(as Hg): <0.001 mg/lit, Manganese (as Mn): BDL mg/lit
Pond water samples quality at 11 locations	pH: 7.1 to 7.8; Total Dissolved Solids:280 to 487 mg/lit; total Hardness (as CaCO3): 120 to 188 mg/lit; Chloride (as Cl): 20 to 80 mg/lit;
Ground Water samples at 06 locations	pH: 6.64 to 7.42; Dissolved Oxygen: 6.2 to 8.4 mg/lit; Total Dissolved Solids: 420 to 880 mg/lit; total Hardness (as CaCO3): 258 to 612 mg/lit; Total Alkalinity (asCaCO3): 274 to 436 mg/lit; Calcium (as Ca): 67.2 to 155.2 mg/lit; Magnesium (as Mg): 21.3 to 54.4 mg/lit; Oil and grease: BDL (<1.4 mg/lit); Sulphate (asSO4): 20 to 104 mg/lit, Nitrate (as NO3): 5.4 to 9 mg/lit; Chloride (as Cl): 42 to 202 mg/lit; Iron (as Fe): 0.02-0.11 mg/lit; Heavy metals like Copper (as Cu):<0.01 to 0.04 mg/lit, Lead (as Pb): <0.01 mg/lit, Cadmium (as Cd): <0.003 mg/lit, Chromium (as Cr): <0.05 mg/lit, Manganese (as Mn): 0.03 to 0.11 mg/lit, Arsenic (as As): < 0.01 mg/lit and Mercury(as Hg) :<0.001 mg/lit
Noise levels Leq (Day & Night) at	The Leq values for daytime was observed to be 40.8 to 55.6 dB (A) in residential area, while during night-

15 locations	time 35.8 to 45.8 dB (A).
Soil Quality at 15 Locations	Bulk density: 1.04 to 1.28 gm/cm^3; pH range 6.42 to 7.72; Electrical conductivity (EC): 298 to 384 µmhos/cm; calcium content: 2436 to 6152 mg/kg; sodium: 68.9 to 375.6 mg/kg; potassium: 8.11 to 10.34 mg/100 gm; Nitrogen: 12.66 to 17.03 mg/100 gm; Phosphorous: 0.57 to 0.98 mg/100 gm; Cation Exchange Capacity (CEC): 9.68 to 16.88 meq/100gm; Magnesium: 162.8 to 1042 mg/kg; Sulphate: 82.6 to 216.5 mg/kg; Organic Matter: 0.47 to 1.41
Flora & Fauna	Schedule-I species observed in the study area: Jackal, Wild Cat, Common Brown Owl, Varanus, Russel's Viper, Red sand Boa.

xv. **Green belt development plan:**

- The main objective of the green belt is to provide a barrier between the plant and the surrounding areas. The green belt helps to capture the fugitive emissions and to attenuate the noise generated in the plant apart from improving the aesthetics of the plant site. In order to control the industrial pollutants, dense tree plantations are necessary.

- 50-100 m wide greenbelt, consisting of at least 3 tiers around the plant boundary shall be developed as greenbelt and green cover as per Central Pollution Control Board, CECB/ MOEF&CC, as per the Terms of Reference. Suitable plant density and native species shall be chosen for green belt development.

- Recommended Species: Siris tree , Saptaparni, Khair , Neem, Sissoo, Shisham, Kadam , Imli, Saaj, Peepal, Nerium, Vettiver, Nut Grass.

- Shrubs and trees will be planted in encircling rows around the project site.

- The short trees (<10-m height) will be planted in the first rows (towards plant side) of the green belt. The tall trees (>10 m height) will be planted in the outer rows (away from plant side).

- Planting of trees in each row will be in staggered orientation (triangular form).
- The spacing between the trees will be maintained slightly less than the normal spaces, so that the trees may grow vertically and slightly increasethe effective height of the green belt.
- Plantation activity started by engaging local people and through contracts.

- Total 4.12 lakhs trees have been planted till date and out of which 0.19 lakh trees have been planted in the year 2022-23

xvi. **Cost Provision for Environmental Measures:** A tentative cost provision of Rs.1060.74 crores has been kept towards providing environmental measures. It includes installation and construction of various pollution control equipment & systems like FGD, ESP, DeNOx system, chimney, dust extraction & suppression system, sewerage collection and treatment, afforestation & plantation and Corporate Environmental Responsibility provision etc.

Sl. No	Item Description	Total Cost in Cr
1	Electrostatic precipitator and FGD	173.25
2	Chimney	54.57
3	Cooling towers incl. civil works	134.56
4	Ash handling	397.78
5	Dust extraction & suppression system	1.00
6	DM plant waste treatment systems	2.60
7	Sewerage collection, treatment & disposal	2.10
8	Environmental laboratory equipment	1.00
9	Green Belt, afforestation & landscaping	10.00
10	FGD	283.88
	Total	1060.74

11.1.3 The project proposal was considered by the Expert Appraisal Committee (Thermal) in its 06th meeting held on 27.02.2024, 08th meeting held on 08.04.2024 for grant of Environmental Clearance (EC) for the Project wherein the EAC deferred the proposal seeking additional information. PP vide its letter dated 05.06.2024 submitted the following information and the proposal is now placed in 11th EAC meeting held on 27-28 June, 2024:

Query 1: PP shall resubmit the EIA/EMP report after the plagiarism check using authenticated plagiarism software including specific details on how the check was conducted, what tools or methods were used, and what the results were in terms of percentage or accuracy certificate.

Reply: Revised EIA/EMP report after Plagiarism check is uploaded at Parivesh Portal. PP informed that 10%-13% similarity was observed.

Query 2: As there is a change in consultant, point-wise compliance with the

NABET's scheme for validation of the EIA Report shall be submitted.

Reply: Point-wise compliance with the NABET's scheme for validation of the EIA Report is prepared as an Addendum to Final Comprehensive Environment Impact Assessment Report and has been submitted.

Query 3: PP shall submit the latest data from the CGWB data regarding groundwater levels and based on the same submit a rainwater harvesting and groundwater recharge plan with budgetary provisions, proposed locations and a defined timeline.

Reply:

- As per CGWB GROUND WATER YEARBOOK OF CHHATTISGARH 2021-22 more than 78 % of the observations wells water table is below 10 meters in Bilaspur District.
- Conducted a consultancy Project "RAINWATER HARVESTING POTENTIAL ASSESSMENT AND DESIGN OF RAINWATER HARVESTING SYSTEMS to National Institute of Hydrology (NIH), Roorkee.
- As per report submitted in February 2023, ground Water table in the project area is in the range of 1.33 meter to 3.15 meter.
- Therefore, NIH has advised not to install artificial recharge structures like recharge shaft or injection wells in the plant area, as further build-up in the ground level will create adverse condition in the plant area including uplift pressure on the installations like plant and machinery and water logging conditions which area not advisable in electricity generating installations, as cables are mostly laid underground.
- NTPC Sipat has installed rainwater harvesting from surface run off through storm water drain. Surface run-off water is pumped through gravity / pressure sand filters and used as CW makeup water.
- 0.52 MCM of Rainwater has been harvested during 2023-24 through four RWH structure installed in Plant area.
- Further, NTPC Sipat has planned to double the surface run-off pumping capacity during 2024-25.
- Another facility is being developed in township area to capture 0.16 MCM surface run off. Total estimated quantity of harvested Rainwater during 2024-25 will be 1.2 MCM (approx.).

Query 4: PP shall submit SDG's goal aligned with the proposed expansion project of Sipat Stage –III.

Reply: SDG's goal aligned with the proposed expansion project of Sipat Stage –III is prepared and submitted.

Goal Detail	Activities Proposed:
No Poverty	Provision of Rs. 25 lakh kept in capital Budget of Sipat-III to be undertaken under CER / CD : Activities under CER: • Welfare/Skill Development: Skill development trainings for increasing employability. Further, an expenditure of Rs. 90 lakhs is proposed to be incurred every year after commissioning of the Stage-III. The exact activities to be decided based on need and stakeholder consultation on annual basis.
Good Health and Well Being	Provision of Rs. 252 Lakh kept in capital Budget of Sipat-III to be undertaken under CER/CD to address issues raised during Public Hearing: • Development of Stadium/Sports Ground in Sipat • Development of Stadium/Sports Ground in Baniyadih • Medical Infrastructure in Sipat Community Health Centre • Providing Taekwondo promotion and support/ infrastructure in Janji village Activities under CER: Health: • Developing health infrastructure, conduct of medical camps etc. • Further an expenditure of Rs. 110 Lakh is proposed to be incurred every year after commissioning of the Stage-III . The exact activities to be decided based on need assessment and stakeholder consultation on annual basis.
Quality Education	Provision of Rs. 150 Lakh kept in capital Budget of Sipat-III to be undertaken under CER/CD to address issues raised during Public Hearing: ➢ Renovation of School in Eramsahi village ➢ Development of School Education Infrastructure in affected villages Activities under CER/CD: Education: Construction/ Renovation of school buildings, classrooms/smart class/labs/ parking shed, playground, furniture etc. in PAVs and vicinity areas. Further an expenditure of Rs.150 Lakh is proposed to be incurred every year after commissioning of the Stage-III. The exact activities shall be decided based on need assessment and stakeholder consultation on annual basis.

Clean Water and Sanitation	Provision of Rs. 178 Lakh kept in capital Budget of Sipat-III to be undertaken under CER/CD to address issues raised during Public Hearing : ➢ Installation of Handpump in Darripara village ➢ Rejuvenation of Pond in Eramsahi village ➢ Development of Drinking Water infrastructure, Rainwater harvesting and Rejuvenation of Ponds in affected villages including Bandhua Talao in Rank village. Activities under CER/CD: Sanitation: Construction/ Repair of drains, Toilets and related infrastructure. Water: Augmentation of drinking Water facilities, Pond rejuvenation. Further, an expenditure of Rs. 100 Lakh is proposed to be incurred every year after commissioning of the Stage-III. The exact activities shall be decided based on need assessment and stakeholder consultation on annual basis.
Affordable and Clean Energy	Provision of Rs. 90 Lakh kept in capital Budget of Sipat-III to be undertaken under CER/CD to address issues raised during Public Hearing : ➢ Installation of Solar Street/High mast Light in Sipat, Karra and other affected villages Further an expenditure of Rs. 50 Lakh is proposed to be incurred every year after commissioning of the Stage-III. The exact activities to be finalized later.
Industry, Innovation and Infrastructure	Provision of Rs. 1100 Lakh kept in capital Budget of Sipat-III to be undertake under CSR & CER. Activities covered are: ➢ Construction of Road from Bazaar Chowk to Lilagar River in Darrabhata village ➢ Construction of culvert in Darrabhata village ➢ Cement Concrete Roads in affected villages ➢ Development of Crematorium Sheds and Boundary Wall of existing Crematorium in Karra, Janji, Sipat, Deori and Kaudiya villages ➢ Development of Boundary Wall of Gothan, Panchayat Bhawan in Karra, Janji and Deori Villages. ➢ Development of Community Hall, Changing Room near Talab and Rangmanch in Karra, Sipat and Deori villages. Activities under CER: Infrastructure Development: • Construction/renovation of community center buildings, boundary wall, Sanskritik Manch, Market Sheds, Parking Sheds, Cremation Grounds etc. in project affected

	villages • Roads: Cement Concretization of existing village roads. Further, an expenditure of Rs. 250 Lakh is proposed to be incurred every year after commissioning of the Stage-III . The exact activities to be finalized later.
Responsible Consumption and Production	Reducing specific coal and water consumptions with adoption of state-of-the-art technologies Proposed Stage-III is " Ultra super technology" for higher efficiency leading to lesser emission of CO2 (12-13 % less) ● Minimising production of waste and recycling/ re-use of wastes: Ash is being used for production of Bricks, Light weight aggregate and Geopolymer based concrete. ● Zero liquid discharge plant and all treated effluents are being recycled back in plant.
Climate Action	● Proposed Stage-III is " Ultra super technology" for higher efficiency leading to lesser emission of CO2 (12-13 % less). ● Use of Low Nox burner will reduce Nox. ● Use of Wet FGD will reduce the SPM and Sox as well as low flue gas exit temperature, thus improve climatic conditions.
Life below Water	● Proposed Stage-III is "Ultra super technology" for higher efficiency with reduced usage of water and coal. ● Less usage of water for power generation will enhance life below water. ● Rejuvenation of ponds will also enhance aquatic life.
Life on Land	● Proposed Stage-III is "Ultra super technology" for higher efficiency with reduced usage of water and coal. ● Clean Power with less pollutant and cost economics will improve life on land. ● 40,000 to 50,000 Plantation is carried out every year. Plantation not only improves the environment but also provide habitat to the birds/insects and other creatures.

Query 5: PP shall get the WLCP prepared with a reputed institute/NABET Accredited consultant having expertise for preparation of the same and accordingly propose the budgetary provisions.

Reply: Revised Wildlife Conservation Plan prepared through NABET accredited agency and submitted to DFO Bilaspur for validation on 14.05.2024 and DFO has forwarded to CCF, Bilaspur for further approval.

A budget of Rs 135.00 lakhs has been earmarked for wildlife conservation.

Query 6: PP shall provide the quantum of legacy ash. How the net utilization can be made more than 100%? Further, point-wise compliance with various notifications issued by the Ministry w.r.t Thermal Power Plant including fly ash shall also be provided.

Reply:

- The available ash ponds or dykes at NTPC Sipat are operational ash pond or dyke designated for temporary storage of ash as specified in sub-para (6) and as per the definition of MoEF&CC Notification dated 31.12.2021.
- The ash stored in the dyke at NTPC Sipat can be divided into two parts as on 31.03.2024.
- The ash quantity stored in the ash dykes below the current raising is 390 LMT, which is not usable due to safety considerations.
- The ash quantity in top raising, which can be evacuated and used is 20.47 LMT, which can be utilized.

Fin Year	Target for Total AU (%) as per MoEF&CC Notification	Actual / Planned Total AU (%)	Compliance as per MoEF&CC Notification	Remark
FY 22-23	No Minimum Target	64.36 (Actual)	Yes	100% Ash Utilization as per MoEFCC Notification for Station Category with Ash Utilization less than 60% in FY 2021-22
FY 23-24	No Minimum Target	101.25 (Actual)	Yes	
FY 24-25	Minimum 80 %	114 (Planned) **93.67 % up to 15.06.2024**	Yes	
FY 25-26	Minimum 80 %	115.44 (Planned)	Yes	
FY 26-27	Minimum 80 %	116.97 (Planned)	Yes	
FY 27-28	Minimum 80 %	120.64 (Planned)	Yes	Completion of Utilization of 20.47 MT of stored ash in top raising.
FY 28-29	Minimum 80 %	105.24 (Planned)	Yes	

Query 7: PP shall demarcate the area identified for plantation i.e. where plantation has to be done to ensure a 33% green plantation within plant premises in case of any land issue then outside the plant premises, on a surface plan/kml file. Further, geotagged photographs of the same may also be submitted. Based on the area identified a plantation plan needs to be submitted with a defined timeline and budgetary provisions.
Reply:

Details of plantation carried out over the years within NTPC land and outside NTPC land

Summary of the Plantation carried out by NTPC within NTPC Land and outside							
NTPC Land		**Outside NTPC Land**		Deemed area of plantation (in hectare) (a	Area of the land acquired/ allotted/ diverted for NTPC-Sipat (in hectare)	33% of the total land- 1768.209 X 33%	Calculated % of the land where plantation has been done (603.462/1768.209)
Number of plantations	Calculated area of plantation - considering a density of 2000 trees per hectare (a)	Number of plantations	Calculated area of plantation - considering a density of 2000 trees per hectare (b)				
458982	229.491	747942	373.971	603.462	1768.209	583.509	34.13%

Query 8: PP shall submit the consolidated list of all the EC conditions with their compliance, comparison, duplication etc. to further deliberate on the same.

Reply: The consolidated list of all the EC conditions with their compliance, comparison, duplication etc. are prepared and submitted.

Query 9: A survey of E-vehicles and battery-operated vehicles shall be carried out within the plant area and an action plan with a timeline for switching over to renewable sources shall be submitted.

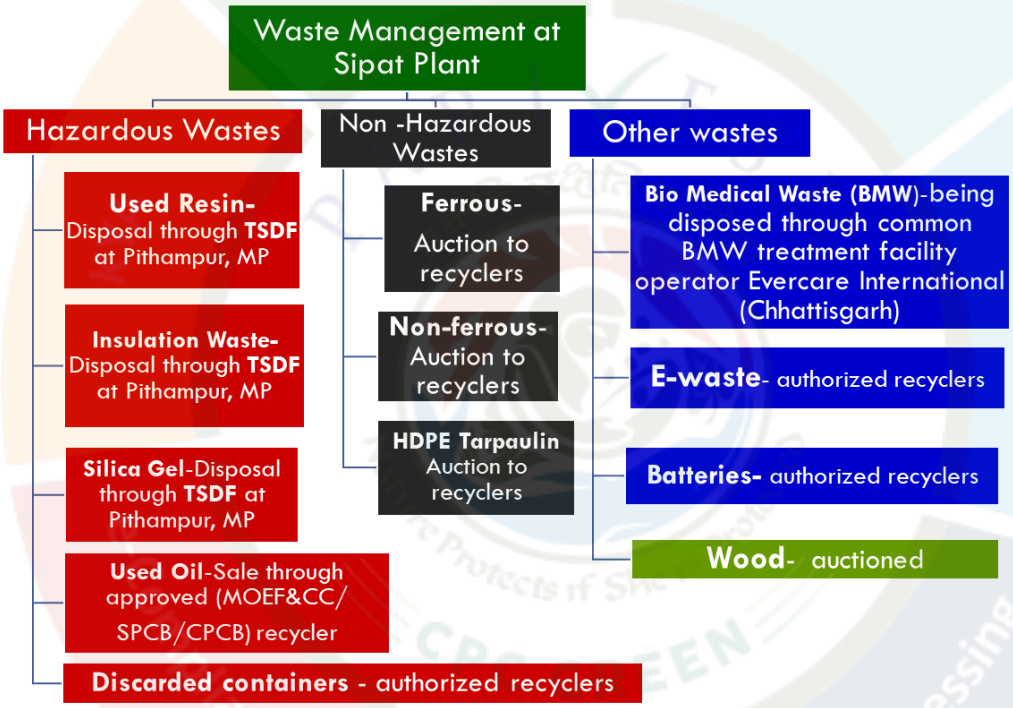
Reply: E-Vehicles: Presently in NTPC Sipat STPP

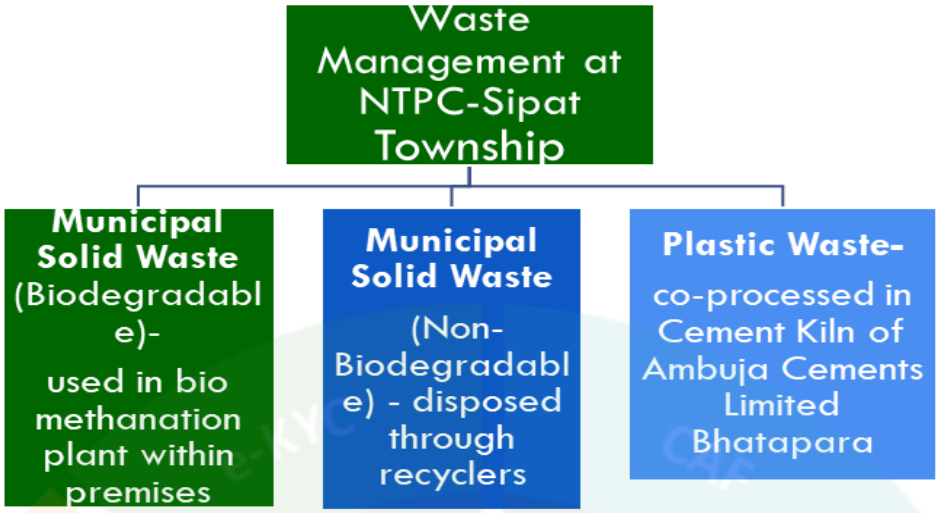
- All 7 nos. materials shifting vehicles are Battery operated.

- Three (3) nos. Forklift are battery operated and
- Two (2) nos. E-rickshaws are operational.
- There are 9 nos. Diesel operated Forklifts which are of higher capacity. These vehicles will be switched over to E-Vehicle as per availability in market.
- Also, there is plan to replace the passenger vehicles to E-vehicle as per market availability and infrastructure in phased manner.

Query 10: Segregation and processing of solid waste generated within the plant shall be submitted along with supporting documents.

Reply: Segregation of wastes generated at NTPC-Sipat is being done. Waste management at NTPC-Sipat is presented as per the flow chart given below-





Query 11: Current status of court cases pending in Hon'ble Supreme Court and PIL case shall be submitted.

Reply:

Nature of cases	Hon'ble Supreme Court of India	Status
Pollution / Environmental cases	1	Matter related to Ash Utilization. SLP arose out of impugned Judgement dtd. 07.07.2023 passed by High Court of Chhattisgarh in CRMP 1681 of 2017. Last heard by SC held on 02.02.24. Next hearing date not scheduled.

Nature of cases	Hon'ble High Court of CG	Status
PIL (Cases to all TPPs)	1	Taking Cognizance of Hon'ble SC Order, HC of CG issued notice to all TPPs of CG, regarding health hazards of the workers working in coal fired thermal power plants since year 2016. The case impleaded all the thermal power plants of Chhattisgarh including NTPC Sipat, Korba and Lara. Next hearing scheduled on 15.07.2024.

Query 12: Data for specific health checkups carried out by NTPC in the Sipat Area in the last three years shall be submitted.

Reply:

- 9000+ health check-ups of contractor's workers done in last 3 yrs as per factory Act.

FY 2021-22	FY 2022-23	FY 2023-24
3008	3029	3113

- Occupational Heath Centre fully functional complying to factory rule 131 of CG Government.
- 2 nos. BLS (Basic Life support) and 01 ACLS ambulance are available.
- Mobile health clinic services are operational in 36 surrounding villages. Total beneficiaries- 26,770

Jun.'22-Mar.'23	Apr.'23-Mar.'24	Apr.'24-15.05.24
11,202	**13,792**	**1,776**

Query 13: Anticipated quantity of effluent generation shall be submitted including their treatment and utilization into the plant premises.

Reply:
Anticipated Quantity of Effluents are: -

(1) Wastewater Generation - 2256 KLD
(2) Domestic Wastewater (Sewage) Generation- 600 KLD

Effluent Treatment Facilities and Sewage Treatment Facility shall be provided. The treated effluent shall be recycled and reuse within plant for various purposes, i.e.-In Ash Handling, Service Water, Dust suppression etc. Treated sewage shall be reused for horticulture purposes. The plant will be based on Zero Liquid Discharge (ZLD) System

Query 14: Proposed area of the ash dyke is too large therefore a detailed plan shall be submitted to reduce the size of it. A detailed plan with a demarcated

location for the Green plantation shall be submitted.

Reply:

- No additional ash dyke is proposed for Stage-III (1 X 800MW).
- Existing ash dyke of Stage-I (Dyke-I & II) and Stage-II (Dyke-III) shall be used for ash disposal for ash produced under Stage-III. All these dykes are operational, therefore there is no plan to abandon any of these ash dykes at present for tree plantation.
- Total area of Existing Ash Dykes under Stage-I & Stage-II is 600 Ha for 2980 MW.
- NTPC Sipat has identified 27.65 ha. of land within Plant and Ash Pond premises for future Greenbelt development.
- NTPC will explore with gram panchayats of villages surrounding ash dyke to make land available for plantation.
- A request has been received from Rank village for roadside plantation, NTPC will do plantation during current monsoon.

11.1.4 Deliberation by the Committee: The EAC after detailed presentation by the EAC deliberated on the information submitted on PARIVESH portal and as presented noted the following:

1) The EAC noted that the proposal is for the grant of Environmental Clearance for 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), located in Village Sipat, Tehsil Masturi, District Bilaspur, Chhattisgarh by NTPC Ltd.

2) The ToR has been issued by Ministry vide letter No J.13012/02/2019.IA-I(T) dated 03.05.2019 and Amendment in TOR vide letter No J.13012/02/2019.IA-I(T) dated 08.08.2022.

3) The committee observed that the total land area required for the project is 1768.211 Ha out of which 264.991 Ha is forest land for which PP has already obtained forest Clearance vide letter dated 16.02.1999 (for 204.991 Ha of forest land) and vide letter dated 30.06.2004 (60 Ha of forest land).

4) The committee observed that as per DSS analysis and as reported by PP the project is not within 10 km of any ESZ Gazette Notification and any Protected Area.

5) The committee noted that as reported by the PP that project does not attracts CRZ clearance. Further, the project does not fall under Critically Polluted Area (CPA)/Severally Polluted Area (SPA) or within 10 km of CPA as notified by the CPCB.

6) There are total 77 court cases are pending against the projects. PP reported that 75 cases are other matters and only 2 matter viz. a PIL which is pending in the Hon'ble High Court related to health hazards of the workers working in coal fired TPP and a case in Hon'ble Supreme Court is pending related to Ash utilization. The PP also provided the status of the same.

7) The committee noted that the advertisement for Public Hearing was published in Haribhoomi, Bilaspur & in the main edition of the national newspaper Hindustan Times, New Delhi on 25.08.2023 and was scheduled on 27.09.2023 however due unavoidable reasons public hearing was not conducted & second advertisement published on 25.11.2023 in Haribhoomi and Hindustan Times. The committee observed that in the instant case the time duration for convening the rescheduled public hearing (i.e on 11.12.2023) is not less than forty-five days from the date of first advertisement already published (i.e. on 25.08.2023) for initial date of public hearing. Further, vide revised advertisement a minimum notice period of fifteen days was provided to the public before the re-scheduled date of the public hearing which is as per the MoEF&CC Notification S.O. 2163(E) dated 9.05.2022. The committee observed that PH dated 11.12.2023 was chaired by Shri R. S. Kuruvanshi, Additional Collector, Office Collector, District-Bilaspur. The main issues raised during the public hearing are related to Medical Infrastructure, Development of School Education Infrastructure, Installation of Solar Street, Construction of Road, Employment, CSR Activities, Fugitive dust emission, water pollution etc. Total budget earmarked to address public hearing issues is 850 Lakhs. In compliance to ministry dated 30.09.2020 & 20.10.2020 issues raised during public hearing and physical activities proposed with budgetary provision are as under:

S. No.	Proposed works to address the issues raised during PH	Estimated cost (In lakhs)	Estimated time from the Award of the Project
1	Construction of Road from Bazaar Chowk to Lilagarh River in Darrabhata village	60	02 years
2	Construction of Culvert in Darrabhata village	25	01 years
3	Development of Stadium/Sports Ground in Sipat	45	02 years
4	Development of Stadium/Sports Ground in Baniyadih	05	01 year
5	Installation of Solar Street/High Mast Light in Sipat, Karra and other affected villages	90	03 years

6	Installation of Handpump in Darripara village	03	01 year
7	Medical Infrastructure in Sipat Community Health Centre (Upgradation of 100 Bed Hospital already built by State Govt.)	100	02 years
8	Renovation of School in Eramsahi village	10	01 year
9	Rejuvenation of Pond in Eramsahi village	10	01 year
10	Cement Concrete Roads in affected villages	140	03 years
11	Development of School Education Infrastructure in affected villages	40	02-04 years
12	Development of Drinking Water infrastructure, Rain Water Harvesting and Rejuvenation of Ponds in affected villages including Bandhwa Talao in Raank village.	40	02 years
13	Providing Taekwondo promotion support/infrastructure to Janji village	02	01 year
14	Development of Community Infrastructure in affected villages	280	02-04 years
	Total (Lakhs)	850	

The Committee observed that based on discussions during EAC Meeting held on 27.06.2024 & 08.04.2024 & 27.02.2024, In addition to above, following measures have been envisaged as below for Sipat STPP, Stage – III (1x800 MW) to address the issue raised during PH:

S. No.	Proposed works	Estimated cost (In lakhs)	Estimated time from the Award of the Project
1	Infrastructure Development – construction/renovation of community center buildings, boundary wall, Sanskritik Manch, Market Sheds, Parking Sheds, Cremation Grounds etc. in project affected villages	330	02-04 years
2	Roads – Cement Concretization of existing village roads	200	02-04 years

3	Sanitation – Construction/Repair of drains, Toilets and related infrastructure	50	01-03 years
4	Water – Augmentation of Drinking Water facilities, Pond rejuvenation	100	01-05 years
5	Health – Developing health infrastructure, conduct of medical camps etc.	100	02-04 years
6	Education – Construction/Renovation of school buildings, classrooms, labs, parking sheds, playground, smart class, furniture etc.	150	02-04 years
7	Welfare/Skill Development – Skill development trainings for increasing employability	25	01-03 years
8	Rainwater Harvesting in Public Building	107.5	01-05 years
9	Additional Pond rejuvenation	591.43	01-05 years
10	Additional Skill Development	200	02-05 Years
	Total (Lakhs)	1853.93	

Regular Expenditure on Activities Planned under CSR for Sipat STPP, Stage-I, II and III. NTPC is already incurring annual expenditure of Rs. 6 Cr./ Annum in CSR activities every year. This will continue during construction phase of Stage-III. After commissioning of Stage-III (after 2029-30), the above expenditure shall be enhanced to Rs. 8 Crore per annum. The activities proposed are tentative and shall be decided in consultation with District Administration and local stakeholders based on need and requirements under the ambit of Schedule-VII of Companies Act (2013).

S. No.	Proposed works under CSR /CER	Estimated Annual Expenditure (In lakhs)
1	Education Infrastructure	100
2	Education - Improving Learning Level	50
3	Medical – Mobile Medical Unit and Maternal and Child Health Care	60
4	Sanitation	50
5	Water/	50
6	Infrastructure (other than road & drains)	150
7	Roads (Strategic)	100
8	Renewables (Strategic)	50
9	Sports, Cultural & Arts	50
10	Skill Development/Livelihood Promotion	50
11	Differently Abled Support & Assistance	30

12	Need Assessment Survey / Social Impact Evaluation Survey	10
13	Miscellaneous	50
	Total (Lakhs)	800

8) The EAC observed that under CER activities and issue raised in public hearing regarding health infrastructure therefore committee asked PP to provide data for specific health checkups carried out by NTPC in the Sipat Area in the last three years. PP in its ADS reply submitted that 9000+ health check-ups of contractor's workers done in last 3 yrs as per factory Act, Occupational Heath Centre fully functional complying to factory rule 131 of CG Government, 2 nos. BLS (Basic Life support) and 01 ACLS ambulance are available, Mobile health clinic services are operational in 36 surrounding villages with total beneficiaries is 26,770. After the deliberation the committee asked PP to submit the details regarding % population covered under mobile health care services to which PP vide email dated 7.07.2024 submitted that Mobile Health Care services is available for entire population (100%) of the affected 36 villages. Additionally, efforts are being made to spread the information about availability of Mobile Health clinic at Village doorstep. Further it is submitted that health care facilities available in NTPC Sipat Hospital is accessible to Project Affected population at a very nominal charge. The Committee is of the view that analysis of population covered needs to be done and awareness needs to be created so that more people come forward for health check-up.

9) PP submitted that EIA is re-validated as per NABET Scheme by new consultant.

10) Regarding combining of EC conditions the Committee is of the view that PP shall apply separately for the same with fresh CCR.

11) The EAC noted that the total area of Existing Ash Dykes under Stage-I & Stage-II is 600 Ha for 2980 MW in the total project area 1768.21 Ha. For the proposed expansion there is no additional ash pond is required. All existing dykes are operational, therefore there is no plan to abandon any of these ash dykes at present for tree plantation. The committee observed that in its ADS reply PP has provided the ash utilization percentage as per which there was 100% ash utilization in financial year 2023-24 and 93.67% has been achieved upto 15.06.2024. The Committee also discussed about the legacy Ash and noted that the ash quantity stored in the ash dykes below the current raising is 390 LMT, which is not usable due to safety considerations. The ash quantity in top raising, which can be evacuated and used is 20.47 LMT, which can be utilized. The Committee asked about the Ground water quality submission of report of last 5 years of ground water monitoring around ash dyke area and nearby villages. The PP vide email dated 7.07.2024 submitted that *the ground water quality is being monitored through MoEF&CC approved third party consultant on monthly basis in the villages around Plant and Ash Dyke. Ground water quality (physico-chemical parameters) data for last five years (05 Yrs) from 2019-20 to 2024-25 (May'24) has been compiled and attached as Annexure- 2A. Values are within limit as per Drinking water standard*

IS:10500:2012. Further, IIT Hyderabad has been consulted to carry out the study to assess the impact of NTPC Ash Dykes on ground water in the surrounding villages and also suggest remedial measures in case of observation, if any. The email communication from IIT Hyderabad dated 03.07. 2024 is attached as Annexure - 2 B. We are initiating the proposal for the study, and it is expected that study will be completed within four months' time which includes finalization of scope of work, getting budgetary offer, award and submission of report. NTPC Sipat is agree to implement the recommendation of the study in phased and time bound manner. The Committee is of the view that PP shall get the study done from IIT Hyderabad within the next 6 months and recommendations of the same shall be implemented. In addition to this as the village is near to the ash pond, in addition to water spraying, PP shall utilise the maximum ash, provide the 15 mt height wind barrier around the ash pond area and also carry plantation around the same.

12) The committee observed that the baseline data collected by PP is well within the range. The EAC asked the PP to provide the details and proof regarding fugitive dust emission control measures from Ash Dykes i.e.- Wind barriers, Sprinkling by tankers, Sprinklers on ash dyke. PP vide email dated 07.07.2024 submitted that for dust suppression at Ash Dykes the actions have been taken which includes 1.Water Cover is being maintained in operational dyke, 2. Water Sprinters (Low range) and rain guns (high range) are installed as per requirement, 3. Water sprinkling on connecting roads, 4. Beshram (Ipomoea Carnea) plantation done in the inside periphery of ash dyke, 5. Tarpaulin cover is provided on dry patches in the dyke, 6. Wind barriers to stop the fugitive dust. PP committed to enhance the control measures so that there is no fugitive emission from ash dyke area in future. Operational ash dyke will be kept water submerged /wet during operation. Concrete steps to prevent fugitive emission from ash dyke along with budget provision of Rs. 270 lakhs with activities such as Additional 3000 No.s sprinklers will be installed, Additional 290 rain guns –(40 m & 12 m radius), Tarpaulin covering –(2,30,000 Sq m), Beshram plantation on ash dyke, Hessian cloth covering, Plantation around the periphery of ash dyke, wherever NTPC land is available. The Committee is of the view that in addition to regular monitoring PP shall collect the ground water samples from the area falling within 500 meters of the ash dyke analyse the same and take corrective measures.

13) Further it was noted that the water consumption for thermal power plants as per MoEF&CC vide Notification S.O. 3305 (E) dated 07.12.2015 for all existing CT based plants reduce specific water consumption upto maximum of 3.5 m3/MWh and as per MoEF&CC stipulated norms vide Notification GSR 593 (E) dated 28.06.2018 water allocated to the thermal power plant is 3 m3/MWhr for new plants installed after the 1st January, 2017. The total water requirement for the project is 2.925 m3/MWh, which will be well within the stipulated norms of Notification dated 07.12.2015/28.06.2018. The water drawl permission of 93 MCM has been obtained from Water Resources Dept. Govt. of Chhattisgarh vide letter dated 11/12/2017.

14) Committee also deliberated on the rainwater harvesting possibility and in the ADS reply PP submitted that as per CGWB Ground Water Yearbook of Chhattisgarh 2021-22 more than 78 % of the observations wells water table is below 10 meters in Bilaspur District. PP also submitted a report on study conducted by National Institute of Hydrology (NIH), Roorkee. As per report submitted in February 2023, ground Water table in the project area is in the range of 1.33 meter to 3.15 meter. Therefore, NIH has advised not to install artificial recharge structures like recharge shaft or injection wells in the plant area, as further build-up in the ground level will create adverse condition in the plant area including uplift pressure on the installations like plant and machinery and water logging conditions which area not advisable in electricity generating installations, as cables are mostly laid underground. NTPC Sipat has installed rainwater harvesting from surface run off through storm water drain. Surface run-off water is pumped through gravity / pressure sand filters and used as CW makeup water. 0.52 MCM of Rainwater has been harvested during 2023-24 through four RWH structure installed in Plant area. Further, NTPC Sipat has planned to double the surface run-off pumping capacity during 2024-25. Another facility is being developed in township area to capture 0.16 MCM surface run off. Total estimated quantity of harvested Rainwater during 2024-25 will be 1.2 MCM (approx.). The Committee asked the PP about the the trend of Groundwater Level in Sipat area. PP vide email dated 7.07.2024 submitted that as per CGWB Ground Water Yearbook of Chhattisgarh 2021-22 “The long-term water level trend (2010-2022) of the phreatic aquifer was plotted for both the pre and post monsoon periods. For the pre monsoon period, the major part of Chhattisgarh shows water level trend between -10 to +10 Cm/year which can be categorized as safe but many parts of Jashpur, Surguja, Korba, Janjgir- Champa, Kawardha, Rajnandgaon show significant falling trend of more than 20 Cm/year which is a cause of concern. The post monsoon decadal water level trend map of the phreatic aquifer presents a more alarming picture. (Fig 7.16 & 7.17) It shows large tracts of Bilaspur, Surguja, Koriya, Jashpur, Kawardha, Rajnandgaon etc with significant decline in water level of more than 20 Cm/year during the last 10 years. This long term trend is also depicted from the individual hydrographs of network stations. Some representative hydrographs are given above.” PP also provided the copy of relevant pages of CGWB report 2021-22 is attached as Annexure - 1. Since, ground water level falling trend in Bilaspur District is less than 20 Cm/year in pre monsoon season so in future, the rainwater harvesting in the project vicinity shall be done through surface water collection. In future, Roof top rainwater harvesting, shall be done through collection of water in water tanks and same will be used for the various purposes in respective buildings in consultation with respective Gram Panchayat and District Administration. Surface rainwater collection shall be done in ponds of respective villages in consultation with respective Gram Panchayat and District Administration as per the details of the ponds is given

Sr. No. 5 of the reply. The Committee asked about the cost estimation of RWH needs to be reviewed and increased and year-wise plan to be submitted. PP vide email dated 7.07.2024 submitted that the *Cost will be revised as per applicable DSR as per area of the roof in respective Building. NTPC is committed for at least five buildings per year roof top surface harvesting for next 05 years in nearby villages (within 10 km radius of plant boundary). Further, surface rainwater harvesting structure in drains shall be discussed with Chhattisgarh Water Resource Department Bilaspur wherever feasible. As per the area of the roof and location of the structure (collection tank), cost estimation will be done, and budget will be ensured for the same. Envisaged cost is given below. PP also submitted that NTPC Sipat will install RWH systems in public buildings based on feasibility and availability of building by Gram Panchayat/District Administration. Required maintenance of RWH system will be done as and when required.*

Sr	*Financial Year*	*Description*	*Envisaged per unit cost (in Rupees lakh)*	*No. of Public Building*	*Amount Rs. Lakh*
1	*2024-25*	*Rainwater Harvesting System in Public Building*	*4*	*5*	*20*
2	*2025-26*		*4*	*5*	*20*
3	*2026-27*		*4.5*	*5*	*22.5*
4	*2027-28*		*4.5*	*5*	*22.5*
5	*2028-29*		*4.5*	*5*	*22.5*
Total amount in rupees lakhs					*107.5*

The Committee also asked about the use of Rainwater as Drinking water for the villages to be explored and plan to be provided. PP vide email dated 7.07.2024 submitted that *"the Ground water level near the Sipat project is high (<10 m) . Har Ghar Jal Jeevan Mission Nal Yojana in project surrounding villages is being provided by State Government and scheme is under implementation. NTPC Sipat is committed for rainwater harvesting system in Public building in phased manner. Use of rainwater as Drinking water will be explored in consultation with Public Health Engineering Department Chhattisgarh, respective Gram Panchayat and District administration wherever feasible."*

PP shall store ground water in the project boundary and utilize the same for plantation, recharging water in the pond and domestic utilization in colonies. A record shall be maintained of water collected through rain water and its supply system. The Committee is of the view that PP shall get the water audit done every year to optimize the water requirement.

15) The Committee also deliberated on the requirement of local people and asked the PP about the concern of villagers regarding Pond Rejuvenation and requested for submission of a 5-year Plan for Village Pond Rejuvenation including the details of activities to be carried out under pond rejuvenation – (Deepening, change in water quality etc) and Plan for maintenance of RWH system & Ponds. PP vide email dated 7.07.2024 submitted that *"Bandhua Talab in Rank village has already been taken up for rejuvenation and beautification, work is in progress. Proposed list of ponds for rejuvenation in the vicinity is attached as Annexure – 3. Work will be taken up in consultation with Gram Panchayat. Envisaged cost is given below-*

Sr	*Financial Year*	*Description*	*No. of Ponds*	*Amount (rupees lakh)*
1	*2024-25*	*Pond Rejuvenation in nearby villages*	*6*	*184.99*
2	*2025-26*		*5*	*106.44*
3	*2026-27*		*4*	*136*
4	*2027-28*		*4*	*126*
5	*2028-29*		*5*	*138*
Total amount in rupees lakhs				*691.43*

Bandhua Talao in Rank village has already been taken up for rejuvenation and beautification, work is in progress (Awarded contract value- Rs. 40 lakhs). The Committee observed that activities to be carried out under pond rejuvenation includes i) Construction of Embankment, ii) Brick pitching and iii) Construction of bathing ghats. Further, PP has submitted that maintenance of ponds will be taken up as and when required on the request of respective Gram Panchayat. Further, PP submitted that Plantation and seating arrangement will be made in this FY and NTPC Sipat will provide funds for infrastructure required in consultation with Gram Panchayat/District authority/ State Govt. authority for development of Bandhua talab as a picnic spot. The Committee observed that budget is revised from 110 Lakhs to 691.43 Lakhs. The EAC is of the view that PP shall submit a report of implementation to Regional Office in its six monthly compliance report.

16) The Committee also deliberated on the SDGs and is of the view that SDG Goals Budget allocation to be increased as Rs.25 lakhs very low for skill development. PP vide email dated 7.07.2024 submitted that in the year 2023-24, Skill Development in the area of Retails Sales associate was conducted for a batch of 60 youths, out of which 57 were placed in different companies. In addition to this, Stitching and Embroidery Skill development training program for a batch of 30 women is ongoing which will be completed in this FY 2024-25. In the FY-2024-25, contract has been awarded for Skill Development of 60 youths (in 02 batches of 30 each) in the area of High-pressure Welding and 60 youths (in 02 batches of 30 each) in the area of Mobile repairing. Both these Skill Development programs will start in July,24.

Besides this, contract has been awarded for Skill Development of 30 women in the area of Masala making and 90 women (in 03 batches of 30 each) in the area of Dona Pattal making. In current financial year budget allocation for Skill development programme is Rs.25 Lakhs and from next year onwards during construction phase of Stage-III Rs.50 Lakhs will be allocated on skill development subjected to availability of interested/suitable candidates. The NTPC Sipat Stage-III activities aligned with SDG Goal and the expenditure is already taken in Public Hearing issues, CER and CSR/CD activities.

17) The EAC during the meeting as informed by the PP noted that mode of coal transportation from the coal mines to the power plant shall be through MGR and Indian Railways with total distance from the source by Rail is 40 km. The committee desired from PP to submit the details regarding inconvenience caused to local people due to traffic congestion during train movement and accordingly it shall be addressed by suitable provisions like underbridge, shelter shed etc. PP vide email dated 07.07.2024 that two shed (one on each side) on Railway MGR Gatora connecting line crossing will be provided by July 25 with approximate cost Rs. 10-15 lakhs. PP also committed to provide the Shed (10MX12M) for villagers. The crossing is manned level crossing. Gate is closed only during movement of Coal Rake. There is only 1-2 rake movement in a day. PP also submitted that they will take up with SECR Railway Authorities for the feasibility of construction of underpass based on utility. The Committee is of the view that additional measures submitted by the PP for inconvenience caused to local people due to train movement, compliance of the same be submitted in the six-monthly compliance report.

18) The committee while observing the transportation plan advised PP to opt for the e-vehicle and asked PP to conduct survey of E-vehicles and battery-operated vehicles within plant premises. Accordingly, PP submitted in ADS reply that all 7 nos. materials shifting vehicles are Battery operated, 3 nos. Forklift are battery operated and 2 nos. E-rickshaws are operational. PP submitted that Diesel operated vehicles will be switched over to E-Vehicle as per availability in market and there is plan to replace the passenger vehicles to E-vehicle as per market availability and infrastructure in phased manner. PP vide email dated 07.07.2024 submitted that for local movement of officials Contract of Vehicles deployment is awarded to our Project affected people and all efforts for adopting heavy E-vehicles like Bulkers for ash transportation for short distance subject to availability of E-vehicle and charging infrastructure in the surrounding area.

19) The Committee observed that PP has reported that there is no Protected Area within 10 KM of the plant. However, there are 6 schedule-1 species in the study area for which PP has prepared a wildlife conservation plan. As desired by EAC, the PP also submitted the revised WLCP prepared by

NABET accredited agency and submitted to DFO Bilaspur for validation on 14.05.2024 and DFO has forwarded to CCF, Bilaspur for further approval. The committee is of the view that PP should have been engaged a reputed institute for the same. The PP vide email dated 7.07.2024 submitted that a communication dated 7/2/2024 has already been sent to Wildlife Institute of India, Dehradun regarding reparation/wetting of Wildlife conservation plan w.r.t. Sipat Stage-III. A budget of Rs 135.00 lakhs has been earmarked for wildlife conservation. The Committee is of the view that PP shall deposit the amount as approved by the concerned authority in government account.

20) The committee observed that PP in its ADS reply has submitted that 34.13% of the total land where plantation has been done. The committee deliberated on the plantation and is of the view that PP shall submit time bound action plan for expediting the plantation in the coming monsoon. Accordingly, PP vide email dated 07.07.2024 informed that PP has already done plantation more than 12 lakh inside/outside plant and 32,000 Nos of plantation work is being taken up in Uchchbhatti village on the request of Gram Panchayat. Additionally, plantation shall be done on degraded Forest land in consultation with DFO Bilaspur subjected to availability of land. PP submitted that plantation over 33% of the project area has already been carried out. However, they shall continue to undertake plantation in Gap areas within plant and outside the plant area. PP has committed to plant 45000 No.s of plant including additional 10,000 nos. of sapling shall be planted in all available area of NTPC Sipat (Plant, Township and Ash Dyke etc.) in current year and for subsequent years (from 2025-26) the plantation target will be 1,00,000 saplings every year for planation in all available area of NTPC Sipat (Plant, Township and Ash Dyke etc.). The budget proposed is Rs 772 Laks for F.Y 2024-25 and for subsequent years it is 1600 Lakh/ annum till 2028-29. The Committee observed that 33% of the total area is 583.5093 and PP has reported that area under plantation is 229 Ha. The remaining area is 354.509 Ha and require ~7.0 lakhs trees to be planted. The Committee therefore of the view that from the current financial year onwards PP shall plant at least 1.0 Lakh saplings and further plantation programme for plantation of 1.0 lakhs saplings every year for next seven years shall be continued in consultation with Forest department/ Gram Panchayat/District Administration. Necessary budget provision shall be made accordingly. The committee was appraised about the Miyawaki plantation carried out at Lara TPP. The committee therefore advised PP to implement the same technique at Sipat TPP with power plantation in the upcoming monsoon season and details of the same shall be submitted RO, MoEF&CC.

21) The committee is also of the view that a sub-committee of EAC shall visit the site after grant of EC (preferably after 4 months) for a review.

22) The committee deliberated on waste generation and previously asked the PP to submit Segregation and processing of solid waste generated within the plant. PP in ADS reply submitted that segregation of wastes generated at NTPC-Sipat is being done and flow chart of waste management at NTPC-Sipat power and township has been submitted. The committee deliberated on the information and asked PP to submit records of waste generation and its disposal for last five years. PP vide email dated 07.07.2024 submitted information desired by the EAC on Hazardous waste, Non-Hazardous waste and Others waste, as under:

i) Hazardous waste:

S.No	Name of hazardous waste	Mode of Disposal
1	Used Oil	Sale through approved (MOEF&CC/SPCB/CPCB) recycler
2	Empty chemical /oil barrels/containers	Sale through approved (MOEF&CC/SPCB/CPCB) recycler
3	Silica gel	Disposal through TSDF at Pithampur, MP
4	Glass Mineral Wool(Insulation waste)	Disposal through TSDF at Pithampur, MP
5	Ion Exchange Resin	Disposal through TSDF at Pithampur, MP

ii) Non-Hazardous waste:

S.No	Name of hazardous waste	Mode of Disposal
1	Ferrous waste	Auction to Recyclers
2	Non-Ferrous waste	Auction to Recyclers
3	HDPE Tarpaulin	Auction to Recyclers

iii) Others waste:

S.No	Name of hazardous waste	Mode of Disposal
1	Bio-Medical waste	Disposed through common BMW treatment facility operator M/s Evercare International (Chhattisgarh
2	E Waste	Disposed through Authorized Recyclers
3	Battery waste	Disposed through Authorized Recyclers
4	Wood	Auction to Recyclers
5	Municipal Solid waste (Bio-degradable)	Used in Bio-Methanation Plant within premises
6	Municipal Solid waste (Non-Bio-degradable)	Disposed through recyclers
7	Plastic Waste	Sent for co-processed in Cement

		Kiln of Ambuja Cements Limited Bhatapara.

The Committee also observed that PP has submitted the corrected certificate for waste disposal by cement plant.

23) The committee also desired to PP shall submit any waste to energy plan w.r.t to Sipat plant to which PP vide email dated 07.07.2024 submitted that municipal Solid (Biodegradable) waste from township and plant is used in bio-methanation plant established near plant canteen. The biogas generated is used in plant canteen burners leading to saving in LPG consumption. Biomass cofiring trial operation has already started by NTPC Sipat in the year 2022-23. Modifications has been done in two pulverisers of Unit # 4 and Unit # 5 each. For biomass cofiring on a regular basis, Bids have been invited for procurement of 7,26,350 MT Agro Residue Based Bio-mass Pallet. The Bid opening date is 01.07.2024. With regular cofiring of biomass, part of coal consumption will be replaced with Agro waste (Renewable source) which helps in reducing carbon foot print. Finally, it will improve the financial health of farmers and help in controlling the well-known menace of crop residue burning in agriculture fields.

24) The committee noted that PP vide its ADS reply submitted anticipated quantity of effluent generation including their treatment and utilization into the plant premises. PP submitted that Effluent Treatment Facilities and Sewage Treatment Facility shall be provided. The treated effluent shall be recycled and reuse within plant for various purposes, i.e.-In Ash Handling, Service Water, Dust suppression etc. Treated sewage shall be reused for horticulture purposes. The plant will be based on Zero Liquid Discharge (ZLD) System.

25) PP vide email dated 07.07.2024 has submitted updated EMP budget along with additional measures suggested by the committee. The revised cost of EMP is presented below:

Sr. No	Item Description*	Capital Cost (Rs. In Crores)	Recurring Cost (Rs. In Crores)
1	Electrostatic Precipitator	173.25	3.47
2	Chimney	54.57	1.09
3	Cooling towers incl. civil works	134.56	2.69
4	Ash handling	397.78	7.96
7	Dust extraction & suppression system	1.00	0.02
8	DM plant waste treatment systems	2.60	0.05
9	Sewerage collection, treatment & disposal	2.10	0.04
10	Environmental laboratory equipment	1.00	0.02
11	Green Belt, afforestation & landscaping	10.00	0.20

12	FGD	283.88	5.68
13	Wildlife Conservation Plan	1.35	0.00
14	Fugitive emission Control measures at ash dyke	2.70	0.10
15	Additional Mass Plantation # (5-year maintenance cost included)	71.72	2.20
Total (In Crores)		1136.51	23.52

11.1.5 The EAC after detailed deliberations on the information submitted and as presented during the meeting recommended for grant of Environmental Clearance to the project 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), located in Village Sipat, Tehsil Masturi, District Bilaspur, Chhattisgarh by NTPC Ltd, subject to compliance of the following additional specific environmental safeguard conditions, in addition to the standard EC conditions (Annexure-II) stipulated for the thermal power plants and conditions already stipulated in earlier ECs and amendments:

Specific Conditions:

[A] Environmental Management

1) The PP adopt 100% utilization of fly ash generated as a result of the expansion being recommended and earmark a minimum area within the existing ash pond for emergency use by lining the earmarked area.

2) PP shall get the study done from IIT Hyderabad within 6 months for management and mitigation of environmental impacts of the existing ash pond and recommendations of the same shall be implemented within the next 2 years. In addition to this as the village is near to the ash pond, in addition to water spraying, PP shall utilise the legacy and current maximum ash, provide a 15 mt high wind barrier around the ash pond area and also carry plantation around the same. In addition to steps being taken for arresting the fugitive emission from the Ash dyke the PP shall take other concrete steps which include i) installation of additional 3000 No.s sprinklers, ii) installation of additional 290 rain guns –(40 m & 12 m radius), iii) Tarpaulin covering –(2,30,000 Sq m), iv) Beshram plantation on ash dyke, v) Hessian cloth covering, and vi) Plantation around the periphery of ash dyke, on NTPC land. In addition to regular monitoring PP shall collect the ground water samples from the area falling within 500 meters of the ash dyke analyse the same and take corrective measures. The budget earmarked for the above activities is Rs 2.7 Cr which shall be kept in a separate account and audited annually. PP shall submit the action taken with expenditure details, photographs (before & after) and other documents in six monthly compliance report.

3) The budget proposed for pond rejuvenation is Rs 691.43 lakhs [2024-25 (6 ponds: Rs 184.99 Lakhs), 2025-26 (5 ponds: Rs 106.44 Lakhs), 2026-27 (4

ponds: Rs 136 Lakhs), 2027-28 (4 ponds: Rs 126 Lakhs) and 2028-29 (5 ponds: RS 138 Lakhs)] for Construction of Embankment, Brick pitching, Construction of bathing Ghats. Regular maintenance of pond shall be taken up with consent of the respective Gram Panchayat. The amount shall be kept in a separate account and audited annually. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), number of pond rejuvenated etc. in six monthly compliance report.

4) PP shall install roof top surface harvesting on at least five buildings per year for next 05 years in nearby villages (within 10 km radius of plant boundary). Further, surface rainwater harvesting structure in drains shall be discussed with Chhattisgarh Water Resource Department Bilaspur wherever feasible. As per the area of the roof and location of the structure (collection tank), cost estimation will be done, and budget will be ensured for the same. PP shall install RWH systems in public buildings based on feasibility and availability of building by Gram Panchayat/District Administration. Required maintenance of RWH system will be done as and when required. The budget earmarked 107.5 Lakh [@Rs 20 Lakh for 2024-25 & 2025-26, @ Rs 22.5 Lakh for 2026-27, 2027-28 and 2028-29] shall be kept in separate account audited annually. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), number of building covered etc. in six monthly compliance report.

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

6) PP shall implement the protective measure proposed in EMP in a time-bound manner. The budget earmarked for the same is Rs 1136.51 Lakhs (Capital) and Rs 23.52 Lakhs (recurring) and should be kept in separate accounts and audited annually. The implementation status along with the amount spent with documentary proof shall be submitted to the concerned Regional Office for the activities carried out during the previous year. In addition to this PP shall install 1 continuous ambient air quality monitoring station near ash pond area at suitable locations preferably the village side in consultation of SPCB within 1 year.

7) PP shall install and commission the FGD in FY 2024-25 and report in this regard submitted to RO, MoEF&CC.

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

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

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

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

12) PP shall ensure that diesel operated vehicles will be switched over to E-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 like Bulkers for ash transportation for short distance subject to availability of such E-vehicle and adequate charging infrastructure in the surrounding area shall be provided. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), number of e-vehicles deployed etc. in six monthly compliance report.

13) PP shall implement the concurrent plantation plan in a time bound manner. The gap plantation shall be completed in the identified 27.65 Ha land within Plant, residential and administrative areas and around Ash Pond by the planting 1.0 Lakh saplings during 2024-2025 and for the subsequent seven years PP shall plant 1.0 lakhs saplings per year in consultation with Forest department/ Gram Panchayat/District Administration. PP shall also adopt Miyawaki plantation technique and plantation with minimum 5m height of the saplings in upcoming monsoon season. The budget proposed is Rs 772 Laks for F.Y 2024-25 and for subsequent years it is 1600 Lakh/ annum till 2028-29. If require the same may be increased. 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.

14) Extensive green cover within 2 km range of the plant boundary and for the schools within 10 KM radius shall be developed. An action plan in this regard to be prepared in consultation with state forest department/expert institution and submitted before Regional Office of the Ministry within 6 months.

15) Wildlife conservation plan as approved by the competent authority shall be implemented. Additional, budget shall be added in the plan, in case additional measures suggested by state wildlife department. The final Wildlife conservation plan shall be submitted to RO, MoEF&CC and the budget approved by the concerned authority shall be deposited in government account.

16) 24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system. The real time data so generated from CAQMS shall be uploaded on company website and linked it with website of CPCB &SPCB. In addition to this, one more CAQMS is required to be installed at 4-5 km away near local market site where population are residing. Further, LED display of air quality (Continuous Online monitoring) shall be installed at prominent locations preferably outside the plant's main entrance for public viewing and in administrative complex. and maintenance of devices shall be done regularly.

17) PP shall install at least three portable " Weather Monitoring Stations " in and around the plant for continuous weather monitoring.

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

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

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

21) 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.

22) 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.

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

24) 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

25) 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.

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

27) 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) PP shall take up the matter with SECR Railway Authorities for the feasibility of construction of underpass/overpass based on utility at railway crossing which is causing long waiting period to the general public. Meanwhile PP shall provide two sheds (one on each side) on Railway MGR Gatora connecting line crossing by July 25 with approximate cost Rs. 10-15 lakhs. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), number of sheds provided etc. in six monthly compliance report.

2) A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area, creation of sacred groves etc. 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.

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.

4) The budget proposed for PH is Rs 27.0393 (8.5 Cr and 18.5393 Cr). In addition to this PP has proposed a budget of Rs 8 Cr under CSR after commissioning of the project. The budget proposed shall be kept in a separate account and audited annually. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), status of implementation of PH action plan submitted during the meeting etc. in six monthly compliance report.

5) PP shall provide the health services and organize medical camps for residents of the surrounding villages as committed during the meeting. PP shall carry out the analysis of the data of medical camp and take all necessary steps so as to cover maximum number of persons.

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

7) 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.

4) A sub Committee of the EAC shall visit the site post EC to recommend any further mitigation measures.

Agenda Item No. 11.2

Proposal for expansion in capacity of Indian coal based ultra-supercritical thermal power plant from 1200 MW to 2800 MW by adding 1600 MW (2x800 MW), located near Kajurda & Sodha Targhadi Village, Dist. Devbhumi Dwarka (Khambhalia), State Gujarat by Essar Power Gujarat Limited (EPGL)– Fresh ToR

- Reg

[Proposal No. IA/GJ/THE/471719/2024; F. No. J-13011/16/2008- IA.II(T)]

11.2.1 The proposal is for grant of Terms of Reference to the Proposal for expansion in capacity of Indian coal based ultra-supercritical thermal power plant from 1200 MW to 2800 MW by adding 1600 MW (2x800 MW), located near Kajurda & Sodha Targhadi Village, Dist. Devbhumi Dwarka (Khambhalia), State Gujarat by Essar Power Gujarat Limited (EPGL).

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended as the power generation capacity of the proposed expansion is beyond the threshold capacity of 500MW i.e. 2800 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

11.2.2 The project proponent and the accredited consultant M/s. Kadam Environmental Consultants, made a detailed presentation on the salient features of the project and informed that:

i. The project is proposed in the vicinity of Essar Power Gujarat Limited (EPGL), subsidiary of Essar Power Limited. Essar Power Gujarat Limited (EPGL) is having existing 1200 MW imported Coal based Thermal Power Plant.

ii. Now, EPGL has proposed total 2800 MW (1200 MW existing + 1600 MW expansion) Coal based Thermal power plant. Proposed expansion will have 1600 MW Ultra-supercritical Indian Coal based thermal power plant near Kajurda & Sodha Targhadi Village, Dist. Devbhumi Dwarka (Khambhalia), State Gujarat.

iii. The proposal is for ToR to the project for Thermal Power Plant located at Kajurda & Sodha Targhadi Village, Taluka Khambhaliya, District Dev Bhumi Dwarka, State Gujarat by M/s. Essar Power Gujarat Limited.

iv. The Ministry had issued EC earlier vide letter no. F.No. J-13011/16/2008-IA. II(T); dated 17.07.2009 to the existing project for 1200 MW (2 x 600 MW) Coal based Power Project at Nana Mandha, District Jamnagar, Gujarat by M/s. Essar Power Gujarat Limited.

v. The salient features of the project are as under: -

• **Category Details**	
Category of the project	A

Capacity	Existing: 2 x 600 MW Proposed: 2 x 800 MW (Ultra-supercritical Tech) Total: 2800 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	NA

- **Project Details**

Location of TPP
Village :
Taluk:
District:
State :

Co-ordinates of all four corners:

Average height of (a) TPP site, (b) ash pond site etc above MSL (m)

Location: At Kajurda & Sodha Targhadi Village, Taluka Khambhaliya, District Dev Bhumi Dwarka, State Gujarat.

No	Latitude	Longitude
1	22°18'59.84"N	69°42'11.73"E
2	22°19'11.61"N	69°42'12.43"E
3	22°19'15.18"N	69°42'22.80"E
4	22°19'18.46"N	69°42'39.10"E
5	22°19'13.64"N	69°42'41.33"E
6	22°19'15.19"N	69°42'49.97"E
7	22°19'2.26"N	69°42'50.95"E
8	22°18'57.51"N	69°42'48.55"E
9	22°18'47.30"N	69°42'32.35"E
10	22°18'46.43"N	69°42'32.98"E
11	22°18'41.98"N	69°42'25.85"E
12	22°18'31.11"N	69°42'33.47"E
13	22°18'32.09"N	69°42'35.08"E
14	22°18'29.30"N	69°42'36.82"E
15	22°18'31.92"N	69°42'41.02"E
16	22°18'27.67"N	69°42'43.95"E
17	22°18'24.09"N	69°42'38.60"E
18	22°18'5.01"N	69°42'52.24"E
19	22°18'13.44"N	69°43'5.93"E
20	22°18'0.24"N	69°43'15.29"E
21	22°17'39.33"N	69°42'51.46"E
22	22°17'48.74"N	69°42'42.37"E
23	22°17'49.77"N	69°42'35.50"E
24	22°17'55.14"N	69°42'26.49"E

a) In between 27 to 38 above MSL (meters)

<table>
<tr><td></td><td>b) In between 23 to 26 above MSL (meters)</td></tr>
<tr><td>Accredited Consultant and certificate no.</td><td>Kadam Environmental Consultants
NABET Certificate No. NABET/EIA/2326/RA 0303, Issued on 11-10-2023, Valid up to 19-03-2026.</td></tr>
<tr><td>Inter- state issue involved</td><td>NA</td></tr>
<tr><td>Seismic zone</td><td>Zone V</td></tr>
<tr><td colspan="2">• Land Breakup</td></tr>
<tr><td>Land Requirement:
a) TPP Site
b) Ash Pond
c) Township
d) Railway Siding & Others
e) Raw Water Reservoir
f) Green Belt
g) others
Total (if expansion state additional land requirement)</td><td>
<table>
<tr><th>Sr. No.</th><th>Area</th><th>Existing (Ha)</th><th>Proposed (Ha)</th><th>Total (Ha)</th></tr>
<tr><td>1.</td><td>Production Building</td><td>36.4994</td><td>17.8464</td><td>54.3458</td></tr>
<tr><td>2.</td><td>Internal Roads, Parking & Open land</td><td>8.1250</td><td>3.7168</td><td>11.8418</td></tr>
<tr><td>3.</td><td>Other</td><td>32.7291</td><td>6.9591</td><td>39.6882</td></tr>
<tr><td>4.</td><td>Green belt area</td><td>58.1765</td><td>19.3682</td><td>77.5447</td></tr>
<tr><td>5.</td><td>Ash handling area</td><td>0.5374</td><td>0.6301</td><td>1.1675</td></tr>
<tr><td>6.</td><td>Ash pond area</td><td colspan="2">27.4331</td><td>27.4331</td></tr>
<tr><td>7.</td><td>Cooling tower</td><td>12.5652</td><td>10.0568</td><td>22.6220</td></tr>
<tr><td colspan="2">Total</td><td>176.0657</td><td>58.5774</td><td>234.6431</td></tr>
</table>
</td></tr>
<tr><td>Status of Land Acquisition:</td><td>Land acquisition procedures completed by the EPGL.</td></tr>
<tr><td>Status of the project:

If under construction phase: please specify the reasons for delay, works completed till date and balance works along with expected date of completion.
If under operation phase, date of commissioning (COD) of each unit. Whether the plant</td><td>No Construction started for the proposed expansion. The plant is operational only as per the existing EC & CTO.</td></tr>
</table>

was under shutdown since commissioning, details and reasons.	
Break-Up of land-use of TPP site: a. Total land required for project components b. Private land c. Government land d. Forest Land	• 23,46,431 m^2 [i.e. 234.6431 Ha] • 23,46,431 m^2 [i.e. 234.6431 Ha] • 0 • 0
Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:	No
CRZ Clearance	Not applicable
Whether the project is in the Critically Polluted Area (CPA)/Severally Polluted Area (SPA) or within 10 km of CPA. If so, the details thereof:	NA

- **Presence of Environmentally Sensitive areas in the study area**

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details Certificate/letter/Remarks**
Reserve Forest/Protected Forest Land	Yes	Reserved Forest 2.55 km SW direction
National Park	No	**---**
Wildlife Sanctuary	Marine Sanctuary	PP submitted that Marine National Park & Sanctuary is at distance of 8.25 km in NW Direction. The proposed project lies outside the ESZ associated with the MNP & Sanctuary
Archaeological sites monuments/historical temples etc.	No	**---**
Names & distance of	Marine	8.3 km NW Direction

National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites Rivers, Tanks, Reserve Forests etc. Located within 10 Km from the plant boundary:	Sanctuary	
Availability of Schedule-I species in study area	---	---
Additional information (if any)	No	---

- **Project Description**

Sl. No.	Salient Features
If expansion, the details of ECs (including amendments and extension of validity) of existing Units etc.	Yes **Proposal No.:** IA/GJ/THE/50045/2007 **Dated:** 17.07.2009 **MoEFCC File No.:** J 13011/16/2008-IA.II(T)
Chronology of the Project	ToR Application applied on: 04.05.2024 EDS Raised on : 24.05.2024 Reply of EDS on : 09.06.2024 Proposal accepted on : 14.06.2024
Amendments granted, if Yes details	No
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:	**Existing:** 5,482 Crores **Proposed:** 13,669 Crores **Total:** 19,151 Crores NA
Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).	**Construction Phase** Permanent: 100 Temporary: 3000 Total: 3100 **Operation Phase** Existing: Permanent – 215 Nos. & Temporary – 709 Nos. (Total – 924 Nos.) Proposed: Permanent – 150 Nos. & Temporary – 500 Nos. (Total – 650 Nos.)
Benefits of the project (specify quantitative information)	• Project will meet the increase power demand of Gujarat state • The project will result in growth of the surrounding area, • Generation of direct and indirect

	employment in the region including ancillary development and supporting infrastructure. • Special emphasis on Financial and Social benefits will be given to the local people. • Revenue to the government • State-of-the-Art Ultra Super Critical Technology which has better efficiency and less carbon emissions in comparison to sub-critical technology.
Status of other statutory clearances	Forest clearance = Not applicable, Wildlife clearance = Not applicable CRZ clearance = Not applicable
R&R details	Not applicable

- **Electricity Generation Capacity:**

Capacity & Unit Configurations:	Existing: 2 x 600 MW Proposed: 2 x 800 MW (Ultra-supercritical Tech) **Total: 2800 MW**
Generation of Electricity Annually	Existing: 9461 million units (90% PLF) Proposed plant: 12614 million units (90% PLF) Total 22075 Million Units (90% PLF)

- **Details of Fuel and Ash Disposal:**

Sl. No.	**Salient Features**
Fuel to be used:	Coal, LDO, HSD (for DG Only)
Quantity of Fuel required per Annum:	Coal: 7 – 9 MTPA LDO: 6300 m^3/annum HSD for DG set: 438 KL/Year (372 MT/year)
Coal Linkage/Coal Block: (If Block allotted, status of EC & FC of the Block)	Details will be submitted at EC stage
Details of mode of transportation of coal from coal source to the plant premises along with distances	Rail/ Sea /Conveyor Rail=450km, Sea=2333 nm (4320 km) Conveyor = 18 km

<table>
<tr>
<td>Fly Ash Disposal System Proposed
a. Ash Pond / Dyke: (Area, Location & Co-ordinates)
Average height of area above MSL (m)
b. Space left in ash dyke area</td>
<td>Send for further utilization or High Concentration Slurry Disposal System
a. 27.43 Ha in EPGL plant premises
In between 23 to 26 above MSL (meters)
<table>
<tr><th>Legend</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>A</td><td>22°19'1.21"N</td><td>69°42'37.98"E</td></tr>
<tr><td>B</td><td>22°19'17.69"N</td><td>69°42'38.87"E</td></tr>
<tr><td>C</td><td>22°19'16.05"N</td><td>69°42'32.55"E</td></tr>
<tr><td>D</td><td>22°19'12.24"N</td><td>69°42'14.90"E</td></tr>
<tr><td>E</td><td>22°19'2.36"N</td><td>69°42'14.45"E</td></tr>
</table>
b. Entire space is available.</td>
</tr>
<tr>
<td>Quantity of
a. Fly Ash to be generated
b. Bottom Ash to be generated:</td>
<td>Fly Ash generation: 3.2 MTPA
Bottom Ash generation: 0.8 MTPA</td>
</tr>
<tr>
<td>Fly Ash utilization percentage with details in last 5 years :</td>
<td>100% fly ash utilization in existing plant.
Fly ash /bottom ash generated from the plant will be commercially utilized in one or more of the following industries to the extent possible:
a) Cement industry
b) Brick industry
c) Fly ash aggregate making industry
d) Road making / paving</td>
</tr>
<tr>
<td>Stack Height (m) & Type of Flue</td>
<td>30m stack height for DG Set of 1500 KVA and fuel will be HSD
Existing phase: 275 m height bi-flue stack
Proposed plant: either single stack with Bi-flue can or two stacks of single flue can and height as per MOEF notification.</td>
</tr>
</table>

- **Water Requirement:**

Source of Water:	Sea water & GWIL supplied water
Quantity of water requirement:	Total Sea Water requirement: 293248 KLD Total GWIL Water requirement: 97974 KLD
Distance of source of water from Plant:	Sea water: 18,000 m GWIL water: 25,000 m

Whether barrage/ weir/ intake well/ jack well/ others proposed:	NA
Mode of conveyance of water:	Pipeline
Status of water linkage:	MOU shall be made with Group Company for water linkages
If source is Sea water) Desalination Plant Capacity	Not applicable
Mode / Management of Brine:	Not applicable
Cooling system	Induced draft cooling tower with 177200 TPH Circulation and 12219 TPH Makeup for Both Units

- **Court case details:**

Any litigation/ Court Case pertaining to the project	
Is the proposal under any investigation? If so, details thereof.	
Any violation case pertaining to the project: i. The Environment Protection Act, 1986 ii. The Forest (Conservation) Act, 1980. iii. The Wild Life (Protection) Act, 1972	No
Additional information (if any)	

vi. The estimated project cost is Rs. 13,669 Crores, existing investment of Rs. 5482 crores. Total capital cost earmarked towards environmental pollution control measures will be provide in EIA report.

vii. Effluent of 1404 KLD quantity will be treated through ETP. The proposed plant will not be based on Zero Liquid discharge system (588 KLD through ETP, 816 KLD FGD reject shall be reused after treatment).

viii. Power requirement after expansion will be 218824 KVA (auxiliary power consumption 186 MW and 0.85 Power Factor) including existing 91765 KVA (auxiliary power consumption 78 MW and 0.85 Power Factor). Plant will have

three DG set of 1500 KVA capacity per unit, DG sets are used as standby during power failure. Stack height of 30 m will be provided as per CPCB norms to the proposed DG sets.

ix. Existing unit has 2 nos. of 2060 TPH (steam generation) coal fired boiler. Additionally, 2 nos. of 2440 TPH (steam generation) coal fired boiler will be installed. High efficiency ESP with spare field attached to boiler is provided (each) and ESP, FGD, Suitable NOX control technology with a stack of height as per MOEF norms will be installed for controlling the particulate emissions within the statutory limit for the proposed boilers.

x. Details of Solid waste/Hazardous waste generation and its management.

Details of Solid Waste:

Sr. No.	Type of Waste	Total Quantity (TPA)	Source	Disposal or Management
1.	Municipal Solid Waste	33.3	Employees of plant	13.3 TPA used as soil manure 19.97 TPA will be sold to end user.
2.	Gypsum	372300	FGD plant	Will be sold to cement, Gypsum board and other manufacturers.
3.	Fly Ash	4400000	From the boiler	Sold to Cement/Bricks/Road embankment/ export.

Details of Hazardous Waste:

Sr. no.	Type/Name of Hazardous waste	Source	Category and Schedule as per HW Rules	Existing	Proposed	Total Quantity	Management of HW
1	Contaminated Cotton Rags & other cleaning materials	Maintenance & Housekeeping	I - 33.2	5 MT/annum	6.5 MT/annum	11.5 MT/annum	Collection, storage, transportation, and Disposal through incineration in

							CHWIF
2	Discarded Containers/Barrels/liners/contaminated with hazardous materials	Consumables	I - 33.1	1,000 Nos./annum	1300 Nos./annum	2,300 Nos./annum	Collection, storage, decontamination, and selling to authorize vendors
3	Used oil	Plant O&M	I - 5.1	25 MT/annum	32.5 MT/annum	57.5 MT/annum	Collection, storage, transportation, and Disposal by selling out to registered recyclers
4	Spent Ion Exchange Resin containing toxic chemicals	Plant O&M	I - 35.2	4 MT/annum	5.2 MT/annum	9.2 MT/annum	Collection, storage, transportation, and Disposal by TSDF

xi. Water Requirement: The total water requirement for the project including sea water is 8.10 m3/MWh. which will be well within the stipulated norms of Notification dated 07.12.2015/28.06.2018 since Sea water is also used for the project. The water drawl permission is made available from Group Company. GWIL supplied water for existing facility is temporary arrangement. Sea water will be used in future once supply is made available by Group Company, the supplier. Thereafter GWIL water will be kept as stand-by.)

11.2.3 The EAC during deliberations noted the following:

1) The EAC noted that the proposal is for the grant of Terms of Reference to the Proposal for expansion in capacity of Indian coal based ultra-supercritical thermal power plant from 1200 MW to 2800 MW by adding 1600 MW (2x800 MW), located near Kajurda & Sodha Targhadi Village, Dist. Devbhumi Dwarka (Khambhalia), State Gujarat by Essar Power Gujarat Limited (EPGL).

2) The committee noted that the Ministry had issued EC earlier vide letter no. F.No. J-13011/16/2008-IA. II(T); dated 17.07.2009 to the existing project for 1200 MW (2 x 600 MW) Coal based Power Project at Nana Mandha, District Jamnagar, Gujarat by Essar Power Gujarat Limited (EPGL).

3) The committee noted that as reported by PP there is no forest land involved in the project.

4) The committee observed that Marine National Park & Sanctuary is 8.3 km in the NW Direction from the project boundary. PP vide email dated 26.06.2024 informed that the proposed project lies outside the ESZ associated with the MNP & Sanctuary. PP in the application form also mentioned that the project does not required recommendations of NBWL.

5) PP submitted that no CRZ clearance is required for the project. The project does not fall under Critically Polluted Area (CPA)/Severally Polluted Area (SPA) or within 10 km of CPA as notified by the CPCB. There is no court case is pending on the said project.

6) Upon reviewing drone footage of the plant site, the EAC noted that there is a scope for increasing the density of planation including that of green belt and there are noticeable patches requiring additional plantation. Furthermore, the committee observed that the plantation around the plant boundary had not been fully developed. In response to these findings, the EAC recommended that Green belt needs to densified and expanded within the plant boundary in the current monsoon season.

7) The Committee observed that PP has submitted that the existing plant is in an area of 176.0657 Ha and for the proposed expansion the area required is 58.5774 Ha. Thus, the total land required is 234.6431 Ha which is already in possession of the PP and no fresh land is required. Additionally, Ash Pond of existing plant will be utilized for Ash disposal in case of emergency.

8) The committee observed that the liquid waste will be discharge into the sea after cooling tower which could affect the aquatic life in the sea, accordingly, the EAC suggested that a study shall be carried out to check presence and effect on aquatic flora and fauna and mitigative measures taken in this regard

shall be submitted.

9) The EAC reviewed the present ambient air quality values of PM_{10} which are observed to be on higher side and it was noted that the proposed plant may add extra pollution load in the environment. Therefore, additional mitigation measures need to be prepared.

10) The Committee observed that Coal source reported for the existing unit is imported coal and that of proposed unit is domestic coal. The Committee is of the view this may lead to increase in particulate matter. Domestic coal often has a higher ash content and different combustion characteristics compared to imported coal, potentially leading to less efficient combustion and higher particulate matter (PM_{10}) emissions. In reply to the concerns raised by the committee the PP replied that they will be installing ESP and air pollution controlling equipment to control such emissions.

11) The committee noted that as per MoEF&CC Notification S.O. 5481(E) dated 31.12.2021 and amendments stipulated ash pond area for thermal power plant 0.1 hectare per Mega Watt (MW), in the instant case the capacity is to be 2800 MW (1200 MW existing + 1600 MW proposed) which works out to be 280 Ha [120 Ha for existing and 160 Ha for the proposed expansion]. The proposed power plant has total ash pond area 27.4331 Ha i.e. 11 % of the total project area 234 Ha therefore, the total ash pond area required for the proposed plant is well within the stipulated norms. The EAC were satisfied with the ash utilization status of the existing unit as fly ash is being sold to cement/bricks/road embankment/ export.

12) The EAC noted that the total water requirement reported by the PP is 311222 KLD (17974 KLD fresh water and 293248 KLD Sea water). The total water requirement in m3/MWh at the capacity of 1600 MW comes out to be is 8.10 m3/MWh but as the thermal plant using sea water is exempted from the limit of 3 m3/MWh as required by Ministry's Notification GSR 593(E) dated 28.06.2018. Therefore, in the instant case as the water from other than sea is 17974 KLD which comes out to be 0.47 m3/MWh which is well within the stipulated norms. However, the committee observed that the requirement of sea water is high and PP shall submit the proper justification for same and also explore the possibility of reducing the same by adopting suitable technology.

13) The EAC deliberated on the existing environmental cell to which PP answered that the cell has been headed by the environment engineer. It was further noted by the committee that pipeline for extracting water from sea lies in the CRZ area, therefore the committee opined that necessary documents/clearance obtained by the Group Company for extracting the water from the sea to be submitted by the PP in the EIA/EMP. Further, committee is of the view that in

case the EC/CRZ clearance granted to Group Company need any amendment in EC/CRZ then PP shall obtain the same for providing water to this project.

14) Further, it shall also be specified about cumulative permission for extraction and discharge available with Group Company and number of user's dependent on the group company to meet their requirement. If the required permission is not available with Group Company, required amendment shall be obtained by the Group company for extracting water for the proposed expansion, before submission of EC application.

15) The Committee is of the view as the PP has proposed to extract the water from sea and discharge the waste water into the sea. Therefore, a study to assess the impact on marine life due to cumulative extraction of sea water and discharge shall be studied from a reputed institute.

11.2.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** the proposal for grant of Standard ToR for conducting an EIA study with Public Consultation (Public Hearing and Written submission) to the project for the construction of the expansion in capacity of Indian coal based ultra-supercritical thermal power plant from 1200 MW to 2800 MW by adding 1600 MW (2x800 MW), located near Kajurda & Sodha Targhadi Village, Dist. Devbhumi Dwarka (Khambhalia), State Gujarat by Essar Power Gujarat Limited (EPGL), under the provisions of the EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation

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

2. Necessary documents/clearance obtained by the Group Company for extracting the water from the sea to be submitted by the PP in the EIA/EMP.

3. 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.

4. Submission of cumulative permission for extraction and discharge available with Group Company and number of user's dependent on the group company to meet their requirement. If the permission is not available with Group Company, required amendment shall be obtained by the Group company for extracting sea

water for the proposed expansion, before the submission of EC application.

5. Impact on marine life due to cumulative extraction of sea water and discharge shall be studied by a reputed institute.

6. Brine disposal and Management plan shall be studied and to be incorporated in EIA/EMP study.

7. Impact of release of cooling tower water on marine life need to be studied by reputed govt. institute and measures implemented.

8. Additional mitigation measures need to be prepared and incorporated in EIA/EMP report for higher particulate matter.

9. 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.

10. A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.

11. 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.

12. Action plan for development of Three tier plantation programme (33% of total project cover area) along the periphery of the project boundary shall be provided. Plan shall be dully approved by the local forest department.

13. A detailed plan need to be submitted for undertaking extensive green plantation within 10 km radius of the plant focusing on water reservoir, school, hospital and

other institutional area and same need to be incorporated in EIA/EMP report.

14. Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed and existing units and shall be incorporated in EIA/EMP report.

15. Details of Ash management of 5-year plan for 100 % ash utilization for proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.

16. Details of Dry Ash handling system along with the supplementary coal handling system shall be submitted.

17. Proper protection measures like 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 under-construction ash pond. A high-density Slurry disposal plan shall be prepared.

18. 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.

19. Details pertaining to water source, treatment and discharge should be provided.

20. Liquid Discharge plan shall be submitted so as treated water can be use by the nearby people.

21. PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.

22. Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.

23. 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.

24. 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 a time bound action plan for this.

25. PP shall submit the proper justification for high quantity of sea water and also explore the possibility of reducing the same by adopting suitable technology.

26. *PP shall provide the details of transportation of flyash 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.*

27. *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.*

28. *Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.*

29. *PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.*

[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 Delivery 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. Demographic details in 10 km area shall be submitted.

4. 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.

[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 thesame to the EAC.
3. PP shall submit the EIA/EMP report after the plagiarism check using authenticatedplagiarism software.
4. Detailed description of all the court cases including all directions given by the apexand 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 undervarious 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 monitoringstation/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 previous public hearing conducted and fresh Public Hearing 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. 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.

12. In case the EC/CRZ clearance granted to Group Company needs any amendment in EC/CRZ then PP shall obtain the same.

13. 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.

14. 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.

15. The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.

16. All the certificates viz. Involvement of Forest land, 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 Item No. 11.3

Neyveli New Thermal Power Station (2x500 MW), Lignite Based TPP at Neyveli, in Kurinjipadi Tehsil, in Cuddalore Distt., Tamil Nadu by NLC India Limited – Amendment in EC - Reg

[Proposal No. IA/TN/THE/466123/2024; F. No. J-13012/250/2007-IA.II (T)]

11.3.1 The proposal is for grant of amendment in Environmental Clearance to the

project Neyveli New Thermal Power Station (2x500 MW), Lignite Based TPP at Neyveli, in Kurinjipadi Tehsil, in Cuddalore Distt., Tamil Nadu by NLC India Limited.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended as the power generation capacity of the proposed expansion is beyond the threshold capacity of 500MW i.e. 1000 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

11.3.2 The Project Proponent made a detailed presentation on the salient features of the project and informed that:

i. The Environment Clearance (EC) for proposed expansion by addition of 1000 MW (2X500 MW) Lignite based TPP at Neyveli, in Kurinjipadi Tehsil, in Cuddalore Distt., in Tamil Nadu was accorded by MoEF&CC vide letter dated 21.10.2010. Subsequently, extension validity of EC was accorded on 09.03.2016.

ii. The project proponent has requested for amendment in the EC with the details are as under:

S. No	Para of EC issued by MoEF&CC	Details as per the EC	To be revised/ read as	Justification/ Reasons
1	Specific Condition (Xxiv)	An amount of Rs 22.40 Crores shall be earmarked as one time capital cost for CSR programme. Subsequently a recurring expenditure of Rs 4.5 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation	May be deleted	NLCIL spends 2% of the average net profits made during the preceding three financial years. Hence, these conditions may be waived of.
2	Specific Condition (Xxv)	While identifying CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor		

S. No	Para of EC issued by MoEF&CC	Details as per the EC	To be revised/ read as	Justification/ Reasons
		section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self-employment and jobs.		
3	Specific Condition (Xxvi)	It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time		
4	General Conditions Sr.no (i)	The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon	The treated effluents conforming to the prescribed standards may be discharged outside the plant premises for	Project affected persons had given their representation to let out the treated water from NNTPS to their Agricultural lands for their livelihood

S. No	Para of EC issued by MoEF&CC	Details as per the EC	To be revised/ read as	Justification/ Reasons
			irrigation purpose.	

iii. The project vide proposal no. IA/TN/THE/296458/2023 was considered by the Expert Appraisal Committee (Thermal) in its 36th meeting held on 25th January 2023 and sought additional information. PP now submitted the following information and proposal is placed in 11th EAC meeting held on :

Query 1: Certified compliance report of existing environmental clearance.

Reply IRO, Chennai vide letter dated 28.04.2023 submitted Certified compliance report of EC dated 28.04.2023.

Query 2: Detailed study on the possible environmental impacts on application of industrial waste water into agricultural fields in the nearby area of the project site by the reputed expert institute.

Reply: A detailed study to assess the impact of application of industrial wastewater into agricultural fields was carried out by M/s. Tamil Nadu Agricultural University (TNAU), Coimbatore. The study revealed that the treated effluent meets the requirements of IS 11624 (Guidelines for Quality of Irrigation Water) and accordingly TNAU has recommended that the treated effluent is suitable for irrigation purpose.

11.3.3 The EAC during deliberations noted the following:

The proposal is for amendment in Environmental Clearance (EC) granted by the Ministry vide letter dated 21.10.2010 for the project proposed expansion by addition of 1000 MW (2X500 MW) Lignite based TPP at Neyveli, in Kurinjipadi Tehsil, in Cuddalore Distt., in Tamil Nadu in favour of M/s Neyveli Lignite Corporation Ltd.

Earlier, the environment clearance was granted by the Ministry for proposed expansion by addition of 1000 MW (2X500 MW) Lignite based TPP at Neyveli, in Kurinjipadi Tehsil, in Cuddalore Distt., in Tamil Nadu vide letters no J-13012/250/2007-IA.II (T) dated 21.10.2010. Subsequently, extension validity of EC was accorded on 09.03.2016.

The EAC noted that Certified Compliance Report submitted by the IRO, Chennai vide letter dated 28.04.2023 mentioned that Green belt development conditions were partially complied to which PP vide letter dated 3.07.2024 submitted the photographs of green belt of NTPS complex. The committee noted that photos submitted by the PP

were not geotagged.

It was further noted that PP vide letter dated 3.07.2024 submitted the water balance diagram along with schematic diagram for sea water and as well as drinking water. PP also submitted details of existing renewable energy sources of Hydro Power plants of 2351 MW and status of proposed renewable energy development towards sustainable development with overall capacity of 14500 MW.

The EAC while observing the treated effluent quality parameters expressed their dissatisfaction towards the analysis carried out by the PP as BOD and COD values area not sufficient. Additionally, it was noted that pH of treated water is towards acidic and as TPP is using mineral acid including HCL the treated water is not suitable for agricultural crops. EAC also interacted with the expert of TNAU who have conducted a study of productivity of crops by using effluent water. The Committee is not satisfied with reply submitted and is of the view that PP needs to carry out further studies from any reputed government agency to ascertain the impact of this water (effluent discharge outside the plant) on the food chain and underground water.

11.3.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **deferred** the proposal seeking the following additional information:

1) PP shall carry out detailed analysis of water including inorganic, organic and heavy metals of treated effluent water. Also, a pilot-based study of effect of treated effluent water on native agricultural crops shall be carried out. Further, the crops may also be tested for human consumption and presence of heavy metals.

2) Additional studies need to be done for assessing the possibility of contamination of ground water particularly with respect to heavy metals since HCL is being used in the plant and the affluent is mildly acidic.

3) The PP needs to carry out further studies from any reputed government institute to ascertain the impact of this water (effluent discharge outside the plant) on the food chain and underground water.

4) PP needs to inform that on what activities corresponding to capital investment of Rs 22.40 cr have been spent from the CSR budget to mitigate the effects of this particular project rather than by NCL as whole.

5) PP needs to inform the source of recurring cost (Rs 4.50 cr) for future expenditure towards maintenance of activities done against the capital investment.

6) PP needs to provide the issues raised during PH and commitment made by PP including budget provision. The activities which are already completed and

amount spent on the same. The activities which are yet to be completed and amount to be spent.

7) PP shall carry out the plantation and submit the status of compliance of EC condition related to the same.

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.

Agenda Item No. 11.4

4X600 MW Thermal Power Plant located at Village Tamnar, Taluk Gharghoda, District Raigarh (Chhattisgarh) by M/s Jindal Power Ltd. (JPL). – Amendment in EC- Reg

[Proposal No. IA/CG/THE/472414/2024; F. No. J-13012/117/2008- IA. II(T)]

11.4.1 The proposal is for grant of amendment in Environmental Clearance to the project 4X600 MW Thermal Power Plant located at Village Tamnar, Taluk Gharghoda, District Raigarh (Chhattisgarh) by Jindal Power Ltd. (JPL)

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended as the power generation capacity of the proposed expansion is beyond the threshold capacity of 500MW i.e. 4x600 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

11.4.2 The Project Proponent made a detailed presentation on the salient features of the project and informed that:

i. The proposal is for amendment in Environmental Clearance of 4x600 MW Thermal Power Plant located at Tamnar, Distt-Raigarh (C.G) by Jindal Power Limited.

ii. Jindal Power Ltd. (JPL) is operating 1000 MW (4X250 MW) & 2400 MW (4x600 MW) thermal power plants located at village Tamnar, District Raigarh, Chhattisgarh.

iii. The 1000 MW plant was constructed in two phases. Phase – I and Phase –II, each comprising of two units of 250 MW.

iv. Existing ash dyke for 4x250 MW has been constructed in an area of 198 ha.

v. The 4X 600 MW units were granted EC in two parts i.e. on 18.03.2011 (Unit # 1 &2) and on 04.11.2011 (Unit # 3 & 4).

S No	Units	EC date	COD
1.	2x250 MW (Phase I)	24.09.1997	08.12.2007 & 15.06.2007
2.	2x250 MW (Phase II)	08.06.2006	16.04.2008 & 05.09.2008
3.	2x600 MW (Units#1&2)	18.03.2011	27.08.2014 & 09.11.2014
4.	2x600 MW (Units#3&4)	04.11.2011	15.01.2015 2.12.2016

vi. The MoEF&CC vide letter no. J-13012/117/2008-IA.II(T) dated 24.02.2023 granted amendment in EC permitting extension in use of existing ash dyke of 4x250 MW for disposal of unutilized ash of 4x600 MW till June,2024.

vii. As per EC dated 18.03.2011, a separate ash dyke near Rodapali village was to be constructed for 4x 600 MW. However, the Ash dyke could not be constructed as the land for the proposed ash dyke area became part of a coal block. Based upon the request of JPL, MoEF&CC vide letter dated 26.04.2017 granted permission to construct the ash dyke on 236 ha land at an alternate location near village Dolesera. However, the Consent to Establish (CTE) for the same was granted by Chhattisgarh Environment Conservation Board (CECB) vide letter dated 27.04.2022. Now, and to conserve the land, JPL has planned to not construct the new ash dyke for 4X600 MW on an area of 236 ha which was permitted by MoEF&CC.

viii. The project proponent has requested for amendment in EC with the details as under:

S. no	Para of EC issued by MoEF&CC	Details as per the TOR/ EC	To be revised/ read as	Justification/ reason
1.	Para no 3, 4 & 5 EC amendment granted vide letter no. J-13012/117/ 2008-IA.II(T) dated	Permission to use existing ash dyke of 4x250 MW for unutilized ash/ bottom ash of 4x600 MW	Permission to continue use existing ash dyke of 4x250 MW for unutilized ash of 4x600 MW permanently	• To conserve the land and maximize ash utilization, the Company has planned to not construct the new ash dyke for 4X600 MW on an area of 236 ha which was permitted by MoEF&CC.

	24.02.2023.	has been granted till June 2024.		• As the Company is utilizing about 100% ash in coal mine backfilling along with Overburden, road making, cement, fly ash brick making etc., the existing ash dyke volume will be adequate to continue bottom ash disposal from 4x250 MW and 4x600 MW TPPs.

ix. Details of Solid waste/ Hazardous waste generation and its management:

- **Solid waste Management (Fly ash)**

Name of the waste	**Source**	**Qty (TPA)**	**Mode of disposal**	**Mode of transport**
Ash (fly ash & bottom ash)	Plant operation	468000	Ash utilization as per fly ash notification & bottom ash as slurry in ash dyke	1-Fly ash utilization by road 2-Bottom ash transported through slurry pipeline for temporary storage in ash dyke and thereafter by road for utilization

- **Hazardous waste generation and its management**

Name of the waste	**Source**	**Qty (TPA)**	**Mode of disposal**	**Mode of transport**
Toxic substance glass wool	Plant process	2.5	Sent to authorized vendors	By road
Used or spent oil	Plant maintenance	100	Sent to authorized vendors	By road
Waste	Plant	20	Sent to	By road

residue oil	maintenance		authorized vendors	
Spend ion exchange resin	Plant process	0.2	Sent to authorized vendors	By road

x. Status of Litigation Pending against the proposal, if any.

Court Name	Bench	Case Category	Status	Order direction
NGT	Central bench	OA No. 70/2023 (CZ)	Pending	Matter is at the stage of completion of pleadings

xi. Chronology of permission for use of existing ash dyke of 4x250 MW for 4x600 MW

S No	EC/EC amendment Date	Remarks
1.	18.03.2011	EC granted for 2x600 MW (Unit#1 & Unit#2)
2.	04.11.2011	EC granted for 2x600 MW (Unit#3 & Unit#4)
3.	10.01.2014	Amendment in EC w.r.t. transportation of coal, utilization of existing ash dyke of 4x250 MW for 4x600 MW TPP for 03 years.
4.	26.04.2017	Amendment in EC w.r.t. transportation of coal, utilization of existing ash dyke for 4x600 MW TPP for 02 more years till construction of new dyke & change in coal source from imported to domestic, change in location of proposed dyke.
5 .	28.08.2020	Amendment in EC for extension of permission for transportation of coal, utilization of existing ash dyke for 4x600 MW TPP till October, 2021.
6.	28.10.2021	Amendment in EC for extension of permission utilization of existing ash dyke for 4x600 MW TPP till December, 2022.
7.	24.02.2023	Amendment in EC for extension of permission utilization of existing ash dyke for 4x600 MW TPP till June 2024.

11.4.3 The EAC during deliberations noted the following:

1) The EAC noted that the proposal is for the grant of amendment in Environmental Clearance to the project 4X600 MW Thermal Power Plant located at Village Tamnar, Taluk Gharghoda, District Raigarh (Chhattisgarh) by M/s Jindal Power Ltd. (JPL).

2) The committee noted that the Ministry had issued EC dated 18.03.2011 wherein a separate ash dyke near Rodapali village was to be constructed for 4x 600 MW. The PP has obtained various amendments dated 26.04.2017, 28.08.2020, 28.10.2021 and 24.02.2023 for utilization of existing ash dyke for 4x600 MW TPP till construction of new dyke & change in coal source from imported to domestic, change in location of proposed dyke.

3) The EAC noted that as per MoEF&CC Notification S.O. 5481(E) dated 31.12.2021 and amendments stipulated ash pond area for thermal power plant 0.1 hectare per Mega Watt (MW). The Committee observed that total capacity available is 3400 MW (1000 MW + 2400 MW) and as per the said notification the area permissible is 340 Ha (100 Ha and 240 Ha). But the EC for 4x250 MW Thermal Power Plant was granted during 1997 & 2006 i.e. before the said notification and the existing dyke constructed in the area of 198 ha for 4x250 MW Thermal Power Plant. As per the existing norms PP already has 98 Ha excess in the said plant which can accommodate the Ash of 2400 MW plant. The Committee is of the view that considering the safe disposal of ash and emergency requirement the permission may be granted for a period of one year. The Committee is of the view that for subsequent amendment PP shall provide the i) details of mitigation measures of the existing ash dyke/pond; height of ash pond and its capacity, ii) details of health of the residents living within 5 kms of the ash pond/dyke iii) status of pending court cases shall be submitted and iv) fresh certified compliance report.

4) During the presentation EAC noted that ash generation over the years has been increasing to which PP replied that it is due increase in demand of demand of the electricity.

5) It was brought to the notice of EAC that road conditions around the plant is not good and may cause air pollution which ultimately impact the health of the nearby people. The Committee is of the view that PP shall take immediate corrective measures for the same. The Committee is of the view that PP shall obtain fresh Certified EC compliance report from RO, MoEF&CC, along with ATR and comments of RO.

6) The total water consumption for the Power Plant is currently 2.44 m^3/MWh, which is well within the stipulated norms of Notification dated 07 12.2015/ 28.06.2018. The water drawl permission of 70 MCM has been obtained from WRD vide letter no. 1642 dated 26.02.2009 which include 17 MCM from Rabo Dam/ Kurket Dam situated on

Kurket river and 53 MCM from Kalma Barrage located on Mahanadi River.

11.4.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting recommended the proposal for grant of amendment in Environmental Clearance dated 18.03.2011 and its amendment therein to the project 4x600 MW Thermal Power Plant located at Village Tamnar, Taluk Gharghoda, District Raigarh (Chhattisgarh) by M/s Jindal Power Ltd. (JPL) to use utilize existing ash dyke of 4x250 MW for 4x600 MW TPP **for 1 year i.e. till 30.06.2025**, subject to compliance of the following additional specific environmental safeguard conditions:

1) *PP shall expedite the planation activities and plantation shall be done in this monsoon.*

2) *PP shall submit the fresh Certified EC compliance report from RO, MoEF&CC, along with ATR and comments of RO.*

3) *PP shall expedite to start construction of nearby roads, geotagged pictures of before and after construction of the road shall be submitted.*

4) *PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM. Sprinkling on the road side shall be carried out regularly (twice in a day) and data shall be maintained mentioning about its functionality.*

5) *All other conditions mentioned in the EC dated 18.03.2011 and its amendment therein shall remain unchanged.*

6) *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 to concerned RO.*

Agenda Item No. 11.5

1X800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities at Villages Ennur & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO) – Amendment in EC - Reg.

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

11.5.1 The proposal is for grant of amendment in Environmental Clearance to the project 1X800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities at Villages Ennur & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO).

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended as the power generation capacity of the proposed expansion is beyond the threshold capacity of 500MW i.e. 800 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

11.5.2 The Project Proponent and the accredited Consultant M/s. Re Sustainability Solutions Pvt. Ltd. Hyderabad, made a detailed presentation on the salient features of the project and informed that:

i. The Present proposals for Seeking Amendment in Environmental Clearance to the1X800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities at Villages Ennur & Puzhudivakkam, Taluk Ponneri, District Tiruvallur, Tamil Nadu by M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO).

ii. The Ministry had issued EC earlier vide letter no. Vide File No. J-13012/14/2012-IA. II (T) dated 20th Jan. 2016 to the existing project in favour of M/s. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

iii. PP has proposed to develop 1X800 MW supercritical coal based Thermal Power Plant (NCTPP Stage-III) within the available NCTPS complex using the existing infra structure facilities viz., cooling water channel/ coal conveyors for which EC and CRZ Clearance were already secured from Expert Appraisal Committee (EAC-Thermal Power), MoEF&CC, New Delhi based on use of 100% Imported coal.

iv. **Amendment sought**: Now, TANGEDCO is planning to change from use of 100% Imported coal to use a mix of domestic coal as well as Imported coal in ratio of 50%-50% proportion. In compliance of the MoEF&CC OM dated 6th Dec, 2023 related to amendment in EC for change in coal source by Thermal Power Plants; the application for amendment in EC has been submitted by TANGEDCO to MoEF&CC to seek the amendment in EC.

v. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. Kosasthalaiyar River is flowing at 218.8 m, Buckingham Canal is at 42.7 m and Boat Canal is at 41.45 m from the project site.

vi. **Baseline Environmental Scenario:**

Period	**From September 2022 to October 2022**

AAQ parameters at 9 locations	PM_{10} = 38.4 to 120.0 µg/m^3 $PM_{2.5}$ = 16.8 to 87.5 µg/m^3 SO_2 = 3.3 to 25.1 µg/m^3 Nox = 7.6 to 42.6 µg/m^3 CO = BDL(DL:1.15) NH_3= 7.5 to 66.0 µg/m^3 Pb= BDL (DL:0.1) to 0.226 µg/m^3 As = BDL (DL:1.0) Ni= BDL (DL:5.0) to 12.2
Incremental GLC Level	PM = Max. GLC: 96.81 µg/m^3 SO_2 = Max GLC: 26.18 µg/m^3 Nox = Max GLC: 43.68 µg/m^3 *Remark: Maximum PM value recorded at project site is 120 µg/m^3 due to ongoing construction activities hence average maximum value is considered for Air modelling.*
River water samples (7 samples)	Not Applicable
Pond water samples quality at 7 locations	pH 6.9 to 8.2; Dissolved Oxygen: 5.2 to 6.7 mg/lit; Total Dissolved Solids: 120 to 1160 mg/lit; Total Hardness (as CaCO3): 46 to 418 mg/lit & total Alkalinity (asCaCO3): 39 to 204 mg/lit; Calcium (as Ca): 12 to 90 mg/lit; Magnesium (as Mg): 4 to 47 mg/lit; Oil and grease: <2 mg/lit; Sulphate (as SO_4): 8.4 to 102 mg/lit, Nitrate (asNO3) : 0.50 to 19.3 mg/lit; Chloride (as Cl) : 22 to 480 mg/lit; Iron (as Fe): BDL(DL:0.01) to 16.5 mg/lit; BOD 2 to 13 mg/lit; Heavy metals like Copper (as Cu): BDL (DL:0.02) to 0.11 mg/lit, Lead (as Pb): BDL (DL:0.005) to 0.11 mg/lit and Manganese (as Mn): BDL(DL:0.01) to 0.38 mg/lit.
Ground Water samples at 9 locations	pH: 7.3 to 8.3; Dissolved Oxygen: 5.6 to 7.2 mg/lit; Total Dissolved Solids: 114 to 1675 mg/lit; total Hardness (as $CaCO_3$): 50 to 756 mg/lit; Total Alkalinity (as$CaCO_3$): 30 to 403 mg/lit; Calcium (as Ca): 17 to 176 mg/lit; Magnesium (as Mg): 2 to 97 mg/lit; Oil and grease: <2 mg/lit; Sulphate (asSO_4): 16 to 483 mg/lit, Nitrate (as NO_3): 1.4 to 32 mg/lit; Chloride (as Cl): 21 to 945 mg/lit; Iron (as Fe): 0.15 to 54.0 mg/lit; Heavy metals like Copper (as Cu): BDL (DL:0.02) to 0.05 mg/lit, Lead (as Pb): BDL (DL:0.005) to 0.08 mg/lit and Manganese (as Mn):

	BDL (DL:0.01) to 0.78 mg/lit.
Noise levels Leq (Day & Night) at 9 locations	The Leq values for day time was observed to be 46.6 to 56.1 dB (A) in residential area, while during night time 37.1 to 44.8 dB (A).
Soil Quality at 8 Locations	Bulk density: 1.42 to 1.56 gm/cm3; pH ranges 7.1 to 9.1; Electrical conductivity (EC); 121 to 1680 µmhos/cm; calcium content: 38 to 400 mg/kg; sodium: 132 to 584 mg/kg; potassium: 98 to 385 mg/kg; Nitrogen: 274 to 870 mg/kg; Phosphorous: 12 to 44 mg/kg; Magnesium: 10 to 110 mg/kg; Sulphur: 32 to 167 mg/kg; Organic Matter: 0.14 to 0.77.
Flora & Fauna	No Schedule-I species sighted in the study area.

vii. **Ash Pond area:** The existing ash pond of NCTPS complex located 5Kms away from the project site will be utilised for dumping of bottom ash from this proposed power plant at the time of emergency only, since, this power plant is proposed with the 100% disposal of bottom ash also.

viii. **Water Requirement:** The potable water required for the construction of project will be met from Chennai Metro Water Supply & Sewerage Board (CMWSSB) for about 2 MGD (9092 m3). For operation purpose, potable water will be produced from sea water by treating in RO based desalination plant, proposed within the power plant.

ix. **Details of Coal Linkage:** Environmental Clearance for the project was issued based on the use of Imported coal of 2.09 MTPA which was planned to source from MMTC, New Delhi. FSA/MoU for imported coal was signed between MMTC Limited and TANGEDCO on 25th May, 2015 for supply of 2.51 MTPA of coal for the project. Now, TANGEDCO is planning to change from use of 100% imported coal to use of domestic coal as well as Imported coal in the equal proportion. Domestic coal will be made available from the Kalinga block of Talcher, Mahanadhi, IB Valley Coal Fields. Total 2.69 MTPA of mixed coal will be required for the project.

x. Details of Certified compliance report submitted by RO, MoEF&CC: Certified Copy of EC Compliance is secured Vide Diary No 046 dated 13.01.2023.

11.5.3 The EAC during deliberations noted the following:

1) The EAC noted that the proposal is for the grant of amendment in Environmental Clearance to the project 1X800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities at Villages Ennur & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO).

2) The committee noted that the Environmental Clearance (EC) and Coastal Regulation Zone (CRZ) Clearance were accorded by MoEF&CC Vide File No. J-13012/14/2012-IA. II (T) dated 20th Jan. 2016 with use of Imported coal of 2.09 MTPA sourced through MMTC, New Delhi. The FSA/MoU for Imported coal was signed between MMTC Limited and TANGEDCO on 25th May, 2015. The Consent to Establish (CTE) issued from TNPCB Vide Order No. 170124499798 under Air (Prevention and control of Pollution) Act, 1981, as amended in 1987 and vide order No.170114499798 under Water (Prevention and control of Pollution) Act,1974, as amended in 1988 on 13th April, 2017.

3) Now, PP has submitted the proposal for obtaining amendment in existing EC for change in fuel composition from 100% Imported coal to mixture of 50% Indian coal & 50% Imported coal in compliance of MoEF&CC OM dated 6th Dec, 2023 and previous OM dated 11th Nov, 2020.

4) The EAC reviewed the present average ambient air quality data and observed that PM_{10} values were on higher side and it was noted that the proposed change in fuel composition from 100% Imported coal to mixture of 50% Indian coal & 50% Imported coal which may increase PM_{10} emissions in the environment. PP in this regard submitted that this is a temporary increase due to ongoing construction activities at site.

5) The EAC also added that as there is change in fuel, PP shall not ask in the future for additional ash pond and additional water requirement. Further, EAC noted that the total area of plant is 76.88 Ha of which only 18.21 Ha is a green belt area which accounts to 23.7% of the total area. Therefore, PP are advised to conduct power plantation in the upcoming monsoon season.

6) The Committee observed that as per OM dated 11.11.2020 & 6.12.2023, proposal of PP is not falling under category (a) to (d) mentioned in para 3 of OM dated 6.12.2023 and hence required amendment in EC. Further, it has mentioned in the same OM that "All *the Thermal Power Plants (including Captive Power Plants) having Prior Environmental Clearance and going in for change in the coal source other than those falling in the aforementioned category of change in coal source shall approach the Ministry for amendment in environmental clearance along with a study on additional impact assessment and revised EMP based on the change in Source of coal".* The Committee observed that PP has submitted the additional impact assessment and revised EMP report of May 2024, along with this proposal.

7) The EAC noted that PP submitted that FSA/MoU for Imported coal was signed between MMTC Limited and TANGEDCO on 25th May, 2015. No additional water will be required due to change in coal use. No additional power required due to change in coal. No additional Coal Handling Plant (CHP) will be required and the area of 8.09 Ha is available within the site for stacking of Indian as well as imported coal.

8) PP submitted that Coal characteristics & consumption as under:

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					

9) The committee observed that there is a increase in ash content further as per the EIA the level of pollutant are increasing and on higher side. In this regard PP submitted that

- Particulate matter (PM): PM value: 96.49 µg/m^3, predicted GLC: 0.32 µg/m^3. Resultant GLC: 96.81 ug/m^3 which is near the limits as per NAAQ standards. The max. value of PM10 120 µg/m^3 recorded in Ennore SEZ TPP site since the project is proposed over abandoned ash dyke. The contribution of PM from TPPs within NCTPS complex is 1.2 µg/m^3 and the contribution all the TPPs with 10 km radius is 1.6 µg/m^3. To reduce the PM

emissions ESP's with an efficiency of 99.98% has been installed to limit the PM below 30 mg/Nm^3.

- Sulphur dioxide (SO_2): SO_2 value: 25.1 µg/m^3, predicted GLC: 1.08 µg/m^3. Resultant GLC: 26.18 µg/m^3 which is well with in the limits as per NAAQ standards. The contribution of SO_2 from TPPs within NCTPS complex is 5.1 µg/m^3 and the contribution all the TPPs with 10 km radius is 7.1 µg/m^3. Dry FGD has been installed to meet the revised emission norms of MoEF&CC for Sulphur dioxide (SO_2) i.e. 100 mg/Nm^3.

- Oxides of nitrogen (NOx): NOx value: 42.6 µg/m^3, predicted GLC: 1.08 µg/m^3. Resultant GLC is 43.68 µg/m^3 which is well with in the limits as per NAAQ standards. The contribution of NOx from TPPs within NCTPS complex is 6.4 µg/m^3 and the contribution all the TPPs with 10 km radius is 8.01 ug/m^3. To reduce the emissions Low NOx burner will be provided. SCR will also be installed in future as per requirement to limit the NOx emission to as per MoEF&CC norms i.e. 100 mg/Nm^3.

10) The committee observed that for managing the air pollution PP has proposed that i) Dust suppression/ extraction system will be provided to mitigate the dust generated at coal conveying area, transfer points and coal stockyard, ii) Dust collection system will be provided in coal bunkers to evacuate dust and hazardous gases like methane from the coal bunkers, iii) Collected dust would be returned to either the associated belt conveyors or to the coal bunkers. The coal dust from coal transfer points would be restricted to 5 mg/Nm^3, iv) 100 % dry fly ash extraction, storage and disposal facilities are proposed for utilization of 100 % fly ash. Closed trucks & containers would be used for this purpose, v) ESP with an efficiency of 99.98 % is proposed to control Particulate Matter, vi) To minimize the SO_2 emissions, dry FGD system is proposed and vii)To reduce the NO_X emissions, Low NOx burners has been provided whereas Selective Catalytic Reduction (SCR) system will be installed in future as per requirement.

11) Additionally, the committee observed that for managing the ash PP has proposed that i) 100% utilization of fly ash in dry form is envisaged. Closed trucks & containers would be used for this purpose, ii) To reduce the dust nuisance while loading the ash into the open trucks from fly ash silos, the fly ash would be conditioned with water spray, iii) It is proposed to cover the ash in the open trucks with tarpaulin to prevent flying of fine ash during transportation, iv) TANGEDCO would put max efforts and ensure bottom ash utilization. 100% ash utilization will be achieved as per MoEF&CC notification dt. 3rd Nov. 2009, v) Proposed to supply entire ash to cement industries that are presently lifting fly ash from NCTPS, since there is huge demand in Tami Nadu for fly ash from thermal stations and vi) MoU between TANGEDCO & M/s. Dalmia Cement (Bharat) Limited was already made on 14th Oct. 2015 for

utilization of Fly ash.

12) The committee observed that EMP cost propose by the PP is Rs. 1185.21 cr and recurring cost is Rs 98 Cr. The details are as under:

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 i) ESP ii) Dust suppression system for coal handling	192.00 3.50		192.0 3.50		No change
2	Chimney	88.90		88.90		
	FGD, De NOx burners etc.	0		615.0		Increased
3	Water treatment plant including clarifier, UF, RO, DM, Electrical and Instrumentation	42.24		42.24		
4	Effluent Treatment Plant	3.50	48.0	3.50	98	
5	Dense phase, pneumatic Ash Handling Plant including bottom ash & fly ash silos, conveying compressors and other equipment	106.56		106.56		No change
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	Increased

13) Based on the discussion held the committee recommended that in the para 3 of EC dated 20.01.2016 the phrase *"The Imported Coal requirement of 2.09 MTPA will be sourced through MMTC, New Delhi"* shall be read as *"The coal*

requirement is 2.69 MTPA in the ratio of 50% Imported Coal (1.04 MTPA) and 50% Indian Coal (1.65 MTPA). Imported coal sourced through MMTC, New Delhi and Indian Coal sourced from Kalinga block of Talcher, Mahanadhi, IB Valley Coal Fields."

11.5.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting recommended the proposal for grant of Amendment in Environmental Clearance (para 13 above) to the project 1X800 MW (Stage-III), North Chennai TPP and CRZ Clearance for foreshore facilities at Villages Ennur & Puzhudivakkam, Taluk Ponneri, District Thiruvallur, Tamil Nadu by M/s. Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO) for change in the use of Coal from 100% Imported Coal to use of Indian Coal and Imported Coal in equal proportion, subject to compliance of the following additional specific environmental safeguard conditions, in addition to the EC conditions granted on 20.01.2016 :

Additional Specific Conditions:

1) PP shall obtain the amendment in CTO from SPCB as applicable in the instant case for the proposed amendments.

2) PP shall implement the protective measures proposed in EMP in a time-bound manner. The budget earmarked for the same is Rs 1,185.21crores (Capital) and Rs 98 crores(recurring) and should be kept in separate accounts and audited annually. The implantation 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.

3) Regular monitoring of Fly Ash Pond shall be carried out and inspection should be done to avoid any chance of failure of bunds or leakage from the Ash Pond. The Pipe line carrying the fly ash shall also be inspected for any leakage at regular intervals. In case of any leakage immediate corrective measures needs to be taken and concerned authorities shall be informed. PP shall also keep a record of inspection.

4) Fly ash handling shall be done strictly as per extent rules/regulations of the Ministry/CPCB issued from time to time including Ministry's Notification No. S.O.5481(E) dated 31st December, 2021. No coal shall be transported through road shall be allowed.

5) The transportation of Ash from the Thermal Power Plant to other Industries (Cement/brick) shall be through closed bulkers only.

6) Water Sprinkling on roads shall be done in at regular interval on the roads atleast within 1 km range approaching the plant. A logbook shall be maintained for the activity and be in six monthly compliance report.

7) PP shall ensure that roads for transportation shall be maintained and keep in good condition to avoid fugitive emissions.

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

9) PP shall provide regular health monitoring services and health services free of cost to people living in 10 km radius.

10) PP shall establish an Environment Management Cell and ensure to engage sufficient staff having environment related qualification for its smooth its functioning.

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

12) Use of Diesel operated transportation vehicles shall be avoided as far as possible and BS-VI complaint vehicle shall be purchased and preference shall be given to EV/CNG/LNG based trucks for transportation raw materials, coal and disposal. Change to EV/CNG/LNG be done in a time bound manner.

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

14) Monitoring for heavy metals and fluoride in ground water and surface water shall be undertaken along with the regular monitoring and results/findings submitted along with half yearly monitoring report.

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. An action plan in this regard shall be submitted concerned RO.

Agenda Item No. 11.6

2x660 MW Udangudi Supercritical Thermal Power Project Stage-1, located at Udangudi Village, Tiruchendur Taluk, Tuticorin District, State Tamil Nadu by

TANGEDCO – Fresh ToR – Reg.

[Proposal No. IA/TN/THE/468592/2024; F.No. J-13012/19/2008-IA. II(T)]

11.6.1 The proposal is for grant of Terms of Reference to the 2x660 MW Udangudi Supercritical Thermal Power Project Stage-1, located at Udangudi Village, Tiruchendur Taluk, Tuticorin District, State Tamil Nadu by TANGEDCO.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended as the power generation capacity of the proposed expansion is beyond the threshold capacity of 500MW i.e. 2x660 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

11.6.2 The Project Proponent and the accredited Consultant M/s. ABC Techno Labs India Private Limited Chennai, made a detailed presentation on the salient features of the project and informed that:

i. The proposal is for ToR to the project for Ongoing 2x660 MW Udangudi Supercritical Thermal Power Project Stage-1 located at Udangudi Village, Tiruchendur Taluk, Tuticorin District, Tamil Nadu by M/s. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

ii. The EC had been obtained for the 2 x 800 MW (1600 MW) Udangudi Super Critical with Imported Coal based Thermal Project and amended to 2 x 660 MW MoEF&CC vide MOEF/GOI's Lr.No.13012/199/2008—IA II(T), dt 26.04.2017. The validity of EC was extended through subsequent validity extension and finally all the projects on account of Covid-19 pandemic (vide MoEF&CC OM F.No.22-25/2020-IA.III dated: 18.1.2021), the validity of EC for Udangudi Super Critical Thermal Power Plant is deemed to be valid till 13.10.2024.

iii. Presently, the physical work progress is completed to the tune of 82.85% for which EC was granted. As the validity of EC is nearing completion, it is planned to obtain fresh EC for the project.

iv. Further, TANGEDCO had planned to reduce the imported coal according to guidelines issued by MoEF&CC OM's issued vide circular. No. J13012/8/2009-IA. II (T), dt.6.12.2023. which is also planned to be sought in this fresh EC. In view EC nearing to completion, a fresh ToR is proposed to be obtained for ongoing 2 x 660 MW Supercritical Thermal Power Project stage-1 at Udangudi village, Thoothukudi District, Tamil Nadu.

v. The salient features of the project are as under:-

- **EAC Meeting Details:**

Date of earlier EAC Meetings	January 11-12, 2010, April 30-May 01, 2010 and May 20-21,2013 (for issuing Original EC), 4th meeting held on 16.3.2017 (for issuing EC amendment) and meeting on 28.7.2020 (for EC Extn.)

- **Category details:**

Category of the project	Category A
Capacity	2x660 MW
Attracts the General Conditions	Yes
Additional Information (if any)	The Public Hearing was conducted on 07.02.2009 at Tiruchendur for the proposed 2x800 MW super critical thermal power project at Udangudi. Presently, the work is completed more than 82.85% and the project proponent is planned to obtain fresh EC for the ongoing 2x660 MW thermal power plant, the fresh Public Hearing would not be required as per OM notification dt. 18.03.2021 by MoEF&CC. Hence, it is requested to exempt the Public Hearing for the project. As stated earlier, it is planned to prepare fresh Rapid Terrestrial EIA report based on one season monitoring. The baseline data pertaining to Marine environment was carried out during the year June – September, 2021 and having the validity upto 3 years (i.e. September 2024). Hence, permission may please be given to use the same data in the EIA report planned for the project.

- **Project details:**

Location of TPP	
Village:	Udangudi
Taluk:	Tiruchendur Taluk
District:	Tuticorin

State:	Tamil Nadu
Co-ordinates of all four corners:	South Side - 8°25’ 20.50” N 78°03’ 05.85” E North Side - 8°26’ 49.26” N 78°04’ 13.07” E East Side - 8°26’ 04.94” N 78°03’ 51.40” E West Side - 8°26’ 23.62” N 78°03’ 27.27” E
Average height of (a) TPP site	23 m above MSL
(b) ash pond site	24 m above MSL
(c) Township	26 m above MSL
Accredited Consultant and certificate no.	ABC Techno Labs India Private Limited NABET/EIA/2225/RA 0290
Inter-state issue involved	No
Seismic zone	Zone II (Low risk Zone)

- **Land Area Breakup:**

Land requirement	
a) TPP Site	164.38
b) Ash Pond	48.562
c) Township	Nil
d) Railway siding & Others	Nil
e) Raw water Reservoir	Nil
f) Green belt	167.058
g) Others	Nil
Total (if expansion state additional land requirement)	380
Status of land Acquisition:	Completed under the possession of TANGEDCO.
Status of the project: If under construction phase: please specifythe reasons for delay, works completed tilldate and balance works along withexpected date of completion.	Presently, the work is completed more than 82.85% and the project proponent is planned to obtain fresh EC for the ongoing 2x660 MW thermal power plant. Expected date of completion is 14/10/2027.
Break-up of Land-use of TPP site:	
A) Total land required for project components	380 Ha

B) Private land	Nil
C) Government land	380
D) Forest land	Nil
Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:	Nil
CRZ Clearance	CRZ clearance is not applicable for Main plant side. However, interlinked project of coal Jetty had separate EC + CRZ Clearance MoEF&CC vide EC ID - EC22A004TN156490, and File No. 10-66/2020 -IA.III dt. 03.08.2022.
Whether the project is in the Critically Polluted Area (CPA)/Severally Polluted Area (SPA) or within 10 km of CPA. If so, the details thereof:	No,

- **Presence of Environmentally Sensitive area in the study area**

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate / letter / Remarks**
Reserve forest / Protected Forest Land	Yes	Kuthiraimozhi Theri R.F – 7.8 km. During EC, letter will be obtained.
National Park	No	Nil within 10 km radius
Wildlife Sanctuary	No	Nil within 10 km radius
Archaeological sites monuments/historical temples etc	Yes	1.Archaeological site - Nil within 10 km radius 2.Monuments – Nil 3. Historical temples – Tirchendhur Temple,Tuticorin -8 km
Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites Rivers, Tanks, Reserve Forests etc.Located within 10 Km from the plant boundary:	Yes	Biosphere reserves - Kuthiraimozhi Theri R.F – 7.8 km (NW)
Availability of Schedule-I species	Yes	Indian Peafowl (Pavo

in study area		cristatus), and avifaunal species such as Black Kite (Milvus migrans), Shikra (Accipiter badius), and Brahminy kite (Halisterindus) belonging to the family, Accipitridae under Schedule-I of the Indian Wildlife Protection Act 1972 were recorded from the study area.

- **Project description**

If expansion, the details of ECs(including amendments and extension of validity) of existing Units etc.	Not applicable
Chronology of the Project	**Enclosed as Annexure II**
Amendments granted, if Yes details	Yes. TANGEDCO obtained amendment to the above mentioned Environmental Clearance for reduction of unit sizes from 2 x 800 MW to 2 x 660 MW, vide MOEF/GOI's Lr.No.13012/199/2008—IA II(T), dt 26.04.2017.
Expansion / Green Field (new): (IPP / Merchant / Captive):	New
If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the environmental and CRZ clearances of the previous phases.	Not applicable
Specific web page address where all EC related documents (including monitoring and compliance related reports/documents) of the specific project under consideration are/will be available. Also contact details of PP's officer responsible for updating this webpage/information.	https://www.tnebnet.org

Cost of the Project (As per EC and revised);	Rs.13,076.705 Crore
Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).	The Project will require direct employment of about 114 persons (permanent) and contractual workers of about 500 persons during construction period for supervision and execution. After construction of the project, plant will require about 545 persons for operation and maintenance of the plant.
Benefits of the project (specify quantitative information)	The ongoing 2 X 660 MW Power plant will result in improvement of infrastructure as well as up-liftment of social infrastructure in the area. The people residing in the nearby areas will be benefited directly and indirectly through employment opportunity likely to be arise due to the project. It will also help in sustainable development of this area including development of physical Infrastructural facilities such as road transport facilities, educational facilities and water supply and sanitation. It is anticipated that the ongoing power plant will provide benefits to the locals in two phases i.e. during construction phase as well as during operational stage of the plant.
Status of other statutory clearances	CTE for Air and Water act valid upto 13.10.2024
R&R details	R&R is not applicable.

- **Electricity generation capacity:**

Capacity & Unit Configurations:	1320 MW
Generation of Electricity Annually	87,12,000 MW

- **Details of fuel and Ash disposal**

Fuel to be used:	**Coal**

Quantity of Fuel required per Annum:	Imported coal is 2.246 MTPA from Indonesia and Indigenous coal is 3.647 MTPA from Odisha.
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Quantity and details of Linkage available: TANGEDCO considered imported/indigenous coal from Indonesia/Odisha (Talcher) as the primary fuel for the ongoing plant. TANGEDCO has entered agreement with MMTC for the supply of imported coal from Indonesia. As per MoEF&CC requirement, calorific value of imported coal will be minimum 6000 kcal/kg. TANGEDCO is approaching MoEF&CC for necessary modification in the MoEF&CC clearance for blending of coal planned to be used for the project. The method of obtaining remaining coal: Ash content in coal 26(%) Sulphur in coal 0.515% Moisture 16.25% GCV in coal 4350 Kcal/Kg
Details of mode of transportation of coal from coal source to the plant premises along with distances	Udangudi site is located at a distance of about 1.2km from sea front and coal will be transported through a captive jetty and conveyed to the plant site by the pipe conveyors.
Fly Ash Disposal System Proposed	High concentration slurry. Ratio of water and ash - 1:8
a. Ash Pond / Dyke: (Area, Location & Co-ordinates) Average height of area above MSL (m)	Area – 48.562 Ha Location – Udangudi village Co-ordinates- 8°25'40.81"N78°3'18.63"E Average height of area – 24 m above MSL
b. Space left in ash dyke area	Entire area is used for ash dyke.
Quantity of Fly Ash to be generated	1.054 million TPA
b. Bottom Ash to be generated:	0.26 million TPA

Fly Ash utilization percentage with details in last 5 years :	Plant yet to be started
Stack Height (m) & Type of Flue	275 m (new or existing) Multiple flue

- **Water Requirement:**

Source of Water:	Sea (Bay of Bengal) (Downstream) HFL –3.77 km Karumeni river
Quantity of water requirement:	13,063 m^3/hr
Distance of source of water from Plant:	1.2 km
Whether barrage/ weir/ intake well/ jack well/ others proposed:	Nil
Mode of conveyance of water:	Pipe line from desalination plant located at plant site.
Status of water linkage:	Nil
(If source is Seawater) Desalination Plant Capacity	16 MLD
Mode / Management of Brine:	No treatment is necessary as the TDS is of brine is higher than 45,000 mg/l – Disposed to Sea
Cooling system	Natural Draft Cooling system

- **Court case details/violation**

Any litigation/Court Case pertaining to the project	Nil
Is the proposal under any investigation? If so, details thereof.	No
Any violation case pertaining to the project on following: i. The Environment Protection Act, 1986 ii. The Forest (Conservation)Act, 1980. iii. The Wild Life (Protection)Act, 1972	No
Additional information (if any)	Nil

vi. The estimated project cost is Rs.13,076.705 Crore. Total capital cost earmarked towards environmental pollution control measures is Rs. 393 Crore and the Recurring cost (operation and maintenance) will be about Rs. 48.8 Crore per annum.

vii. Total Employment will be 545 persons as direct & indirect after expansion. Industry proposes to allocate Rs. 32.694 @ of 0.25 % towards CER.

viii. Effluent of 720 KLD quantity will be treated through ETP and 40 KLD of sewage will be treated by STP.

ix. Power requirement after commissioning will be 92 MW which will be supplied by plant.

x. Proposed unit has 2340 TPH coal fired boiler. Multi cyclone separator/ bag filter with a stack of height of 275 m will be installed for controlling the particulate emissions within the statutory limit for the proposed boilers.

xi. Details of Solid waste/ Hazardous waste generation and its management

Solid waste:

Ash will be the major solid waste generated from the power project. An ash management scheme will be implemented consisting of dry collection of ash, supply of ash to entrepreneurs for utilization and promoting ash utilization to maximum extent and safe disposal of unused ash. Unlike other process industries, power project does not handle and generate any major flammable materials (Class A and Class B Flammable material) except small quantities of furnace oil for boiler start up conditions. Other hazardous materials that will be handled at the power plant will be small quantities of Chlorine used as biocide in the cooling tower. In general, about 2 to 5ppm of Chlorine is doped in the cooling water circulation line for this purpose. Both Hydrochloric acid and Sodium Hydroxide will be used for regeneration of the De-Mineralization Plant resin beds. The solid waste (effluent) generated in DM & PT plant shall be disposed of in ash disposal area.

Solid waste generation

Description	Ash Generation
Total Ash generation for two units	175.2 T/h
Annual ash generated for two units	1.31 million TPA
Annual Bottom ash generated for two units	0.26 million TPA
Annual Fly ash generated for two units	1.054 million TPA

The estimated Municipal solid waste is about 109 kg/day. Out of this, 40% that is about 43.6 kg/day is Bio-degradable waste. The non Bio-degradable waste 60% is estimated to be 65.4 kg/day. As the plastic waste recirculation is maximized and usage of plastic is reduced the expected plastic waste is about

20% of 65.4 kg/day that is 13.08 kg/day.

Hazardous waste

Hazardous material to be stored at site during construction include petrol, diesel welding gas, weld inspection material, radiographic material, paints, chemicals, DM plant chemicals etc. These materials will be stored in accordance with prescribed safety norms in ventilated enclosures. Safety instructions and signage will prominently be displayed at appropriate points/locations.

Name of the waste	**Source**	**Qty (TPA)**	**Mode of disposal**	**Mode of transport**
Resin	DM Plant	2	TSDF site	Road
Glass Wool	Overhauling	1.3	TSDF site	Road
Waste oil	Maintenance	1.6	TSDF site	Road

xii. Public Hearing for the proposed project has been conducted by the State Pollution Control Board on **7.2.2009.**

i. Advertisement for PH with date	31.12.2008
ii. Details of newspaper published:	THINA THANTHI
Date of PH	7.2.2009
Venue	Arulmigu Senthil Aandavar government boys higher secondary school, Tiruchendur, Tuticorin – 628 215
Chaired by	District Collector

xiii. The total water requirement for boiler and cooling water for the proposed plant would be about 13,063 m^3 /hr and the source is seawater. Water requirement for the operation phase will be met through captive desalination plant of 16 MLD capacity. The RO reject from the desalination plant will be about 36840 m^3 /day. This reject will be diluted with blow down water and let into the sea.

xiv. Details of Coal Linkage: The present coal linkage of proposed thermal power plant is from Indonesia. MOU/permission for 2.246 MTPA of coal has been obtained. Balance of about 3.647 MTPA from Odisha. TANGEDCO considered imported/indigenous coal from Indonesia/Odisha (Talcher) as the primary fuel for the ongoing plant. TANGEDCO has entered agreement with MMTC for the supply of imported coal from Indonesia. As per MoEF&CC requirement, calorific value of imported coal will be minimum 6000 kcal/kg. TANGEDCO is approaching MoEF&CC for necessary modification in the MoEF&CC clearance for blending of coal planned to be used for the project.

11.6.2 The EAC during deliberations noted the following:

- The EAC noted that the proposal for grant of Terms of Reference to the 2x660 MW Udangudi Supercritical Thermal Power Project Stage-1, located at Udangudi Village, Tiruchendur Taluk, Tuticorin District, State Tamil Nadu by TANGEDCO.

- The committee noted that EC had been obtained from MoEF&CC vide letter dated 14.10.2013 & amended and validity extended till 13.10.2018. Since the validity of the existing EC is nearing completion TANGEDCO envisages to obtain a fresh EC for the project. Additionally, the coal jetty is located at about 7.5km from shore and possess a separate EC and CRZ clearance from MoEF&CC vide Lr. No. - EC22A004TN156490, 10-66/2020-IA.III dt. 03.08.2022.

- It was observed by the EAC that currently the work is completed more than 82.85% and the project proponent is planned to obtain fresh EC for the ongoing 2x660 MW thermal power plant and requested to exempt the fresh Public Hearing under the provision of Notification dt. 18.03.2021 by MoEF&CC. The Public Hearing was conducted on 07.02.2009 at Tiruchendur for the ongoing 2x800 MW super critical thermal power project at Udangudi. Committee deliberated on the PP request regarding exemption of Public Hearing and referred to following provision in the Ministry's notification dated 18.03.2021:

  "…the projects where construction and commissioning of proposed activities have not been completed within the validity period of the Environmental Clearance (EC) and a fresh application for EC has been submitted due to expiry of the said period of the EC, the concerned Expert Appraisal Committee or State Level Expert Committee, as the case may be, may exempt the requirement of public hearing subject to the condition that the project has been implemented not less than fifty percentage in its physical form or construction."

  In view of the above provision and considering the construction work completed more than 82.85%, Public Hearing is exempted, however, PP shall obtain responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity by publicizing the draft EIA/EMP report/Summary on the SPCB website, following the provisions mentioned in the EIA Notification, 2006 and as amended. Further, incase no or few response is received, PP shall also do the need base assessment survey and based on the survey, PP is required to take up physical activities in time bound manner.

- The EAC observed that EC obtained during 2013 was planned with 100% imported coal now TANGEDCO proposes to use indigenous coal and imported

coal for the ongoing power plant. The total coal requirement for the Udangudi Super critical power project is 5.893 MTPA. TANGEDCO is planning to use Imported Coal verses Indigenous Coal in the ratio of 50:50 based on efficiency which is amounting to 2.246 MTPA of imported coal and 3.647 MTPA of indigenous coal. The present coal linkage of proposed thermal power plant is from Indonesia. MOU/permission for 2.246 MTPA of coal has been obtained. Balance of about 3.647 MTPA from Odisha. On coal source change, EAC observed that detailed Impact assessment shall be carried out due to change in source of coal along with proper mitigation measure and EMP budget.

- The EAC noted that the PP has informed in Form 1 about court case details but during the meeting it was noted that there is no court case is pending for power plant. Also noted that the total land requirement for the project site is of 380 Ha and fully utilized for construction of Udangudi power station facilities, including 44% for greenbelt which is amounting to 167.058 Ha.

- The committee observed that as per MoEF&CC Notification S.O. 5481(E) dated 31.12.2021 and amendments stipulated ash pond area for thermal power plant 0.1 hectare per Mega Watt (MW), which works out to 132 Ha for proposed project. The proposed power plant has total ash pond area 48.652 Ha i.e. 12.77 % of the total project area 380 Ha. Total ash pond area is required for the proposed plant is within the stipulated norms dated 31.12.2021.

- The total water consumption for thermal power plants as per MoEF&CC vide Notification S.O. 3305 (E) dated 07.12.2015 for all existing CT based plants upto maximum of 3.5 m3/MWh and as per MoEF&CC stipulated norms vide Notification GSR 593 (E) dated 28.06.2018 water allocated to the thermal power plant is 3 m^3/MWhr for new plants installed after the 1st January, 2017. However, TPP using sea water, water consumption limit is not applicable as per notification dated 28.06.2018. The total water requirement for boiler and cooling water for the proposed plant would be about 13,063 m3/hr and the source is seawater.

11.6.3 The EAC after detailed deliberation on the information submitted and as presented during the meeting recommended the proposal for grant of Standard ToR for conducting an EIA study without Public Hearing but Public Consultation through written submission, to the project, for the construction of the 2x660 MW Udangudi Supercritical Thermal Power Project Stage-1, located at Udangudi Village, Tiruchendur Taluk, Tuticorin District, State Tamil Nadu by TANGEDCO, under the provisions of the EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation

1. A Cumulative Environmental Impact Assessment study of all the existing and

proposed projects in the 15-km radius of the proposed project shall be conducted and the same shall be included the in EIA/EMP report. Details of industrial units present in 10 Km radius of the power plant shall be submitted.

2. 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.

3. Detailed Impact assessment shall be carried out due to change in source of coal along with proper mitigation measure and EMP budget.

4. Impact of release of cooling tower water on marine life need to be studied by reputed govt. institute and measures implemented.

5. Brine disposal and Management plan shall be studied and to be incorporated in EIA/EMP study.

6. 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.

7. A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.

8. Certified compliance report shall be submitted along with ATR and comments of RO on the existing EC.

9. 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.

10. Action plan for development of Three tier plantation programme (33% of total project cover area) along the periphery of the project boundary shall be provided. Plan shall be dully approved by the local forest department.

11. A detailed plan need to be submitted for undertaking extensive green plantation within 10 km radius of the plant focusing on water reservoir, school, hospital and other institutional area and same need to be incorporated in EIA/EMP report.

12. Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed and existing units and shall be incorporated in EIA/EMP report.

13. Details of Ash management of 5-year plan for 100 % ash utilization for proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.

14. Details of Dry Ash handling system along with the supplementary coal handling system shall be submitted.

15. Proper protection measures like 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 under-construction ash pond. A high-density Slurry disposal plan shall be prepared.

16. 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.

17. Details pertaining to water source, treatment and discharge should be provided.

18. Liquid Discharge plan shall be submitted so as treated water can be use by the nearby people.

19. PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.

20. Project Proponent to conduct Environmental Cost Benefit Analysis for the

project in EIA/EMP Report.

21. 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.

22. 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.

23. *PP shall provide the details of transportation of flyash 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.*

24. *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.*

25. *Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.*

26. *PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.*

[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 Delivery 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 (Written submission only) shall be conducted as per the provisions of EIA Notification, 2006 and as amended i.e PP shall obtain responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity by publicizing the draft

EIA/EMP report/Summary on the SPCB website, following the provisions mentioned in the EIA Notification, 2006 and as amended.

3. As per the Ministry's OM dated 30.09.2020/20.10.2020, to address the concern submitted against the written submission, 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.

4. Further, incase no or few response is received, PP shall also do the need base assessment survey. Based on the survey, PP is required to take up physical activities in time bound manner with year-wise budgetary provision (Capital and recurring). Activities proposed shall be part of EMP.

5. 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.

6. Demographic 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 thefield 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 thesame to the EAC.

3. PP shall submit the EIA/EMP report after the plagiarism check using authenticatedplagiarism software.

4. Detailed description of all the court cases including all directions given by the apexand 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 monitoringstation/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 previous 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 Forest land, 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 Item No. 11.7

Expansion of Kawai Thermal Plant under Phase – II by adding 3200 (4x800) MW Ultra Super Critical Thermal Power Plant to existing 1320 (2x660) MW located at village Kawai, Tehsil Atru, District Baran, State Rajasthan by Adani Power Limited – Reconsideration for Terms of Reference – Reg

[Proposal no. IA/RJ/THE/467570/2024: F. No. J-13012/154/2008- IA.II(T)]

11.7.1 The proposal is for grant of Terms of Reference to the expansion of Kawai Thermal Plant for increasing the capacity from1320 MW to 4520 MW by adding 3200 (4×800) MW Ultra Super Critical Thermal Power Plant under Phase – II to existing 1320 (2×660) MW, located at village Kawai, Tehsil Atru, District Baran, State Rajasthan by Adani Power Limited.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended, the power generation capacity of the proposed expansion is beyond the threshold capacity of 500MW i.e. 4x800 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

11.7.2 The Project Proponent and the accredited Consultant M/s. Gaurang Environmental Solutions Pvt. Ltd., made a detailed presentation on the salient features of the project and informed that:

i. APL, Kawai proposes to set up an Ultra Super-Critical Thermal Power Project, under Phase-II expansion, with configuration of four units of 800 MW each deploying the state-of-the-art technology in the field, to have an installed capacity of 3200 MW. The proposed project is envisaged as an expansion of the existing 1320 (2x660) MW capacity catering total capacity of 4520 MW.

ii. The Ministry had issued EC earlier vide letter no. J-13012/154/2008-IA.II(T) dated 04.05.2011 to the existing project i.e. 1320 (2x660) MW Coal based thermal power plant situated at village Kawai, in Atru the existing Taluk, in Baran District in Rajasthan in favour of M/s. Adani Power Rajasthan Limited (APRL) and subsequently, EC amendment was granted on 13.03.2014 and EC was transferred from Adani Power Rajasthan Limited (APRL) to Adani Power Limited (APL, Kawai) on 24.04.2023 by MoEF&CC.

iii. Subsequently, Consent to Operate (CTO) for operation 1320 (2x660) MW issued with validity up to 28.02.2029 from Rajasthan State Pollution Control Board (RSPCB), Jaipur, Rajasthan. APL, Kawai (2x660) MW units are operational Unit-1 from 31.05.2013 and Unit – 2 from 31.12.2013.

iv. The salient features of the project are as under: -

- **EAC Meeting Details:**

Date of earlier EAC meetings	9th EAC Meeting held on 07th May'2024 Fresh ToR of Proposed Expansion of Kawai TPP

- **Category details:**

Category of the project	A
Capacity	**3200 (4x800) MW** (expansion of TPP under Phase - II)
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

- **Project details:**

Location of TPP Village : Taluk : District : State :	Kawai Atru Baran Rajasthan
Co-ordinates of all four corners: a) TPP site; b) Ash pond site; c) township etc.	Site Coordinates of TPP including Ash Pond, Township etc.
Average height of (a) TPP site, (b) ash pond site etc above MSL (m)	a) 309 m above MSL. b) 310 m above MSL. The average altitude of site is ranging 308m to 313m above MSL.
Accredited Consultant and certificate no.	Gaurang Environmental Solutions Pvt. Ltd. NABET Accreditation No.: NABET / EIA / 2023/SA0203

Latitude	Longitude
24°48'49.45"	76°43'52.90"
24°49'52.57"	76°43'13.78"
24°49'18.09"	76°43'9.64"
24°50'16.91"	76°42'16.70"
24°50'17.26"	76°41'49.49"
24°48'52.21"	76°42'36.87"
24°48'12.53"	76°43'23.90"
24°48'7.23"	76°43'44.16"
24°47'20.05"	76°43'34.43"
24°47'17.07"	76°43'58.42"
24°47'2.40"	76°44'42.01"
24°45'43.52	76°44'29.90"

Inter- state issue involved	Yes Rajasthan-Madhya Pradesh inter-state boundary at about 7.5 km in East direction
Seismic zone	Zone-II as per IS 1893.

- **Land Area Breakup:**

Land Requirement: a) TPP Site b) Ash Pond c) Township d) Railway Siding/Coal conveyor belt & Others e) Raw Water Reservoir f) Green Belt g) others Total (if expansion state additional land requirement)	**822.541** (*Includes 1.8414 Ha. Forest Area outside power plant area for proposed Coal Conveyor*) 208 117.06 30 1.8414 (*Forest Area outside power plant area for proposed Coal Conveyor)* 65 289.44 111.2 (105.2+6) 822.541 ha (Existing-350+ Proposed 470.7)
Status of Land Acquisition:	For proposed expansion, land is already under possession with Adani Power Limited.
Status of the project: If under construction phase: please specify the reasons for delay, works completed till date and balance works along with expected date of completion. If under operation phase, date of commissioning (COD) of each unit. Whether the plant was under shutdown since commissioning, details and reasons.	**Phase-I:** 1320 (2x660) MW is commissioned and operational. **Phase-II:** Proposed Expansion of Kawai Thermal Power Plant by addition of 3200 (4x800) MW Ultra Super Critical Thermal Power Plant.

Break-Up of land-use of TPP site: a. Total land required for project components. b. Private land c. Government land Forest Land	**Total Project Land:822.541 ha** • Private Land: 820.7 ha • Forest Land: 1.8414 ha (Forest Land is *Outside power plant area for proposed Coal Conveyor* - [FC Proposal No. FP/RJ/OTHERS/467838/2024]
Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:	No, the district doesn't fall under CPA.
CRZ Clearance	Not Applicable
Whether the project is in the Critically Polluted Area (CPA)/Severally Polluted Area (SPA) or within 10 km of CPA. If so, the details thereof:	No, the district doesn't fall under CPA.

- **Presence of Environmentally Sensitive areas in the study area:**

Forest Land/ Protected Area/Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate/letter/Remarks**
Reserve Forest/Protected Forest Land	Yes	RF (Kheldi Birdaggiyan) is Adjacent to Plant Boundary. PF (Dense Mixed Jungle) is about 0.23 km in SE direction. No National Park, Sanctuary, Elephant/Tiger Reserve, or migratory routes/wildlife corridor exists within 15 km of the power station.
National Park	No	
Wildlife Sanctuary	No	
Archaeological sites monuments/historical temples etc	No	
Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites Rivers, Tanks, Reserve Forests etc. Located within 10 Km from the plant boundary:	No	

Availability of Schedule-I species in study area	No	-
Additional information (if any)	-	-

- **Project description:**

If expansion, the details of ECs (including amendments and extension of validity) of existing Units etc.	Environmental Clearance (EC) was granted by MoEFCC, New Delhi vide File no. J-13012/154/2008-IA.II(T) dated 04.05.2011 to Kawai Thermal Power Plant at Baran District, Rajasthan. Subsequently, EC amendment was granted on 13.03.2014 and EC was transferred from Adani Power Rajasthan Limited (APRL) to Adani Power Limited (APL, Kawai) on 24.04.2023 by MoEFCC.
Chronology of the Project	• APL, Kawai owns and operates 1320 (2x660) MW Coal based thermal power plant situated at village Kawai, in Atru the existing Taluk, in Baran District in Rajasthan. • Environmental Clearance (EC) was granted by MoEFCC, New Delhi vide File no. J-13012/154/2008-IA.II(T) dated 04.05.2011 to Kawai Thermal Power Plant at Baran District, Rajasthan. Subsequently, EC amendment was granted on 13.03.2014 and EC was transferred from Adani Power Rajasthan Limited (APRL) to Adani Power Limited (APL, Kawai) on 24.04.2023 by MoEFCC. • Subsequently, Consent to Operate (CTO) for operation 1320 (2x660) MW issued with validity up to 28.02.2029 from Rajasthan State Pollution Control Board (RSPCB), Jaipur, Rajasthan. APL, Kawai (2x660) MW units are operational Unit-1 from 31.05.2013 and Unit – 2 from 31.12.2013.
Amendments granted, if Yes details	EC amendment was granted on 13.03.2014

<table>
<tr><td>Expansion / Green Field (new):

(IPP / Merchant / Captive):</td><td>Expansion – 3200 (4x800) MW

(IPP)</td></tr>
<tr><td>If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the environmental and CRZ clearances of the previous phases.</td><td>EC Certified by Integrated Regional Office of MoEFCC, Jaipur vide File No. IV/ENV/R/THE-44/821/2011 dated: 26.05.2013.</td></tr>
<tr><td>Specific webpage address where all EC related documents (including monitoring and compliance related reports/documents) of the specific project under consideration are/will be available. Also contact details of PP’s officer responsible for updating this webpage/information.</td><td>https://www.adanipower.com/
&
https://parivesh.nic.in/</td></tr>
<tr><td>Co-ordinates of all four corners of TPP Site:</td><td>Site Coordinates of TPP including Ash Pond, Township etc.
<table>
<tr><th>Latitude</th><th>Longitude</th></tr>
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</table></td></tr>
</table>

Average height of: (a) TPP site, (b) ash pond site etc. above MSL	a. 309 m above MSL. b. 310 m above MSL. The average altitude of site is ranging 308m to 313m above MSL.
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:	Rs. 7000 Cr. Rs.36,600 Crores
Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).	Employment during construction phase (4 x 800 MW) is estimated to be around 8000 Nos. (Direct employment approx. 500 Nos and approx. 7500 Nos Indirect). Employment required for operation of 4 x 800 MW Units in addition to existing O&M staff is estimated around Approx. 550 Nos Direct and 1500 Nos Indirect.
Benefits of the project (specify quantitative information)	The proposed expansion project will improve the power supply position in the state as well as in India, which is vital for economic growth as well as improving the quality of life. • Infrastructure development. • Direct & indirect employment opportunity. • Revenue generation to central & state government. • Trickledown effect of enhance profitability to the local populace. • Skill development and capacity building like vocational training, income generation programmes and entrepreneurship development program • Awareness programme and community activities, like health camps, medical aides, family welfare camps, sanitization/ cleanliness awareness programme, immunization camp, sports & cultural activities, plantation, etc. • Awareness about water borne diseases and pandemic diseases etc. will be done to local villagers. • The project will also attract the high-income groups to invest in the region

	and thus bring about economic growth of the region.
Status of other statutory clearances	APL has already applied for Forest clearance/approval for Land Diversion of 1.8414 Ha
R&R details	Not applicable

- **Details of fuel and Ash disposal:**

Fuel to be used:	Coal and Auxiliary Fuel
Quantity of Fuel required per Annum:	For the Proposed Power Project of 3200 MW, the annual fuel requirement is estimated at about 12.9 MTPA at 85% plant load factor with Design Coal GCV of 3200-4300 KCal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum is about 30000 kilo liters.
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Coal from Commercial Coal Mines (GCV 3200-4300 Kcal /Kg) – Jitpur Coal Mines (>1200 km), Rampia Coal Mines (>900 km) & Gondbahera Ujheni Coal Mines (>700 km) & e-auction.
Details of mode of transportation of coal from coal source to the plant premises along with distances	Coal shall be received from Mine to TPP through Rail.
Fly Ash Disposal System Proposed a. Ash Pond / Dyke: (Area, Location & Co-ordinates) Average height of area above MSL (m) Space left in ash dyke area	Fly ash will be collected in dry form for utilization, while bottom ash will be collected in wet form. There would be provision for dry disposal of fly ash from storage silos to closed tankers for utilization in cement industries, abandoned mine reclamation, road construction, aggregate replacement in concrete, for manufacturing bricks, etc. as per Fly Ash Notification, 31st December'2021 and amendments. Provision would be kept for HCSD disposal of both bottom and fly ash to ash pond in case of exigency. In this case, both bottom ash and fly ash will be disposed through HCSD system to the proposed ash dyke.
Quantity of a. Fly Ash to be generated. b. Bottom Ash to be generated:	6.2 MMTPA 16,057 T/day 4,014 T/day

Fly Ash Utilization percentage with details in last 5 years:	(MoU with Cement/Brick Manufactures/ Others) MoU for 100% Utilization of Ash will be provided along with EC application.
Stack Height (m) & Type of Flue	120 (m) (new) Bi Flue

- **Water Requirement:**

Source of Water:	Parwan River/Dam
Quantity of water requirement:	56 MCM
Distance of source of water from Plant:	18.4 Km (as proposed from existing intake water system.)
Whether barrage/ weir/ intake well/ jack well/ others proposed:	No. After engineering & re-evaluating the existing infrastructure facilities for water withdrawal for proposed expansion of 4x800 MW, the existing infrastructure will be adequate.
Mode of conveyance of water:	Pipeline
Status of water linkage:	WRD Permission
(If source is Sea water) Desalination Plant Capacity	Not Applicable
Mode / Management of Brine:	Not Applicable
Cooling system	Induced draft

- **Court case details/violation:**

Any litigation/ Court Case pertaining to the project	Regulatory & Non-regulatory Court Cases are under hearing & Consideration and reserved for judgement.
Is the proposal under any investigation? If so, details thereof.	No.
Any violation case pertaining to the project on following: i. The Environment Protection Act, 1986 ii. The Forest (Conservation) Act, 1980. iii. The Wild Life (Protection) Act, 1972	No.
Additional information (if any)	-

v. The estimated project cost is Rs. 44864.59 Cr (proposed expansion- 36,600 Cr.) including existing investment of Rs 8264.59 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 5,992.94 Cr. and the Recurring cost (operation and maintenance) will be about Rs. 5. 2 Cr per annum considering EMP.

vi. Total Employment will be 850 persons as direct & 350 persons indirect after expansion. Industry proposes to allocate Rs 100 Cr. @ of 0.27 % towards CER (as per Ministry's OM dated 01.05.2018 & 30.09.2020).

vii. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. River Parbati is flowing at 2.93 km in NE direction.

viii. Effluent of 2000 KLD quantity will be treated through STP & ETP. The plant will be based on Zero Liquid discharge system.

ix. Power requirement after expansion will be 22000 KVA including existing 7000 KVA and will be met from self-generation, i.e AUX consumption. Existing unit has no DG sets of capacity, additionally no DG sets are used as standby during power failure. Stack (height-movable DG sets) will be provided as per CPCB norms to the proposed DG sets.

x. Existing/Proposed unit has 467 TPH Coal fired boiler. Additionally, 585 TPH Coal fired boiler will be installed. Electrostatic precipitator (ESP), No_x Control system and Flue gas desulphurisation system (FGD) with a stack height of 120 m will be installed for controlling particulate emissions within the statutory limit of 30 mg/Nm^3 for proposed boilers.

xi. Details of Solid waste/Hazardous waste generation and its management:

Name of the waste	Source	Quantity (TPA)	Mode of Disposal	Mode of Transportation
Used/Spent oil	Plant Operation	90	Registered Recyclers/ Preprocessor with SPCB	Road
Wastes or residues containing oil	Plant Operation	15	Send to authorized recyclers	Road
Empty barrels/container/contaminated liners	Plant Operation	15	Send to authorized recyclers	Road

xii. **Details of Coal Linkage:** Coal for Proposed TPP Expansion will be Domestic coal from commercial Coal Mines - Jitpur Coal Mines, Rampia Coal Mines, Gondbahera Ujheni Coal Mines & e-auction.

xiii. **Details of Coal Sourcing:** Coal (proposed expansion) will be sourced from commercial coal mines - Jitpur Coal Mines & Rampia Coal Mines, Gondbahera Ujheni Coal Mines & e-auction. (GCV-3200-4300 Kcal/Kg).

xiv. Details of Certified compliance report submitted by RO, MoEF&CC.

EC Certified by Integrated Regional Office of MoEFCC, Jaipur vide File No. IV/ENV/R/THE-44/821/2011 dated: 26.05.2013 & 09.10.2015. MoEFCC, Lucknow Office had visited the Kawai TPP dated 23rd and 24th November in 2020.

xv. Status of Litigation Pending against the proposal, if any.

Court name	Bench	Case Category	Status	Orders Directions
Apellate Tribunal for Electricity (APTEL)	Apellate Tribunal for Electricity (APTEL)	Appeal	Reserved for judgement	Regulatory and Non-Regulatory court cases are under hearing & consideration.
Status of Court cases of Kawai TPP is enclosed.				

xvi. **Ash Pond area:** As per MoEF&CC Notification S.O. 5481(E) dated 31.12.2021 and amendments stipulated ash pond area for thermal power plant 0.1 hectare per Mega Watt (MW). The proposed power plant has total ash pond area 117.06 Ha i.e. 14.2 % of the total project area 822.54 Ha (for proposed expansion - 57.06 Ha.)

11.7.3: Deliberation by the committee in the meeting:

1) Environmental Clearance (EC) was granted to existing 1320 MW TPP (2x660 MW) by MoEFCC, New Delhi vide File No. J-13012/154/2008-IA. II(T) dated 04.05.2011 to Kawai Thermal Power Plant at Baran District, Rajasthan. Subsequently, EC amendment was granted on 13.03.2014 and EC was transferred from Adani Power Rajasthan Limited (APRL) to Adani Power Limited (APL, Kawai) on 24.04.2023 by MoEFCC.

2) Total land involved in the project is 822.541 ha (Existing-350+ Proposed 470.7), this Includes 1.8414 Ha. Forest Area outside power plant area for proposed Coal Conveyor. PP has submitted the application vide proposal number

FP/RJ/OTHERS/467838/2024 for diversion of Forest Land outside power plant area for proposed Coal Conveyor.

3) EAC also noted that No National Park, Sanctuary, Elephant/Tiger Reserve, or migratory routes/wildlife corridor exists within 15 km of the power station.

4) For the Proposed Power Project of 3200 MW, the annual fuel requirement is estimated at about 12.9 MTPA at 85% plant load factor with Design Coal GCV of 3200-4300 KCal/kg. Coal linkage is proposed from Commercial Coal Mines (GCV 3200-4300 Kcal /Kg) – Jitpur Coal Mines (>1200 km), Rampia Coal Mines (>900 km) & Gondbahera Ujheni Coal Mines (>700 km) & e-auction.

5) There are total 17 court cases as on February, 2024 which are pending against the projects including one court case pending at Hon'ble Supreme Court.

6) Earlier the proposal was considered 09th meeting held on 07.05.2024 for grant wherein the EAC deferred the proposal seeking additional information. PP vide its letter dated 13.06.2024 submitted the following information:

Query 1 Complete project proposal including the land requirement for infrastructure proposed outside the TPP (Water Pipeline (ROW/ROU) shall be submitted. During the survey for the water pipeline, forest areas in part or complete, may be avoided. Final alignment of the proposed water pipeline and railway line along with land details shall be submitted.

Reply: The infrastructure facilities like water pipeline & intake already exists for operational 1320 MW TPP. After re-evaluating the infrastructure facilities for water withdrawal requirement for proposed expansion of 4x800 MW, the existing infrastructure are adequate. Hence, existing facility for water withdrawal i.e. water pipeline will be used for proposed expansion. Applicable approvals/permissions, if any will be obtained from concerned authorities before construction of project.

Observation of EAC: *The Committee observed that PP shall use the existing facilities and asked whether the same are in forest land. PP informed that these are on non-forest land.*

Query 2 A copy of the agreement (MoU) for coal linkage from Commercial coal mines shall be submitted.

Reply: Coal/Fuel Supply Agreement was executed between Adani Power Limited & Terri Mining Private Limited (Jitpur Coal Mine) for 1.75 million MTPA on 02.03.2024, Jhar Mineral Resources Pvt. Ltd. (Rampia Coal Mine) for 3.75 million MTPA on 02.03.2024 and MP Natural Resources Pvt. Ltd. (Gondbahera Ujheni coal mine) for 1.75 million MTPA on 28.03.2024 and balance requirement will be met through e-auction. Complete details will be submitted along with EC application.

Observation of EAC: *The Committee is of the view than PP shall submit the compliance of comply with OM dated 15.03.2017.*

Query 3 The school and health centre are located near the boundary to the proposed expansion, therefore detailed plan to relocate them shall be submitted.

Reply: The proposed Main plant/ BTG of APL, Kawai is about 754.49 meters away from nearest Govt School and Health Center which lies beside the school at Dara Village. However, APL, Kawai has approached Government of Rajasthan, (The Hon'ble District Collector, Baran District, Rajasthan) vide letter no. APL/Kawai/05062024/1 dated 05.06.2024 for relocation of Govt School and Health Center of Village Dara falling in proximity of the proposed TPP to a suitable location at a safer distance. Upon grant of permission for relocation, the same will be taken up in consultation with Local/Concerned Authorities and villages before commissioning of the Project, Undertaking is enclosed regarding the same. A copy of the request letter to the District Collector has been submitted.

Observation of EAC: *The Committee is of the view that EIA report shall include all these details and accordingly budget needs to be planned.*

Query 4 Status on development of the Three-tier plantation programme (33% of total project cover area) along the periphery of the project boundary shall be provided for the existing unit. Green belt Development plan for the proposed project shall also be submitted.

Reply: In existing TPP, Three-tier plantation plan/program of 33% of total project cover area along the periphery of project boundary is taken up and will be maintained. The details regarding the same is enclosed. The Green belt development plan for the proposed project covering 33% of project area will be submitted along with Final EIA & EMP Report with EC Application.

Observation of EAC: *The Committee asked that PP shall submit the geo-tagged phots of the plantation. PP vide letter dated 28.06.2024 submitted the same. The Committee is of the view that a site visit is planned for the said plant and the same may be seen during the visit. However, till that time PP shall carry out extensive plantation activities during the coming monsoon.*

Query 5 Status on permission for Water allocation of 56 MCM from Parwan River/Dam from WRD Jaipur, Rajasthan shall be submitted.

Reply: The water requirement for the proposed expansion 3200 (4x800) MW is optimized as 56 MCM/year (6400 m3/hr) sourced from Parwan River/ Dam through existing infrastructure facilities. Water Resource Department (WRD), Jaipur, Rajasthan has already allocated 34 MCM/Year water for existing operational 1320 (2x660) MW TPP from Parwan River/Dam. APL, Kawai has applied for Water allocation of 52 MCM/Year water to Water Resource Department (WRD), Jaipur, Rajasthan and balance quantity will be met through existing permission. Water Permission Letter will be submitted along with the final EIA & EMP report.

Observation of EAC: *The Committee is of the view that PP is in process of*

obtaining the same and shall provide the same in EIA.

Query 6 Alternative site location, bypassing forest area for conveyor belt and other infrastructure proposed outside the TPP shall be explored and submitted.

Reply: During site selection alternative locations were examined for Coal Conveyor corridor routes, the following points were taken into consideration:

- No wildlife sanctuary / Biosphere/ Protected Areas / Archaeological sites.
- Least/minimum forest involvement
- Higher density tree patches avoided
- No involvement of temples/ Cultural Habitats/ Schools & colleges.
- Minimum route length

The proposed forest area is the minimum area & unavoidable area.

Query 7 PP shall align its proposed activities to one/few of the Sustainable Development Goals (SDG) and start working on the mission of net zero by 2050.

Reply: APL at Business level is committed for SDG's and exploring net zero target in line with Nation Commitment.

Query 8 Explore the possibility of using the existing Ash Pond for proposed expansion or justify specific reasons for not using it. Geotagged images for the existing Ash Pond along with mitigation measures in place shall be submitted.

Reply: The existing ash pond of 60 Ha is being used for unutilized Ash from Ph-I (2x660 MW). For the proposed expansion as Phase-II, (4x800 MW) minimum Ash dyke area of 57.06 Ha is envisaged, which is much lesser and only about 18% of 320 Ha allowed as per Fly Ash Notification dated 31.12.2021 (i.e. 0.1 Ha/MW) for unutilized ash in case of emergency & during rainy season. APL, Kawai shall ensure 100% ash utilization to meet MoEF&CC guidelines.

Observation of EAC: *The Committee asked the PP why the existing ash pond area is not enough for the proposed expansion. PP vide letter dated 28.06.2024 submitted that the proposed area is in line with notification dated 31.12.2021 and they are agreeing to any direction of Hon'ble EAC in this regard. The Committee is of the view that quantum of area is one part and location of the same is another issues. The Committee therefore is of the view that PP shall get the detailed study done to accommodate the ash from the proposed expansion project to existing ash pond area to avoid setting up of a new pond near habitation.*

Query 9 Details of 10 years of satellite image data shall be submitted w.r.t forest area, land use and land pattern of 10km radius from the plant boundary.

Reply: Details of Satellite images has been submitted.

Observation of EAC: *The Committee observed that 10-year data is not analyzed properly for which PP submitted that they have requested NRSC for the same. The Committee asked for details of the communication. PP vide letter dated 28.06.2024 submitted the email sent to nrsc on 7/06/2024 for providing images.*

Query 10 Water balance chart with water conservation measures in place and proposed for expansion to be submitted.

Reply: The Water Balance Chart having provision of Water conservation measures has been submitted.

Query 11 Details of 17 court cases shall be submitted. Cases filed and involving environmental implications should be highlighted.

Reply: Details of 17 court cases are enclosed and cases are not related to the Environment/Forest, hence there is no implication. Details regarding the same has been submitted.

7) The EAC observed that the total water consumption for thermal power plants as per MoEF&CC vide Notification S.O. 3305 (E) dated 07.12.2015 for all existing CT based plants is upto maximum of 3.5 m^3/MWh and for new plants installed after the 1st January, 2017, as per MoEF&CC Notification GSR 593 (E) dated 28.06.2018 water allocated to the thermal power plant is 3 m^3/MWhr. The total water requirement for the project is 2 $m^{3/}$MWh (56 MCM/Annum) for proposed expansion which will be well within the stipulated norms of Notification dated 07.12.2015/28.06.2018.

11.7.5 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** the proposal for grant of Standard ToR for conducting an EIA study with Public Consultation (Public Hearing and Written submission) to the project for the construction of the expansion of Kawai Thermal Power Plant by addition of 3200 (4x800) MW Ultra Super Critical Thermal Power Plant to Existing 1320 (2x660) MW in an area of 822.54 Ha located at Village Kawai, Sub District Atru, District Baran (Rajasthan) by M/s Adani Power Limited, under the provisions of the EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation

1. A Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 10-km radius of the proposed project shall be

conducted and the same shall be included the in EIA/EMP report. Details of industrial units present in 10 Km radius of the power plant shall be submitted.

2. 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.

3. 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.

4. A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.

5. 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.

6. PP shall carry out extensive plantation activities during the coming monsoon and details of the same shall be presented during appraisal of EC proposal along with geo tagged photos.

7. Action plan for development of Three tier plantation programme (33% of total project cover area) along the periphery of the project boundary shall be provided. Plan shall be dully approved by the local forest department.

8. A detailed plan need to be submitted for undertaking extensive green plantation within 10 km radius of the plant focusing on water reservoir, school, hospital and other institutional area and same need to be incorporated in EIA/EMP report.

9. Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed and existing units and shall be incorporated in EIA/EMP report.

10. Details of Ash management of 5-year plan for 100 % ash utilization for proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.

11. PP shall get the detailed study done to accommodate the ash from the proposed expansion project to existing ash pond area to avoid setting up of a new ash pond.

12. Detailed plan for 100% utilization of total ash including legacy ash, if any shall be submitted. Details of Dry Ash handling system along with the supplementary coal handling system shall be submitted.

13. Proper protection measures like 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 under-construction ash pond. A high-density Slurry disposal plan shall be prepared.

14. 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.

15. Details pertaining to water source, treatment and discharge should be provided. Water allocation of 52 MCM/Year water to Water Resource Department (WRD), Jaipur, Rajasthan shall be submitted.

16. PP shall provide details of infrastructure facilities like water pipeline & intake to be used for already exists for operational TPP.

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 shall provide the details of transportation of flyash 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.

21. 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.

22. Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.

23. PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.

24. 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 a time bound action plan.

[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 Delivery 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. Demographic details in 10 km area shall be submitted.

4. PP shall prepare budget wise time bound action plan for relocation of Govt School and Health Center of village falling in proximity of the proposed TPP to a suitable location at a safer distance and details of the same shall be included in EIA/EMP report.

5. To ascertain the need of the local people a need based assessment to be done and an action plan on its recommendations may also be submitted with budgetary provisions.

[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 thesame to the EAC.
3. PP shall submit the EIA/EMP report after the plagiarism check using authenticatedplagiarism software.
4. Detailed description of all the court cases including all directions given by the apexand 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 undervarious 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 monitoringstation/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 previous public hearing conducted and fresh Public Hearing with defined timeline and budgetary provisions.

10. PP shall submit detailed plan to reallocate of nearby school, hospital and/or other sensitive infrastructure.

11. PP shall submit land use change within 10 kms radius in time series using satellite imageries.

12. 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.

13. 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.

14. The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.

15. All the certificates viz. Involvement of Forest land, 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.

16. Aerial view video of project site and transportation route proposed for this project shall be recorded through drone and be submitted.

17. PP shall comply with norms of OM J-13011/18/2014-IA. I (T) dated 15.03.2017.

18. A sub-committee of the EAC shall visit the site prior to appraisal.

19. PP shall submit 10 years of satellite image data shall be submitted w.r.t forest area, land use and land pattern of 10km radius from the plant boundary after analyzing the same.

Additional Agenda:

Report of the EAC Sub-Committee for laying of ash slurry and recovery pipelines from NCTPP Stage III to NCTPS Ash dyke (Pipeline system) of 1 x 800 MW NCTPPP Stage III at Villages Ennore & Puzhudivakkam, Ponneri Taluk, Tiruvallur District, Tamil Nadu by M/s TANGEDCO

The Expert Appraisal Committee (Thermal) in its 2nd meeting held on 31.10.2023 to 01.11.2023, suggested to constitute a sub-committee to conduct site visit before making any recommendations on the said proposal. Accordingly, the Ministry vide letter No. J-13012/14/2012-IA II(T), dated 08.03.2024 constituted a Sub-committee comprising of following members as under:

1. Shri. Inder Pal Singh Matharu -- Chairman
2. Shri. Mahi Pal Singh -- Member
3. Shri. Umesh Kahalekar -- Member
4. Dr. Saranya P -- Member

Accordingly, the sub-committee visited the site on 13-14th March, 2024 to NCTPP Stage-III plant along with the PP.

The Sub-Committee of EAC briefed the EAC about the visit report and its recommendation. It was informed to the EAC that initially a report was circulated through email but now the report with revised recommendation are submitted before the EAC. The EAC deliberated on the same and accepted the site visit report with revised recommendations. The Copy of the same is attached herewith as ***Annexure-III.***

The meeting ended with vote of thanks to the Chair.

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Annexure I

S. No.	Name & Address	Role	Attendance 27/06/24	Attendance 28/06/24
1.	Dr. Sharad Singh Negi (I.F.S. Retd.)	Chairman	Present	Present
2.	Shri Inder Pal Singh Matharu, IFS (Retd.)	Member	Present	Present
3.	Shri Lalit Kapur	Member	Present	
4.	Dr. Umesh Jagannathrao Kahalekar	Member	Present	Present
5.	Dr. Santosh Kumar Hampannavar	Member	Present	Present
6.	Shri Savalge Chandrasekhar	Member	Present	Present
7.	Shri K. B. Biswas	Member	Present	Present
8.	Prof. Shyam Shanker Singh	Member	Present	Present
9.	Dr. Vinod Agrawal	Member	Present	Present
10.	Dr Nazimuddin, Scientist - F	Representative of Central Pollution Control Board	Present	Present
11.	Shri Mahi Pal Singh, Chief Engineer	Representative of Central Electricity Authority (CEA)	Present	Present
12.	Shri Harmeet Sahaney	Representative of Indian Meteorological Department (IMD)	Absent	Absent
13.	Prof. R M Bhattacharjee	Representative of IIT/ISM Dhanbad	Absent	Absent
14.	Shri Amit Vashishtha	Member Secretary	Present	Present
MOEF&CC				
1.	Dr. Mohit Saxena	Sc'D'	Present	Present

Annexure II

Standard EC Conditions for Thermal Power Sector:

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 Notification G.S.R 02(E) dated 2.1.2014 as amended time to time regarding use of raw or blended or beneficiated/washed coal with ash content not exceeding 34% shall be complied with, as applicable.
4. MoEF&CC Notifications on Fly Ash Utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 as amended from time to time shall be complied.
5. Thermal Power Plants other than the power plants located on coast and using sea water for cooling purposes, shall achieve specific water consumption of 2.5 m^3/MWh and Zero effluent discharge.
6. The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.
7. No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.
8. Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction, necessary permission be obtained from CGWA.

B. Ash content/ mode of transportation of coal:

1. EC is given on the basis of assumption of ____% of ash content and ____km distance of transportation in rail/road/conveyor/any other mode. Any increase of %ash content by more than 1 percent, and/or any change in transportation mode or increase in the transport distance (except for rail) require application for modifications of EC conditions after conducting the 'incremental impact assessment' and proposal for mitigation measures.

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 SO_2 emissions standard of 100 mg/Nm^3.
2. Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NO_X 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 ____m shall be provided with continuous online monitoring instruments for SO_X, 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, NO_Xwithin 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.

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. Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases.
3. Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant.
4. Sewage Treatment Plant shall be provided for domestic wastewater.

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 2.5 m^3/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.
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. Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area.
5. Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities.
6. The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. conforming to the prescribed standards shall be re-circulated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.
7. Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water.
8. Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project, the treated sewage of ……..KLD from STP ….. (name) shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies.
9. Wastewater generation of …….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;
10. Sewage generation of …….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 33% of the total project with indigenous native tree species in accordance with CPCB guidelines. The green belt shall inter-alia cover an entire periphery of the plant.
2. *In-situ/ex-situ* Conservation Plan for the conservation of flora and fauna should be prepared and implemented.
3. Suitable screens shall be placed across the intake channel to prevent entrainment of life forms including eggs, larvae, juvenile fish, etc., during extraction of seawater.

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 and amendment thereto. By the end of 4th year, 100% fly ash utilization should be ensured. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry. Mercury and other heavy metals (As, Hg, Cr, Pb, etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. Flyash utilization details shall be submitted to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.
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.
6. In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up:
    i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled.
    ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.

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. Monitoring of Carbon Emissions from the existing power plant aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
5. Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
6. Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.
7. The project proponent shall (Post-EC Monitoring):

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

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

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

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

    e. monitor the criteria pollutants level namely; PM (PM_{10}& $PM_{2.5}$incase of ambient AAQ), SO_2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;

    f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB;

    g. submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company;

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

K. Corporate Environmental Responsibility (CER) activities:

1. CER activities will be carried out as per OM No. 22-65/2017-IA.II dated 01.05.2018 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.

L. Marine facilities:

1. As the seawater intake systems are required for the plant fall in CRZ area, recommendations from State Coastal Zone Management Authority (SCZMA) as per CRZ Notification shall be implemented.
2. Marine intake and outfall pipelines shall be located as per the recommendations State Coastal Zone Management Authority (SCZMA).

M. Sea Water Intake:

1. Seawater intake system shall be so designed and constructed to ensure sufficient sweater in terms of quantity and quality.
2. The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.
3. In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.

N. Effluent Release:

1. At the effluent release point, maximum temperature of the discharge water shall not be more than 5^{o}C and salinity shall not exceed 50 ppt with respect to that of the ambient seawater.
2. Use of antifouling agents like chlorine / hypochlorite, shall be carefully controlled. The chlorine concentration shall not exceed 0.2 ppm at the effluent release point.
3. The effluent when released at the selected location shall attain sufficient dilution so that near ambient water quality (particularly temperature and salinity) is attained within 500 m from the release location, at low tide.
4. The location of the diffuser shall be marked with a solar lighted buoy to avoid accidents.
5. The site selected based on mathematical modeling shall ensure absence of recirculation of the effluent plume in the seawater intake area under all tidal conditions.
6. The effluent shall be released through a properly designed multiport diffuser above the seabed to facilitate its efficient initial mixing with the receiving seawater.
7. Efficacy of the diffuser shall be ascertained at least once in 2 years through scientific studies and corrective actions such as cleaning of the diffuser from marine growth, removal of silt deposits, etc. shall be taken up, if warranted.
8. Continuous online monitoring system for Temperature and Salinity shall be installed to monitor the quality of effluent.

O. Common to intake and effluent:

1. The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafloor strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surf and intertidal zones, the pipeline shall be buried below the maximum scour level.
2. In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).

3. If the substratum is rocky the pipeline may be anchored to the rock provided the geology of the area satisfactorily supports the structure which shall be ascertained through geo-technical investigations.
4. Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.
5. The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.
6. Marine / Sea water quality shall be monitored at effluent release location at the center. Parameters to be monitored shall be as follows:
    a. *Physico-chemical:* Temperature, Salinity, pH and Dissolved Oxygen.
    b. *Biological:* Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophytin, Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).
7. In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area of ……ha, along the coast/ on the banks of ……. Estuary.

Report of the EAC Sub-Committee for laying of ash slurry and recovery pipelines from NCTPP Stage III to NCTPS Ash dyke (Pipeline system) of 1 x 800 MW NCTPPP Stage III at Villages Ennore & Puzhudivakkam, Ponneri Taluk, Tiruvallur District, Tamil Nadu by M/s TANGEDCO

The Expert Appraisal Committee (Thermal) in its 2nd meeting held on 31.10.2023 to 01.11.2023, suggested to constitute a sub-committee to conduct site visit before making any recommendations on the said proposal. Accordingly, the Ministry vide letter No. J-13012/14/2012-IA II(T), dated 08.03.2024 constituted a Sub-committee comprising of following members as under:

1. Shri. Inder Pal Singh Matharu -- Chairman
2. Shri. Mahi Pal Singh -- Member
3. Shri. Umesh Kahalekar -- Member
4. Dr. Saranya P -- Member

Accordingly, the sub-committee visited the site on 13-14th March, 2024 to NCTPP Stage-III plant along with the PP. The visit report is submitted herewith.

Background of the project:

M/s TANGEDCO had obtained environmental clearance from Ministry of Environment, Forest and Climate Change for setting up thermal power plant of capacity 1 X 800 MW on 20.01.2016. Further, MoEF&CC vide letter dated 13.04.2017 has amended the environmental clearance in line with this Ministry's Notification S.O. 3305(E), dated 07.12.2015.

The environmental clearance was issued for following activities in the CRZ area:

(i) Coal conveyor having length of 3.5 km and elevation of 6 m for coal transportation from Ennore Port to NCTPS Stage III TPP

(ii) Supporting trestles (steel frames) for coal conveyor at about 6 m/8 m from ground level

(iii) Sea water intake from forebay of NCTPS Stage II take & outlet pipe to pre cooling channel of NCTPS for discharge with intake pipe length of 3 km and outlet pipe length of 1.5 km

(iv) GRP (Glass reinforced plastic) pipes on the ground level for cooling water inlet and coolant water outlet

It is pertinent to note that ash slurry pipeline corridor in CRZ area was not part of the environmental & CRZ clearance obtained by M/s TANGEDCO. As informed during the site visit, the pipeline corridor conveyance system (ash slurry) was constructed during 2017-2018, part of which falls within CRZ zone as per approved Coastal Zone Management plan (CZMP) for which prior CRZ clearance was not obtained.

Direction of Hon'ble NGT order dated 31.01.2022

As per para 84 of the Hon'ble NGT order dated 31.01.2022 in the O.A.122 of 2021 and O.A.No. 162 of 2021, the case was disposed of as follows:

i) *The TANDGECO is directed 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 2016, without getting necessary further clearances in this respect by filling afresh application in accordance with law and the same will have to be considered by the authorities strictly in accordance with law and the direction given for this purpose cannot be treated as a direction to the authorities to grant the permission, if it is not otherwise feasible or permissible under law. This must be strictly in compliance with the decision of Hon'ble Supreme Court in Key stone realtors private limited vs. Anil V. Tharthare and ors.*

ii) *The TANGEDCO is directed to pay an Environmental Compensation of Rs. 4,12,20,000/- fixed by the Joint Committee and approved by this Tribunal to Tamil Nadu Pollution Control Board for the damage caused to environment on account of the deposit of fly ash slurry in the Kosasthalaiyar River region, over and above the compensation already remitted by them as directed by the Pollution Control Board in O.A. No. 08 of 2016 and other connected cases.*

iii) *The TANDGECO is also directed to pay an additional compensation of Rs. 50 lakh with the Tamil Nadu Pollution Control Board for the violation committed i.e. preparation for constructing the pipeline and making some attempts for that purpose in violation of the Environmental Clearance and CRZ Clearance granted and this is in addition to the compensation already directed to be paid by them for damage caused to the environment on account of deposit of fly ash.*

iv) *The TANGEDCO is directed to carry out the replacement of the old pipes as undertaken by them and as directed by this Tribunal in O.A. No. 08 of 2016 and other connected cases within the time line fixed by the Tribunal, on the basis of the undertaking given by them to avoid future breaches.*

v) ***The TANDGECO is directed to carry out recommendations made by the Joint Committee in both the cases in its letter and spirit to avoid future breaches of fly ash into the riverine area.*** *The question regarding steps to be taken for remediation process of damage caused to the environment on account of deposit of fly ash in that area for longer period will be considered by this Tribunal including any further compensation to be paid on the basis of the recommendations to be made by Committee already appointed by this Tribunal in O.A. No. 08 of 2016and other connected cases.*

vi) *The TANDGECO is also directed to take steps to remove the fly ash already deposited in that area, as directed by the Joint Committee as well as the Pollution Control Board at the earliest possible time to reduce the impact of damage to riverine environment any further.*

vii) *The TANDGECO is also directed to take necessary steps to avoid leakage through pipes and they must hold vigil by regular inspection of the old pipe lines till such time their replacement is completed and take immediate steps to arrest breaches, if*

any, during the interregnum. The amount of compensation directed to be paid on two counts are to be deposited by TANDGECO with Tamil Nadu Pollution Control Board which they can utilise for the purpose of protecting Kosasthalaiyar River as well Ennore creek in that area to restore the damage caused to environment and also to provide necessary protection to prevent encroachments in that areas in future and avoid further environmental damage as well as riverine damage in that area.

viii) *As regards the action to be taken for violations committed by TANDGECO in violation of Environmental Clearance and CRZ Clearance, the respective regulators, namely, MoEF&CC and State Coastal Zone Management Authority are directed to take necessary action against TANDGECO in accordance with law.*

ix) *As regards O.A.No. 122 of 2021 is concerned, since it is filed by a private person in order to protect environment, we feel that TANGEDCO can be directed to pay a cost of Rs. 25,000/- to the applicant in that case.*

x) *If the above amounts including the compensations and costs are not paid within three months from today, then the Pollution Control Board and the applicant are entitled to initiate proceedings for recovery of the same under Section 25 of the National Green Tribunal Act, 2010 or through District Collector for recovery of the amount invoking Revenue Recovery Act, 1890 in accordance with law.*

xi) *The Registry is directed to communicate this order to the official respondents including TANGEDCO for their information and necessary compliance.*

Report of the Joint Committee appointed by Hon'ble National Green Tribunal (SZ) in case of O.A. No. 162 of 2021:

In case of O.A. No.162 of 2021, the Hon'ble National Green Tribunal (SZ) the Hon'ble Tribunal in the order dated 07.06.2021 appointed a joint committee comprising of

1) The District Collector, Tiruvallur District
2) A senior Officer from Ministry of Environment, Forest and Climate Change (MoEF&CC)
3) A senior Officer/Scientist from Central Pollution Control Board (CPCB), Integrated Regional Office, Chennai
4) The Superintending Engineer from Public Works Department (PWD) and water Resources Organization (WRO), Chennai
5) A senior Officer from Tamil Nadu Coastal Zone Management Authority (TNCZMA), Chennai and
6) A Senior Officer from Tamil Nadu Pollution Control Board

as designated by its Chairman to inspect the area in question and submit a factual as well as action taken report if there is any violation found. Accordingly, the committee submitted the report on 14.09.2021. Subsequently, in due compliance of the order of the Hon'ble Tribunal, the joint committee inspected the area in question and convened a meeting with NCTPS Power plants officials on 20.10.2021 and in response to the Hon'ble NGT order dated 24.09.2021, the NCTPS Stage I, II, III and IV (Ennore SEZ) have furnished the following information to the committee as per ***Annexure -1.***

Recommendations of TNCZMA

Tamil Nadu Coastal Zone Management Authority (TNCZMA) had considered the proposal for amendment in the CRZ clearance for the laying of ash slurry and recovery water pipelines from the NCTPS stage III to NCTPS Ash Dyke (pipeline system), based on the recommendations of the DCZMA and recommended the proposal vide letter No.6269/EV.3/2023-1 dated 18.08.2023, with following conditions:

- All the recommendations in the Environmental Management Plan shall be followed
- The project proponent shall ensure that their activity shall have least interference to the Mangroves, that are found in the Buffer Zone
- The project proponent, in consultation with the Forest Department, formulate and implement plans for the conservation and maintenance of the Mangrove in the vicinity of the project
- There should not be any damage to flora and fauna
- Utmost care should be taken to avoid any leakage from the pipeline
- Proper monitoring should be done to detect any leakage in the pipeline including monitoring through CCTV. If any such incident is found unchecked, action will be taken by concerned Authorities in addition to imposing environmental compensation.
- Monthly monitoring report has to be furnished to Tamil Nadu Pollution Control Board
- The Pier structure should not disturb the free flow of water in the Kosathalaiyar River.

Observations of the EAC Sub-Committee

(i) Ash slurry pipeline Corridor:

For Stage III NCTPS, three ash slurry pipelines are proposed and one water recovery pipeline is proposed. Almost 65% of the construction activities were completed and then stopped as per Hon'ble NGT directions. Thereafter, the project proponent has applied for amendment in the existing EC+CRZ clearance for inclusion of dedicated ash slurry pipeline.

The activities in CRZ area including Buckingham Canal and Kosasthalaiyar River is as under:

CRZ classification	*Length (m)*	*Area (sq.m)*	*Total length (m)*	*Total footprint (sq.m)*
CRZ 1A (50 m buffer from Mangroves)	271.1	34	6813.25	2550
CRZ 1B	141.15	78		
CRZ II	902.45	1250		
CRZ IV B	59.01	65		
Outside CRZ	5439.54	1123		

During the visit, it was informed that in NCTPS Stage- I, 5 Nos of Ash slurry disposal lines are laid from Ash handling pump house to ash dyke. Pipeline 2 & 3 has been replaced due to frequent leakages and puncture of pipelines. For stage II NCTPS plant, 5 Nos (3 ash slurry pipeline and 2 recovery water pipelines) are being used.

(ii) Present Scenario of Ash Pond:

Ash dyke consist of primary pond (115 Ha) and secondary pond (15.5 Ha). The capacity of the pond is 57.5 lakh cu.m. The water from ash dyke is being collected in guard pond by gravity and being reused in mixing with bottom ash for disposal to ash pond/dyke. As reported the stock of ash as on date is 26.96 lakh cu.m in ash pond. The project proponent has submitted that 100% dry ash system is envisaged and fly ash will be disposed off in nearby cement plants and other units like brick making etc. It is also proposed to utilize the existing ash dyke of NCTPS for bottom ash disposal in case of emergency only.

Ash Generation (Stage-III)

S. No.	Description	Quantity (TPD)	Remarks
1	Fly ash	645.12	Assuming 1.1 tons ash requires 1 cu.m of land, ash dump height assumed to be 5 m. Ash pond area required to achieve 100% utilization is 17 acres (7 Ha)
2	Bottom Ash	161.28	
3	Total ash	806.4	

(iii) Meeting with local fishermen/villagers on the representation received on the project:

The Expert Appraisal Committee (Thermal) had received a representation from Fishermen Welfare Association on 28.11.2023 requesting the EAC Sub-Committee to give them an opportunity to submit their concerns.

Accordingly, the sub-committee heard the representatives' viz. Shri. R.L. Srinivasan and Shri. Karunakaran from Kattukuppam village on 14.02.2023 in Stage III NCTPS site office. During the meeting, the major concerns raised were:

(a) Leakage of ash slurry from ash slurry pipelines (NCTPS Stage I, II) and deposited in the water stream around,
(b) Air pollution due to the existing thermal plant,
(c) Adequacy of existing ash dyke to accommodate ash slurry from proposed Stage III NCTPS.
(d) Employment for local people

The submissions made by the project proponent w.r.t above concerns of the local villagers/fishermen are as under:

(a) NCTPS Stage- I, 5 Nos of Ash slurry disposal lines are laid from Ash handling pump house to ash dyke. Pipeline 2 & 3 has been replaced due to frequent

leakages and puncture of pipelines. For the remaining pipelines, tenders have been floated for replacement and till then those pipelines are not being used.

(b) The TANGEDCO has told that regular monitoring is being done regarding this issue and all mitigating measures are being taken from time to time.

(c) Ash dyke consist of primary pond (115 Ha) and secondary pond (15.5 Ha). The capacity of the pond is 57.5 lakh cu.m. The stock of ash as on date is 26.96 lakh cu.m in ash pond.

(d) During maintenance phase, the tender are being floated with a condition that 10% local people have to be engaged for work as per their skills by the contractors.

Revised Recommendations of the EAC Sub-Committee

Based on the site inspection, the following recommendations were made by the sub-committee as follows:

The Sub-committee observed that NCTPS stage-III of 1x800 MW has completed constructed and the plant has started its oil synchronization process as informed by concerned authorities.

a. The first recommendation of the committee appointed by the Hon'ble National Green Tribunal (SZ) during September 2021 reads as 'The TANGEDCO shall resume the activities pertaining to the NCTPS Stage III and Ennore SEZ Power Plants within the CRZ area in Kosasthalaiyar River/Buckingham Canal/Backwaters only after obtaining amendment to the existing CRZ Clearance from MoEF&CC'. Subsequently as per para 84 of the Hon'ble NGT order dated 31.01.2022 in the O.A.122 of 2021 and O.A. No. 162 of 2021, ***The TANDGECO is directed to carry out recommendations made by the Joint Committee in both the cases in its letter and spirit to avoid future breaches of fly ash into the riverine area.***

b. ***Further, the recommendation of the proposal for ash slurry pipeline falling within CRZ area, can be considered as fresh proposal as per directions of Hon'ble NGT vide order dated 31.01.2022 and as per extant norms of the EIA Notification and CRZ Notification.***

c. *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.*

d. ***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 .*

e. ***Adequacy report*** *from Competent Authority on existing ash dyke capacity to accommodate the proposed ash slurry from Stage III NCTPS shall be submitted.*

f. *The conditions of TNCZMA shall be followed.*

g. *The legal advice on these recommendations can be obtained from MoEF&CC legal wing in the light of NGT order dated 31st January 2022 on O.A. No.122 of 2021 and O.A. No.162 of 2021.*

(Mahi Pal Singh)	(Umesh Kahalekar)	(Dr. Saranya P.)
EAC Sub-Committee Member	EAC Sub-Committee Member	EAC Sub-Committee Member

(Inder Pal Singh Matharu)
EAC Sub-Committee
Chairman

Photographs of the site inspection carried out by the EAC Sub-Committee


Shot on vivo Z1x
Vivo AI camera

NORTH CHENNAI THERMAL POWER PROJECT-STAGE-III

Meeting with Officials from Ministry of Environment Forest & Climate Change on 13.03.2024 at NCTPP-III site conference hall

SI.NO	NAME	DESIGNATION	SIGNATURE
	EAC – Sub Committee Officials		
1	Shri Inder Pal Singh Matharu	Chairman	
2	Shri Mahi Pal Singh	Member	
3	Shri Umesh Kahalekar	Member	
4	Dr. Saranya P. (RO Chennai)	Member	
	TANGEDCO		
1	Er.Parameshwaran	CE/Projects (I/c)	
2	Er.N. Mala	CE/NCTPP-III	
3	Er.S. Marimuthu	CE/C/Uppur TPP	
4	Er.P. Rajadurai	SE/Civil.	
5	Er. Gurumoorthy	SE/Mech.,/Commissioning	
6	Er.P. Ramachandran	EE/Civil 3	
7	Er.P. BALASUBRAMANIAN	EE/ CIVIL	
8	Er. S. Pandisthurai	SE/civil/PTE	
9	Er. S. ESAKKI	EE/C-2	
10	Er. P. Selvarajan	EE/MI	
11	S. SIVARAJA	AEE/N/D-2	
12			
13			
14			

15	Sathya.S	Cholamandalam MS Risk services	
16	Manjit S	Cholamandalam MS Risk Services	
17	C. Dhandayuthapany	EE/E/Projects, TANGEDCO	
18	N. SRINIVASAN	EE Tech cell / HQ TANGEDCO	
19			
20	C. Venkatesh	JE/C/NCTPP stage II	
21			
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30			
	Consultant		
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2			

NORTH CHENNAI THERMAL POWER PROJECT-STAGE-III

Meeting with Officials from Ministry of Environment Forest & Climate Change on 14.03.2024 at NCTPP-III site conference hall

SI.NO	NAME	DESIGNATION	SIGNATURE
	EAC – Sub Committee Officials		
1	Shri Inder Pal Singh Matharu	Chairman	
2	Shri Mahi Pal Singh	Member	
3	Shri Umesh Kahalekar	Member	
4	Dr. Saranya P. (RO Chennai)	Member	
	TANGEDCO		
1	Er.Parameswaran	CE/Projects (i/c)	14/3/24
2	Er.N. Mala	CE/NCTPP-III	14/3/24
3	Er.P. Rajadurai	SE/Civil.	
4	Er. V. ILANGO	EE/AHP/NCTPS-I	
5	P. VIBEESHNAN	EE/AHP/NCTPS-II	14/3/24
6	S. Vijayan	AEE/AHP/NCTPS	
7	G. MURUGAN	AEE/AHP/NCTPS-II	
8	V. CHOWDRY SEKARAN	HBT/ICHS/NCTPS	
9	S. PANDITHURAI	SE/C/P&C	
10	N. SRINIVASAN	EE/C/GMC	
11	T. SENTHILKUMAR.	SLAO/NCTPP III	
12	S. Baskaran	EE/Civil/ABWIV	
13	P. BALASUBRAMANIAN	EE/C/Dn.I	
14	S. BSAKKI	EE/C-2	

15	Sathya.S	Cholamandalam MS Risk	
16	MANOJ.E.S	Cholamandalam MS Risk	
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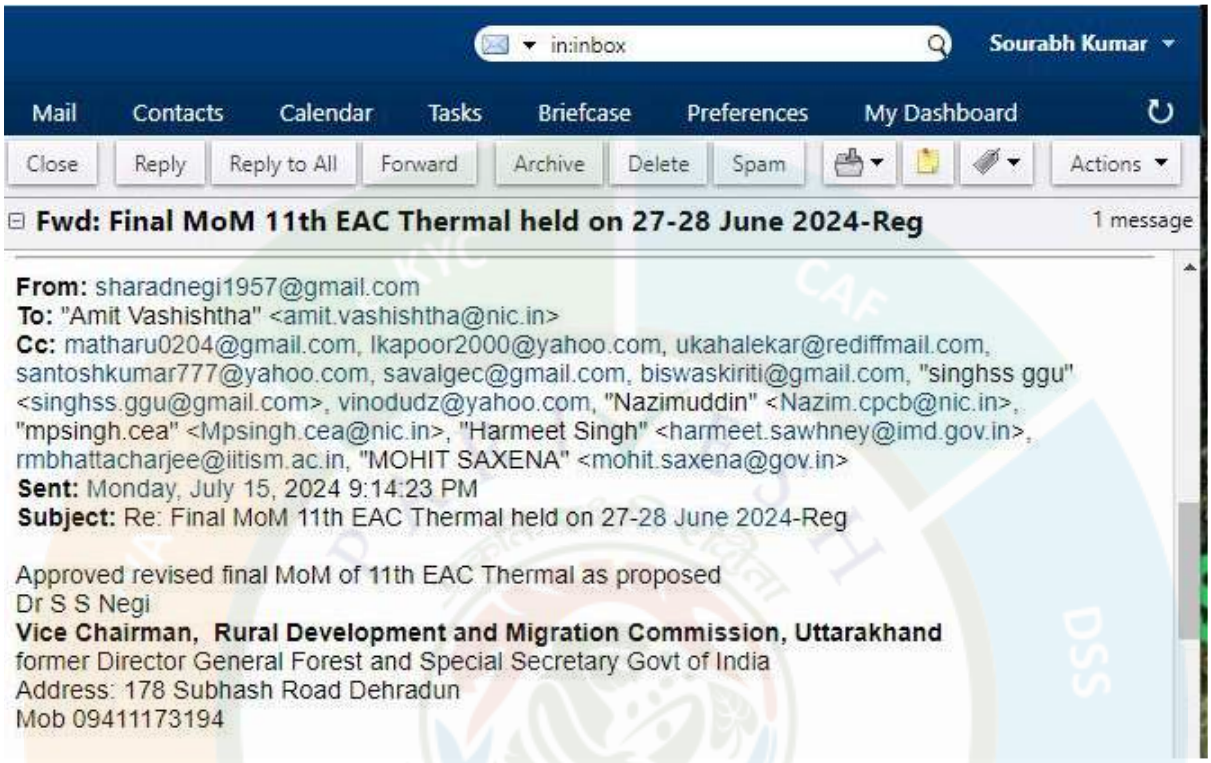
	Representatives from Local Fishermen Community		
1	R.L. Srinivasan	Kattu Kuppam	
2		9962733450	
3	Karunakaran	Kattu Kuppam	M. Karunakaran
4			

APPROVAL OF THE CHAIRMAN



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Sourabh Kumar

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Fwd: Final MoM 11th EAC Thermal held on 27-28 June 2024-Reg 1 message

From: sharadnegi1957@gmail.com
To: "Amit Vashishtha" <amit.vashishtha@nic.in>
Cc: matharu0204@gmail.com, lkapoor2000@yahoo.com, ukahalekar@rediffmail.com, santoshkumar777@yahoo.com, savalgec@gmail.com, biswaskiriti@gmail.com, "singhss ggu" <singhss.ggu@gmail.com>, vinodudz@yahoo.com, "Nazimuddin" <Nazim.cpcb@nic.in>, "mpsingh.cea" <Mpsingh.cea@nic.in>, "Harmeet Singh" <harmeet.sawhney@imd.gov.in>, rmbhattacharjee@iitism.ac.in, "MOHIT SAXENA" <mohit.saxena@gov.in>
Sent: Monday, July 15, 2024 9:14:23 PM
Subject: Re: Final MoM 11th EAC Thermal held on 27-28 June 2024-Reg

Approved revised final MoM of 11th EAC Thermal as proposed
Dr S S Negi
Vice Chairman, Rural Development and Migration Commission, Uttarakhand
former Director General Forest and Special Secretary Govt of India
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