



File No: J-13012/12/2011-IA.II (T)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division



Dated 29/07/2024



To,

Sh. Santosh Kumar Singh
M/s MIRZAPUR THERMAL ENERGY (UP) PRIVATE LIMITED
Mirzapur Thermal Energy (UP) Private Limited, Adani Corporate House, Shantigram, Near Vaishno Devi Circle, S. G. Highway, Khodiyar, Ahmedabad 382 421, Gujarat, India, Ahmedabad, AHMADABAD, GUJARAT, ACH, Shantigram, Vaishnodevi Circle, S.G Highway., 382421
E-mail: mirzapur.env@gmail.com

Subject: **Proposal of 2x800 MW Coal based Ultra Super Critical Thermal Power Project (TPP) at Village Dadri Khurd, Tehsil, Mirzapur Sardar, District Mirzapur, Uttar Pradesh by M/s Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL). – Grant of Terms of Reference - regarding**

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project 2x800 MW Coal based Ultra Super Critical Thermal Power Project (TPP) at Village Dadri Khurd, Tehsil, Mirzapur Sardar, District Mirzapur, Uttar Pradesh by Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL). submitted to Ministry vide proposal number IA/UP/THE/467671/2024 dated 08/05/2024.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO24A0601UP5665287N
(ii) File No.	J-13012/12/2011-IA.II (T)
(iii) Clearance Type	TOR
(iv) Category	A
(v) Project/Activity Included Schedule No.	1(d) Thermal Power Plants
(vi) Sector	Thermal Projects 2x800 MW Coal based Ultra Super Critical Thermal Power Project (TPP) at Village Dadri Khurd, Tehsil, Mirzapur Sardar, District Mirzapur, Uttar Pradesh by Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL).
(vii) Name of Project	
(viii) Name of Company/Organization	M/s MIRZAPUR THERMAL ENERGY (UP)

(ix) Location of Project (District, State)	PRIVATE LIMITED MIRZAPUR, UTTAR PRADESH
(x) Issuing Authority	MoEF&CC
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

3. M/s Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL) has made an application online vide proposal no IA/UP/THE/467671/2024 dated 08/05/2024 in the prescribed format (Form-I) and submitted a pre-feasibility report for undertaking a detailed EIA study as per the EIA Notification, 2006 for grant of Terms of Reference (ToR) to 2x800 MW Coal based Ultra Super Critical Thermal Power Project (TPP) at Village Dadri Khurd, Tehsil, Mirzapur Sardar, District Mirzapur, Uttar Pradesh by M/s Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL).

4. 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 proposed expansion is beyond threshold capacity of 500MW i.e. 2 x 800 MW (1600 MW) and requires appraisal at Central level.

5. The instant Proposal was considered in the 10th EAC (Thermal) meeting held on 10th June 2024. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed at <https://parivesh.nic.in>.

Details submitted by the project proponent

6. Project Proponent along with the QCI NABET consultant M/s. Gaurang Environmental Solutions Pvt. Ltd made the detailed presentation and apprised following to the EAC:

i. Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL) is proposed to setup a coal based Ultra Super Critical Technology Thermal Power Project (USCTPP) of 1600(2X800) MW in Village Dadri Khurd, District Mirzapur, State Uttar Pradesh.

ii. Previously, M/s. Welspun Energy UP Pvt. Ltd. (WEUPPL) proposed to set up 2x660 MW Super Critical Coal based thermal power plant at Village Dadri Khurd, Tehsil Mirzapur, Uttar Pradesh. The Ministry of Environment, Forest & Climate Change (MoEFCC) had granted Environmental Clearance for 1320 (2x660) MW vide F. No: J-13012/12/2011-IA II(T) dated 21.08.2014 and subsequently, name changed to Welspun Energy UP Pvt. Ltd. (WEUPPL) to Mirzapur Thermal Energy UP Pvt. Ltd. (MTEUPPL) Vide Letter No. F. No: J-13012/12/2011-IA II(T) dated 20.12.2019.

iii. Earlier, Hon'ble NGT, Principal Bench, Delhi in their judgement dated 21.12.2016 set aside the Environmental Clearance (EC) dated 21.08.2014. Further, in Judgement dated 01.05.2017, a clarification was issued, that "the Project Proponent is at liberty to approach the MoEF&CC or any other competent authority for processing of the application for grant of EC upon making up for /rectifying the defects and deficiencies pointed out in the judgement".

iv. MTEUPPL had submitted the revised Form-I & supporting documents - Study Reports as suggested by MoEFCC for EC amendment, which was appraised by the EAC (Thermal Power) in its meetings held on 24.07.2017 and 22.02.2019. The EAC in its meeting held on 22.02.2019 recommended for EC amendment.

v. The MoEFCC vide letter no. J-13012/ 12/2011-IA.II(T) dated: 20.12.2019 suggested for providing/submitting the Stage-I Forest Clearance for further issuance of EC amendment letter. MTEUPPL had not submitted the same and the EC amendment letter was not issued. PP now submitted a fresh proposal for EC.

vi. Pre-Construction activities & Planning has been completed and construction work not started yet.

vii. Now the proposal has changed from 2x660 MW to 2x800 MW and almost 10 years have lapsed, a new reference (De Novo) is being made through this application for grant of ToR.

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

Project Details

S. No.	Particulars	Details
i.	Category of the project	A
ii.	Capacity	1600 (2 X 800) MW
iii.	Location of TPP	Village Dadri Khurd, Tehsil, Mirzapur Sardar, District Mirzapur, Uttar Pradesh
iv.	Average height	(a) TPP site: 198 m above MSL (b) Ash pond site: 195 m above MSL.
v.	Accredited Consultant and certificate no.	M/s Gaurang Environmental Solutions Pvt. Ltd. NABET Accreditation No.: NABET / EIA / 2023/SA0203
vi.	Inter- state issue involved	No
vii.	Seismic zone	Zone-III as per IS 1893.

Land Area Breakup:

Land Requirement:	365.19 ha.
a) TPP Site	85.80 ha
b) Ash Pond	49.37 ha
c) Township	11.57 ha
d) Railway Siding & Others	64.14
e) Raw Water Reservoir	33.18 ha
f) Green Belt	120.51 ha
g) others	0.62
Total (if expansion state additional land requirement)	Total: No additional land is required.
Status of Land Acquisition:	The land required for proposed project is already under possession except Govt. & Forest like area (Jhari)
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.	Proposed project is at planning stage and no construction activities have been commenced at the site.
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: 365.19 ha · Private Land: 364.57 ha · Forest Land: 0.62 ha (Application was submitted for same area but after the Joint inspection of DFO (Forest Office) & SDM (Revenue) was held on 03.04.2024 confirming that the above area is Non-Forest Land. This area will be used for plantation / green belt purposes only.)
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)/Severely Polluted Area (SPA) or within 10 km of CPA. If so, the details thereof:	No, the district doesn't fall under CPA/SPA.

Details of fuel and Ash disposal:

Fuel to be used:	Coal and Auxiliary Fuel
Quantity of Fuel required per Annum:	Coal - 6.4 Million MTPA Auxiliary Fuel- 15000 KL per annum
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Coal for the Proposed project will be Domestic coal from commercial Coal Mines of NCL / SECL / CCL & Commercial Coal Mines. (Design Coal GCV of 3200-4300 KCal/kg.). Auxiliary liquid fuels, viz. LDO/HSD requirement per annum is about 15000 kilo liters.
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 BG Rail Wagons. Total distance from the source to Rail: about 250 - 550 km.
Fly Ash Disposal System Proposed	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.
a) Ash Pond / Dyke: (Area, Location & Co-ordinates) Average height of area above MSL (m) b) Space left in ash dyke area	Area-49.37 ha 25° 0'1.67"N 82°40'33.12"E 195 m above MSL. Area- 49.37 ha
Quantity of a) Fly Ash to be generated b) Bottom Ash to be generated:	10,035 TPD 8028 TPD 2007 TPD
Fly Ash utilization percentage with details in last 5 years	No fly ash generated in last five years as this is a green field (De Novo) project
Stack Height (m) & Type of Flue	120 (m) (new) Bi Flue

ix. The estimated project cost is Rs. 18,300 Cr. Total capital cost earmarked towards environmental pollution control measures is Rs. 3012.39 Cr. and the Recurring cost (operation and maintenance) will be about Rs 3.0 Cr per annum considering EMP.

x. Total Employment will be 275 persons as direct & 25 persons as indirect. Industry proposes to allocate Rs. 48.5 Cr. towards CER (as per Ministry's OM dated 30.09.2020).

xi. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site except Reserved forests, temples and BHU (South Campus) exist within the study area from the project site. Upper Khajuri Dam is at a distance of 6.0 km in the WEST direction and few other water bodies exist within the study area from the project site.

xii. Effluent of 1080 KLD quantity will be treated through STP & ETP. The plant will be based on a Zero Liquid discharge system.

xiii. Power requirement after will be 7.5 and will be met from self-generation, i.e. AUX consumption. The existing unit has no DG sets, additionally, no DG sets are used as standby during power failure. Stack (height-movable DG sets) will be provided as per CPCB norms for the proposed DG sets.

xiv. The existing unit has no boiler. Additionally, a 585 TPH coal-fired boiler will be installed. Electrostatic precipitator (ESP), NOx 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/Nm³ for proposed boilers.

xv. Details of Solid waste/ Hazardous waste generation and its management are given below-

Name of the waste	Source	Quantity (TPA)	Mode of Disposal	Mode of Transportation
Used/Spent oil	Plant Operation	60	Registered Recyclers/ Pre-processors with SPCB	Road
Wastes or residues containing oil	Plant Operation	10	Send to authorized recyclers	Road
Empty barrels/container/contaminated liners	Plant Operation	12	Send to authorized recyclers	Road

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 49.37 ha i.e. 13.51% of the total project area 365.19 ha which is well within the norms.

xvii. Water Requirement: 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 3200 m3/h, (2m3/MWh) which will be well within the stipulated norms of Notification dated 07.12.2015/28.06.2018.

xviii. The water drawl permission of 36 MCM/year is obtained from WRD Uttar Pradesh Vide letter no. 3613/11-27-C.0-4-174/11 dated 09.10.2011.

xix. Details of Coal Linkage: Coal for the Proposed project will be Domestic coal from commercial Coal Mines of NCL / SECL / CCL & Commercial Coal Mines.

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

Court name	Bench	Case Category	Status	Orders Directions
Local Court	Local Court	WP(Civil)	Reserved for judgement	Regulatory and Non Regulatory court caes are under hearing & consideration.
NGT court Case	NGT, Principal Bench, Delhi	Appeal	Disposed Off	In December' 2016, NGT judgement set aside the EC of the 1320 MW TPP at Mirzapur and vide their judgment in May'2017, that Project proponent is at liberty to approach the MoEFCC or any other competent authority for processing of the applications for grant of EC upon making up for rectifying the defects and deficiencies pointed out in the judgment. However, the authorities concerned are at liberty to process the same in accordance with law while strictly adhering to the content of the judgment.

Deliberations of the Committee

7. The EAC noted the following:

i. The proposal is for the grant of Terms of Reference (ToR) to 2x800 MW Coal based Ultra Super Critical Thermal Power Project (TPP) at Village Dadri Khurd, Tehsil, Mirzapur Sardar, District Mirzapur, Uttar Pradesh by Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL). The committee noted that earlier, M/s. Welspun Energy UP Pvt. Ltd. (WEUPPL) proposed to set up a 2x660 MW Super Critical Coal-based thermal power plant and MoEF&CC granted EC for 1320 (2x660) MW vide letter no. F. No: J-13012/12/2011-IA II(T) dated 21.08.2014 and subsequently, name changed to Welspun Energy UP Pvt. Ltd. (WEUPPL) to Mirzapur Thermal Energy UP Pvt. Ltd. (MTEUPPL) vide Letter No. F. No: J-13012/12/2011-IA II(T) dated 20.12.2019.

ii. It was noted by the EAC that in 2016, Hon'ble NGT, Principal Bench, Delhi vide Judgement dated 21.12.2016 set aside the Environmental Clearance (EC) dated 21.08.2014. Further, in the Judgement dated 01.05.2017, it was clarified that "the Project Proponent is at liberty to approach the MoEF&CC or any other competent authority for the processing of the application for grant of EC upon making up for rectifying the defects and deficiencies pointed out in the judgement". Accordingly, PP applied for amendment in EC in 2019 but the same was not issued due to non-submission of the Stage-I FC.

iii. It was observed by the committee that as per the KML file, no construction work has been started yet and now PP has proposed a thermal power plant with a change in capacity from 2x660 MW to 2x800 MW for obtaining prior environmental clearance (De Novo).

iv. The Committee also deliberated on the land use and observed that previous EC was granted over an area of 354.1 Ha (875 acres as per EC dated 21.08.2014) but now the proposal is for 365.19 Ha. The EAC deliberated on land use pattern and PP informed that the area is barren land, further EAC asked PP to submit existing Land Use pattern of the Project Site. Accordingly, PP vide letter dated 10.06.2024 submitted the following:

The proposed Land area for the project is 365.19 Ha. Land as per Government of Uttar Pradesh land records and land use details are as under:

S. No.	Type of Land	Area (in ha)	Remarks
a.	Industrial Land (Private Land converted for industrial use.) Currently the land is barren and under possession.	333.19	Land use map prepared using satellite imagery and GIS is enclosed as Annexure – I. Copy of order & summary of land documents is enclosed as Annexure – II. Based on the Land allotment and Land converted for industrial purpose by order of District Magistrate, Sadar Mirzapur, Govt. of U.P Order dated: 05.11.2012.
b.	Govt. Land	31.38	Application for land allotment was submitted on dated 22.03.2024 & 22.05.2024. Copy of receipt the application is enclosed Annexure - III.
c.	Forest like area	0.62	The application was submitted for diversion of forest area (forest-like area) but after the Joint inspection of DFO (Forest Office) & SDM (Revenue) held on 03.04.2024, it was confirmed that the above area is Non-Forest Land. Copy of Joint inspection report enclosed Annexure - IV. However, as per the directions of Hon'ble committee members, this area will be used for plantation / green belt purposes only

The Committee observed that PP has reported an area of 0.62 Ha (forest land) inside the plant boundary but at the same time applied for FC over an area of 4.0123 vide proposal No FP/UP/OTHERS/470227/2024 dated 22/04/2024. Further, PP submitted that application was submitted for the same area (0.62 Ha) but after joint inspection of DFO (Forest Office) & SDM (Revenue) was held on 3.04.2024 confirming that the above area is non-forest land. In addition to this PP also reported in PFR that there is a forest involvement in water pipeline (5.8162 ha) and approach road (2.5419 ha). Stage I Forest Clearance has already been applied for this vide Proposal no. FP/UP/THE/14236/2015 and the same is under due consideration with MoEF&CC. The Committee is of the view that although PP has submitted a copy of joint inspection report but for more clarity PP shall obtain a letter in this regard from concerned forest department clearly mentioning the extent of forest land involved within and outside (other activities related to plant) plant area. The EAC also suggested that while preparing the EIA/EMP report, PP shall explore the possibility of optimizing forest land requirement to the extent possible and submit a detailed note on the same at the time of EC presentation. In case of any increase in forest land PP shall obtain the amendment in ToR.

v. PP showed the KML file and Topo-Sheet of the project area. The Committee observed that as per KML the area is barren land but some water bodies/nallha passing through the project area. The Committee therefore asked the PP to submit a drainage map with contours. PP vide letter dated 10.06.2024 submitted project area drainage map with contour. The Committee is of the view that PP shall submit a plan for diversion of nallha/water body, if any, involved in the project. PP shall also obtain the permission for such diversion from the concerned authorities.

vi. The Committee observed that PP has submitted that Coal for the proposed project will be Domestic coal from commercial Coal Mines of NCL / SECL / CCL & Commercial Coal Mines. But PP has not submitted the quantity of coal that will be used for the proposed plant, accordingly, PP vide email dated 10.06.2024 submitted that the annual requirement of coal is estimated to be about 6.4 million MTPA for Ultra Super Critical Boiler based TPP (2x800 MW) Coal from Coal Mines of NCL / SECL & Commercial Coal Mines. The Coal will be transported through Rail as per the rules, regulations & terms/conditions of the Indian Railway for transportation of Coal. The Committee is of the view PP shall submit the firm coal linkage, quality of coal and propose mitigative measures in the EIA/EMP report after referring to the OMs issued by MoEF&CC in this regard.

vii. The Committee also observed that PP has submitted a PPT for expansion but it's a green field project and asked the PP to submit the revised PPT. PP vide email dated 10.06.2024 submitted the revised PPT and basic information.

viii. Further, the EAC noted that the total water requirement for the expansion project is 3200 m³/h (~2 m³ /MWh), which is well within the stipulated limits mentioned in the Notification dated 28.06.2018. The water drawl permission of 36 MCM/year is obtained from WRD Uttar Pradesh Vide letter no. 3613/11-27-C.0-4-174/11 dated 09.10.2011.

ix. Additionally, the Committee noted that total power generation will be 1600 MW (2x800 MW). Further, as per MoEF&CC Notification S.O. 5481(E) dated 31.12.2021 and amendments stipulated ash pond area for the thermal power plant is 0.1 hectare per Mega Watt (MW), which works out to be 160 Ha. The proposed power plant has a total ash pond area of 49.37 ha i.e. 13.51% of the total project area 365.19 ha which is well within the area suggested as per Notification dated 31.12.2021.

x. The Committee is also of the view that PP while preparing the EIA/EMP Report and conducting Public consultation shall take into account, the deficiency pointed out by the Hon'ble NGT Judgment 21.12.2016.

Recommendations of the Committee:

8. The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** the proposal for grant of ToR for conducting an EIA study with Public Consultation (Public Hearing and Written submission) to the project for the construction of the 2x800 MW Coal based Ultra Super Critical Thermal Power Project (TPP) at Village Dadri Khurd, Tehsil, Mirzapur Sardar, District Mirzapur, Uttar Pradesh by **M/s Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL)**, under the provisions of the EIA Notification, 2006, as amended with the specific ToRs in addition to generic/standard ToR.

9. In accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and based on the recommendations of the EAC, the Ministry hereby accords Terms of Reference (ToR) to M/s Mirzapur Thermal Energy (UP) Private Limited (MTEUPPL) for the construction of the 2x800 MW Coal based Ultra Super Critical Thermal Power Project (TPP) at Village Dadri Khurd, Tehsil, Mirzapur Sardar, District Mirzapur, Uttar Pradesh under EIA Notification, 2006 (as amended) with the specific ToRs in addition to generic/standard ToR as per **Annexure 1**.

10. The EIA/EMP report should contain the information in accordance with provisions & stipulations as given in the specific and standard ToR.

11. You are required to submit the final EIA/EMP prepared as per TORs to the Ministry within 4 years as per this Ministry's Notification vide dated 25.07.2022 for considering the proposal for environmental clearance.

12. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization(s)/laboratories including their status of approvals etc.

13. The Ministry reserves the right to stipulate additional ToR, if found necessary.

14. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project

Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

15. This issues with the approval of the Competent Authority.

Yours faithfully,

(Sundar Ramanathan)
Scientist 'E'/Additonal Director
Tel: 011- 20819378
Email- r.sundar@nic.in;

Copy To

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD cum-Office Complex, East Arjun Nagar, Delhi-110032.
4. The Chairman, Uttar Pradesh State Pollution Control Board, Building. No. TC-12V. Vibhuti Khand, Gomti Nagar. Lucknow-226 010
4. The Deputy Director General of Forests (C), Integrated Regional Officer, Ministry of Environment, Forest and Climate Change, Kendriya Bhawan, 5th Floor, Sector "H", Aliganj, Lucknow – 2260205.
5. The Chairman, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
6. Member Secretary, Uttar Pradesh State Pollution Control Board, PICUP Bhawan, 3rd Floor, B-Block, Vibhuti Khand, Gomti Nagar Lucknow – 226 010.
7. The Member Secretary, Central Ground Water Authority, Jamnagar House, 18/11, Man Singh Road Area, New Delhi, Delhi 110001
9. The District Collector, Mirzapur, Uttar Pradesh
10. Guard File/Monitoring File/PARIVESH Portal

Annexure 1

Specific Terms of Reference for (Thermal Power Plants)

1. [A] Environmental Management And Biodiversity Conservation

S. No	Terms of Reference
1.1	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 15 Km radius of the power plant shall be submitted.
1.2	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.
1.3	A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.

S. No	Terms of Reference
1.4	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.
1.5	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 duly approved by the local forest department.
1.6	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.
1.7	<i>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.</i>
1.8	<i>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.</i>
1.9	<i>Details of Ash handling system along with the supplementary coal handling system shall be submitted.</i>
1.10	<i>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. The design of the same should as per CEA/CPCB guidelines.</i>
1.11	<i>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. This is in addition to the regular baseline study of the study area.</i>
1.12	<i>Details pertaining to water source, treatment and discharge should be provided.</i>
1.13	<i>Zero Liquid Discharge plan shall be submitted.</i>
1.14	<i>PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.</i>

S. No	Terms of Reference
1.15	<i>Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.</i>
1.16	<i>An action plan shall be prepared for Water shed development within a 10 km radius of the plant boundary in consultation with a reputed government institution and incorporated in the EIA/EMP report. This should include recharge of ground water in the surrounding area of the plant.</i>
1.17	<i>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.</i>
1.18	<i>PP shall submit a plan for diversion of nallha/water body if any involved in the project. PP shall also obtain the permission for such diversion from the concerned authority.</i>
1.19	<i>PP shall obtain a letter from concerned forest department clearly mentioning the extent of forest land involved within and outside (other activities related to plant) plant area.</i>
1.20	<i>While preparing the EIA/EMP report, PP shall explore the possibility of optimizing forest land requirement to the extent possible and submit a detailed note on the same at the time of EC presentation. In case of any increase in forest land PP shall obtain the amendment in ToR.</i>
1.21	<i>List of Schedule-1 species needs to be authenticated by the concerned forest department.</i>
1.22	<i>PP shall submit the firm coal linkage, quality of coal and propose mitigative measures in the EIA/EMP report after referring to the OM's issued by MoEF&CC in this regard.</i>

2. [B] Disaster Management

S. No	Terms of Reference
2.1	A Disaster Management Plan shall be prepared and incorporated in the EIA/EMP report.

3. [D] Miscellaneous

S. No	Terms of Reference
3.1	<i>Plot the wind rose diagram using the typical meteorological year (TMY) data for the period considered for the study. The monitoring units shall be deployed in the field based on the coverage area ratio and direction of the wind. A mathematical model shall be developed for the local site rather than using the standard model available in software for both air & water quality modelling.</i>
3.2	<i>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.</i>
3.3	<i>PP shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.</i>

S. No	Terms of Reference
3.4	<i>Detailed description of all the court cases including all directions given by the apex and currents status of them shall submit.</i>
3.5	<i>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.</i>
3.6	<i>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.</i>
3.7	<i>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.</i>
3.8	<i>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 the Public Hearing. The capital and recurring expenditures to be incurred need to be submitted.</i>
3.9	<i>Aerial view video of the project site and transportation route proposed for this project shall be recorded through drone and be submitted.</i>
3.10	<i>PP while preparing the EIA/EMP Report and conducting Public consultation shall take into account, the deficiency pointed out by the Hon'ble NGT Judgment 21.12.2016.</i>

4. [C] Socio-economic Study

S. No	Terms of Reference
4.1	<i>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.</i>
4.2	<i>Public consultation (Public Hearing and Written submission) shall be conducted as per the provisions of EIA Notification, 2006 (as amended) and OM's issued in this regard by MoEF&CC.</i>
4.3	<i>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 at least 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. In addition to this issues raised during previous PH shall also be taken into account.</i>
4.4	<i>Demographic details in 10 km area shall be submitted.</i>

1. Statutory Compliance

S. No	Terms of Reference
1.1	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.
1.2	Vision document specifying prospective long term plan of the project shall be formulated and submitted.
1.3	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.

2. Details Of The Project And Site

S. No	Terms of Reference
2.1	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.
2.2	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.
2.3	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.
2.4	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.
2.5	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
2.6	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.
2.7	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.
2.8	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

S. No	Terms of Reference
	along with copies of relevant documents.
2.9	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
2.10	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.
2.11	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.

3. Ecology Biodiversity And Environment

S. No	Terms of Reference
3.1	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.
3.2	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.
3.3	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.
3.4	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.
3.5	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.
3.6	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.
3.7	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

S. No	Terms of Reference
	spelt out and time bound Action Plan for its implementation shall be submitted
3.8	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.
3.9	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.
3.10	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.
3.11	Feasibility of near zero discharge concept shall be critically examined and its details submitted.
3.12	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
3.13	Plan for recirculation of ash pond water and its implementation shall be submitted.
3.14	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.
3.15	Hazards Characterization: Past incidents of hazard events within 10km radius of project area with detailed analysis of causes and probability of reoccurrence

4. Environmental Baseline Study And Mitigation Measures

S. No	Terms of Reference
4.1	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 wind speed analysis and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM10, PM2.5, SO2, NOx, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre - dominant downwind direction at a location where maximum ground level concentration is likely to occur.

S. No	Terms of Reference
4.2	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).
4.3	A list of industries existing and proposed in the study area shall be furnished.
4.4	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.
4.5	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
4.6	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
4.7	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
4.8	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.
4.9	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.
4.10	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.

5. Environmental Management Plan

S. No	Terms of Reference
5.1	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.
5.2	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

S. No	Terms of Reference
	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.
5.3	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.
5.4	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.

6. Green Belt Development

S. No	Terms of Reference
6.1	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 CO ₂ and other gaseous pollutants and hence a stratified green belt should be developed.
6.2	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

7. Socio-economic Activities

S. No	Terms of Reference
7.1	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.
7.2	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.
7.3	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.
7.4	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

S. No	Terms of Reference
	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.
7.5	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). CER details done in the past should be clearly spelt out in case of expansion projects.
7.6	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.
7.7	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.
7.8	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-conductive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.

8. Corporate Environment Policy

S. No	Terms of Reference
8.1	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.
8.2	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.
8.3	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.
8.4	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.

9. Miscellaneous

S. No	Terms of Reference
9.1	All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.
9.2	Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.
9.3	In case any dismantling of old plants are envisaged, the planned land use & land reclamation of dismantled area to be furnished.

10. Additional Tor For Coastal Based Thermal Power Plants Projects (Tpps)

S. No	Terms of Reference
10.1	Low lying areas fulfilling the definition wetland as per Ramsar Convention shall be identified and clearly demarcated w.r.t the proposed site.
10.2	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.
10.3	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.
10.4	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.
10.5	Marshy areas which hold large quantities of flood water to be identified and shall not be disturbed.
10.6	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.
10.7	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.
10.8	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.
10.9	Impact on fisheries at various socio economic level shall be assessed.
10.10	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

S. No	Terms of Reference
	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.
10.11	Tsunami Emergency Management Plan shall be prepared wherever applicable and Plan submitted prior to the commencement of construction work.
10.12	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.

