



File No: J-13012/112/2010-IA.II(T)

Government of India
Ministry of Environment, Forest and Climate Change
IA Division



Dated 10/04/2024



To,

Shri Toopran Vishal, Sr Manager
NTPC LIMITED
NTPC Limited, NTPC Bhawan, SCOPE Complex, Institutional Area, Lodhi Road, New Delhi – 110003
environment.ntpc@gmail.com

Subject: Expansion of Telangana Super Thermal Power Project from 1600 MW (Phase I: 2x800 MW) to 4000 MW [Phase II: 2400 (3x800 MW)] in an area of 738.5509 Ha (256.97 existing and 481.57 proposed) at village Ramagundam, Kundanpalli, Ranapur and etc, District Peddapalli, Telangana by NTPC Ltd.– Terms of References (TOR) - reg.

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 Telangana Super Thermal Power Project, Phase-II (3x800MW) submitted to Ministry vide proposal number IA/TG/THE/458070/2024 dated 14/02/2024.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO24A0601TG5949635N
(ii) File No.	J-13012/112/2010-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
(vii) Name of Project	Telangana Super Thermal Power Project, Phase-II (3x800MW)
(viii) Name of Company/Organization	NTPC LIMITED
(ix) Location of Project (District, State)	PEDDAPALLI, TELANGANA
(x) Issuing Authority	MoEF&CC
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

3. **3.** Instant proposal is for the grant of Terms of Reference (ToR) to the project for the Expansion of Telangana Super Thermal Power Project, from 1600 MW (2x800 MW) to 4000 MW [Phase-I: 1600MW + Phase II: 2400 (3x800 MW)] in an area of 738.5509 Ha (256.97 Ha existing and 481.57 Ha proposed) located at village Ramagundam, Kundanpalli, Ranapur and etc, District Peddapalli, Telangana by M/s NTPC Ltd.
4. **4.** The Project Proponent and accredited consultant Mantec Consultants Pvt. Ltd (NABET/EIA/2326/RA 0305, valid till 20.04.2026) made a detailed presentation in the 6th meeting held on 27.02.2024 on the salient features of the project and informed following to the EAC:
5. **(i)** The proposal is for ToR to the project for the Telangana Super Thermal Power Project, for Expansion of Telangana Super Thermal Power Project from 1600 MW (2x800 MW) to 4000 MW [Phase-I: 1600MW + Phase II: 2400 (3x800 MW)] in an area of 738.5509 Ha (256.97 Ha existing and 481.57 Ha proposed) located at Ramagundam by M/s. NTPC Limited.
- (ii)** All the project components (Thermal Power Plant>500MW) are listed at S.N. 1(d) of the Schedule to the Environment Impact Assessment (EIA) Notification under the category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).
- (iii)** EC for Telangana STPP Phase-I (2x800MW) has been granted vide letter no. J-13012/112/2010-IA. II(T) on 20.01.2016. Subsequently, Amendments dated 06.03.2017, 21.10.2020 and 08.08.2022 were granted. Unit-I (800 MW) of Telangana STPP, Phase-I has been declared commercial w.e.f 28.09.2023. Unit-II (800MW) is also scheduled to be commissioned shortly. Construction of Phase II shall start after the grant of Environment Clearance.
- (iv)** The salient features of the project are as follows:

Project details:

Location of TPP	Village – Ramagundam District – Peddapalli State - Telangana PIN – 505215
Co-ordinates of all four corners: Average height of (a) TPP site, (b) ash pond site etc above MSL (m)	Existing Main Plant & Ash Dyke Area: A) 18° 46' 08" (N) 79° 27' 12" (E) B) 18° 45' 42" (N) 79° 28' 48" (E) C) 18° 42' 30" (N) 79° 28' 29" (E) D) 18° 42' 43" (N) 79° 27' 11" (E) Proposed Ash Dyke Area: A) 18° 46' 08" (N) 79° 23' 32 (E) B) 18° 45' 24" (N) 79° 22' 53 (E) C) 18° 44' 56" (E) 79° 24' 27" (E) D) 18° 44' 42" (E) 79° 29' 02" (E) Township: A) 18° 45' 41" (N) 79° 28' 52" (E) B) 18° 45' 39" (N) 79° 29' 46" (E) C) 18° 44' 51" (N) 79° 29' 45" (E) D) 18° 44' 42" (N) 79° 29' 27" (E) 170 m 215 m
Inter- state issue involved	No
Seismic zone	Zone-II

Category details:

Capacity	Telangana STPP Phase-I (1600 MW: 2x800MW)) Under Operation: Unit-I of Phase-I:800 MW Under Construction: Unit-II of Phase-I:800 MW (Full load trial completed and to be commissioned shortly) Proposed Expansion: Addition of Telangana STPP Phase-II
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	(2400MW:3x800 MW)
Attracts the General Conditions (Yes/No)	No
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
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:	Cost of the Existing Project at current price level (in Cr) [A] Rs. 11035 Cr Cost of the proposed expansion of Project at current price level (in Lakhs) [B] Rs. 16326 Total Cost of the project/ Activity (in lakhs) [A+B] Rs. 27361
Employment Potential for the entire project/plant and employment potential for the proposed amendment (specify the number of persons and quantitative information).	The project will generate direct and indirect employment opportunities as well as opportunities for self-employment. Approx. 180 nos. of NTPC employees are in Telangana Phase-I. For Phase II, the no. of NTPC employees during the construction and operation phases are approx. 554 and 720 respectively. The workforce employed during the construction phase by the EPC contractors would be much higher (about 4000-5000 during peak deployment). In addition to the people directly involved in the construction and operation of the power project, employment opportunities in subsidiary industries and service sectors as well as self-employment opportunities shall also be generated
Benefits of the project (specify quantitative information)	There will be overall improvement in the socio-economic status of the people of the surrounding areas. Power plant will have a positive effect on the socio-economic conditions of the people nearby, the project and service activities will generate steady source of income for local people. With the implementation of the project, employment opportunities, communication, medical facilities, education and skill up-gradation facilities etc. in the area will be further improved.
R&R details	NTPC has done R&R during 1992 for Mogalpahad village. Total Village/families have been shifted to the new colony. Hence, it is opined that R&R is not required for the new proposed project.

Electricity generation capacity:

Capacity & Unit Configurations:	Telangana STPP Phase-I (1600 MW: 2x800MW)) Under Operation: Unit-I of Phase-I:800 MW Under Construction: Unit-II of Phase-I:800 MW (Full load trial completed, to be commissioned shortly) Proposed Expansion Telangana STPP Phase-II (2400MW:3x800 MW)
Generation of Electricity Annually	Phase-I (1600 MW): 12.61 Million Units annually (@ 90% PLF) Phase-II (2400 MW) (Proposed expansion):

Details of fuel and Ash disposal

Fuel to be used:	Coal
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Quantity of Fuel required per Annum	Phase-I: 8000000 TPA Phase-II: 11739276 TPA corresponding to 90% PLF considering GCV of 3800 Kcal/Kg.
Coal Linkage/Coal Block: (If Block allotted, the status of EC & FC of the Block)	SLC (LT) in its meeting held on 03.01.2024 has recommended for the grant of coal linkage to the project. The likely coal source for the project is SCCL. However, the allocation is yet to be finalized. Tentative details of coal quality are: Ash content in coal <u>40</u> (%) Sulphur in coal <u>0.4</u> (%) Moisture <u>14</u> (%) GCV in coal <u>3800</u> Kcal/Kg
Details of the mode of transportation of coal from the coal source to the plant premises along with distances	The tentative distance from the source to the plant through Rail is 15-50 km (from SCCL to Telangana as envisaged). The mode of coal transportation from the coal mines to the power plant shall be MGR and Indian Railways.
Fly Ash Disposal System Proposed	High Concentration Slurry Disposal system. Ratio of water and ash: 40:60 by Weight The fly ash shall be extracted in dry form from the electrostatic precipitator hoppers. This dry ash shall either be taken to buffer hoppers for its onward transportation in dry form for utilization or shall be slurrified in wetting units for its ultimate disposal in the ash disposal area using HSCD System. The bottom ash shall be extracted and disposed off in wet form. It is envisaged to have a disposal system sized for 100% generation of ash.
a. Ash Pond/ Dyke: (Area, Location & Co-ordinates)	Ash Pond Area: Existing: 80.937 Ha (Telangana Phase-I) Proposed: 246.858 Ha (Telangana Phase-II) Total: 327.795Ha
Quantity of a. Fly Ash to be generated b. Bottom Ash to be generated:	4038310 TPA 1009577 TPA
Fly Ash utilisation percentage with details in last 5 years:	The first unit of Phase-I has been commissioned recently (Sept – 2023). The Ash Utilisation shall be done as per the Ministry of Environment, Forests and Climate Change Notification dated 31-12-2021 as amended on 31.12.2022.
Stack Height (m) & Type of Flue	Phase-I: One Twin flue stack of 275 m height Phase-II: One twin flue stack of 220 M height & one single flue stack of 150 m

Water Requirement:

Source of Water:	Phase-I: Yellampalli Barrage on Godavari River Phase-II: Yellampalli Barrage on Godavari River (Upstream) HFL of Godavari River – 4.24 km approx.
Quantity of water requirement:	Phase-I: 1,15,200 KLD i.e., 4800 M3/Hr Phase-II: 72,240 KLD i.e., 3010 M3/Hr

Distance of source of water from Plant:	12 km
Whether barrage/ weir/ intake well/ jack well/ others proposed:	Barrage
Mode of conveyance of water:	Pipeline
Status of water linkage:	Water for Telangana STPP Phase-I is presently being drawn from Sreepada Yellampalli Barrage on the Godavari River. Irrigation & CAD Dept. Govt. of Telangana vide order dated 09.10.2015 accorded permission for drawl of 2.73 TCM water from Sreepada Yellampalli Barrage. The total water requirement for Phase-I is 115200 KLD. The water requirement for Telangana STPP Phase-II is 72240 KLD. An adequate quantity of water allocation is available for meeting the water requirement of the Telangana STPP Phase-II.

Land Area Breakup:

Land Requirement:	Description	Existing (Ha.)	Proposed (Ha.)	Total (Ha.)
a) TPP Site	Main Plant	68.796	157.827	226.624
b) Ash Pond	Township	0	0	0
c) Township	Ash Pond*	80.937	246.858	327.795
d) Railway Siding & Others	Reservoir	0	0	0
e) Raw Water Reservoir	Green belt	107.242	76.8903	184.132
f) Green Belt	Total	256.975	481.575	738.55
g) others				
Total (if expansion states additional land requirement)	*Approx. 610 acres (246.858 Ha) of additional land is proposed to be acquired.			
Break-Up of land-use of TPP site:	Nature of Land involved in (Ha)	Area Existing in Ha [X]	Additional Area Proposed in Ha [Y]	Total Area required after expansion in Ha [X+Y]
a. Total land required for project components	Non-Forest Land [A]	256.975	481.5759	738.5509
b. Private land	Forest Land [B]	0	0	0
c. Government land	Total [A+B]	256.975	481.5759	738.5509
d. Forest Land				

(v) Existing unit has 2580 TPH Pulverised Coal fired two boilers. Additionally, 2600 TPH Pulverised Coal fired three boilers will be installed. Electrostatic Precipitator with a one twin-flue stack of height 220 m and one single-flue stack of height 150 m will be installed for controlling the particulate emissions within the statutory limit of 30 mg/Nm³ for the proposed boilers

(vi) There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. River Godawari is flowing at a distance of 4.24 km in NE direction. Black Kite & Shikra are the Schedule-I species present in the study area

(vii) No litigation/Court cases pending regarding Environment Issue, however there are two Court Cases WR 6103 of 2021 and WP 31795 of 2022 pending in Hon'ble High Court of Telangana at Hyderabad regarding land.

5. Above proposal was deliberated in detailed by the EAC in its 6th meeting. The committee expressed concern over the substantial 246.858 hectares of land designated for emergency ash disposal, considering the project proponent's commitment to achieving 100% fly ash utilization. The Committee is of the view that PP shall explore the means to

reduce the size of land requirement by increasing the fly ash utilization and height of dyke. The EAC after detailed deliberation on the information submitted and as presented during the meeting recommended for grant of Standard ToR for conducting an EIA study with Public Hearing to M/s NTPC Ltd for the proposed expansion of Telangana Super Thermal Power Project, Phase-II (3x800MW) in an area of 738.5509 Ha (256.97 Ha existing and 481.57 Ha for proposed expansion) at village Ramagundam, Kundanpalli, Ranapur and etc, District Peddapalli, Telangana under the provisions of the EIA Notification, 2006, as amended along with the above mentioned additional/specific ToR.

6. MoEF&CC has examined the proposal in accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and based on the recommendations of the EAC hereby **accords** Standard Terms of Reference alongwith Specific/additional ToR (**Annexure 1**) to NTPC Ltd for the proposed expansion of Telangana Super Thermal Power Project, from 1600 MW (2x800 MW) to 4000 MW [Phase-I: 1600MW + Phase II: 2400 (3x800 MW)] in an area of 738.5509 Ha (256.97 Ha existing and 481.57 Ha proposed) for proposed expansion at village Ramagundam, Kundanpalli, Ranapur and etc, District Peddapalli, Telangana under the provisions of the EIA Notification, 2006, as amended

7. The Ministry reserves the right to stipulate additional conditions, if found necessary.

8. 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.

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

Copy To

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, 3rd Floor, Room No. 309, Aranya Bhawan, Opp. RBI, Safiabab – 500004, Hyderabad, Telangana
4. The Chairman, Telangana State Pollution Control Board, A-3, Paryavaran Bhavan, Sanath Nagar Rd, Sanath Nagar Industrial Estate, Sanath Nagar, Hyderabad, Telangana 500018.
5. The Member Secretary, Telangana State Pollution Control Board, A-3, Paryavaran Bhavan, Sanath Nagar Rd, Sanath Nagar Industrial Estate, Sanath Nagar, Hyderabad, Telangana 500018
6. The District Collector, Peddapalli , State Government of Telangana
7. 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	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.
1.2	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.
1.3	PP shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.

S. No	Terms of Reference
1.4	PP shall explore all the possibilities to minimize to land requirement of the ash pond area. Either by increasing ash utilization or increasing the proposed height. A detailed action plan for fly ash utilization as per CPCB guidelines needs to be submitted.
1.5	The SRSP canal is passing in the proposed site. The PP shall submit the impact of the fly ash disposal on the same. PP shall submit a study report for the diversion of the same and permission from the concerned authorities.
1.6	The forest is very close to the project site, the impact of the ash disposal on the same along with the mitigative measures needs to be submitted.
1.7	A wildlife conservation plan shall be prepared, in consultation with the State Forest and Wildlife Department, with adequate funds for wildlife habitat management, preserving wildlife and its corridors and be submitted along with the EIA/EMP report. Human-wildlife conflict issues shall be studied and such incidences reported in the study area during the last 10 years shall be submitted. No provision for purchasing the vehicle shall be made in the wildlife conservation plan.
1.8	Details of the existing rail, and road networks and alignment of transmission lines along with the quantity of coal being transported/to be transported for existing units and proposed expansion, its source and transportation mode shall be submitted.
1.9	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.
1.10	A comparative chart shall be prepared with changes observed from previous baseline study and present baseline study.
1.11	PP should submit the detailed plan in tabular format (year-wise for the life of the project) for afforestation and green belt development in and around the project site. The PP should submit the number of saplings to be planted, the area to be covered under afforestation & green belt, the location of the plantation, the target for survival rate and the budget earmarked for the afforestation & green belt development. In addition to this PP should show on a surface plan (5-year interval for the life of the project) of suitable scale the area to be covered under afforestation & green belt mentioning the latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditures to be incurred need to be submitted. The plantation plan should be prepared in such a way that 80% of the plantation is to be carried out in the first 5 years and for the remaining years the proposal for gap filling. The seedling of height not less than 2 meters is to be selected and accordingly cost of the plantation needs to be decided. In addition to this, the 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.
1.12	An action plan for the development of a green belt (40% of the total project cover area) along the periphery of the project boundary shall be provided with a drone video clip of the existing green belt. The plan shall be dully approved by the local forest department.
1.13	A detailed plan needs to be submitted for undertaking extensive green plantation within a 10 km radius of the plant focusing on water reservoir, school, hospital and other institutional areas and the same needs to be incorporated in the EIA/EMP report.

S. No	Terms of Reference
1.14	An action plan shall be prepared for the maintenance of air pollution control equipment for proposed and existing units and shall be incorporated in the EIA/EMP report.
1.15	Details of Ash management of existing (last 5 years) and the proposed project shall be submitted, along with a 5-year plan for 100 % ash utilization.
1.16	Details of the Dry Ash handling system along with the supplementary coal handling system shall be submitted.
1.17	Proper protection measures like HDPE lining, the appropriate height of the bund and adequate distance between the proposed Ash pond and water body (minimum 60 meters) etc. shall be planned so as to reduce the possibility of mixing of leachate with any fresh water body for under construction ash pond. A high-density Slurry disposal plan shall be prepared.
1.18	Pond and groundwater quality (10 locations within a 2 km radius of the plant boundary) shall be studied and a report be submitted along with EIA/EMP. Action plan for Groundwater monitoring stations on all hotspots like schools/hospitals within a 2 km radius of the plant boundary be submitted.
1.19	Baseline Study for Heavy metals in Groundwater, Surface water and soil to be carried out and incorporated in EIA/EMP report.
1.20	Details pertaining to water source, treatment and discharge should be provided.
1.21	A Zero Liquid Discharge plan shall be submitted.
1.22	PP shall submit an action plan for using treated Sewage/Domestic wastewater for its operations.
1.23	Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
1.24	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.
1.25	PP should 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.
1.26	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 a 10 Km radius of the power plant shall be submitted.

2. [C] Socio-economic Study

S. No	Terms of Reference
2.1	As per the Ministry's OM dated 30.09.2020, to address the concern raised during the Public Hearing, 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 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.
2.2	Demographic details in a 10 km area shall be submitted.
2.3	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 existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the needs of the labour force and local populace.

3. [D] Miscellaneous

S. No	Terms of Reference
3.1	A detailed description of all the court cases including all directions given by the apex and the current status of them shall be submitted.
3.2	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 the grant of EC.
3.3	PP shall submit details of court cases and their status for the project.
3.4	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.
3.5	PP should 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 the environmental management plan (EMP). The capital and recurring expenditures to be incurred need to be submitted.
3.6	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.
3.7	Aerial view video of the project site and transportation route proposed for this project shall be recorded through drone and submitted.
3.8	In the case of groundwater abstraction/intersection. The PP shall comply with the Ministry's OM dated 23/05/2019. Compliance status needs to be presented before EAC at the time of appraisal.
3.9	Certified compliance report of previous EC certified by the Regional office of the MoEF&CC shall

S. No	Terms of Reference
	provide. Specific observations on the status of OCMS, ash utilization, green cover and emission control equipment of all units of the plant shall be done. In case of any non-compliance, the PP shall submit the ATR to the concerned RO and get it closed before applying to the Ministry.
3.10	PP should submit the quantity of surface or groundwater to be used for this project. The complete water balance cycle needs to be submitted. In addition to this PP should submit a detailed plan for rainwater harvesting measures to be taken. The PP should submit the year-wise target for reduction in consumption of the ground/surface water by developing alternative sources of water through rainwater harvesting measures. The capital and recurring expenditures to be incurred need to be submitted.
3.11	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.

4. [B] Disaster Management

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

Standard Terms of Reference for (Thermal Power Plants)

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

S. No	Terms of Reference
	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 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),

S. No	Terms of Reference
	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 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

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

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	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 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.

S. No	Terms of Reference
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 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

S. No	Terms of Reference
	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

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	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 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.

Additional Terms of Reference

N/A