



सत्यमेव जयते

File No: J-13012/9/2004.IA-II(T)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division



Dated: 08/06/2026



To,

Sh. Anil Kumar Panda
M/s. National Aluminum Company (NALCO) Limited
NALCO Bhawan, P-1, Nayapalli P.O.-RRL, Bhubaneswar, Khordha, Odisha- , 751013
E-mail: gm_uecb@nalcoindia.co.in

Subject: Proposed Expansion of the Existing 1200 MW (10x120 MW) Captive Power Plant to 2280 MW by addition of 4x270 MW Sub-critical Captive Power Plant by M/s. NALCO at NALCO Nagar, Banarpal Block, Angul District, Odisha – Prescribing of Terms of Reference – regarding.

Sir/Madam,

This is in reference to your online proposal number IA/OR/THE/573338/2026 dated 26.03.2026 along with written submission dated 22.05.2026 seeking for Grant of Terms of Reference under the provision of the EIA Notification 2006 and as amended for the project mentioned above.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO26A0601OR5981405N
(ii) File No.	J-13012/9/2004.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 Proposed Expansion of the Existing 1,200 MW (10x120 MW) to 2,280 MW (Addition of 4 × 270 MW Units) Sub-critical Captive Power Plant at Angul, Odisha by National Aluminium Company Limited (NALCO)
(vii) Name of Project	M/s. National Aluminum Company (NALCO) Limited
(viii) Name of Company/Organization	Angul, Odisha
(ix) Location of Project (District, State)	MoEF&CC
(x) Issuing Authority	

(xi) Applicability of General Conditions	no
(xii) Applicability of Specific Conditions	no

3. M/s. National Aluminum Company Ltd (NALCO) has made an application online vide proposal no IA/OR/THE/573338/2026 dated 26.03.2026 along with the application in prescribed format (CAF, Form – I Part A & B), copy of pre-feasibility report and proposed ToRs for undertaking detailed EIA study as per the EIA Notification, 2006 for the project mentioned above. The proposed project activity is listed at item no. 1(d) Under Category “A” of the schedule of the EIA Notification, 2006 and does not attract general conditions and is to be appraised at Central Level.

4. The instant proposal was considered in 43rd EAC meeting held on 14th May 2026. The MoM for the same may be seen using the web link: parivesh.nic.in.

Details submitted by Project proponent

5. The existing captive power plant project unit 1 to 6 (6x120 MW) was accorded environmental clearance vide Lr. No. O.O.No14/13/81-Env dated 13.01.1982. Expansion of CPP 7th & 8th unit (2x120 MW) was accorded environmental clearance vide Lr. No.J-13-11/1/91/-IA-III dated 23.01.1992. Expansion of CPP 9th and 10th unit (2x120 MW) was accorded Environmental Clearance vide Lr. No F.No.J-13012/9/2004.IA-II(T) dated 30.07.2004. Amendment of EC for expansion of Ash pond was accorded Environmental Clearance vide Lr. No J-13012/9/2004-IA.II(T) dated 06.02.2014. Consent to Operate for the existing unit was accorded by Odisha State Pollution Control Board vide Lr. No. 6613/IND-I-CON-235 dated 29.03.2025. The validity of CTO is up to 31.03.2027.

6. Implementation status of the existing EC

S. No.	Configuration	Capacity (MW)	EC Dated	Implementation Status as on today	Production as per CTO
1	CPP - Sub critical 6x120MW (Unit 1 to 6)	720	13.01.1982	In Operation	720 MW
2	CPP -Sub critical 2 x 120 MW (Unit 7 & 8)	240	23.01.1992	In Operation	240 MW
3	CPP -Sub critical 2 x 120 MW (Unit 9 & 10)	240	30.07.2004	In Operation	240 MW
4	Amendment of EC for expansion of Ash pond	Construction of ash pond 4 ash mound on ash pond 2 and dyke raising of ash pond 1	06.02.2014	Presently Pond-I is in operation	

7. **Compliance to MoEF&CC Notification dated 11/07/2025 regarding SO2 emission norms:** The status of compliance to the SO2 emission norms shall be furnished as per the MoEF&CC Notification dated 11/07/2025:

- Categorization details of TPP: Not yet done by CPCB Task Force
- Sulfur content of the coal to be fired in the boiler: Average sulphur content is < 0.5%
- Status of SO2 emission control facility for the existing unit: CPP is dosing ammonia at inlet of ESPs for PM control, which may be partially contributing in SOx emission reduction. The proposal for installation of FGD in units #7-10 have got administrative approval of the board. Scope, PQC etc. are being prepared for engaging one EPCM consultant for preparation of DPR for installation of FGD in units #7-10.
- Action plan for installation of new stack in compliance to the notification number GSR 742 (E) dated the 30/08/1990 for the proposed expansion: Stack height of 275 m will be provided as per guidelines GSR 742 (E) dated 30/08/1990 during establishment.

8. Environmental site settings

S. No.	Particulars	Details			Remarks															
1	Total land	CPP and Ash Pond-678.33 ha and Other infrastructure-141.52 [Private: 712.53 ha; Govt.: 107.32 ha;]			Land use: Industrial land															
2	Land use break up	Facilities	Existing Area in Hectares	Proposed Area in Hectares																
		Captive Power plant																		
		Power House Area	61.88	128.12																
		Coal Handling Systems	20.07	38.21																
		Water systems	27.03	32.29																
		Roads	14.58	19.72																
		Switch Yard	11.25	11.25																
		Green belt	237.63	142.85																
		Sub Total (A)	372.44	372.44																
		Ash Pond																		
		Ash pond 1,2,3 & 4	189.10	130.5																
		Other areas (dyke, ramp, office, pipeline, drains, open area)	68.02	31.84																
		Green Belt	48.77	143.55																
		Sub Total (B)	305.89	305.89																
		Total (A+B)	678.33	678.33																
		Others																		
		Captive Rail system/ROB	95.74	No change in the land area after expansion																
		HTT Line	30.31																	
		Water supply pipe line	9.32																	
		Ash pipe corridor	6.15																	
Sub Total	141.52																			
3	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014 & 20/2/2025	Entire land is in possession of NALCO			Land documents are attached with TOR Application															
4	Existence of habitation& involvement of R&R, if any	Project site: NA Study Area: <table><tr><th>Habitation</th><th>Distance</th><th>Direction</th></tr><tr><td>Amantapur</td><td>10 m</td><td>W</td></tr><tr><td>Kulad</td><td>30 m</td><td>E</td></tr><tr><td>Gotamara</td><td>50 m</td><td>E</td></tr><tr><td>Bonda</td><td>60 m</td><td>S</td></tr></table> Mitigation Measures:			Habitation	Distance	Direction	Amantapur	10 m	W	Kulad	30 m	E	Gotamara	50 m	E	Bonda	60 m	S	Status of R&R.- NA
Habitation	Distance	Direction																		
Amantapur	10 m	W																		
Kulad	30 m	E																		
Gotamara	50 m	E																		
Bonda	60 m	S																		

S. No.	Particulars	Details	Remarks																																										
		- Development a multi-layer greenbelt 50 m width along the village boundary. - Use of dense native species with high dust attenuation capacity. - Install closed/covered conveyors and transfer point enclosures. - Provide dry fog / water spray dust suppression systems at unloading & transfer points. - Regular water sprinkling on internal roads. - Ensure wind-breaking walls																																											
5	Existence of school and hospitals if any.	A. School Project site: No school at project site Study Area: <table><thead><tr><th>School</th><th>Distance</th><th>Direction</th></tr></thead><tbody><tr><td>Govt. High School, Gotamara</td><td>200 m</td><td>E</td></tr><tr><td>Saint Lawrence School, Tentoloi</td><td>2.72 km</td><td>NW</td></tr><tr><td>Omm Bidya Bharati Higher Secondary School</td><td>4.71 km</td><td>SW</td></tr><tr><td>Tapovanam International School, Turanga</td><td>5.68 km</td><td>SW</td></tr><tr><td>My Chhota School, pre school Turanga</td><td>6.18 km</td><td>W</td></tr><tr><td>Odisha Brigade School</td><td>6.61 km</td><td>W</td></tr></tbody></table> B. Hospital Project site: No Hospital at site Study Area: <table><thead><tr><th>Hospital</th><th>Distance</th><th>Direction</th></tr></thead><tbody><tr><td>Banarpal Govt. Hospital</td><td>1.2 km</td><td>E</td></tr><tr><td>Alpha Clinic, Hari Parida, Banarpal</td><td>1.6 km</td><td>E</td></tr><tr><td>Balaram Prasad New PHC</td><td>2.0 km</td><td>NW</td></tr><tr><td>Jaganath Clinic, Banarpal</td><td>2.1 km</td><td>E</td></tr><tr><td>NALCO Hospital</td><td>2.8 km</td><td>W</td></tr><tr><td>Santry Hospital, Gadasantri</td><td>4.7 km</td><td>S</td></tr></tbody></table>	School	Distance	Direction	Govt. High School, Gotamara	200 m	E	Saint Lawrence School, Tentoloi	2.72 km	NW	Omm Bidya Bharati Higher Secondary School	4.71 km	SW	Tapovanam International School, Turanga	5.68 km	SW	My Chhota School, pre school Turanga	6.18 km	W	Odisha Brigade School	6.61 km	W	Hospital	Distance	Direction	Banarpal Govt. Hospital	1.2 km	E	Alpha Clinic, Hari Parida, Banarpal	1.6 km	E	Balaram Prasad New PHC	2.0 km	NW	Jaganath Clinic, Banarpal	2.1 km	E	NALCO Hospital	2.8 km	W	Santry Hospital, Gadasantri	4.7 km	S	
School	Distance	Direction																																											
Govt. High School, Gotamara	200 m	E																																											
Saint Lawrence School, Tentoloi	2.72 km	NW																																											
Omm Bidya Bharati Higher Secondary School	4.71 km	SW																																											
Tapovanam International School, Turanga	5.68 km	SW																																											
My Chhota School, pre school Turanga	6.18 km	W																																											
Odisha Brigade School	6.61 km	W																																											
Hospital	Distance	Direction																																											
Banarpal Govt. Hospital	1.2 km	E																																											
Alpha Clinic, Hari Parida, Banarpal	1.6 km	E																																											
Balaram Prasad New PHC	2.0 km	NW																																											
Jaganath Clinic, Banarpal	2.1 km	E																																											
NALCO Hospital	2.8 km	W																																											
Santry Hospital, Gadasantri	4.7 km	S																																											
6	Latitude and Longitude of all corners of the project	A. CPP Site <table><thead><tr><th>ID</th><th>Latitude</th><th>Longitude</th></tr></thead><tbody></tbody></table>	ID	Latitude	Longitude																																								
ID	Latitude	Longitude																																											

S. No.	Particulars	Details	Remarks																																																																											
	site.	<table><tr><td>A</td><td>20° 51' 48.530" N</td><td>85° 11' 41.003" E</td></tr><tr><td>B</td><td>20° 51' 23.779" N</td><td>85° 11' 44.325" E</td></tr><tr><td>C</td><td>20° 51' 18.669" N</td><td>85° 12' 8.764" E</td></tr><tr><td>D</td><td>20° 50' 38.145" N</td><td>85° 12' 9.246" E</td></tr><tr><td>E</td><td>20° 50' 34.373" N</td><td>85° 12' 4.218" E</td></tr><tr><td>F</td><td>20° 50' 43.500" N</td><td>85° 11' 27.910" E</td></tr><tr><td>G</td><td>20° 50' 43.088" N</td><td>85° 10' 48.900" E</td></tr><tr><td>H</td><td>20° 51' 14.805" N</td><td>85° 10' 45.690" E</td></tr><tr><td>I</td><td>20° 51' 18.763" N</td><td>85° 10' 55.437" E</td></tr><tr><td>J</td><td>20° 51' 24.857" N</td><td>85° 10' 55.889" E</td></tr><tr><td>K</td><td>20° 51' 24.788" N</td><td>85° 11' 9.604" E</td></tr><tr><td>L</td><td>20° 51' 47.554" N</td><td>85° 11' 9.256" E</td></tr></table> B. Ash pond <table><tr><th>ID</th><th>Latitude</th><th>Longitude</th></tr><tr><td>A</td><td>20° 53' 1.183" N</td><td>85° 8' 57.149" E</td></tr><tr><td>B</td><td>20° 53' 2.770" N</td><td>85° 9' 12.766" E</td></tr><tr><td>C</td><td>20° 52' 54.573" N</td><td>85° 9' 31.809" E</td></tr><tr><td>D</td><td>20° 52' 57.687" N</td><td>85° 10' 3.167" E</td></tr><tr><td>E</td><td>20° 52' 50.420" N</td><td>85° 10' 2.973" E</td></tr><tr><td>F</td><td>20° 52' 44.890" N</td><td>85° 9' 52.219" E</td></tr><tr><td>G</td><td>20° 52' 42.276" N</td><td>85° 9' 32.993" E</td></tr><tr><td>H</td><td>20° 52' 9.991" N</td><td>85° 9' 53.231" E</td></tr><tr><td>I</td><td>20° 52' 7.202" N</td><td>85° 10' 5.668" E</td></tr><tr><td>J</td><td>20° 51' 59.686" N</td><td>85° 10' 6.737" E</td></tr><tr><td>K</td><td>20° 51' 51.559" N</td><td>85° 9' 14.731" E</td></tr><tr><td>L</td><td>20° 52' 40.873" N</td><td>85° 8' 45.405" E</td></tr></table>	A	20° 51' 48.530" N	85° 11' 41.003" E	B	20° 51' 23.779" N	85° 11' 44.325" E	C	20° 51' 18.669" N	85° 12' 8.764" E	D	20° 50' 38.145" N	85° 12' 9.246" E	E	20° 50' 34.373" N	85° 12' 4.218" E	F	20° 50' 43.500" N	85° 11' 27.910" E	G	20° 50' 43.088" N	85° 10' 48.900" E	H	20° 51' 14.805" N	85° 10' 45.690" E	I	20° 51' 18.763" N	85° 10' 55.437" E	J	20° 51' 24.857" N	85° 10' 55.889" E	K	20° 51' 24.788" N	85° 11' 9.604" E	L	20° 51' 47.554" N	85° 11' 9.256" E	ID	Latitude	Longitude	A	20° 53' 1.183" N	85° 8' 57.149" E	B	20° 53' 2.770" N	85° 9' 12.766" E	C	20° 52' 54.573" N	85° 9' 31.809" E	D	20° 52' 57.687" N	85° 10' 3.167" E	E	20° 52' 50.420" N	85° 10' 2.973" E	F	20° 52' 44.890" N	85° 9' 52.219" E	G	20° 52' 42.276" N	85° 9' 32.993" E	H	20° 52' 9.991" N	85° 9' 53.231" E	I	20° 52' 7.202" N	85° 10' 5.668" E	J	20° 51' 59.686" N	85° 10' 6.737" E	K	20° 51' 51.559" N	85° 9' 14.731" E	L	20° 52' 40.873" N	85° 8' 45.405" E	
A	20° 51' 48.530" N	85° 11' 41.003" E																																																																												
B	20° 51' 23.779" N	85° 11' 44.325" E																																																																												
C	20° 51' 18.669" N	85° 12' 8.764" E																																																																												
D	20° 50' 38.145" N	85° 12' 9.246" E																																																																												
E	20° 50' 34.373" N	85° 12' 4.218" E																																																																												
F	20° 50' 43.500" N	85° 11' 27.910" E																																																																												
G	20° 50' 43.088" N	85° 10' 48.900" E																																																																												
H	20° 51' 14.805" N	85° 10' 45.690" E																																																																												
I	20° 51' 18.763" N	85° 10' 55.437" E																																																																												
J	20° 51' 24.857" N	85° 10' 55.889" E																																																																												
K	20° 51' 24.788" N	85° 11' 9.604" E																																																																												
L	20° 51' 47.554" N	85° 11' 9.256" E																																																																												
ID	Latitude	Longitude																																																																												
A	20° 53' 1.183" N	85° 8' 57.149" E																																																																												
B	20° 53' 2.770" N	85° 9' 12.766" E																																																																												
C	20° 52' 54.573" N	85° 9' 31.809" E																																																																												
D	20° 52' 57.687" N	85° 10' 3.167" E																																																																												
E	20° 52' 50.420" N	85° 10' 2.973" E																																																																												
F	20° 52' 44.890" N	85° 9' 52.219" E																																																																												
G	20° 52' 42.276" N	85° 9' 32.993" E																																																																												
H	20° 52' 9.991" N	85° 9' 53.231" E																																																																												
I	20° 52' 7.202" N	85° 10' 5.668" E																																																																												
J	20° 51' 59.686" N	85° 10' 6.737" E																																																																												
K	20° 51' 51.559" N	85° 9' 14.731" E																																																																												
L	20° 52' 40.873" N	85° 8' 45.405" E																																																																												
7	Elevation of the project site	106 to 138 M above mean sea level (as per google earth image)																																																																												
8	Involvement of Forestland if any.	No forest land involved	No-forest land involved																																																																											
9	Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area	Project site: No waterbody at site Study area <table><tr><th>Water body</th><th>Distance</th><th>Direction</th></tr><tr><td>Bramani River</td><td>6.1 km</td><td>NE</td></tr><tr><td>Nandira Jor</td><td>2.4</td><td>N</td></tr><tr><td>Lingara Nadi</td><td>6.7</td><td>SW</td></tr></table> Mitigation measures- • Maintaining zero discharge with respect to ash pond decanted water. 100% of water recycled back after treatment for using in the plant purpose. • Leachate is collected through dedicated drains/canals further connected to garland drain and diverted to dedicated ETP for further treatment and reuse in ash	Water body	Distance	Direction	Bramani River	6.1 km	NE	Nandira Jor	2.4	N	Lingara Nadi	6.7	SW	HFL of Brahmani River is 55.7m																																																															
Water body	Distance	Direction																																																																												
Bramani River	6.1 km	NE																																																																												
Nandira Jor	2.4	N																																																																												
Lingara Nadi	6.7	SW																																																																												

S. No.	Particulars	Details	Remarks																		
		quenching and ash slurry making. • Construction of garland drains and stormwater management system around the ash dyke. • Installation of piezometers for regular groundwater quality monitoring. • Development of a greenbelt buffer zone between the ash dyke and the river. • Maintenance of adequate freeboard to prevent overflow during monsoon. • Periodic structural stability assessment and safety audits																			
10.	Archaeological sites monuments/ historical temples etc.	No Archaeological site present in the vicinity of project area.																			
11	Existence of ESZ/ESA/ National park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. if any within the study area	<u>Study area: No existence of ESA/ESZ</u> Name of the ESZ/ESA: NA Status of Notification: NA Distance of project from ESZ/ESA: NA Authenticated map of ESZ projecting distance of ESZ from project site: Not in study area Status of NBWL approval: NA List of Reserved and protected forests: <table><thead><tr><th>Name</th><th>Distance (km)</th><th>Direction</th></tr></thead><tbody><tr><td>Balaram prasad PF</td><td>2.1</td><td>NW</td></tr><tr><td>Ganthigarhia PF</td><td>5.6</td><td>SE</td></tr><tr><td>Baistambaragarhi RF</td><td>8.1</td><td>N</td></tr><tr><td>Sakasingha RF</td><td>8.7</td><td>W</td></tr><tr><td>Kauchiakhhol RF</td><td>8.7</td><td>NW</td></tr></tbody></table>	Name	Distance (km)	Direction	Balaram prasad PF	2.1	NW	Ganthigarhia PF	5.6	SE	Baistambaragarhi RF	8.1	N	Sakasingha RF	8.7	W	Kauchiakhhol RF	8.7	NW	
Name	Distance (km)	Direction																			
Balaram prasad PF	2.1	NW																			
Ganthigarhia PF	5.6	SE																			
Baistambaragarhi RF	8.1	N																			
Sakasingha RF	8.7	W																			
Kauchiakhhol RF	8.7	NW																			
12	Involvement of Critically Polluted Area/ Severely Polluted area as per 2018 CEPI score	Project is not located in Critically Polluted Area/Severely Polluted area																			

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

S.No.	Existing power plant configuration and capacity	Proposed power plant configuration and capacity	Total	Technology adopted
1	1200 MW (10x120 MW)	1080 MW (4x270 MW)	2280 MW	Sub Critical*

***Note:** Ministry of Power vide OM dated 25/02/2026 clarified that provision of their O.M. No. 8/3/2002-Th-II (Vol. I) dated 13.11.2009 and its subsequent modification vide O.M. No. 5/18/2017-Th-II dated 01.02.2018 regarding capacity addition would be through super-critical units only are applicable only for plants to be set up by power generation utilities. There are no specific requirements prescribed for captive power plants. Accordingly, NALCO may adopt sub-critical technology for its proposed brownfield captive power plant expansion of 1080 MW (4 × 270 MW) at Angul, Odisha.

10. The details of the fuel (coal/gas/LDO) requirement for the proposed project/ expansion cum proposed project along

with its source and mode of transportation is given as below:

Details	Fuel requirement (MTPA)	Source	Distance from site (Kms)	Mode of Transportation	Coal characteristics (Worst case scenario)	Linkage document
Coal	Existing: 6.820 Proposed: 4.821 Total: 11.641	Mahanadi Coalfield Limited and NALCO's Utkal D&E blocks, NLC	Maximum 100 km	Combination of two or three modes (road and rail)	Ash: 50 (%) Sulphur: 0.5 (%) Moisture: 14 (%) GCV: 3000Kcal/Kg	FSA with MCL and owned coal from NALCO's Utkal D&E block
LDO	4200 KL	Oil Marketing Company (OMC)	Maximum 1500 km	Rail	NA	

11. Water requirement: Existing Water requirement is 100800 KLD, which is being obtained from Bramani river and permission for the same has been obtained from Irrigation Dept. Govt. of Odisha Vide Lr. No. T313 Dated 04.03.1980 and further renewed vide letter no 2131 dated 30.03.2024 (Valid for 3 years). The water requirement for the proposed project is estimated as 77760 m³/day which will be obtained from the Bramani river. The permission for drawl of additional surface water will be obtained for additional quantity. The water will be transported to the plant site through Pipeline. The specific water consumption for the proposed power plant will be 3 m³/MWhr.

12. Power requirement: Existing power requirement of 100 MW is obtained from Existing Plant. The power requirement for the proposed project is estimated as 108 MW that will be obtained from the Existing Plant.

13. Solid and hazardous waste management: The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below:

S. No.	Type of Waste	Source	Quantity generated (TPA)	Disposal
1	Domestic waste	Plant and canteen	300	Nearest MSW disposal site
2	ETP Sludge	ETP	20	Nearest TSDF

14. Project Cost: Existing capital cost of project was Rs.1547 Crores. The capital cost of the proposed project is Rs.11313.47 Crores and the capital cost for environmental protection measures is proposed as Rs. 1358 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs.136 Crores. The employment generation from the proposed project / expansion is 745 nos. (Permanent 545 nos. and Contractual 200 nos.).

15. Greenbelt development: Due to the proposed expansion, the greenbelt in the plant site area is rationalised from 237.63 Ha to 142.85 Ha and in the ash pond from 48.77 Ha to 143.55 Ha. Due to the proposed rationalisation, the existing greenbelt at the plant site is maintained at 38.66 % which is more than the stipulated norms of 33%. Thus total of 286.40 Ha area (42.22% of total project area) will be developed as greenbelt. A 10-15 m wide greenbelt, consisting of at least 3 tiers around plant boundary will be developed as greenbelt and green cover as per CPCB guidelines. Local and native species will be planted with a density of 2500 trees per hectare.

16. Ash management: Ash management for last three years

Year	Quantity generated (MT)	Quantity utilized (MT)	% utilization	Balance quantity (MTP)	No of storage silos with capacity
2025-2026*	2259267	1897457	83.99	361810	06 nos, 5000 MT
2024-2025	3332793	2680824	80.44	651969	06 nos, 5000 MT

2023-2024	2917869	2619412	89.77	298457	06 nos, 5000 MT
*till November 2025					

A. Fly ash Details for last three years: 2023-24: 2334295 MT; 2024-25: 2666234 MT; 2025-2026: 1807413 MT

S.No.	Activity (as applicable)	Quantity	Percentage	Remarks (Prior approval of SPCB details to be mentioned)
1.	Fly ash based products (bricks or blocks or tiles or fiber cement sheets or pipes or boards or panels)	2023-24: 730516 MT 2024-25: 672544 MT 2025-26: 478329 MT	2023-24: 31.2% 2024-25: 25.2% 2025-26: 26.5%	As per MoEF act 2021, Audited by CPCB approved auditor.
2.	Construction of roads, road and fly over embankment	2023-24: 157320 MT 2024-25: 201600 MT 2025-26: 158367 MT	2023-24: 6.7% 2024-25: 7.6% 2025-26: 8.8%	As per MoEF act 2021, Audited by CPCB approved auditor
3.	Filling up of low-lying area	2023-24: 191760 MT 2024-25: 52800 MT 2025-26: 0 MT	2023-24: 8.2% 2024-25: 2% 2025-26: 0.6%	Audited by CPCB approved auditor
4.	Filling of mine voids:	2023-24: 956242 MT 2024-25: 1087321 MT 2025-26: 1247760 MT	2023-24: 40.9% 2024-25: 40.8% 2025-26: 44.04%	Permission from DGMS
5.	Total	2023-24: 2035838 MT 2024-25: 2014265 MT 2025-26: 1445605 MT	2023-24: 87.2% 2024-25: 75.5% 2025-26: 79.98%	

B. Bottom ash generation for last three years: 2023-24: 583574 MT; 2024-25: 666559 MT; 2025-26: 451854 MT

S.No.	Activity (as applicable)	Quantity	Percentage	Remarks (Prior approval of SPCB details to be mentioned)
1.	Filling of mine voids	2023-24: 583574 MT 2024-25: 666559 MT 2025-26: 451854 MT	2023-24: 100% 2024-25: 100% 2025-26: 100%	Permission from DGMS
	Total	2023-24: 583574 MT 2024-25: 666559 MT 2025-26: 451854 MT	2023-24: 100% 2024-25: 100% 2025-26: 100%	

C. Ash Pond Details

S.No.	Details of Ash pond	Ash pond 1	Total
1.	Status of ash pond (Active / Exhausted (yet to be reclaimed)/ Reclaimed)	Active	-
2.	Area (Ha)	67.66*	67.66
3.	Dyke height (m)	113 mRL	-
4.	Volume (m ³)	19.2 Million m ³	-
5.	Quantity of ash disposed (Metric Tons)	230.4 LMT	-
6.	Available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons)	0.52% @1.2 LMT	-
7.	Expected life of ash pond (number of years and months)	Active	-
8.	Type lining carried in ash pond: HDPE lining of LDPE lining or clay	No lining	-

S.No.	Details of Ash pond	Ash pond 1	Total
	lining or No lining		
9.	Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)	Wet Slurry LCSD	-
10.	Ratio of ash: water in slurry mix (1:):	1:9	-
11.	Ash water recycling system (AWRS) installed and functioning : Yes or No	Yes	-
12.	Quantity of wastewater from ash pond discharged into land or water body (m ³)	ZERO	-
13.	Last date when the dyke stability study was conducted and name of the organization who conducted the study:	15.10.2015	
14.	Last date when the audit was conducted and name of the organization who conducted the audit:	25.10. 25 Dr Suresh Prasad Singh Professor & Head Department of Civil Engineering National Institute of Technology, Rourkela, ODISHA, 769008	

*** Note:** Total ash pond area as per land use break up submitted to the Ministry is 189.10 Ha. Out of 189.10 Ha, active ashpond area is only 67.66 Ha. In the remaining land

D. Proposed ash utilization plan for expansion project

Details	Existing generation (MTPA)	Proposed generation (MTPA)	Total	Utilization (MTPA)	% of utilization	Balance quantity (MTPA)	No storage silos with capacity
Ash (Fly & bottom)	3.3	2.7	6.0	6.0	100	0	6 nos 5000 MT

Ash pond details: For the proposed expansion, existing ash pond of situated in an area of 67.66 Ha will be utilized and no new ash pond is proposed. In the remaining 121.44 Ha, 94.78 Ha will be brought under green belt development and 26.66 ha will be utilized for miscellaneous purposes.

17. Summary of violation under EIA, 2006/court case/show cause/direction if any, related to the project under consideration: There is no court case/show cause against the proposed project. Further, there is no violation cases under the Environmental Protection Act, 1986, Van (Sanraksha Evam Samvardhan) Adhiniyam, 1980 and The Wildlife (Protection) Act, 1972.

18. Written Submission:

Query: Ash Management Details:

Reply: NALCO's approach to ash management marks a strategic shift from conventional disposal to sustainable utilization, mandated by stringent regulatory frameworks that emphasize industrial applications and mine stowing as preferred alternatives to traditional pond storage.

1. Disposal Strategies:

- Primary (Eco-Friendly): Dry ash is supplied to brick/cement units, and lean slurry is disposed of in abandoned allotted mines.
- Emergency Storage: Ash Pond, I serve as a temporary buffer during surplus or exigencies.

2. Infrastructure Status: The facility manages four ash ponds covering a total area of 168.26 Ha excluding utility area.

3. Water Recovery & Treatment: To ensure environmental compliance, the system operates a closed-loop water cycle: channels.

- Sedimentation: Slurry settles in ponds; supernatant water overflows into decanting
- Clarification: Ash Pond III facilitates final settlement of particles.

- Recycling: Clarified water is processed through the dedicated wastewater treatment plant and recycled back to the CPP.

4. *Future Expansion*: The proposed expansion project focuses on Dry Ash Collection & Evacuation. In the event of operational exigencies, the existing Ash Pond I will remain the designated backup for temporary storage.

Observation and deliberation of the EAC

19. *The Committee observed and noted the following*:

- i. The instant proposal is for Expansion of the Existing 1200 MW (10x120 MW) Captive Power Plant to 2280 MW by addition of 4x270 MW Sub-critical Captive Power Plant by M/s. NALCO at NALCO Nagar, Banarpal Block, Angul District, Odisha.
- ii. The committee observed that no alternative sites considered by the Project proponent, since the proposed project area has been coming inside the existing plant area. Total land requirement for the project is 678.33 ha. In addition to the above, about 141.5 Ha consists of the Captive Rail System/ROB (95.74 Ha), HT Line (30.31 Ha), Water Supply Pipeline (9.32 Ha), and Ash Pipe Corridor (6.15 Ha). No R & R is involved in the proposed project.
- iii. The project site is not located within CPA/SPA as per CEPI assessment 2018 of CPCB.
- iv. The committee noted that Brahmani River, Nandira Jor and Lingara nadi are located at 6.1 (NE), 2.4 (N) and 6.7 (SW) km, respectively, from the project boundary. The committee observed some reserved/protected forests such as Baistambaragarhi RF, Sakasingha RF, Kauchiakho R.F, Balaram prasad PF, Ganthigarhia PF etc. located within the study area.
- v. Coal requirement for the proposed project is about 4.821 MTPA that will be sourced from Nearby Commercial Coal Mines of MCL and owned coal from NALCO's Utkal D&E block and transported through combination of railway wagons and road. LDO (4200 KL/ Annum) will be transported by Railway.
- vi. Existing Water requirement is 100800 KLD, water requirement is obtained from Bramani river and permission for the same has been obtained from Irrigation Dept. Govt. of Odisha Vide Lr. No. T313 Dated 04.03.1980 and which got renewed vide letter no 2131 dated 30.03.2024 (Valid for 3 years). The water requirement for the proposed project is estimated as 77760 m³ /day which will be obtained from the Bramani river. The permission for drawl of additional surface water will be obtained for additional quantity. The water will be transported to the plant site through Pipeline. The specific water consumption for the proposed power plant will be 3 m³/MWhr.
- vii. Existing capital cost of project was Rs.1547 Crores. The capital cost of the proposed project is Rs.11313.47 Crores and the capital cost for environmental protection measures is proposed as Rs. 1358 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs.136 Crores. The employment generation from the proposed project / expansion is 745 nos. (Permanent 545 nos. and Contractual 200 nos.).
- viii. Due to the proposed expansion the greenbelt in the plant site area is rationalised from 237.63 Ha to 142.85 Ha and in the ash pond from 48.77 Ha to 143.55 Ha, however due to the proposed rationalisation the existing greenbelt at the plant site is maintained at 38.66 % which is more than the stipulated norms of 33%. Thus total of 286.40 Ha area (42.22% of total project area) will be developed as greenbelt. A 10-15 m wide greenbelt, consisting of at least 3 tiers around plant boundary will be developed as greenbelt and green cover as per CPCB guidelines. Local and native species will be planted with a density of 2500 trees per hectare. With respect to green belt development in the instant proposal, MS apprised that the proposal was referred to Policy section and their comments/views on the same is given as below:
 - "If 33% was prescribed in the earlier EC, then the project proponent may not clear the existing green belt to reduce it. However, PP may relocate the green belt within the project site, subject to not reducing it from 33%.
 - If a specific green-belt percentage was not prescribed in the EC and the project proponent has suo-moto developed a certain percentage of greenbelt in the project site, then the same may be rationalised to not less than the minimum percentage as mentioned in the revised green belt norms."In the instant case, PP rationalized the green belt from 63.80 % to 38.36 %.

ix. Baseline data for the proposed project was already collected for the period of January 2026 to March 2026 in study area.

x. Existing Ash pond situated in an area of 67.66 ha will be used for proposed expansion and no new ash pond is envisaged. About 2.7 LMTPA ash will be generated and the same will be disposed with 100 % utilization by cement manufacturing, bricks manufacturing industries and filling mines etc. Unused fly ash, if any, will be stored to ash dyke.

xi. EAC suggested the Project Proponent to quantify the Carbon Sink capacity of the existing Greenbelt and the translocated Greenbelt area.

xii. EAC asked the Project Proponent to install the wind barrier along the village side for fugitive dust control and shall plant the saplings not less than 2 meter height along with it.

xiii. EAC asked the Project Proponent to account the number of trees to be felled and accordingly compensate for the same in consultation with the State Forest Department

xiv. Committee asked the Project Proponent to make provisions for Dry Bottom and Fly ash collection and if any ash to be disposed in the ash dyke it should be in HCSD form.

xv. EAC opined that a site visit should be conducted by the Sub-committee of EAC to see the various issues pertaining to the instant project before consideration of EC proposal. The findings of the subcommittee report shall be incorporated in the final EIA/EMP report and the same shall be reported along with the ToR compliance.

xvi. The EAC also deliberated on the written submission of the project proponent and found it satisfactory.

Recommendations of the Committee:

20. Based on the discussion held and the documents submitted the EAC **recommended** the proposal for the grant of Terms of Reference (TOR) to the “*Proposed Expansion of the Existing 1200 MW (10x120 MW) Captive Power Plant to 2280 MW by addition of 4x270 MW Sub-critical Captive Power Plant by M/s. National Aluminum Company Limited at NALCO Nagar, Banarpal Block, Angul District, Odisha*”, with Public Consultation (along with Public Hearing) under EIA Notification, 2006 (as amended) with the specific TOR conditions in addition to generic TOR (**Annexure-1**).

21. 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. National Aluminum Company Limited** for “*Proposed Expansion of the Existing 1200 MW (10x120 MW) Captive Power Plant to 2280 MW by addition of 4x270 MW Sub-critical Captive Power Plant at NALCO Nagar, Banarpal Block, Angul District, Odisha*” with the specific ToRs in addition to generic/standard ToR as per **Annexure-1**.

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

23. 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 S.O. 751(E) dated 17th February, 2020 for considering the proposal for environmental clearance.

24. 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.

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

26. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006 and as amended.

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

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

Yours faithfully,
(Sundar Ramanathan)
Scientist 'F'
Tel: 011- 20819378
Email- r.sundar@nic.in

Copy To

1. The Monitoring Cell, Ministry of Environment Forest and Climate Change, Indira Paryavaran Bhawan Jor Bagh Road New Delhi, Raipur, Chhattisgarh, monitoring-ec@nic.in
2. The Member Secretary, CGWA, 18/11 Jamnagar House Man Singh Road, Central, Delhi, cgwa@nic.in
3. The Member Secretary, CPCB, Parivesh Bhawan Cbd-Cum-Office Complex East Arjun Nagar, East, Delhi, mscb.cpcb@nic.in
4. The District Collector, DC Office, Angul, Anugul, Odisha, dm-angul@nic.in
5. The Deputy Director General, Regional Office, "Deputy Director General Of Forests (C) Ministry Of Environment Forest And Climate Change Regional Office A/3 Chandshekharapur Bhubaneswar-751023", N/A, N/A, roez.bsr-mef@nic.in
6. The Member Secretary, SPCB/PCC, Paribesh Bhawan A-118 Nilakantha Nagar Unit-Viii, Bhubaneswar, Odisha, membersecretary@ospcboard.org
7. The Secretary, Ministry of Power, Shram Shakti Bhawan Rafi Marg New Delhi 110001, New Delhi, Delhi, Secy-power@nic.in
8. The Chairman, Central Electricity Authority, Sewa Bhawan R.K. Puram New Delhi-110066., New Delhi, Delhi, chair@nic.in

Annexure 1

Specific Terms of Reference s for (Thermal Power Plants)

1. [A] Environmental Management And Biodiversity Conservation

S. No	Terms of Reference
1.1	Project proponent shall provide appropriate Pollution control measure for SO2 emissions as per the applicable emission norms for the proposed project.
1.2	Project Proponent to take necessary permissions from the State Forest Department before felling/translocation of trees.
1.3	Project Proponent to obtain certified compliance report from the MoEF&CC RO office for the existing EC as per MoEF&CC OM dated 08/06/2022.
1.4	Certificate from concerned District Magistrate/Executive Engineer from the State Water Resources department (or) any officer authorized by the State Government in this regard shall be submitted stating that project site is not located within flood plain of Nandira River and Brahmani River corresponding to one in 25 years of flood as per Ministry's O.M. dated 14/02/2022.

S. No	Terms of Reference
1.5	PP needs to submit NOC/permission from the State Water resource Department/Irrigation Dept. in case of diversion of any Nala/Stream/water bodies.
1.6	All the parameters as mentioned in the National Ambient Air Quality Standards (NAAQS) shall be monitored by the project proponent and additionally ambient air at two more locations other than the proposed locations shall be monitored.
1.7	Project proponent shall also obtain recommendations from the State Forest department regarding the impact of project on the nearby Reserved Forests, if any, along with the mitigation measures to be followed.
1.8	EIA/EMP study shall take in to consideration the different scenarios arising due to change of coal source, impact on environmental attributes due to change of coal source along with corresponding mitigation measures with EMP budget shall be submitted.
1.9	Biodiversity analysis of the project site and study area shall be done through any NABET accredited consultant. The study report shall inter-alia include impact of power plant on aquatic life of Nandira River and action plan for complying with the recommendations of the study report shall be submitted.
1.10	Project proponent shall commission a study on site specific hydrological studies for area drainage for existing and proposed 2280 MW power plant structure through reputed Government institute. The study report along with the action plan for implementing the recommendations of the report shall be submitted along with the EIA/EMP report.
1.11	Project proponent shall prepare an integrated water shed management plan for protection and conservation of water bodies within the study area of the project site. The study report along with the action plan for implementing the recommendations of the report shall be submitted along with the EIA/EMP report.
1.12	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.
1.13	PP should submit the detailed plan in tabular format (year-wise) for concurrent afforestation and green belt development in and around the project site covering 286.4 Ha (Plant site- 142.85 Ha + Ash Dyke- 143.55 Ha) of the project area as per MoEF&CC OM dated 29.10.2025 of MoEF&CC for greenbelt/green cover requirement for industries. 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. 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 should be of native and few fruit bearing species mainly, of height not less than 2 meters to be selected and accordingly cost of plantation needs to be decided.
1.14	Action plan for development of three-tier plantation programme along the periphery of the project boundary and the coal transportation route shall be provided. PP shall submit concurrent plantation plan.

S. No	Terms of Reference
1.15	Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed units and shall be incorporated in the EIA/EMP report.
1.16	Details of Ash management plan as per MoEF&CC notification dated 31/12/2021 & its subsequent amendment for the proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.
1.17	Action plan for dry ash collection system (Bottom ash and Fly ash) shall be submitted.
1.18	Action plan for disposal of ash through High Concentration Slurry Disposal (only in emergency conditions) shall be submitted.
1.19	Proper protection measures like high-density polyethylene (HDPE) lining, appropriate height of bund and adequate distance between the proposed Ash pond and water body etc. shall be planned to reduce the possibility of mixing leachate with any freshwater body for ash pond. A high-density Slurry disposal plan shall be prepared.
1.20	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.
1.21	Details pertaining to water source, treatment and discharge should be provided.
1.22	PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.
1.23	Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
1.24	PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total material handled) and steps to be taken for reduction of the same. The year-wise target for reduction in the specific diesel consumption needs to be submitted. PP shall also explore the possibility of using e-vehicles/LNG/CNG based machinery and trucks for the operation and transportation of Coal and ash and submit an implementation strategy.
1.25	PP shall provide the details of transportation of fly ash from the plant, transportation route etc. Further, carry out a traffic study for at least one month and provide the impact of transportation along with the mitigation measures.
1.26	PP shall submit the action plan to adhere to the Plastic Waste Management Rules 2026 and to adhere Ministry's OM dated 18/07/2022.
1.27	Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.
1.28	The input parameters for the AAQ modelling and the influence of various combinations of these on the AAQ must be reported in the EIA/EMP Report. In addition to the Wind Rose diagram collected for one season during the preparation of the E.I.A., wind rose diagram for all seasons must be

S. No	Terms of Reference
	provided using secondary data from sources such as IMD/CPCB etc.
1.29	Project proponent shall take all necessary steps to control the Air Quality and take additional mitigation measures for proposed TPP to maintain the Ambient Air Quality values within the limits. The action plan regarding maintaining ambient quality standards (Time weighted average for 24 hours and Annual both) be submitted. Further, project proponent shall submit an undertaking to abide by the provisions of the notification number G.S.R 465 (E) dated 11/07/2025 related to SO2 emission norms.
1.30	Details of air pollution control devices to be installed in the proposed 4x270 MW TPP along with its maintenance schedule shall be incorporated in EIA/EMP report.
1.31	Carbon emission due to proposed TPP and allied carbon sequestration/ carbon offsetting plan be submitted.
1.32	PP is advised to implement the 'Ek Ped Maa Ke Naam' Campaign, which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than Green belt development. An action plan in this regard shall be submitted.

2. [B] Disaster Management

S. No	Terms of Reference
2.1	A Disaster Management Plan shall be prepared and incorporated in the EIA/EMP report.
2.2	Project proponent shall carry out study on site specific design earthquake parameters for proposed 1080 MW (4x270 MW) power project through reputed institute.
2.3	Site specific risk assessment study followed by emergency preparedness plan shall be submitted.

3. [C] Socio-economic Study

S. No	Terms of Reference
3.1	Public Health Action Plan including the provisions for drinking water supply for the local population shall be in the EIA/EMP Report. The status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the needs of the labour force and local populace.
3.2	Public consultation (Public Hearing and Written submission) shall be conducted as per the provisions of EIA Notification, 2006 and as amended. As per the Ministry's OM dated 30.09.2020, to address the concern raised during the Public Hearing, the Project Proponent is required to submit the detailed activities proposed with year wise budgetary provision (Capital and recurring) for 5 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.

S. No	Terms of Reference
3.3	A need based Social Impact Assessment Study shall also be carried out and an action plan on its recommendations may also be submitted with budgetary provisions.
3.4	Demographic details and land use change details in 10 km area shall be submitted.

4. [D] Miscellaneous

S. No	Terms of Reference
4.1	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 modeling.
4.2	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.
4.3	PP shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.
4.4	Detailed description of all the court cases along with its current status shall be submitted.
4.5	PP should provide in the EIA Report details of all the statutory clearances, permissions, no objection certificates, consents etc. obtained for this project under various Acts, Rules and regulations shall be submitted. Further, all the permissions/MoUs obtained for this project shall be revalidated and submitted along with the EIA/EMP report.
4.6	The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs, which will analyze the samples.
4.7	PP should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this PP should mention the number and designation of persons to be engaged for the implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.
4.8	PP should submit the year-wise, activity wise and time-bound budget earmarked for EMP, occupational health surveillance, and activities proposed to address the issues raised during Public Hearing. The capital and recurring expenditure to be incurred needs to be submitted.
4.9	Activities shall be prepared based on the issues arise during public hearing conducted and fresh written submission with defined timeline and budgetary provisions.
4.10	Aerial view video of project site and coal transportation route proposed for this project shall be recorded through drone and be submitted. Along with this plan of 3 tier plantation on coal transportation route shall be submitted.
4.11	The PP should ensure that only NABET-accredited consultants shall be engaged for the preparation

S. No	Terms of Reference
	of EIA/EMP Reports. PP shall ensure that the accreditation of the consultant is valid during the collection of baseline data, preparation of EIA/EMP report and the appraisal process. The PP and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and the PP and consultant are fully accountable for the same.
4.12	PP should provide in the EIA Report details of the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after the grant of EC.
4.13	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.
4.14	Necessary coordination shall be made with concerned SPCB (who is responsible for Compliance of OM dated 14.01.2025) regarding streamlining the implementation of GSR 702 and GSR 703 dated 12.11.2024 through which projects requiring prior EC were exempted from requirement of CTE.
4.15	The findings of the subcommittee report shall be incorporated in the final 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 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.
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

S. No	Terms of Reference
	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.