



सत्यमेव जयते

File No: J-13012/57/2008.IA.II (T)  
Government of India  
Ministry of Environment, Forest and Climate  
Change  
IA Division  
\*\*\*



Date 01/01/2025



To,

Sh. Santosh Kumar Singh  
M/s Adani Power Ltd.  
Adani House, Nr Mithakhali Circle Navrangpura, Ahmedabad. Pin- 380 009, Gujarat  
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**Subject:** Proposed expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW by M/s. Adani Power Limited located at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amlı Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh - Grant of Environmental Clearance – regarding

Sir/Madam,

This is with reference to your proposal number IA/CG/THE/494913/2024 dated submitted by M/s. Adani Power Limited to the Ministry for grant of Environmental Clearance (EC) under the provision of the EIA Notification 2006 and as amended thereof to the proposed project mentioned above.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC24A0601CG5496626N
(ii) File No.	J-13012/57/2008.IA.II (T)
(iii) Clearance Type	Fresh EC
(iv) Category	A
(v) Project/Activity Included Schedule No.	1(d) Thermal Power Plants
(vi) Sector	Thermal Projects Proposed expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amlı Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh by Adani Power Limited.
(vii) Name of Project	
(viii) Name of Company/Organization	M/s Adani Power Ltd.
(ix) Location of Project (District, State)	RAIGARH, CHHATTISGARH

(x) Issuing Authority

MoEF&CC

(xi) Applicability of General Conditions as per  
EIA Notification, 2006

No

3. M/s. Adani Power Limited has made an online application vide proposal no. IA/CG/THE/494913/2024 dated 18/10/2024 along with copy of EIA/EMP report, Forms (CAF, Part A, B and C), certified compliance report and subsequent reply to the additional information submitted on 18/11/2024 and sought for environmental clearance under the provisions of EIA Notification, 2006 for the project mentioned above.

4. The proposed project activity is listed at item No. **1(d) – Thermal Power Plants under Category ‘A’** of the schedule of the EIA Notification, 2006 and appraised at the Central Level.

5. The instant Proposal was earlier considered and deferred by the EAC (Thermal) in its 14th meeting held during 4-5th November, 2024. The proposal was further considered by the EAC (Thermal) in its 15th meeting held on 28th November, 2024. The PP has submitted the written information on 05.12.2024. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed at <https://parivesh.nic.in>.

6. The project of M/s. Adani Power Limited located in Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna Villages, Tehsil Pussore, District Raigarh, State Chhattisgarh is for enhancement/expansion of capacity from 600 (1x600) MW to 2200 MW [Proposed 1600 (2x800) MW based on Ultra Super Critical Technology].

7. The detail of the ToR is furnished below:

Proposal No with Date	Consideration	Details	Date of Accord	ToR Validity
IA/CG/THE/438173/2023, dated 31 <sup>st</sup> July 2023	45 <sup>th</sup> EAC Meeting held on 16 <sup>th</sup> August 2023	Terms of Reference	23 <sup>rd</sup> September 2023	22 <sup>nd</sup> September 2027

8. The existing project was accorded environmental clearance vide letter no. J-13012/57/2008-IA. II (T) dated 20/05/2010 and subsequent amendment to EC was accorded on 16.04.2015, 26.11.2019 and 30.07.2020, Thereafter, EC was transferred vide letter dated 22.10.2019 (from KWPCCL to REGL) and 24.04.2023 (REGL to APL) by MoEF&CC. Consent to Operate renewal for the existing unit was accorded by Chhattisgarh Environment Conservation Board (CECB) vide Consent Order No. 9122/TS/CECB/2022, Nava Raipur Atal Nagar, Raipur on 11/03/2022. The validity of CTO is up to 31/03/2025.

9. Environmental Site Settings

S. No.	Particulars	Details			Remarks
1	Total Land	355.71 Ha (Private- 355.71 Ha)			Land use: The land used for the proposed expansion is within existing TPP land areas which is already under the possession of project proponent.
2	Land use breakup	<b>Facilities</b>	<b>Existing Area (In Ha)</b>	<b>Proposed Area (In Ha)</b>	-
		Main Plant	10.11	22.25	
		Coal Handling System	23.47	24.28	
		Water System	7.28	11.33	
		Switch Yard	-	-	
		Green belt	67.58	49.82	
		Roads	-	-	
		Ash pond	72.84	-	

		Facilities	Existing Area (In Ha)	Proposed Area (In Ha)
		Railway siding	-	-
Water supply pipeline	-	-		
Ash transport pipeline	-	-		
Others (including plant Road, boundary road, Misc. etc.)	25.49	41.26		
<b>Total</b>	<b>355.71 Ha.</b>			
3	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	The proposed expansion is within the plant premises area. The land is already under the possession with APL.		
4	Existence of habitation & involvement of R&R, if any	R & R is not required as land is already under possession of the proponent.		
5	Latitude and Longitude of all corners of the project site	<b>A. Plant site</b>		
		<b>Point</b>	<b>Latitude</b>	<b>Longitude</b>
		A	21°45'07.92"N	83°16'25.37"E
		B	21°45'05.19"N	83°16'42.40"E
		C	21°45'04.59"N	83°16'46.64"E
		D	21°44'59.76"N	83°16'54.97"E
		E	21°44'47.67"N	83°17'08.40"E
		F	21°44'40.52"N	83°17'06.11"E
		G	21°44'29.86"N	83°17'02.82"E
		H	21°44'17.40"N	83°16'59.75"E
		I	21°44'09.42"N	83°17'10.55"E
		J	21°44'02.09"N	83°17'03.93"E
		K	21°44'03.99"N	83°16'53.96"E
		L	21°43'50.43"N	83°16'49.33"E
		M	21°43'44.19"N	83°16'46.05"E
		N	21°43'37.64"N	83°16'38.27"E
		O	21°43'50.1"N	83°16'22.98"E
		P	21°43'41.32"N	83°16'20.53"E
		Q	21°43'49.15"N	83°16'02.52"E
		R	21°44'02.77"N	83°15'54.55"E
		S	21°44'21.75"N	83°15'55.35"E
		T	21°44'29.30"N	83°15'59.48"E
		U	21°44'46.69"N	83°16'5.021"E
		V	21°44'52.46"N	83°16'21.52"E
		<b>B. Ash Pond</b>		
		<b>Point</b>	<b>Latitude</b>	<b>Longitude</b>
		A	21°44'24.37"N	83°16'5.40"E
B	21°44'22.32"N	83°16'28.20"E		
C	21°43'51.30"N	83°16'25.26"E		
D	21°43'52.93"N	83°16'1.74"E		
6	Elevation of the project site	230 m above MSL		

7	Involvement of Forest land if any.	No forest land is involved.		
8	Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area.	Project Site: Raigarh Thermal Power Plant Study Area:		
		<b>Water body</b>	<b>Distance</b>	<b>Direction</b>
		Mahanadi River	3.5	S
		Mand River	1.4	SW
		Kutari Nala	3.3	SW
		Lath Nala	5.4	SW
		Kantang Nala	5.6	S
		Gayasagar Nala	8.7	SE
		Nala	2.8	NW
Kamrel Nala	8	NNW		
9	Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. if any within the study area	<b>List of Reserved and protected forests:</b>		
		<b>Particulars</b>	<b>Distance (in km)</b>	<b>Direction</b>
		Damka PF	5.4	SW
		Devtongri PF	8	SSW
		Kandola RF	9.7	SSE
10	Archaeological sites/monuments/ historical temples etc.	Nil		
11	Involvement of Critically Polluted Area/Severely Polluted area as per 2018 CEPI score	Nil		

10. 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
1.	600 (1x600) MW	1600 (2x800) MW Ultra Super Critical	2200 (600+1600) MW	Sub-Critical & Ultra Super Critical

11. 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
Existing TPP	3.25 Million TPA	SECL, MCL	About 110 (Rail 85 KM & Road 25 KM)	Rail & Road	Ash – <40(%) Sulphur - <0.5 (%) Moisture – 13 (%) GCV- 3065 Kcal/Kg	Through e-auction.
Proposed TPP	6.6 Million TPA	Bijahan coal mine	Refer below table	Rail	Ash- <40(%) Sulphur- <0.5 (%) Moisture- 13 (%) GCV – 3700 Kcal/Kg	Fuel Supply Agreement (FSA) & e-auction.

Transportation Rail Route with distance for expansion project:

Rail Route	Route Length (approx..)	Status
Sardega Station to Bhalumuda & Ghargoda Station	37 Km	Under Development by CIL & Indian Railways
Ghargoda Station to Bhupdeopur station	51.2 Km	Existing Rail Route
Bhupdeopur station to Raigarh TPP through Kirodimal station route	28.3 Km	Under Construction by APL

12. Water requirement: Existing Water requirement is 41095 m<sup>3</sup>/day, water allocation is obtained from Mahanadi River and permission for the same has been obtained from WRD Raipur, Chhattisgarh vide agreement certificate No. IN-CG20016765166330T dated 23.02.2021. The water requirement for the proposed project is estimated as 95996 m<sup>3</sup> /day which will be met from Surface Water from River Mahanadi at 05 km. The permission for drawl of surface water is obtained from Rajya Nivesh Prothsahan Board (Chhattisgarh Govt.) vide letter No./ 299/SIPB/2021/239 dated 15.03.2024 The water will be transported to the plant site through existing pipeline. The specific water consumption for the power plant is 2.5 m<sup>3</sup>/MWhr.

13. Power requirement: Existing power requirement of about 50 MWh from own TPP, i.e. AUX consumption. The power requirement for the proposed project is estimated as about 144 MWh, and will be met with own generation, i.e. AUX consumption.

14. Baseline environmental studies:

Period	Range	Additional study (if any)
AAQ parameters at 10 locations (Oct to Dec 2023)	PM <sub>10</sub> (g/m <sup>3</sup> ) 31 – 72.6 PM <sub>2.5</sub> (g/m <sup>3</sup> ) 18.6 – 48.5 SO <sub>2</sub> (g/m <sup>3</sup> ) 10.2 – 32.6 NO <sub>2</sub> (g/m <sup>3</sup> ) 8.8 – 20 CO (mg/m <sup>3</sup> ) 0.35 – 0.78	DSS
Incremental Level	GLC PM <sub>10</sub> = 0.4 µg/m <sup>3</sup> (Level at 06 km in SW Direction) SO <sub>2</sub> = 3.3 µg/m <sup>3</sup> (Level at 06 km in SW Direction)	
Surface samples (10 locations)	Water pH of the study area varied from 7.26 to 7.56. TDS was observed in the range of 206 mg/l at SW6 to 416 mg/l at SW10.). The maximum total hardness of surface water samples in study area was found to be 188 mg/l in sample at SW10 and the minimum was observed as 94 mg/l in the sample at SW6 which is at moderate to high levels. The maximum alkalinity of water bodies samples was found to range between 60-120 mg/l in the study area. The maximum chloride concentration (90 mg/l) was found at SW10 and the minimum (45 mg/l) was recorded at SW5. The level of fluoride ranged between 0.35 mg/l to 0.55 mg/l and were found to be within the acceptable limit of drinking water.	
Ground samples at 10 locations	Water pH value of ground water samples varied from 7.33 to 7.54. The water samples are slightly alkaline. The maximum total hardness of ground water was found to be 328 mg/l in sample at GW5 and the minimum was observed as 190 mg/l in the sample at GW8. The minimum alkalinity of ground water was found to be 140 mg/l in sample at GW2 and GW10 and the maximum was observed as 220 mg/l in the sample at GW5. The maximum chloride concentration (75 mg/l) was found at GW5 and the minimum (45 mg/l) was recorded at GW9 and GW 10. The maximum average level of fluoride (0.45 mg/l) was found in GW5 and the minimum value (0.25 mg/l) was found at GW9 and GW10.	
Effluent generation details and its	Effluent generation from TPP - 3000 KLD Mode of treatment & reuse – Neutralization treatment will be provided for DM	

Period	Range				Additional study (if any)
treatment	<p>water reject. Wastewater wiutilized within the plant to achieve Zero Liquid discharge.</p> <p>Domestic wastewater generation – 120 KLD</p> <p>Domestic wastewater will be treated through latest MBBR Technology.</p> <p>Mode of treatment &amp; reuse - Treated water will be utilized for greenbelt and plantation purpose.</p>				
Noise levels Leq (Day & Night) at 10 locations	<b>Category</b>	<b>Location</b>	<b>Time</b>	<b>Leq dBA</b>	
	Industrial Area	Project Site	Day	66.8	
			Night	41.6	
		Inside the Project Boundary	Day	64.3	
			Night	41.9	
	Commercial Area	Timarlaga petrol pump	Day	58.7	
			Night	43.4	
	Residential Area	Bunga Village	Day	51.4	
			Night	44.3	
		Ruchida Village	Day	50.5	
			Night	42.2	
		Kalma Village	Day	53.2	
			Night	40.2	
		Amalibhuan Village	Day	58.3	
			Night	43.9	
		Near Maa Mangla College (Surri Village)	Day	52.3	
			Night	42.6	
		Amalibhuana Village	Day	58.3	
			Night	43.9	
Tilgai Village	Day	52.9			
	Night	43.6			
Silent Zone	There is no silent zone				
Soil Quality at 5 Locations	pH range 7.44 to 7.81; Electrical conductivity (EC); 344 to 506 mhos/cm; potassium: 102 to 150 mg/kg; Nitrogen: 507 to 745 mg/kg; Phosphorous: 43 to 63 mg/kg;				
Flora & Fauna	<p>Schedule-I species observed in the study area: Indian grey mongoose or Asian grey mongoose (<i>Urva edwardsii</i>), Indian fox (<i>Vulpes bengalensis</i>), Indian Giant Squirrel (<i>Ratufa indica</i>), Indian Python (<i>Python molurus</i>), Indian Star Tortoise (<i>Geochelone elegans</i>)</p> <p>APL, Raigarh has already submitted the wildlife conservation plan along with requisite documents to PCCF &amp; DFO and further, PP will adhere &amp; comply with all the conditions, suggestions/recommendations by PCCF office towards wildlife conservation plan.</p>				
Hydrogeology study	Recommendations of Hydrogeology study:				Consultant Consultant details: The hydrogeology study report has been prepared by M/s. Akshar Geo Services Pvt. Ltd & Vetted by NIT Delhi and the Vetted report is submitted with ADS response.
	<b>S. No.</b>	<b>Recommendations</b>	<b>Action Plan</b>		
	1.	The maximum hardness level (680.0 mg/l) exceeds both the acceptable limit (200 mg/l) and the permissible limit (600 mg/l) set by IS 10500:2012. This may indicate potential issues for water usability, especially in WS-12. Elevated hardness levels and	<p>Water quality monitoring shall be done once a month through NABL accredited laboratory to track Hardness Level in <b>WS-12</b> location.</p> <p>Further, PP shall engage reputed government institutes to closely monitoring the hardness levels for further course of action as well to take</p>		

Period	Range	Additional study (if any)
	<p>water treatment may be required in coming future. A need for ongoing monitoring and potential remediation efforts in areas with hardness levels, particularly WS-12 can be suggested.</p>	<p>preventive action within the next 8 to 10 months.  <b>Noughata village (WS-12) located at a distance of 6.5 km w.r.t plant site in North direction.</b></p>
	<p>2. By reviewing the report it was found that the values of Chloride content, Magnesium and Calcium were found to be above acceptable limit but within permissible limits. The plant may take some preventive measures accordingly</p>	<p>Raigarh TPP has already implemented ZLD and not using Ground water. Water quality monitoring shall be done once in a month engaging NABL accredited laboratory to track parameters like Chloride content, Magnesium and Calcium and corrective/preventive actions will be taken based on findings in the report.</p>
	<p>3. As the topography of the study area is undulating with varied drainage network, slope map and Digital Elevation Model (DEM) map of the study area can be incorporated in future study report for better understanding.</p>	<p>For the present project site Slope and elevation details are provided in EIA report. Recommendation duly noted for future study.</p>
	<p>4. It is recommended to mention the method used for determining stream order of the study area once in three years.</p>	<p>Raigarh TPP will engage reputed government institute for future study as recommended once in 3 years.</p>
Impact on aquatic ecology	<p>Mitigation measures</p> <ul style="list-style-type: none"> <li>Plant is based on ZLD.</li> <li>Suitable screens (1.0-3.0 mm mesh size) at the water intake structures provided to prevent entrainment and impingement of fish and other aquatic organisms and can significantly reduce harm.</li> <li>Implementing comprehensive monitoring systems for water temperature, quality, and aquatic life health allows for early detection of negative impacts and timely mitigation.</li> </ul>	

15. 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 to	Remarks
1	Municipal Solid waste	Plant Canteen & Admin Building	5.3 TPA	Collected; segregated using color coded waste bin, Organic waste converters (OWC)	--
2	E-Waste	IT, Telecom, Used tubes & bulbs	2.5 TPA	Collected; segregated	--
3	Battery Waste from UPS	Automotive & Industrial	5.4 TPA	Collected; segregated	--

S. No	Type of Waste	Source	Quantity generated (TPA)	Disposal to	Remarks
4	Bio-medical Waste	First Aid Centre	0.025 TPA	Collected; segregated	--
5	Hazardous Waste	Plant Operation	Used/Spent Oil – 60 TPA Spent ion Exchange resin containing toxic Metals – 5 TPA Waste or residue containing Oil – 8 TPA Empty/ Barrels/ Contaminated Containers 15 TPA	Collected; segregated	--

#### 16. Public Consultation

Details of advertisement given	The Times of India, Haribhoomi, Krantikari Sanket
Date of public consultation	12.07.2024, Time 11.00 AM onward
Venue	Playground/field near the Government Higher Secondary School, Supa
Presiding Officer	Smt. Santan Devi Jangde, Additional District Magistrate, Raigarh
Major issues raised	Employment to Local People, Community Rural Infrastructure Development, Dust generation issue, Education, Community Health & infrastructure, Job to locals.
No. of people attended	Approx. 400

#### Action plan as per MoEF&CC O.M. dated 30/09/2020 to address the concerns of public consultation:

S. No	Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing	Proposed Expenditures year wise (Rs. In Crores)					Total Proposed Expenditures (Rs. In Crores)	Physical Targets
		1st Yr	2nd Yr	3rd Yr	4th Yr	5th Yr		
<b>A</b>	<b>Educational Initiatives</b>							
	Modernization & necessary construction of identified Primary / Higher Secondary School of core zone village of the project site in consultation with Local Government Authorities. Identified aadarsh school shall be developed by APL with full support of local administration.	3.0	1.6	-	-	-	4.6	School of 1858 sq meters area is proposed to be constructed in Bade Bhandar <b>within 2 years</b> with classrooms and other basic facilities viz. principal room, staff room, library, assembly hall, computer room, administrative room, toilets, storeroom, playground etc.
	Distribution of drinking water filter/Drinking water coolers in schools.	0.1	0.2	0.2	-	-	0.5	APL will provide drinking water facility in more than 20-25 nearby villages Bade Bhandar, Chhote Bhandar, Amli bhanuna, Sarvani etc.
	Basic teaching and learning	2.0	1.5	1.0	-	-	4.5	APL will provide



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		1st Yr	2nd Yr	3rd Yr	4th Yr	5th Yr		
	infrastructure support to Govt. Schools, Supporting in creation of assembly halls, prayer halls, classrooms and <b>Smart class</b> , computer room, space for mid-day meals, playground, school boundary walls etc. for government school.							infrastructure support to Govt. School in about 20 Villages Bade Bhandar, Sarvani, Amli Bhanuna, Jevridih, Supa, Kathli.
	Educational Vocational Guidance fair (EVGF) for career talk. Conducting Quiz competition and awareness programs for Students, Provide assistance for coaching Classes.	0.15	0.30	0.30	-	-	<b>0.75</b>	APL will provide Scholarship to promote education for girls in the nearby 20-25 villages and Extracurricular activities like 'Yoga', events' etc. will be supported.
	Community provides awareness about education, health, hygiene, and good practices.	0.10	0.20	0.20	-	-	<b>0.5</b>	Functional literacy in Chhattisgarh state is 71% & 75% in 20 villages where APL is working. Further APL aims to meet 80% functional literacy within the next 2 years.
	Program for skill improvements of teaching staffs in govt. school.	0.10	0.20	0.20	-	-	<b>0.5</b>	Program for skill improvement of teaching staff is being conducted in about 8 government schools of the nearby villages.
		<b>5.45</b>	<b>4.00</b>	<b>1.90</b>	-	-	<b>11.35</b>	
<b>B</b>	<b>Community Health Initiatives</b>							
	Providing assistance for the construction & operation of Primary Health Centre equipped with necessary facilities within core village of TPP (Bade Bhandar) in consultation with local government authorities.	4.25	3.25	Actual recurring cost will be borne by APL Raigarh			<b>7.5</b>	<b>Hospital in an area of 3200 sq meter to be constructed within 2 years with 40 beds, doctors' cabin, nurses/staff rooms, emergency room, dispensary, pathology, patients' waiting area, toilets (M &amp; F), parking area, equipment etc.</b>
	Rural Medical Camps through Medical Team of Primary Health Centre @ 4 Nos. of camps per month (@ 60 patients per camp),	0.3	0.3	0.3	0.3	0.3	<b>1.5</b>	Mobile Health Care Unit services is being provided in about 28 villages.

S. No	Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing	Proposed Expenditures year wise (Rs. In Crores)					Total Proposed Expenditures (Rs. In Crores)	Physical Targets
		1st Yr	2nd Yr	3rd Yr	4th Yr	5th Yr		
	Safe Menstrual Hygiene Management Awareness, Mega Health Camp, Cataract Screening & Operation.							Medical camps will be periodically organized in about 10-15 villages Bade Bhandar, Chhote Bhandar, Amlia Bhanuna Sarvani, Barpali, Jevridih, Kathli, Tupakdhar, Bunga, Ranbhatha, Taparda, Supa, Kotmara.
	Promotion of awareness of malnutrition and anemia.	0.15	0.15	0.15	0.15	0.15	0.75	Awareness on Mother & child health and knowledge enhancement on preventive health care being promoted in about 18-20 Villages Bade Bhandar, Chhote Bhandar, Amlia Bhanuna Sarvani, Kalma, Chandli, Amlipali, Shankarpali, Pusalda, Jatri and Tilgi.
	Promotion of Poshan Vatika at backyard of villagers & Project Suposhan.	0.2	0.2	0.2	0.2	0.2	1.0	In about 25-30 nearby Villages Jevridih, Kathli, Bunga, Ranbhatha, Taparda, Supa.
		4.9	3.9	0.65	0.65	0.65	10.75	
<b>C</b>	<b>Sustainable Livelihood and Women Empowerment</b>							
	Skill Development Centre (SDC) to make the youth for achieving their Goals in life by becoming Skilled Professionals.	0.55	0.55	0.55	0.55	0.3	2.5	APL is providing ITI Training & Skill Development Program in the nearby villages.
	Development & Support for Drip irrigation, assistance for mushroom, vegetable cultivation and livestock management in core zone villages	0.35	0.35	0.35	0.35	0.1	1.5	Support being provided in Villages Bade Bhandar, Chhote Bhandar, Amlia Bhanuna and Sarvani.
		0.9	0.9	0.9	0.9	0.4	4.0	
<b>D</b>	<b>Community Rural Infrastructure Development</b>							
	Repairing, strengthening & Maintenance of Existing roads in consultation with Gram Panchayats.	0.7	0.7	0.7	0.7	0.7	3.5	Cement Concrete Road (about 6000 meters length) will be constructed near Sarvani & Amlia

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		1st Yr	2nd Yr	3rd Yr	4th Yr	5th Yr		
								Bhanuna and will be extended to other villages.
	To provide facility for potable drinking water, RO Plants and water supply system through overhead tanks	1.05	1.05	0.30	0.20	0.15	<b>2.75</b>	Portable drinking water facility being provided to Bade Bhandar, Chhote Bhandar, Amli Bhanuna Sarvani etc.
	Creation of clean and hygienic environment by proper drainage systems, community sanitation campaign, waste management awareness etc. implementation of Swachhh Bharat Initiative.	0.6	0.6	0.25	0.20	0.10	<b>1.75</b>	Strengthening of drainage facility in the nearby villages is under progress and further will be continued.
	Upgradation & Renovation of sanitation facilities such as toilets etc.	0.4	0.4	0.4	0.4	0.4	<b>2.0</b>	Upgradation & renovation of sanitation facility is being provided and will be provided on need based in Villages Sarvani, Bade Bhandar and Amli Bhanuna and other villages.
	Provision of solar street lighting, green nurturing programs, plantation drives etc. in	0.7	0.7	0.7	0.25	0.35	<b>2.7</b>	Solar street lighting is provided in Villages Barpali, Supa, Bunga & Tarda and other nearby villages shall be provided. Plantation drive will be conducted in consultation with forest office.
		<b>3.45</b>	<b>3.45</b>	<b>2.35</b>	<b>1.75</b>	<b>1.7</b>	<b>12.7</b>	
<b>E</b>	<b>Development of Playgrounds for Sports</b>							
	Development of playgrounds and promotion of sports and training for school children.	0.1	0.1	0.1	0.05	0.05	<b>0.4</b>	Playground shall be developed In Villages Bade Bhandar & Amli Bhanuna.
	Cultural activities for villagers & provide sports equipment such as swing sets etc.	0.1	0.1	0.1	0.05	0.05	<b>0.4</b>	Renovation work will be done in nearby temples & cultural/assembly halls for Bhajan Kirtaan.
		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.8</b>	
<b>F</b>	<b>Development of local youth &amp; women for various activities at village level</b>							
	Team/ Leaders development &	0.45	0.45	0.45	0.20	0.20	<b>1.75</b>	The program is already

S. No	Key Area Identification for Activities Based on Public Needs Highlighted During Public Hearing	Proposed Expenditures year wise (Rs. In Crores)					Total Proposed Expenditures (Rs. In Crores)	Physical Targets
		1st Yr	2nd Yr	3rd Yr	4th Yr	5th Yr		
	capacity building activities at village level for various programme and activities.							in progress and further strengthening will be done for more youths.
	Vehicles for emergency purpose for local villagers including private ambulances as per requirement	0.1	0.1	0.1	0.1	0.1	0.5	Vehicles are already made available to all.
		0.55	0.55	0.55	0.30	0.30	2.25	
	<b>Total (A+B+C+D+E+F)</b>	<b>15.45</b>	<b>13.0</b>	<b>6.55</b>	<b>3.70</b>	<b>3.15</b>	<b>41.85</b>	

17. Existing capital cost of project was Rs. 2,900 Cr. The capital cost of the proposed expansion project is Rs 13,600 Crores and the capital cost for environmental protection measures is proposed as Rs. 2110.33 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 21.85 Crores. The employment generation from the proposed project / expansion is 396 Nos. The details of cost for environmental protection measures as follows:

S. No.	Description of Item	Existing (Rs. In Crores)		Proposed (Rs. In Crores)	
		Capital Cost	Recurring Cost	Capital Cost (updated)	Recurring Cost
(i)	Air Pollution Control	81.20	3.23	1692.48	15.95
(ii)	Noise control	2.15	0.15	30.0	0.25
(iii)	Water Pollution Control	25.50	0.86	193.03	2.95
(iv)	Ash management	15.45	6.86	170	1.6
(v)	Environmental Monitoring and Management	0.15	0.06	16.82	0.50
(vi)	Green Belt Development	1.05	0.06	8.0	0.60
(vii)	Addressal of Public Consultation issues	1.7	0.1	41.85	4.57

18. Existing green belt has been developed in 67.58 ha area which is about 34.3% of the total project area of 197 ha with total sapling of 3,10,000 Trees. Proposed greenbelt will be developed in 49.82 ha which is about 33% of the total project area. Thus, total of 117.4 ha area (33% of total project area) will be developed as greenbelt. Around 30 m wide greenbelt, consisting of at least 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. Total no. of 4,34,425 saplings will be planted and nurtured in 117.4 hectares and available area in 5 years.

#### Updated Action Plan for Greenbelt and Plantation

S No.	Area (Ha)	Description	Proposed (Gap/Casualty replacement)	Year wise Action Plan (FY)	Budget Cost in (Rs.)
1	67.58	Already Plantation done	Gap filling by planting additional (Casualty replacement will be completed within two years)	2024-2025 2025-2026 2026-2027	0.316 Cr. 0.388 Cr. 0.295 Cr.
2	49.82	Greenbelt will be developed	Details action as below. (Five-year Plan)		9.21 Crores

#### Five Year Action Plan for Proposed Greenbelt Development (Expansion)

Year	Area (Ha)	No. of Trees	Plantation on safety zone (7.5 Meter) & Un-worked Area		Capital cost	Recurring cost/Annum	Name of species
			Area (Ha)	No. of Trees			
2024-25	16.6	41,500	Plant Purchase	Maintenance/Watering/Manuring	Sal (Shorea robusta)	Teak (Tectona)	

Year	Plantation on safety zone (7.5 Meter) & Un-worked Area		Cost of sapling along with maintenance Rs.600/Plant		Name of species
	Area (Ha.)	No. of Trees	Capital cost	Recurring cost/Annum	
2025-26	16.6	41,500	Cost- 7.47 Cr	Cost (@ Rs.100/Plant) –	grandis) Mahua (Madhuca indica), Neem (Azadirachta indica) Bamboo (Bambusa), Amaltas (Cassia fistula), Sissoo (Dalbergia sissoo), Peepal (Ficus religiosa), Khamar (Gmelina arborea), Melia azederach (Mahaneem), Neolamarckia cadamba (Kadam) and other local species as per CPCB/CECB Guidelines.
2026-27	16.6	41,500		Rs. 1.24 Cr	
2027-28	Manpower & Manure for maintenance			Rs. 0.25 (Lumpsum)	
2028-29	Manpower & Manure for maintenance			Rs. 0.25 (Lumpsum)	
<b>Total</b>	<b>49.8</b>	<b>1,24,500</b>	<b>7.47 Crores</b>	<b>1.74 Crores</b>	
<b>Total 9.21 Crores</b>					

### Status and Proposed Greenbelt Plantation

S. No.	Type	Area (Ha)	Percentage
1	Existing Greenbelt	67.58	34.%
2	Proposed Greenbelt	49.82	--
<b>Total Greenbelt Area</b>		<b>117.4</b>	<b>33 %</b>

### Plantation Methodology:

Plantation will be implemented through Miyawaki plantation technique to provide dense with native species and the approach is supposed to ensure that plant growth is 10 times faster and the resulting plantation is 30 times denser than usual. It involves planting dozens of native species in the same area and becomes maintenance-free after the first three years.

- The native trees of the region are identified and divided into four layers — Canopy Trees, Trees, Sub-trees & Shrubs.
- The quality of soil is analyzed and biomass, which would help enhance the perforation capacity, water retention capacity, and nutrients in it, is mixed with it.
- A mound is built with the soil and the seeds are planted at a very high density — three to five saplings per square meter. The ground is covered with a thick layer of mulch.

### 19. Ash management

#### A. Ash Pond details: -

S. No.	Details of Ash pond	Ash pond 1
1	Status of ash pond (Active / Exhausted (yet to be reclaimed)/ Reclaimed)	Active
2	Area (Ha)	70.43
3	Dyke height (m)	12.0
4	Volume (m <sup>3</sup> )	84.51 Lakh m <sup>3</sup>
5	Quantity of ash disposed (Million Tons)	2.355
6	Available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons)	About 70% (60 Lakh m <sup>3</sup> )
7	Expected life of ash pond (number of years and months)	15 yrs. Considering October'2024 (Capacity/life of ash dyke calculated in worst scenario for 25 years)
8	Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No lining	HDPE

S. No.	Details of Ash pond	Ash pond 1
9	Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)	HCSD
10	Ratio of ash: water in slurry mix	65:35
11	Ash water recycling system (AWRS) installed and functioning: Yes or No	Yes
12	Quantity of wastewater from ash pond discharged into land or water body (m <sup>3</sup> )	0
13	Last date when the dyke stability study was conducted and name of the organization who conducted the study:	19 <sup>th</sup> June 2024, NIT, Rourkela
14	Last date when the audit was conducted and name of the organization who conducted the audit:	01.10.2023, NIT Delhi

#### B. Proposed ash utilization plan for expansion project

Details	Existing generation (Phase- 1) (MTPA)	Proposed generation (Phase- II) (MTPA)	Total	Utilization (MTPA)	% of utilization	Balance quantity (MTPA)	No. of storage silos with capacity
Ash (Fly & Bottom)	1.282	2.356*	3.638	3.638	100	Nil	Existing TPP: Silo 1- 1000 MT Silo 2- 2500 MT Proposed TPP: Silo 4x2500 MT

\* MTPA: Million Ton Per Annum

\*Proposed ash generation calculated considering 85% PLF and worst coal scenario.  
Avg. Ash% content about 40%

Ash pond details: Nil. The existing ash pond will be used for the proposed expansion.

20. Summary of violation under EIA, 2006/court case/show cause/direction if any.

#### A. Summary of court cases :

S. No	Case no.	Court Details	Brief Summary of the Case	Last date of hearing	Next date/ Order Passed	Action taken by PP
1	3044/2010	Civil Court, Raigarh	A complaint is filed to recover the deficit of "Stamp duty & Registration fees" on R&R amount.	03.02.2011	Awaited	Matter is pending before Secretary-Revenue for guidelines on the matter since 3-Feb-2011. Neither party is pushing the matter. And no hearing is taking place. To be kept on hold.
2	E.C. 181/2014	Labour court, Allahabad	Petitioners filed a compensation claim for a fatal road accident involving an	-	Awaited	No liability of APL as the compensation is to be paid by Contractor.

S. No	Case no.	Court Details	Brief Summary of the Case	Last date of hearing	Next date/ Order Passed	Action taken by PP
			employee of M/s Roots Cooling System Pvt. Ltd (Party) alleging it to be employment-related injury.			
3	WP (C) No. 6003/2010	Civil (High Court, Bilaspur)	The Case is between Govt of Chhattisgarh & petitioners - challenging land acquisition proceedings no. 21/A-82/ 2009- 10 of Village Chhote Bhandar. we are as Party.	07.01.2022	Awaited	The hearing was held on 07.01.2022 as the court opinion that Weit Petition is pending since 2010. Opportunity has been given to Petitioners to make their representations.
4	WP (C) No. 5918/2010	Civil (High Court, Bilaspur)	The Cases is between Govt of Chhattisgarh & petitioners are challenging the notification issued under Sec-4 & Sec-6/ land acquisition proceeding no. 22/A-82/ 2009- 10 of village Bade Bhandar. and we are as Party.	07.01.2022	Awaited	The hearing was held on 07.01.2022 as per the court opinion that Weit Petition is pending since 2010. Opportunity has been given to Petitioners to make their representations.
5	Criminal Case/ 759/ 2016	Criminal (JMFC Court, Raigarh)	Calming forged registry - FIR no. 205/2016 was filed for forged registry in name of Ghansiram & Harichand-Ucchbhitti (Railway land).	--	Awaited	Police submitted the charge sheet on 03.11.16. Scheduled for registration of charges. Bail granted by High court, Bilaspur for all accused. Also scheduled for argument on accused application.
6	6/ B-105(3)/ 2016-17	Civil (District Registrar court, Raigarh)	A case has been filed for the loss of stamp duty and registration fee alleging suppression of the	--	Awaited	Scheduled for submission of patwari prativedan. Application to be filed for

S. No	Case no.	Court Details	Brief Summary of the Case	Last date of hearing	Next date/ Order Passed	Action taken by PP
			facts by KWPCCL.			restoration of case and name change on next hearing date. Case has been refiled in the Commissioner Court.
7	A.P./A-6/2017-18	Civil (Additional Commissioner, Bilaspur)	An appeal has been filed by Kulkitdas against an order in favor of his daughter Lata and KWPCCL, wherein the ownership of land is disputed.	--	Awaited	Scheduled for record call. Restoration applications are not needed, however application to be filed for name change.
8	A21 09/2016 (Not Registered Yet)	Civil (Commissioner Court, Bilaspur)	The case is filed through villager for getting land purchasing approval from land Commissioner as the village comes under the tribal area.	--	Awaited	Scheduled for record call. APL is not in array of parties.
9	72-A/2020	Declaration and Possession (2 <sup>nd</sup> CJ II)	Appeal Filed by Arjun Nishad for possession of land purchased by Company.	--	Awaited	--
10	OMP(I) COMM. NO.348 OF 2016 & AA 107 of 2017/OMP (I) COMM. NO.349 OF 2016 & AA 108 of 2017	Arbitration (Tribunal court, New Delhi)	Agency had filed the case in Tribunal Court for extra claim. Although Final Contract Closure MOM dated 12 Jun 2015 mutually agreed & signed.	--	Awaited	In view of the resolution plan getting approved without giving any right to Prem co. to claim the amount under dispute. The same gets extinguished and as such the arbitration is now infructuous.
11	ARB.P111/17 & 112/7	Arbitration (Tribunal court, New Delhi)	Although Final Contract Closure MOM dated 12 Jun 2015 mutually agreed & signed. Agency had filed the case in Tribunal Court for extra	--	-	In view of the resolution plan getting approved without giving any right to Premco to claim the amount under dispute. The same gets



S. No	Case no.	Court Details	Brief Summary of the Case	Last date of hearing	Next date/ Order Passed	Action taken by PP
			claim.			extinguished and as such the arbitration is now infructuous.
12	Writ Petition All Orders Civil [Related To Other Matter] (WPC) (Filing Number) 1248/2022	High Court, Bilaspur	The petition challenges the order by the Regional Officer, directing the petitioner to pay INR 18,90,000 without demonstrating the determination method. It also contests the cancellation of the NOC by the Sub-Divisional Officer, Sarangarh District, on 08.10.2021.	10.03.2022	Awaited	The matter was heard on 10.03.2022 wherein the Hon'ble Court granted an interim order staying the effect and operation of RO, order dated 04.12.2021 (levy of Rs. 18.9 lakhs). Further, the Respondent authorities are restrained from taking any coercive steps against APL Raigarh.
13	Appeal No. 446 of 2022	APTEL, New Delhi	Appeal against the Order Dated 08.08.2022 passed by CSERC in Petition No. 67 of 2020 (T) Carrying Cost to be allowed from the date the amounts were due to REGL instead of date of filing of Petition	--	Awaited	Pending for hearing. IA for name change from REGL to APL was allowed by APTEL on 02.06.2023.
14	Appeal No. 437 of 2019	APTEL, New Delhi	Appeal against levy of Relinquishment Charges for surrender of LTA	23.11.2020	Awaited	23.11.2020 – PGCIL not to raise invoice during pendency of Appeal, except for cases under IBC. To be Included in List of Finals IA for name change from REGL to APL was allowed by APTEL on 02.06.2023.
15	WPC 835 of 2023 filed by	Chhattisgarh High	Appeal against levy	23.11.2020	Awaited	23.11.2020 –

S. No	Case no.	Court Details	Brief Summary of the Case	Last date of hearing	Next date/ Order Passed	Action taken by PP
	REGL challenging CECB's Direction under Section 31A of Air Act	court	of Relinquishment Charges for surrender of LTA			PGCIL not to raise invoice during pendency of Appeal, except for cases under IBC. To be Included in List of Finals IA for name change from REGL to APL was allowed by APTEL on 02.06.2023.
16	Civil Suit Class B (DJ ADJ)/0000001/2022	District court, New Delhi (Non-Regulatory)	A suit has been filed against REGL/APL for the refund of INR 19,60,437, which includes the EMD amount of Rs. 4,60,438 and a Bank Guarantee of Rs. 15,00,000, along with interest. The plaintiffs claim that all obligations have been discharged, but the amounts have not been returned.	--	Awaited	For hearing.
17	OA No. 70/2023_Suo Moto Application by NGT against various Thermal Power Plants	Central Zone Bench of NGT, Bhopal (Non-Regulatory)	Imposition of Compensation [provisional Rs. 6.1689 Crores (Rs. 2.120 Crore for impact + Rs. 4.0489 Crore, towards cost of Road construction)], as road is being used by different/various TPPs & Industries due to impact and damage of road by transportation of Coal by road from Kulda Mine to destination.	17.10.2024	disposed off	Last hearing of NGT was held on 17.10.2024. NGT order OA no. 70/2023 stands disposed off and imposed compensation (penalty) is nullified to TPP's & Industries.
18	MSEFC-CASE-No.MH/20/S/NGR/02811-	MSEFC Court Nagpur	A Party was hired for plant	--	Awaited	A Party was hired for plant

S. No	Case no.	Court Details	Brief Summary of the Case	Last date of hearing	Next date/ Order Passed	Action taken by PP
	EM Services (India) Pvt Ltd Vs Adani Infra	(Non-Regulatory)	maintenance during Shutdown. During the maintenance, an accident happened by the party with a Govt Ambulance coming to Plant on the subject matter District Collector had directed Raigarh TPP to compensate for the same and same was executed. The party had laid a complaint in MSEFC Court Nagpur.			maintenance during Shutdown. During the maintenance, an accident happened by the party with a Govt Ambulance coming to Plant on the subject matter District Collector had directed Raigarh TPP to compensate for the same and same was executed. The party had laid a complaint in MSEFC Court Nagpur. The hearing date is awaited.
19	90/2023	Appellant Court Regulatory	Petition for determination of Energy Charge Rate for FY 20-21, FY 21-22, FY 22-23 towards supply of 5% power to CSPDCL.	--	Awaited	The hearing date is awaited.

#### B. Summary of Show Cause Notices :

S. No	Issuing authority	Date	Reasons for the issuance of SCN	Status of reply to submission	Present status
There is no Show cause notices issued either by MoEFCC or CECB for APL, Raigarh TPP.					

#### C. Summary of Violation :

Any violation case pertaining to the project on following:	No.
i. The Environment Protection Act, 1986 ii. Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980. iii. The Wildlife (Protection) Act, 1972	

#### ADS Information in chronology

21. The proposal was initially considered in 14th EAC meeting of Reconstituted EAC (Thermal) held on 4-5th November 2024. Proposal was deferred for want of following additional information. Proponent uploaded the additional information on 18/11/2024 and the proposal was placed before the EAC for consideration in its 15th meeting held on 28/11/2024.

i. Proceedings of the public hearing held for the existing project shall be submitted along with the action taken to address these issues.

- ii. Project proponent shall submit a comprehensive action plan with detailed activity wise outlay to address the issues raised during the public hearing held for the existing project as well as for the expansion project by explicitly stating the physical targets in accordance with the Ministry's OM dated 30/09/2020 and its subsequent amendments. The action plan inter-alia include scheme for supporting schools and hospitals in surrounding area for mitigating the effects of air pollution on the local population.
- iii. Hydrogeology study report submitted by the proponent shall be vetted by the reputed government institute. The vetted report along with the recommendations and action plan to comply with the recommendations shall be submitted to the Ministry.
- iv. Action taken report submitted by the proponent against the observations of certified compliance report shall be submitted along with the comments/views of the CECB.
- v. Ash pond calculation needs to be revisited as life of the ash pond is mentioned as only 15 years.
- vi. Project proponent shall submit revised ash management plan for improving ash pond management. The plan shall inter-alia include ash pond details, infrastructure facilities, ash generation and utilization as per the ash utilization notification dated 31/12/2021 and its subsequent amendments as well as legacy ash utilization and plan for reduction in existing ash pond area etc.
- vii. Revised action plan for green belt development covering 33% of the project area shall be submitted giving details of native species and cost outlay.
- viii. Action plan for installation of dry ash collection system and ash disposal by HCSD shall be submitted.
- ix. Project proponent shall explore the feasibility for installation of air cooled condenser system for the expansion project and the same shall be submitted.
- x. Proponent shall submit action plan for installation of solar power generation on roof top and also road side poles within the project site. A time bound plan for installation of minimum 1 MW solar power generation facility be submitted.
- xi. Traffic assessment study report submitted shall be revisited by incorporating the mitigation measures to be adopted for coal transportation by road. Project proponent shall submit the flood plain map of Mand river (1.4km distance) vis-à-vis with the project site, impact of project on aquatic ecology along with the mitigation measures to be adopted for the protection of the Mand river. 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 Mand river flood plain corresponding to one in 25 years of flood as per Ministry's O.M. dated 14/02/2022.
- xii. Project proponent shall submit the details of case no OA 70 of 2023 pending before the Hon'ble NGT with specific reference to the existing 600 MW by mentioning the details of non-compliance of conditions observed by the Hon'ble NGT and action taken by the proponent to comply with the directions of Hon'ble NGT. In this regard, RO of MoEF&CC may also give observations with regard to the coal transportation issues raised before the Hon'ble NGT and action if any taken by the PP.
- xiii. Project proponent shall clarify the stack height proposed under the expansion project is in consonance with prescribed norms of Central Electricity Authority.
- xiv. PP shall submit plan to ensure that diesel operated vehicles will be switched over to E-Vehicles/ CNG vehicles in a time bound manner, replace the passenger vehicles to E-vehicle in phased manner.
- xv. Time bound action plan to mitigate the impact of the project on the health of villagers of surrounding area be submitted.

**22. Observations and deliberations by the Committee:** The EAC in its meeting held on 28th November 2024, inter alia deliberated the following:

- i. Instant proposal is for expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW located at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amlhi Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh.
- ii. Existing project was accorded environmental clearance vide letter no. J-13012/57/2008-IA. II (T) dated 20/05/2010 and subsequent amendment to EC was accorded on 16.04.2015, 26.11.2019 and 30.07.2020, Thereafter, EC was transferred vide letter dated 22.10.2019 (from KWPCCL to REGL) and 24.04.2023 (REGL to APL) by MoEF&CC. Consent to Operate renewal for the existing unit was accorded by Chhattisgarh Environment Conservation Board (CECB) on 11/03/2022. The validity of CTO is up to 31/03/2025.
- iii. The Committee deliberated on the certified compliance report of Regional Office - CECB along with the action taken report of the project proponent and found it satisfactory.
- iv. A total area of 355.71 ha will be required for the proposed expansion, which is within the existing TPP area. The entire area of 355.71 ha. is already under possession of Adani Power Limited. No additional land is proposed to be acquired.
- v. FGD installation in the existing power plant shall be completed by December, 2026.
- vi. The hydrogeology study report done by the proponent has been vetted by NIT- Delhi. The recommendations made in this regard shall be complied by the proponent in a time bound manner.
- vii. Existing capital cost of project was Rs. 2,900 Cr. The capital cost of the proposed expansion project is Rs 13,600 Crores and the capital cost for environmental protection measures is proposed as Rs. 2110.33 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 21.85 Crores. The employment generation from the proposed project / expansion is 396 Nos.
- viii. The EAC also took into consideration the drone survey of the project site and kml file on the Google Earth presented by the project proponent along with DSS of the project site on PARIVESH.
- ix. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site as ascertained from DSS. River Mand is flowing at a distance of 1.4 km in SW direction. The High Flood Level (HFL) is RL 200.43m at a distance of 1.4 KM from TPP.
- x. The project site is not located within the Critically Polluted Area (CPA) / Severally Polluted Area (SPA) as per CEPI assessment 2018 of CPCB.
- xi. The Committee deliberated on the baseline data and incremental GLC due to the proposed project and observed that AAQ levels are within NAAQS.
- xii. Public hearing for the project was held on 12/07/2024. The Committee looked in to the videography of the public hearing proceedings, deliberated on the public hearing issues along with action plan submitted by the proponent to address the issues raised during the public hearing and found it satisfactory. The committee advised the PP to implement the PH action plan in a time bound manner.
- xiii. The Committee noted that the EIA reports are in compliance of the ToR issued for the project, reflecting the present environmental status and the projected scenario for all the environmental components.
- xiv. Effluent of 3000 KLD will be treated in ETP and Domestic waste water of 120 KLD will be treated through STP and reused. The plant will be based on Zero Liquid discharge system.
- xv. The proposed power plant does not require additional ash pond as existing ash pond will be used.
- xvi. Existing Water requirement is 41095 m<sup>3</sup>/day, water allocation is obtained from Mahanadi River and permission for the same has been obtained from WRD Raipur, Chhattisgarh vide agreement certificate No. IN-CG20016765166330T dated 23.02.2021. The water requirement for the proposed project is estimated as 95996 m<sup>3</sup> /day which will be met from Surface Water from River Mahanadi at 05 km. The permission for drawl of surface water is obtained from Rajya Nivesh Prothshahan Board (Chhattisgarh Govt.) vide letter No./ 299/SIPB/2021/239 dated 15.03.2024 The water will be

transported to the plant site through existing pipeline. The specific water consumption for the power plant is 2.5 m<sup>3</sup>/MWhr.

xvii. The present coal linkage of existing thermal power plant is from coal mines of SECL and MCL. Coal requirement for the proposed expansion will be met from Bijahan coal mine and transported to the plant site by rail only.

xviii. Green belt is proposed to be developed in an area of 33 % of the total area.

xix. Schedule-I species observed in the study area: Indian grey mongoose or Asian grey mongoose (*Urva edwardsii*), Indian fox (*Vulpes bengalensis*), Indian Giant Squirrel (*Ratufa indica*), Indian Python (*Python molurus*), Indian Star Tortoise (*Geochelone elegans*). APL, Raigarh has already submitted the wildlife conservation plan along with requisite documents to PCCF & DFO for approval and the same is under process.

xx. EAC observed that 19 court cases are pending against the proposed project. There are no show cause notice pending against the project.

xxi. EAC noted that they are in receipt of one public representation against the instant project. Proponent submitted point wise reply to the said representation and the same has been deliberated by the EAC.

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

xxiii. The EAC noted that the Project Proponent has given an undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.

**23. Recommendations of the Committee:** The EAC after detailed deliberations on the information submitted and as presented during the meeting recommended for grant of Environmental Clearance to the proposed expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW by **M/s. Adani Power Limited** located at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh, under the provisions of EIA Notification, 2006 subject to the stipulation of specific conditions and standard/general conditions (**Annexure 1**).

24. The 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 Environmental Clearance to **M/s. Adani Power Limited** for “proposed expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW, located at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh” subject to compliance of the Specific/General environmental conditions (**Annexure 1**).

25. The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

26. The Environmental Clearance 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.

27. The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.

28. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

29. General Instructions:

(i) The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC website where it is displayed.

(ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn must display the same for 30 days from the date of receipt.

(iii) The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions.

(iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.

(v) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(vi) The Regional Office of this MoEF&CC shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

(vii) Validity of EC is as per the provision of EIA Notification, 2006 and its subsequent amendment.

31. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

30. This issue with an approval of the Competent Authority

Yours faithfully,

(Sundar Ramanathan)

Scientist 'F'

Tel: 011- 20819378

Email- r.sundar@nic.in

### **Copy To**

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
3. The Director General of Forest, Ministry of Environment, Forest and Climate Change, New Delhi
4. Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Aranya Bhawan, North Block, Sector-19 Naya Raipur, Atal Nagar, Chhattisgarh – 492002.
5. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi – 32.
6. The Member Secretary, Chhattisgarh State Environment Conservation Board (Pollution Control office), Paryavas Bhawan, North Block Sector-19, Atal Nagar Dist- Raipur Chhattisgarh.
7. The District Collector, Raigarh District, Chhattisgarh.

## Specific EC Conditions for (Thermal Power Plants)

## 1. A. Environmental Management

S. No	EC Conditions
1.1	The PP shall achieve 100% utilization of ash generated as a result of the expansion project in accordance with the ash utilization notification dated 31/12/2021 and its subsequent amendment. No additional ash pond is permitted for the expansion project. In case of exigencies, ash generated from existing and proposed power plant shall be disposed to existing ash bund through high concentration slurry disposal (HCSD) system only.
1.2	Project proponent shall completely utilize the ash stock present in ash dyke i.e., 2.35 Million Tons within 3 three years from the date of grant of this EC. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report.
1.3	Proponent shall ensure that avenue plantation along NH-153 from Chhatamuda village up to plant premises shall be completed by September, 2025. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report.
1.4	PP shall obtain amendment in the condition no. xxvi of the existing EC dated 29/05/2010 within the time frame of three months from the date of grant of EC. A fresh CCR report will be submitted at the time of seeking this amendment.
1.5	PP shall engage reputed government institutes to closely monitor the hardness levels in the water samples. Digital Elevation Model (DEM) map of the study area shall be prepared as recommended in the hydrogeology report. This task shall be completed by June, 2025. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report.
1.6	The hydrogeology study shall be carried out once in three years by reputed government institutes. Compliance status in this regard shall be submitted to concerned Regional Office of the Ministry along with the six monthly compliance report.
1.7	PP shall explore the possibility of use of rainwater as drinking water in consultation with Public Health Engineering Department Chhattisgarh, respective Gram Panchayat and District administration wherever feasible. PP shall store rain water in the project boundary and utilize the same for plantation, recharging water in the pond and domestic utilization in colonies. A record shall be maintained of water collected through rain water and its supply system. PP shall get the water audit done every year to optimize the water requirement.
1.8	PP shall implement the protective measure proposed in Environment Management Plan (EMP) in a time-bound manner. The budget earmarked for the same is Rs 2110.33 Crores (Capital) and Rs 21.85 crores (recurring) and should be kept in separate accounts and audited annually. The implementation status along with the amount spent with documentary proof shall be submitted to



S. No	EC Conditions
	the concerned Regional Office for the activities carried out during the previous year. In addition to the 4 CAAQMS, PP shall install two continuous ambient air quality monitoring station near ash pond area at suitable locations preferably the village side in consultation of CECB within 6 months from the date of grant of EC.
1.9	Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time.
1.10	PP shall ensure that pipelines carrying the fly ash and effluent shall be inspected regularly for any leakages.
1.11	PP shall install solar power plant on roof top and also road side poles within the project site will be lighting through solar power with a capacity of 1MW. Implementation status of solar plant shall be specifically submit in six monthly compliance report.
1.12	As committed by the PP, Zero liquid discharge shall be adopted.
1.13	PP shall ensure that diesel operated vehicles will be switched over to E-Vehicles/ CNG vehicles in a time bound manner, replace the passenger vehicles to E-vehicle in phased manner. Further, for local movement of officials Contract of Vehicles deployment shall be awarded to Project affected people and all efforts for adopting heavy E-vehicles /CNG vehicles like Bulkers for ash transportation for short distance subject to availability of such E-vehicle and adequate charging infrastructure in the surrounding area shall be provided. PP shall submit the action taken report to concerned RO with amount spent, photographs (before & after), number of such non diesel vehicles deployed etc. in six monthly compliance report.
1.14	PP shall implement the concurrent plantation plan in a time bound manner. The gap plantation shall be completed in the identified 67.58 Ha land within Plant, residential and administrative areas and around Ash Pond in next two years. Further, three tier green belt shall be developed in an area of 49.82 ha in a time frame of four years from the date of grant of EC in consultation with Forest department/ Gram Panchayat/District Administration. The budget earmarked for the green belt, plantation inside and outside the plant area, along the transportation route and Miyawaki Plantation area shall be kept in a separate account and audited annually. PP should annually submit the audited statement of expenditure along with proof of activities viz. photographs (before & after with geolocation date & time), details of expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC and on PARIVESH Portal as the case may be for the activities carried out during previous year.
1.15	Wildlife conservation plan as approved by the competent authority shall be implemented. Additional, budget shall be added in the plan, in case additional measures suggested by state wildlife department. The final Wildlife conservation plan duly approved by the CWLW shall be submitted to RO, MoEF&CC within a time frame of three months from the date of grant of EC and the budget approved by the concerned authority shall be deposited in government account.
1.16	24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system. The real time data so generated from CAAQMS shall be uploaded on company website and linked it with website of CPCB & SPCB. Further, LED display of air quality (Continuous Online monitoring) shall be installed at prominent locations preferably outside the plant's main entrance for public viewing and in administrative complex. and maintenance of devices shall be done regularly.

S. No	EC Conditions
1.17	Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system. Water Sprinkling on roads inside the plant area/ administrative/ residential areas and outside the plant area at least for 2KM on a regular basis to control the air pollution. A logbook shall be maintained for the activity and be in six-monthly compliance report.
1.18	Coal for the proposed power plant shall be received at plant through Railway siding only from Bijahan coal mine. Transportation of coal by road for the expansion project is not permitted.
1.19	PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM.
1.20	Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
1.21	A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the same shall be submitted to the Regional Office of the Ministry. Leachate shall be treated and reused. No treated leachate shall be discharged in any circumstances. Characteristics of Leachate and the treated leachate shall be monitored once in quarter and records shall be maintained.
1.22	Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.
1.23	Monitoring of surface water quality and Ground Water quality shall also be regularly conducted in and around the project site and records to be maintained. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report. The monitored data shall be submitted regularly on PARIVESH portal as part of Half Yearly compliance report
1.24	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
1.25	PP shall ensure that all types of plastic waste generated from the plant shall be stored separately in isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016 (as amended). In pursuant to the Ministry's OM dated 18/07/2022. PP shall also create awareness among the people working in the project area as well as in its surrounding area on the ban on Single Use Plastic (SUP) in order to ensure compliance of Ministry's Notification published by the Ministry on 12/08/2021. A report along with photograph on the measures taken shall also be included in the six monthly compliance report being submitted by PP.
1.26	PP is advised to implement the 'Ek Ped Maa Ke Naam' Campaign which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than Green belt development. The action in this regard shall be submitted concerned RO in six monthly report.

## 2. B. Socio-economic

S. No	EC Conditions
2.1	A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance reports.
2.2	Epidemiological Study among population within 5 km radius of project cover area shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.
2.3	The budget proposed for PH is Rs 41.85 Crores. The budget proposed shall be kept in a separate account and audited annually. Project proponent shall implement the action plan to address the issues raised during public hearing including establishment of 40 bed multi-speciality hospital and free medical facilities to the villagers in 10 km radius of the project site within a time frame of 2 years from the date of grant of this EC. PP shall submit the progress report regarding the implementation of action plan to concerned RO along with the six monthly compliance report. PP shall provide the health services and organize medical camps for residents of the surrounding villages as committed during the meeting. PP shall carry out the analysis of the data of medical camp and take all necessary steps so as to cover maximum number of persons.
2.4	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
2.5	The establishment of a robust public grievance redressal mechanism to address concerns and complaints from local communities regarding the power plant's operations, environmental impacts, or social issues shall be developed. A Senior Officer shall review the functioning of the mechanism twice in a month.

### 3. C. Miscellaneous

S. No	EC Conditions
3.1	An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures. In addition to this, PP shall also set up modern environmental laboratory for monitoring of different environmental parameters.
3.2	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
3.3	All necessary clearance from the concerned Authority, as may be applicable should be obtained prior to commencement of project or activity.

### Standard EC Conditions for (Thermal Power Plants)

#### 1. Statutory Compliance

S. No	EC Conditions
1.1	Emission Standards for Thermal Power Plants as per Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593(E) dated 28.6.2018 and as amended from time to time shall be complied.
1.2	Part C of Schedule II of Municipal Solid Wastes Rules, 2016 dated 08.04.2016 as amended from time to time shall be complied for power plants based on Municipal Solid Waste.
1.3	MoEF&CC Notification G.S.R 02(E) dated 2.1.2014 as amended time to time regarding use of raw or blended or beneficiated/washed coal with ash content not exceeding 34% shall be complied with, as applicable.
1.4	MoEF&CC Notifications on Ash Utilization S.O. 5481(E) dated 31/12/2021 as amended from time to time shall be complied.
1.5	MoEF&CC Notifications on Water Consumption vide Notification No. S.O. 3305(E) dated 07.12.2015 read with G.S.R 593 (E ) dated 28.6.2018 as amended from time to time shall be complied.
1.6	The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.
1.7	No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.
1.8	Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction, necessary permission be obtained from CGWA.

## 2. Ash Content/mode Of Transportation Of Coal

S. No	EC Conditions
2.1	MoEF&CC Notification issued vide S.O. 1561 (E) dated 21.05.2020 and as amended from time to time shall be complied which inter-alia include use of coal by Thermal Power Plants, without stipulations as regards ash content or distance, shall be permitted subject to compliance of conditions prescribed under (1) Setting Up Technology Solution for emission norms, (2) Management of Ash Ponds and (3) Transportation.

## 3. Air Quality Monitoring And Management

S. No	EC Conditions
3.1	Flue Gas Desulphurisation System shall be installed based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO <sub>2</sub> emissions standard as per G.S.R. 243 (E ) dated 31.03.2021 read with G.S.R. 682 (E ) dated 05.09.2022 and amended from time to time.
3.2	Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NOX emission standard of 100 mg/Nm <sup>3</sup> .

S. No	EC Conditions
3.3	High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm <sup>3</sup> .
3.4	Stacks of prescribed height 120 m shall be provided with continuous online monitoring instruments for SO <sub>2</sub> , Nox and Particulate Matter as per extant rules.
3.5	Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically.
3.6	Six Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NOX within the plant area. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.
3.7	Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.
3.8	Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc.

#### 4. Noise Pollution And Its Control Measures

S. No	EC Conditions
4.1	The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000.
4.2	Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like earplugs/ear muffs, etc.
4.3	Periodical medical examination on hearing loss shall be carried out for all the workers and maintain audiometric record and for treatment of any hearing loss including rotating to non-noisy/less noisy areas.

#### 5. Human Health Environment

S. No	EC Conditions
5.1	Bi-annual Health check-up of all the workers is to be conducted. The study shall take into account of chronic exposure to noise which may lead to adverse effects like increase in heart rate and blood pressure, hypertension and peripheral vasoconstriction and thus increased peripheral vascular resistance. Similarly, the study shall also assess the health impacts due to air polluting agents.
5.2	Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases.
5.3	Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in

S. No	EC Conditions
	two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant.
5.4	Sewage Treatment Plant shall be provided for domestic wastewater.

## 6. Water Quality Monitoring And Management

S. No	EC Conditions
6.1	Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 3.0 m <sup>3</sup> /MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5.
6.2	Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 2.5 m <sup>3</sup> /MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.
6.3	Records pertaining to measurements of daily water withdrawal and river flows (obtained from Irrigation Department/Water Resources Department) immediately upstream and downstream of withdrawal site shall be maintained.
6.4	Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area.
6.5	Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities.
6.6	The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. conforming to the prescribed standards shall be re-circulated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.
6.7	Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water.
6.8	Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies.
6.9	Wastewater generation of 3000 KLD from various sources (viz. cooling tower blowdown, boiler blow down, wastewater from ash handling, etc) shall be treated to meet the standards of pH: 6.5-8.5;

S. No	EC Conditions
	Total Suspended Solids: 100 mg/l; Oil & Grease: 20 mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l;
6.10	Sewage generation of 120 KLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number):<1000 per 100 ml.

## 7. Risk Mitigation And Disaster Management

S. No	EC Conditions
7.1	Adequate safety measures and environmental safeguards shall be provided in the plant area to control spontaneous fires in coal yard, especially during dry and humid season.
7.2	Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made as per the extant rules in the plant area in accordance with the directives of Petroleum & Explosives Safety Organisation (PESO). Sulphur Content in the liquid fuel should not exceed 0.5%.
7.3	Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
7.4	Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary.
7.5	Regular mock drills for on-site emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situations.

## 8. Green Belt And Biodiversity Conservation

S. No	EC Conditions
8.1	Green belt shall be developed in an area of 33% of the total project with indigenous native tree species in accordance with CPCB guidelines. The green belt shall inter-alia cover an entire periphery of the plant. Concurrent plantation shall be done and all the earmarked area shall be suitably planted with native species in three rows within the next 2 years.
8.2	In-situ/ex-situ Conservation Plan for the conservation of flora and fauna should be prepared and implemented.

## 9. Waste Management

S. No	EC Conditions
9.1	Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.
9.2	Toxicity Characteristic Leachate Procedure (TCLP) test shall be conducted for any substance, potential of leaching heavy metals into the surrounding areas as well as into the groundwater.

S. No	EC Conditions
9.3	Ash pond shall be lined with impervious liner as per the soil conditions. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached.
9.4	Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notification on Fly Ash Utilization issued by the Ministry S.O. 5481 (E) dated 31.12.2021, S.O.6169 (E) dated 30.12.2022, S.O.0 5 (E) dated 01.01.2024 and amendment thereto.
9.5	Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.
9.6	In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up: i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled. ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.

### 10. Monitoring Of Compliance

S. No	EC Conditions
10.1	Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.
10.2	Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.
10.3	Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.
10.4	Monitoring of Carbon Emissions from the existing power plant as well as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
10.5	Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.
10.6	The project proponent shall (Post-EC Monitoring): a. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government; b. upload the clearance letter on the web site of the company as a part of information to the general public. c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at



S. No	EC Conditions
	<p><a href="http://parviesh.nic.in">http://parviesh.nic.in</a>.</p> <p>d. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;</p> <p>e. monitor the criteria pollutants level namely; PM (PM10&amp; PM2.5incase of ambient AAQ), SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;</p> <p>f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&amp;CC, the respective Zonal Office of CPCB and the SPCB;</p> <p>g. submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company;</p> <p>h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.</p>
10.7	<p>An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures</p>

#### 11. Corporate Environmental Responsibility (CER) Activities

S. No	EC Conditions
11.1	<p>CER activities will be carried out as per Ministry's OM F.No.22- 65/2017- IA.III dated 30th September, 2020 and 22-65/2017- IA.III dated 25.02.2021 or as proposed by the PP in reference to Public Hearing or as earmarked in the EIA/EMP report along with the detailed scheduled of implementation with appropriate budgeting. Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the shall be submitted.</p>