सत्यमेव जयते

File No: J-13011/79/2007-IA.II(T)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division
****

Date **13/08/2024**

To,

Shri Rajan Anand
Jindal Steel & Power Ltd.
Jindal Centre, 12- Bhikaji Cama Place, New Delhi- 110066
jsplenvironment@jindalsteel.com

Subject: Grant of prior Environmental Clearance (EC) to 2 x 525 MW Coal Based Thermal Power Plant in an area of 400 Ha at village Malibrahamani, Balichandrapur and Nisa, Dist. Angul, Odisha by M/s Jindal Steel & Power Ltd. - Environmental Clearance (EC) – reg.

Sir/Madam,

This is in reference to your application submitted to MoEF&CC vide proposal number IA/OR/THE/459699/2024 dated 28/01/2024 for grant of prior Environmental Clearance (EC) to the proposed project under the provision of the EIA Notification 2006 and as amended thereof.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC24A0601OR5443311N
(ii) File No.	J-13011/79/2007-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
(vii) Name of Project	2 x 525 MW Coal Based Thermal Power Plant at village Malibrahamani in Chhendipada Block, Dist. Angul, Odisha
(viii) Name of Company/Organization	M/s Jindal Steel & Power Ltd.
(ix) Location of Project (District, State)	ANUGUL, ODISHA
(x) Issuing Authority	MoEF&CC
(xi) Applicability of General Conditions as per EIA Notification, 2006	No

3. The proposal is for the grant of Environmental Clearance to the project 2 x 525 MW Coal Based Thermal Power Plant in an area of 400 Ha at village Malibrahamani, Balichandrapur and Nisa, Dist. Angul, Odisha by M/s Jindal Steel & Power

Ltd. The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended as the power generation capacity of the proposed expansion is beyond the threshold capacity of 500MW i.e. 2x525 MW and requires appraisal at Central level by the sectoral EAC in the Ministry.

4. M/s Jindal Steel & Power Limited (JSP) recently purchased the partially constructed & not yet operational 2X525 MW coal based Thermal Power Plant at Angul, Odisha from the liquidator of the previous promoters of the project, M/s Monnet Power Company Limited (MPCL), appointed by the NCLT under Insolvency and Bankruptcy Code, 2016. MoEF&CC vide letter no. J-13011/79/2007-IA. II(T) dated 29.06.2010 granted EC to MPCL and its validity was extended vide letters dated 27.05.2015 and 10.07.2017, thus extending validity till 28.06.2020. The EC lapsed in 2021 as per MOEF&CC's Notification no. S.O. 1807(E) dated 12.04.2022 and the additional one-year relaxation granted due to COVID vide MOEF&CC's Notification no. S.O. 4254(E) dated 27.11.2020. TOR was granted vide letter no. J-13011/79/2007.IA.II.(T) dated 12.06.2023 with Public consultation (written submission) as per the MoEF&CC's Notification S.O. 1247(E) dtd. 18.03.2021. Baseline data on different environmental attributes was collected during December 2022 to February 2023. EIA/EMP report was submitted on 28.01.2024.

5. Proposal was considered by the EAC in its 5th EAC meeting, the Project Proponent along with consultant M/s. Enviro Infra Solution Pvt. Ltd made a detailed presentation and apprised following to the committee:

(a) Project description:

Co-ordinates of all four corners ofTPP Site:	Plant area A. North most: 20°55'57.75" N, 84°59'13.78" E B. East most: 20°55'04.93" N, 84°59'59.75" E C. South most: 20°54'50.21N, 84°59'30.7" E D. West most: 20°55'09.48" N, 84°58'58.85"E
Average height of: (a) TPP site, (b) ash pond site etc. above MSL	179 m to 210 m amsl 166 m to 210 m amsl
Whether the project is in the Critically Polluted Area (CPA) or within 10 km of CPA. If so, the details thereof:	No.
CRZ Clearance	Not applicable
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:	Rs. 5755 crores. Out of this Rs. 3947 Crore had been spent by previous PP till takeover. The balance works are expected to cost Rs. 1808 crores.
Employment Potential for entire project/ plant and employment potential for the proposed amendment (specify number of persons and quantitative information)	~400 persons
Benefits of the project (specify quantitative information)	Employment (direct & indirect), tax to the state exchequer, benefits to the local population due to peripheral development measures that shall be undertaken by the company
Electricity generation capacity:	
Capacity & Unit Configurations	2 X 525 MW

(b) Details of fuel and Ash disposal

Fuel to be used:	Coal
Quantity of Fuel required per Annum:	5.45 MTPA coal at 80% PLF or 6.81 MTPA at 100% PLF
Coal Linkage / Coal Block: (If Block allotted, the status of EC & FC of the Block)	JSPL owned Utkal B1/B2 or Utkal-C Coal Mines in Odisha Status: Utkal B1, EC vide letter no. No. J-11015/309/2006-IA. II (M) dated 09.04.2007. Utkal B2, vide letter no. J-11015/108/2003-IA. II (M) dated 28 Jul 2006

	Utkal C, EC vide letter no. J-11015/108/2003-IA. II (M) dated 28.07.2006
Details of the mode of transportation of coal source to the plant premises along with distances	Coal will be transported by conveyor.
Fly Ash Disposal System Proposed	Fly ash: Dry extraction & utilisation, Bottom ash: slurry & disposal.
Ash Pond/ Dyke (Area, Location & Co-ordinates) Average height of area above MSL (m)	Location: Village Malibrahmani, Nisha, Dist. Angul, Odisha Ash Disposal Area coordinates: A. North most: 20°56'16.30" N, 85°00'12.71" E B. East most: 20°55'03.43" N, 85°01'08.92" E C. South most: 20°55'03.43" N, 85°01'08.92" E D. West most: 20°56'12.29" N, 85°00'08.50" E Elevation: 166 m to 210 m amsl
Quantity of a. Fly Ash to be generated b. Bottom Ash to be generated:	Fly ash - 1.744 MTPA at 80% PLF or 2.176 MTPA at 100% PLF. Bottom ash - 0.436 MTPA at 80% PLF or 0.544 MTPA at 100% PLF.
Fly Ash utilization (details)	The Ash utilisation shall be done as per Ministry of Environment, Forests and Climate Change Notification dated 31-12-2021. Fly ash collected from silo will be collected in dry form for commercial use for cement manufacturing, brick making, road embankment, filling in mines, etc. and balance stored in ash disposal area. Bottom ash would be disposed in slurry form to ash pond located on the east of the power plant.
Stack Height (m) & Type of Flue	Twin-flue common stack of 275 m height.

(c) Water Requirement:

Source of Water:	Brahamani river
Quantity of water requirement:	3050 m3/hr
Distance of source of water from Plant:	22 km
Whether barrage/ weir/ intake well/ jack well/ others proposed:	Samal Barrage is existing on Brahamani River
Mode of conveyance of water:	Pipeline
Status of water linkage:	Previous PP had received approval from the Odisha Water Resource Department (OWRD) for drawing 37 cusecs of water from Brahmani. High Level Committee, Govt. of Odisha has granted approval for transfer of the permission to JSP
Cooling system	Recirculating type cooling water system with wet type Induced Draft Cooling Towers using clarified water as cooling medium.

(d) Land Area Breakup:

Land Requirement: a) TPP Site b) Ash Pond c) Township d) Railway Siding & Others e) Raw Water Reservoir f) Green Belt g) others Total (if expansion state additional land requirement)	a) 175 ha b) 155 ha c) 20 ha 50ha

<table>
<tr><td>Status of Land Acquisition:</td><td>
<table>
<tr><th>Component</th><th>Acquired, ha</th><th>To be acquired, ha</th><th>Total, ha</th></tr>
<tr><td>Plant</td><td>166.265</td><td>8.735</td><td>175</td></tr>
<tr><td>Ash disposal</td><td>127.754</td><td>27.246</td><td>155</td></tr>
<tr><td>Township (& RR colony)</td><td>9.603</td><td>10.397</td><td>20</td></tr>
<tr><td>Service Corridor & misc.</td><td>0</td><td>50</td><td>50</td></tr>
<tr><td>Total</td><td>303.622</td><td>96.378</td><td>400</td></tr>
</table>
Company will optimize land and try to minimize land acquisition in project area.
</td></tr>
<tr><td>Status of the project:
If under construction phase: please specify the reasons for delay, works completed till date and balance works along with expected date of completion.</td><td>66% complete
The construction was carried out from 2010 to March 2015. All major civil foundation works had been completed in 2014. Boiler construction of unit 1 was in advance stage in 2014 as its hydro test has been completed in that year. Construction ceased from March 2015 due to insolvency of the previous promotor.
JSP Ltd. will resume construction & operation after receipt of statutory clearances.</td></tr>
<tr><td>If under operation phase, date of commissioning (COD) of each unit.
Whether the plant was under shutdown since commissioning, details and reasons.</td><td>Not operational
Not commissioned till date</td></tr>
<tr><td>Break-Up of land use of TPP site:
Total land required for project components
Private land
Government land
Forest Land</td><td>Total land required for project components - 400 ha
Private land – 34.18 ha
Government land – 43.917 ha
Forest Land – 18.281 ha
Others (industrial)- 303.622 ha</td></tr>
</table>

6. Odisha SPCB issued public notice in newspapers on 26.09.2023 inviting views, comments, suggestions/objections etc. relating to environmental aspects of the proposed project within 30 days of publishing of the notice. The Key issues raised during the public consultation (written submission) are related to generation of employment opportunity, provision of adequate environmental protection measures, drinking water supply, health care facilities school, community development etc. The total expenditure to address the issues/demand raised by public will be Rs. 211.5 Lakh to be distributed over 3 years (Annexure 2). The Committee deliberated on the on the public comments and is of the view that there are activities which are also recurring in nature and accordingly PP shall keep the provision for the same for at least 10 years. The CSR budget shall be used for the same.

7. The EAC noted that though the project doesn't require additional land but 96.378 Ha of land still needs to be acquired by the project proponent. Out of 400 ha of project land requirement, there is the presence of 18.281 ha forest land of which Stage-I Forest Clearance was obtained vide letter No. 5-ORC175/2013-BHU dated 09.04.2014 Eastern Regional Office, Bhubaneshwar of MoEF. The proposal for the transfer of FC to JSPL is under process at the State Govt. level. The Committee is of the view that PP shall get the FC transfer in its name.

8. There are 14 Schedule-1 species reported by the PP in the buffer area and the PCCF & HoFF, Govt. of Odisha vide letter dated. 23.08.2023 directed DFO to prepare a Site Specific Wildlife Conservation Plan for the TPP. The same is under preparation by DFO and the Company undertakes to comply with the subsequent directions from the PCCF & Chief Wildlife Warden on the same. The Committee is of the view that PP shall get WLCP approved from CWLW and the budget approved by CWLW for implementation of WLCP shall be deposited with the concerned authority.

9. Coal to be supplied through road by 38 T trucks from Utkal B1 (1.7 km, NW) or Utkal B2 (2.8 km, NW) or Utkal C (0.6 km, NW) coal mines of the company and within a period of 2 years the coal will be transported from mines to TPP by conveyor belt. The Committee is of the view that as of now around 66% work is completed and the remaining 34% is yet to be completed. Therefore, the PP have some time to initiate the work related to the installation of the conveyor belt before the commissioning of the project. The Committee is of the view that PP shall ensure that construction of the

conveyor belt shall be taken up on priority and completed within 18 months of start of operations and further all mitigative measures to be taken for road transportation. The Committee is of the view that PP shall deploy BS-VI complaint tippers and as far as possible EV/CNG/LNG-based tippers will be used for the same.

10. Transportation of ash from plant to end-users by covered trucks/ bulkers. The Committee is of the view that transportation of the fly ash should be through bulkers only. Further, bottom Ash will be evacuated in slurry form through pipeline to the ash pond (0.7 km NW of plant). The Committee is of the view that PP while operating the plant shall ensure that the pipeline shall be inspected regularly for any leakages.

11. PP has proposed to plant 3,30,000 Trees within a period of 5 years in area of 132 Ha in phased wise manner. The Committee is of the view that PP has acquired most of the land for plant and ash pond and only 96.378 Ha is yet to be acquired. Therefore, the Committee is of the view that plantation around the project boundary shall be completed within a period of one year and the remaining shall be covered in phased wise manner as proposed by PP.

12. The estimated project cost is Rs 5755 crores. Total capital cost earmarked towards environmental pollution control measures is Rs 617.07 crores and the recurring cost (operation and maintenance) will be Rs 59.3 crores per annum. Total Employment will be 400 persons as direct & indirect. Industry proposes to allocate Rs.2.11 Crores towards budget to address public consultation issues (Annexure 2)

13. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. Kurdabhali Nala is flowing at a distance of 2.0 km in SW direction.

14. The EAC in its 5th meeting after detailed deliberations on the information submitted and as presented during the meeting **recommended** for grant of Environmental Clearance to the project 2 x 525 MW Coal Based Thermal Power Plant in an area of 400 Ha at village Malibrahamani, Balichandrapur and Nisa, Dist. Angul, Odisha by M/s Jindal Steel & Power Ltd.subject to compliance of specific environmental safeguard conditions, in addition to the standard EC conditions (Annexure-I) stipulated for the thermal power plants. The EAC in 6th EAC meeting also made corrections in specific conditions.

15. PP vide letter dated 30.05.2024 submitted an undertaking that the forest land 18.281 Ha for which Satge-I FC has been granted to MPCL is not broken up so far and the Company also undertake not to undertake any construction work for this Power Plant before grant of Stage-II FC.

16. 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** Environment Clearance for the instant proposal to **Jindal Steel & Power Ltd.** for project 2 x 525 MW Coal Based Thermal Power Plant in an area of 400 Ha at village Malibrahamani, Balichandrapur and Nisa, Dist. Angul, Odisha under the provisions of Environment Impact Assessment Notification, 2006 and its amendments, subject to compliance of specific environmental safeguard conditions, in addition to the standard EC conditions (Annexure-I) stipulated for the thermal power plants.

16. 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.

17. 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.

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

19. 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.

20. General Instructions:

· 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.
· 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.

· 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.

· 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.

· 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.

- The grant of EC does not necessarily implies that forestry and wildlife clearance shall be granted to the project and that their proposal will be considered by respective authorities on their merits and decision taken. The investment made in the project, if any, based on EC so granted , in anticipation of the clearance from forestry and wildlife angel shall be entirely at the cost and risk of the project proponent and MoEF&CC shall not be responsible in this regard in any manner.

· 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.

· Validity of EC is as per the provision of EIA Notification and as amendment.

21. This issue with an approval of the Competent Authority

Copy To

1. The Secretary, Ministry of Power, Shastri Bhawan, New Delhi.
2. The Additional Principal Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, A-31, Chandershekharpur, Bhubaneswar- 751023 (Odisha).
3. The Secretary, Department of Environment & Forests, Government of Orissa, Secretariat, Bhubaneswar (Odisha).
4. The Inspector General of Forests, MoEF&CC
5. The Chairman, Odisha State Pollution Control Board, Parivesh Bhawan, A/118, Nilkanthanagar, Unit VIII, Bhubaneshwar - 751012 (Odisha).
6. District Collector, Angul, Government of Odisha.
7. Monitoring File

Annexure 1

Specific EC Conditions for (Thermal Power Plants)

1. Environmental Management

S. No	EC Conditions
1.1	The project proponent shall not to undertake any construction work for this Power Plant before the grant of Stage-II FC.
1.2	Necessary permission for water withdrawal permission of 37 cusecs i.e. 3772 m3/hr from Samal Barrage existing on Brahamani River from Department of Water Resources, Odisha shall be obtained/transferred.
1.3	Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time.
1.4	PP while operating the plant shall ensure that the pipeline shall be inspected regularly for any leakages.
1.5	PP shall get the WLCP approved from CWLW and the budget approved by CWLW for implantation of WLCP shall be deposited with the concerned authority.
1.6	PP shall install solar power plant on roof top and alsoroad side poles within the project site will be lighting through solar power. [Refer section 4.3 c), Chapter4 of EIA]
1.7	No effluent shall be mixed with rain water stream during Monsoon seasons. Treatment of effluent and quantity data shall be maintaining through the year.
1.8	PP shall ensure that construction of the conveyor belt shall be taken up on priority and completed within 18 months of start of operations and further all mitigative measures to be taken for road transportation. Transportation of coal thereafter, from mines to TPP is through closed belt conveyor only.
1.9	No BS-IV trucks shall be use for transportation, BS-VI complaint vehicle shall be purchased and preference shall be given to EV/CNG/LNG based trucks.
1.10	Peripheral Green belt (Three row plantation) with Miyawaki plantation technique of 15 m thickness along the plant boundary shall be developed with more than 90% survival rate of the plant species focusing on Ash Dyke area.
1.11	33% Plantation shall be carried out within the plant boundary apart from peripheral plantation in ash pond area.
1.12	PP shall develop green belt within a period of one year from grant of EC and remaining plantation out of 3,30,000 trees shall be completed within a period of 2 years from the date of commissioning of the project. The budget earmarked for the plantation 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.
1.13	Extensive green cover within 2 km range of the plant boundary shall be developed. An action plan in this regard to be prepared in consultation with state forest department/expert institution and submitted before Regional Office of the Ministry within 3 months.

S. No	EC Conditions
1.14	Extensive green plantation shall be done in the school to bring down the emission level in the range of 10km radius of the project boundary with more than 90% survival rate. Green belt implementation status shall be submitted in six monthly compliance reports.
1.15	24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system.
1.16	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 shall be done in every 6 hours in winter season and 3 hours in summer season of roads within 1 km range approaching the plant. A logbook shall be maintained for the activity and be in six-monthly compliance report.
1.17	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 maintenance of devices shall be done regularly.
1.18	Everyday cleaning of road/Paved roads/schools/ hospitals within 5 km range of plant site shall be ensured throughout the year through vaccum based vehicle.
1.19	Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
1.20	Project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality / local bodies/ similar organization located within 50km radius of the proposed power project to minimize the water drawl from surface water bodies.
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	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.
1.24	PP shall provide LEDs Solar lights, solar panel, availability of drinking water, internet connectivity and equip with smart classes, and other basic necessity to School present in 10 km radius of the plant boundaries.
1.25	Monitoring of surface water quality and Ground Water quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. 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

S. No	EC Conditions
	shall also be undertaken and results/findings submitted along with half yearly monitoring report.
1.26	A well designed rain-water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
1.27	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant. A list of all small and large water bodies shall be prepared after physical survey within 10 km radius of the project. A detailed conservation plan for all these water bodies shall be prepared and submitted before the Regional Office of the Ministry within 3 months. Implementation status of conservation plan be submitted in 6 monthly compliance report.
1.28	Watershed development plan shall be prepared in consultation with reputed government institute and implemented focusing on micro watershed development within 10 km radius of the project. Action taken report in this regard be submitted before regional office of the Ministry in 6 monthly compliance report.
1.29	A detailed ecological monitoring and survey covering forestry, fisheries, wildlife and its habitat shall be done once in two years to assess the impacts of project on the local environment and ecology. Monitoring report shall be uploaded on the Parivesh Portal and a copy of the same be submitted to the regional office of MoEF&CC.
1.30	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.
1.31	PP submitted that a minimal plastic waste (less than 1 ton per year) is anticipated from equipment packaging. This will be stored separately in isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016. The Committee is of the view that in pursuant to 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.

2. 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, creation of sacred groves etc. shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance report.
2.2	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.

S. No	EC Conditions
2.3	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of Environmental Clearance for undertaking the CER activities, committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.
2.4	The budget earmarked for addressing the issuesraised public consultation (written submission) is Rs. 211.5 Lakh to be distributed over 3 years. The PP shall extend the same for ten years and the budget of CSR may be used for the same. The amount shall be kept in a separate account and audited annually. PP shall submit the activities undertaken with proof and audited statement of expenditure to concerned RO, MoEF&CC every year for the activities carried out in previous year.
2.5	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
2.6	A multi-specialty Hospital with 100 beds shall be established and managed by the PP to cater the need of population living within 10 km. The project affected families shall be given free of cost treatment.
2.7	A 10+2 Grade school with capacity of at least 500 students with well-equipped modern science practical lab, computer lab and other necessary infrastructure shall be established to provide education facilities in the area. The students from project affected families shall be given free of cost education.
2.8	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. 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.
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.
3.4	PP shall submit an undertaking on following within 30 days of grant of EC:

S. No	EC Conditions
	• Ambient air quality data shall be uploaded on CPCB server uninterruptedly through continuous monitoring station. • For both the existing unit of TPP FGD will be installed by May, 2024. • Ground water analysis including heavy metal and micro bacterial study shall be done on regular basis and same shall be submitted in six monthly compliance report. • Legacy ash shall be completely utilized within 1 year after the start of operations for construction of roads by NHAI/ brick making etc. • To comply with all the conditions in which" PP has assured to comply" written in the review report of IRO dated 08.01.2024 on the action taken report.

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 Fly Ash Utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 as amended from time to time shall be complied.
1.5	Thermal Power Plants other than the power plants located on coast and using sea water for cooling purposes, shall achieve specific water consumption of 2.5 m3/MWh and Zero effluent discharge.
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 Transporatation Of Coal

S. No	EC Conditions
2.1	EC is given on the basis of assumption of ____% of ash content and ____km distance of

S. No	EC Conditions
	transportation in rail/road/conveyor/any other mode. Any increase of %ash content by more than 1 percent, and/or any change in transportation mode or increase in the transport distance (except for rail) require application for modifications of EC conditions after conducting the 'incremental impact assessment' and proposal for mitigation measures.

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 SO2 emissions standard of 100 mg/Nm3.
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/Nm3.
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/Nm3.
3.4	Stacks of prescribed height ____m shall be provided with continuous online monitoring instruments for SOX, 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	Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM10, PM2.5, SO2, NOXwithin the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.
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

S. No	EC Conditions
	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 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 2.5 m3/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.
6.2	In case of the water withdrawal from river, a minimum flow 15% of the average flow of 120 consecutive leanest days should be maintained for environmental flow whichever is higher, to be released during the lean season after water withdrawal for proposed power plant.
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.

S. No	EC Conditions
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, the treated sewage of ……..KLD from STP ….. (name) shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies.
6.9	Wastewater generation of …….KLD from various sources (viz. cooling tower blowdown, boiler blow down, wastewater from ash handling, etc) shall be treated to meet the standards of pH: 6.5-8.5; Total Suspended Solids: 100 mg/l; Oil & Grease: 20 mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l;
6.10	Sewage generation of …….KLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number):<1000 per 100 ml.

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

S. No	EC Conditions
	species in accordance with CPCB guidelines. The green belt shall inter-alia cover an entire periphery of the plant.
8.2	In-situ/ex-situ Conservation Plan for the conservation of flora and fauna should be prepared and implemented.
8.3	Suitable screens shall be placed across the intake channel to prevent entrainment of life forms including eggs, larvae, juvenile fish, etc., during extraction of seawater.

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.
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 and amendment thereto. By the end of 4th year, 100% fly ash utilization should be ensured. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry. Mercury and other heavy metals (As, Hg, cr, Pb, etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. Flyash utilization details shall be submitted to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.
9.5	Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.
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.

S. No	EC Conditions
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 aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.
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	Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.
10.7	The project proponent shall (Post-EC Monitoring): a. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government; b. upload the clearance letter on the web site of the company as a part of information to the general public. c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at http://parviesh.nic.in. d. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically; e. monitor the criteria pollutants level namely; PM (PM10& PM2.5incase of ambient AAQ), SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company; f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB; g. submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company; h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.

11. Corporate Environmental Responsibility (Cer) Activities

S. No	EC Conditions
11.1	CER activities will be carried out as per OM No. 22-65/2017-IA.III dated 30.9.2020 or as proposed by the PP in reference to Public Hearing or as earmarked in the EIA/EMP report along with the detailed scheduled of implementation with appropriate budgeting.

12. Marine Facilities

S. No	EC Conditions
12.1	As the seawater intake systems are required for the plant fall in CRZ area, recommendations from State Coastal Zone Management Authority (SCZMA) as per CRZ Notification shall be implemented.
12.2	Marine intake and outfall pipelines shall be located as per the recommendations State Coastal Zone Management Authority (SCZMA).

13. Sea Water Intake

S. No	EC Conditions
13.1	Seawater intake system shall be so designed and constructed to ensure sufficient sweater in terms of quantity and quality.
13.2	The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.
13.3	In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.

14. Effluent Release

S. No	EC Conditions
14.1	At the effluent release point, maximum temperature of the discharge water shall not be more than 5oC and salinity shall not exceed 50 ppt with respect to that of the ambient seawater.
14.2	Use of antifouling agents like chlorine / hypochlorite, shall be carefully controlled. The chlorine concentration shall not exceed 0.2 ppm at the effluent release point.
14.3	The effluent when released at the selected location shall attain sufficient dilution so that near ambient water quality (particularly temperature and salinity) is attained within 500 m from the release location, at low tide.
14.4	The location of the diffuser shall be marked with a solar lighted buoy to avoid accidents.
14.5	The site selected based on mathematical modeling shall ensure absence of recirculation of the effluent plume in the seawater intake area under all tidal conditions.
14.6	The effluent shall be released through a properly designed multiport diffuser above the seabed to facilitate its efficient initial mixing with the receiving seawater.
14.7	Efficacy of the diffuser shall be ascertained at least once in 2 years through scientific studies and corrective actions such as cleaning of the diffuser from marine growth, removal of silt deposits, etc. shall be taken up, if warranted.
14.8	Continuous online monitoring system for Temperature and Salinity shall be installed to monitor the quality of effluent.

15. Common To Intake And Effluent

S. No	EC Conditions
15.1	The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafloor strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surf and intertidal zones, the pipeline shall be buried below the maximum scour level.
15.2	In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).
15.3	If the substratum is rocky the pipeline may be anchored to the rock provided the geology of the area satisfactorily supports the structure which shall be ascertained through geo-technical investigations.
15.4	Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.
15.5	The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.
15.6	Marine / Sea water quality shall be monitored at effluent release location at the center. Parameters to be monitored shall be as follows: a. Physico-chemical: Temperature, Salinity, pH and Dissolved Oxygen. b. Biological: Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophytin, Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).
15.7	In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area of ……ha, along the coast/ on the banks of …… Estuary.

Additional EC Conditions

N/A

Annexure 2

The total expenditure to meet public consultation other demands will be Rs. 211.5 Lakh to be distributed over 3 years.

Sl. No.	Physical activity and action plan		Year of Implementation (Budget in Rs. lakhs)			
	Name of the Activity	Physical Target	Year 1	Year 2	Year 3	Total
1	Drinking Water					
	Provision of drinking water	Provision of water supply through tankers on any community function occasion Nisha, Malibrahmani, R&R colony, Kaliakata, Balichandrapur& others, as Required	2	2	2	6
		Provision of pipeline and tanks (2nos./village) in villages Malibrahmani, Nisha and Kaliakata	6	6	6	18
2	Electricity					
		Maintenance of street light in villages Nisa and Malibrahmani	0.5	0.5	0.5	1.5
	Electricity facilities	Installation of solar lights (10 nos each year) in villages Malibrahmani, Balichandrapur and Kaliakata	4	4	4	12
3	Skill Development					
	For Women	Provision of sewing machines (10 nos./year/village) to women for tailoring classes through Local Panchayat of Nisha, Malibrahmani, R&R colony, Kaliakata, Balichandrapur	2.5	2.5	2.5	7.5
	To farmers/rearing animals	Training to farmers (20 nos./ village/year) and animal rearers to increase productivity ofNisha, Malibrahmani, Kaliakata, Balichandrapur	4	4	4	12
	For youths/land loosers	Provision of training (20 nos./ year/ village) to local youths/land loosers through Local Panchayat to become self reliant (Carpentry, automobile mechanic, driving etc.) of Nisha, Malibrahmani, Kaliakata, Balichandrapur	4	4	4	12

4	Education					
	Monetary support to schools & underprivileged students	Provision of stationary, books, etc. to underprivileged students in the school nearby the Plant in Malibrahmani and Nisa Village	2	2	2	6
	Supporting meritorious Students	Scholarship to meritorious students for higher education- ITI training (10 students)	1	1	1	3
		Laptops to top three rankers of Odisha Board Class 10 from amongst schools in 2 km radius	1.5	1.5	1.5	4.5
	Infrastructure	Construction of boys and girls toilets in schools (4 nos.) in villages Nisha, Malibrahmani, Kaliakata, Balichandrapur	4	4	4	12
		Boundary wall construction in 3school, as per requirement from villages in 2 km radius	2	2	2	6
5	Tree Plantation	Distribution of saplings of native ethno botanical species to Nisa, Malibrahmani,Kaliakata,Balichandrapur, Kankarei villages	1	1	1	3
6	Sports activities	Provision of sports material (bats, balls, wickets basket ball, foot ball, badminton raquets, carrom boards, chess etc.) to primary and middle Schools inalibrahmani, Nisa and Kaliakata villages or any otherschools in villages as per requirement	1.5	1.5	1.5	4.5
		Maintenance of playground (1 no. per year)	1	1	1	3
7	Social infrastructure	Repair of places of worship, community centre	1.5	1.5	1.5	4.5
		Construction of toilets in villagesKaliakata, Malibrahmani, Balichandrapur	2.5	2.5	2.5	7.5
		Repair/ Provision of drains in villages Raijharan, Nisha, Malibrahmani, Kaliakata (Rs. 2lakh/village/ year)	8	8	8	24
		Donation in local festivals	1	1	1	3
8	Infrastructure Development	Repair of internal village roads of Malibrahmani, Balichandrapur and Kaliakata	2	2	2	6

		Maintenance of village ponds and cleaning of overhead tanks of Malibrahmani, Balichandrapur and Kaliakata	1	1	1	3
9	Communication development	Provision of free bus service on special occasions	1	1	1	3
10	Expenditure for Public Health	Medical camps (Eye checkup, pathological test,etc.) in Nisa and Malibrahmani Villages (6per year in each villages)	12	12	12	36
		Provision of ambulance on callasperrequirementin Malibrahmani and Nisa Village	10	1	1	12
		Awareness camps for recycle and reuse, importance of cleanliness,nourishment, de-addiction in Malibrahmaniand Nisa Village	0.5	0.5	0.5	1.5
	Total		76.5	67.5	67.5	211.5

Note: The PP shall extend the same for ten years and the budget of CSR may be used for the same. The amount shall be kept in a separate account and audited annually. PP shall submit the activities undertaken with proof and audited statement of expenditure to concerned RO, MoEF&CC every year for the activities carried out in previous year.

Environmental Management Plan:

The capital cost estimated for EMP and the Annual recurring cost of monitoring and implementation of control measures and environment management plan are given in the Table below:

Cost for Environment Management (Rs. Crores)

Sl. No.	Particulars	Capital Cost	RecurringCost
1	Air pollution control (Including ESPs balance work, provision of FGD, etc.)	440	44
2	Water pollution control	30	3
3	Ash handling	130	6.5
4	Environmental Monitoring	0.92	0.26
5	Occupational Health	3.05	0.30
6	Greenbelt(ha)	13.1	5.24
	TOTAL	**617.07**	**59.3**

The capital investment on environmental management plan is envisaged as Rs. 617.07 crores and recurring expenditure will be Rs. 59.3 crores /year which includes the provision of

installation of FGD (about Rs. 400 crores capital cost and Rs. 40 crores recurring cost). Till installation of FGD the recurring EMP cost shall be Rs. 19.3 crores.