सत्यमेव जयते

File No: J-13012/04/2023-IA.I (T)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division
****

Date **18/06/2025**

To,

Sh. Sandip Dutt
M/s. Jindal Urban Waste Management (Bawana) Limited
U-1, UPSIDC Industrial Area, Nandgaon, Koshi Kalan, Chhata, Mathura, Uttar Pradesh, 281403
E-mail: Info.Juwmbl@jindalecopolis.com

Subject: **Proposed Waste to Energy Thermal Power Project of capacity 30 MW by M/s Jindal Urban Waste Management (Bawana) Limited located at DSIIDC Industrial Area, Sector 5, village Bawana, Sub-district Narela, District North Delhi, Delhi - Environmental Clearance -Regarding**

Sir/Madam,

This is with reference to your proposal number IA/DL/THE/536932/2025 dated 12/05/2025 along with a written submission dated 03.06.2025 seeking for grant of Environmental Clearance (EC) under the provisions of the EIA Notification 2006 and as amended thereof for the project mentioned above.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC25A0603DL5984671N
(ii) File No.	J-13012/04/2023-IA.I (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	Proposed Waste to Energy Project 50 MW, DSIIDC Industrial Area, sector-5, Bawana, Delhi-110039 by M/s Jindal Urban Waste Management (Bawana) Limited.
(viii) Name of Company/Organization	M/s. Jindal Urban Waste Management (Bawana) Limited
(ix) Location of Project (District, State)	North West, Delhi
(x) Issuing Authority	MoEF&CC
(xi) Applicability of General Conditions as per EIA Notification, 2006	Yes

3. M/s Jindal Urban Waste Management (Bawana) Limited has made an online application vide proposal number IA/DL/THE/536932/2025 dated 12/05/2025 along with copy of EIA/EMP report, CAF (Part A, B & C) and sought for Environment Clearance (EC) under the provisions of the EIA Notification, 2006 for the project mentioned above.

4. The proposed project/activity is listed at item no. 1(d) Thermal Power Plants of the schedule of the EIA Notification, 2006 and falls under Category 'A'. Further, the proposed project/activity also attracts the general condition of the EIA Notification, 2006 as the project site is located at a distance of 4.48 KM from Delhi-Haryana State boundary in NNW direction.

5. The instant Proposal was considered by the EAC (Thermal) in its 25th meeting held on 27th May, 2025. The PP has submitted the written information on 03.06.2025. The MoM for the same may be seen using the following web link: https://parivesh.nic.in

Details submitted by the project proponent

6. The instant proposal of M/s Jindal Urban Waste Management (Bawana) Limited is for setting up of Waste to Energy (WTE) Thermal Power Project with a capacity 30 MW at Delhi State Industrial and Infrastructure Development Corporation Limited (DSIIDC) Industrial Area, Sector 5, village Bawana, Sub-district Narela, District North Delhi, Delhi.

7. The details of the Terms of Reference (ToR) obtained for the above project for prearation of EIA/EMP report is furnished as below:

Proposal No with Date	Consideration	Details	Date of accord	ToR Validity
IA/DL/THE/435160/2023dated 11/08/2023	2nd meeting of EAC–Thermal held on 31/10/2023	Terms of Reference	10/01/2024	4 years

8. Environmental site settings:

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td>1.</td><td>Total Land</td><td>15.0 Acres (or) 6.07 Ha – Government Land</td><td>Land Use: Industrial Purpose
Located at DSIIDC Industrial Area, Sector-5, Bawana, Delhi</td></tr>
<tr><td>2.</td><td>Land Use breakup</td><td>
<table>
<tr><th>Details</th><th>Area Break up (Acres)</th><th>Percentage (%)</th></tr>
<tr><td>TPP Site</td><td>7.84</td><td>52.27</td></tr>
<tr><td>Admin Office & Canteen</td><td>0.3</td><td>2.0</td></tr>
<tr><td>Greenbelt Area</td><td>6.0</td><td>40.0</td></tr>
<tr><td>Others</td><td>0.86</td><td>5.73</td></tr>
<tr><td>Total</td><td>15 acres (or) 6.07 Ha</td><td>100%</td></tr>
</table>
</td><td>· Land Use: Industrial Purpose.
· At DSIIDC Industrial Area, Sector-5, Bawana, Delhi-110039.</td></tr>
<tr><td>3.</td><td>Land acquisition details as per MoEF&CC O.M. dated 7/10/2014 & 20/02/2025</td><td>The land requirement for the project is 6.07 Ha (or) 15 acres which is a Government land.</td><td>The land has been provided by Municipal Corporation of Delhi (MCD) to M/s. Jindal Urban Waste Management (Bawana) Limited vide concession agreement dated 27/02/2025.</td></tr>
<tr><td>4.</td><td>Existence of habitation & involvement of R&R, if any.</td><td><u>Study Area:</u>
<table>
<tr><td>Habitation</td><td>Distance</td></tr>
<tr><td>JJ Colony</td><td>Within 1 Km</td></tr>
<tr><td>Iradat Nagar alias Naya</td><td>Within 05 Km</td></tr>
</table>
</td><td>· The proposed project is within the DSIIDC Industrial Area, Bawana
· The land for the project is allocated by the MCD.
· It does not involve R&R issue.</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Particulars</th><th>Details</th><th>Remarks</th></tr>
<tr><td></td><td></td><td><table><tr><td>Bans</td></tr><tr><td>Holambi Khurd</td></tr><tr><td>Holambi Kalan</td></tr><tr><td>Sanoth</td></tr><tr><td>Ghoga</td></tr><tr><td>Khera Khurd</td></tr></table></td><td></td></tr>
<tr><td>5.</td><td>Latitude and Longitude of all corners of the project site.</td><td><u>Plant Site:</u><table><tr><th>Point</th><th>Lat.</th><th>Long.</th></tr><tr><td></td><td>28°47‘41.49"N</td><td>77°3’42.51"E</td></tr><tr><td></td><td>28°47’46.08"N</td><td>77°3’36.54"E</td></tr><tr><td></td><td>28°47’53.53"N</td><td>77°3’43.80"E</td></tr><tr><td></td><td>28°47’49.56"N</td><td>77°3’48.06"E</td></tr><tr><td></td><td>28°47’47.84"N</td><td>77°3’47.27"E</td></tr><tr><td></td><td>28°47’47.12"N</td><td>77°3’47.43"E</td></tr><tr><td></td><td>28°47’46.70"N,</td><td>77°3’47.84"E</td></tr></table></td><td>-</td></tr>
<tr><td>6.</td><td>Elevation of the project site</td><td>The project site elevation varies from 248 m to 236 m above mean sea level (msl)</td><td>-</td></tr>
<tr><td>7.</td><td>Involvement of Forest land if any</td><td>No</td><td>-</td></tr>
<tr><td>8.</td><td>Water body (Rivers, Lakes, Pond, Nala, Natural Drainage, Canal etc.) exists within the project site as well as study area</td><td>· A natural nallah is passing through the project site.
· Western Yamuna Canal is located at approx. 32 meters from the project site in South-West direction.
<u>Protection measures:</u>
· MSW will be stored in a closed pit to prevent cross-contamination
· Fly ash and bottom ash securely stored in closed silos
· Fuel oil tanks equipped with dykes and spill collection pits
· Nallah passing through the site will not be diverted
· Development of a green belt along the surrounding nallah/stream
· Stormwater from open storage areas will be routed through pits for effective silt collection</td><td>No perennial river passing, only regulated canal passing by near to the project site.</td></tr>
<tr><td>9.</td><td>Existence of ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. if any within the study area</td><td>There is no National Park, Wildlife Sanctuary etc. within study area.</td><td>-</td></tr>
<tr><td>10.</td><td>Archaeological sites, monuments/ historical temples, etc.</td><td>None</td><td>-</td></tr>
<tr><td>11.</td><td>Involvement of Critically Polluted Area/ Severely Polluted area as per 2018 CEPI score</td><td>No</td><td>-</td></tr>
</table>

9. **Salient features of the proposed WTE project**: The technology proposed to be employed for this WTE project is RDF combustion based reciprocating forward feed grate technology. The power plant constitutes Material Recovery Facility

(Pre-sorting), RDF fuel Pit, Incinerators, Boilers, and Steam Turbine Generators with power generation total capacity of 30 MW±6MW. Air cooled condensers (ACC) are to be used in lieu of water-cooled condenser (WCC). The rejects/generated bottom ash will be processed in the bottom ash processing plant. After the processing materials which are not recyclable for further processing will be sent to Sanitary Landfill. Fly ash will be sent to the secured landfills site designated by MCD. The air pollution control system will consist of Flue Gas Treatment System which includes Adsorption of acidic components and other pollutants by lime and Activated carbon in turbo reactors and filtration of dust particles through bag filters. Wastewater & leachate generated from the WTE plant will be treated in the Leachate Treatment Plant. The treated wastewater will be recycled to DM plant and rejected water for quenching of bottom ash. The green belt area will be developed in an area of 6 acres all along the periphery of the project site. .

• Total MSW feed : 3000 TPD
• Power Plant capacity : 30 MW ± 6 MW
• RDF Processing Capacity : 700 TPD per unit (2x700 TPD for two units)
• Auxiliary power consumption : 10 to 15% of total power generation
• Saleable Power to Grid : 85 to 90%
• Calorific Value of Fuel : 1600 kcal/kg and above based on RDF quality
• Export grid voltage : 66 kV
• Grid Interconnection : DTL Bawana Substation (220/66 kV)
• Furnace and boiler type
• Upward grate system
• 99.9% Combustion rate (less than 10 ppm of CO)
• Low NOX generation design – secondary air control
• Flue gas Cooling system
• Hydrated lime dosing system for SO2 control
• Stack of 60 meter height

The description of process involved in the generation of electricity from municipal waste is given below:

• MSW receiving
• Pre Segregation and preparation of RDF
• Heat Recovery & Steam Generation in the boiler
• Power Generation & exporting to grid
• Flue Gas Cleaning System
• Leachate Treatment

Overall mass balance

Description	**Quantity (Tons Per Day)**	**% fraction**
Total Waste for processing	3000 ton	100 %
Green Waste by bio-methanation process	600 ton	20 %
Total MSW Processed for RDF	2,400 ton	80 %
Total RDF to storage	1,400 ton	58 %
Inerts removal in processing	295 ton	12%
Leachate recovered	357 ton	15 %
Moisture	343 ton	14 %
Compost	4 ton	0.17 %
Recyclables	2 ton	0.08 %

Note: *20 to 25 percentage variations on the MSW feed quality are envisaged.*

10. **Fuel requirement**: The details of the municipal solid waste requirement for the proposed project along with its source and mode of transportation is given as below:

Details	Fuel requirement (TPD)	Source	Distance from site (Kms)	Mode of Transportation	Linkage document
1.	3000 Municipal Solid	Municipal	Approx. 12 Kms	Road	Concession Agreement with

	Waste	Corporation of Delhi			MCD

11. **Water requirement**: The water requirement for the proposed project during operation phase is estimated as 625 m3 /day and approx. 7 m3/day of fresh water will be required for domestic purposes which will be met by the DJB. Requirement of water for industrial usage will be met from the blowdown reject water from the Pragati Power Corporation Limited (PPCL) or treated sewage from STP, DJB. There will be no use of ground water in the process or for domestic use for the proposed project.

Operation Phase:
• Fresh water – 7 m3/day
• Blowdown reject water from the PPCL/Treated sewage from STP, DJB – 625 m3/day
• Treated Leachate water – 357 m3/day

12. **Power requirement**: The power requirement during construcytion shall be met from the nearest construction power source i.e., Tata Power Delhi Distribution Limited (TPDDL). During operation phase, power consumption shall be 10–15 % of the generated power. A 750 kVA DG set is envisaged which will be used in case of grid failure.

13. **Baseline Environmental Studies with proposed mitigation measures**

Period	March, 2023 to May, 2023	Additional Study (if any)
AAQ parameters at 8 Locations (min and max)	$PM_{2.5}$ = 46.0 To 228.0 µg/m^3 PM_{10} = 77.0 To 380.0 µg/m^3 SO_2 = 5.0 to 18.0 µg/m^3 NO_x = 14.0 To 32.0 µg/m^3 CO = 0.52 To 0.84 mg/m^3	-
Incremental GLC level	PM = 1.604 µg/m^3 (Level at 0.96.km in South Direction) SO2 = 6.418 µg/m^3 (Level at 0.96.km in South Direction) NO_x = 12.837 µg/m^3 (Level at 0.96.km in South Direction) **Proposed mitigation measures** • Presence of PVC waste is significant, hence the release of HCl, Dioxins and furans will be less significant (below 0.1 ngTEQ/Nm^3) • Hydrated lime and activated carbon injection in the post-combustion stage to control SO_2 and HCl • 130% design capacity of PTFE Bag Filter House, • PM, SO_2, and NOX emissions will be maintained within the levels of 50 mg/Nm^3, 200 mg/Nm^3, and 400 mg/Nm^3, respectively, as per SWM Rules, 2016 norms • Continuous Emission Monitoring System (CEMS) will be installed on the stack • CAAQMS will be installed at the site • Provision for Selective Non-catalytic Reduction for Nox Control **Odour control measures** · Negative Pressure Ventilation in the MSW collection pit · Ventilation air from MSW pit will be fired in the boiler · Fogging unit/mist system & herbal solution spray · Odour assessment will be undertaken during the operational phase as per EN 16841-1 standards	-
Ground water quality at 8 locations	pH: 7.11 to 7.58, Temperature- 19 degree C to 22 degree C, Turbidity- 1.0 to 1.6 NTU, TDS-232.0 to 698.0 mg/l, Alkalinity as CaCO3-188 to 232.0 mg/l,	-

Period	March, 2023 to May, 2023	Additional Study (if any)
	Total Hardness: 134 to 250 mg/l, Mercury-<0.0005 mg/l, Selenium-<0.002 mg/l, Zinc-<0.01 mg/l, Chlorides: 62.00 to 84.00 mg/l, Fluoride: 0.57 to 0.81 mg/l, Sulphate-44.0 to 58.00 mg/l, Nitrate-10.20 to 13.80 mg/l, Cyanide-<0.01 mg/l, Free Residual Chlorine- <0.1 mg/l, Phenolics-<0.001 mg/l, Calcium- 56.20 to 72.0 mg/l, Aluminium-<0.03 mg/l, Total Arsenic-<0.002 mg/l, Cadmium-<0.001 mg/l, Boron-<0.05 mg/l, Total Chromium-<0.002 mg/l, Iron - 0.0 to 0.01 mg/l, Copper-<0.002 mg/l, Lead-<0.002 mg/l, Manganese-<0.02 mg/l, Faecal Coliform-<2 MPN/100 ml.	
Surface water quality at 8 locations	pH-7.02 to 7.34, TDS-233.0 to 311.0 mg/L, BOD-10.0 to 20.0 mg/L. DO-5.50 to 6.40 mg/L, Total Hardness as CaCO3 130.0 to 196.0 mg/L. Temperature – 19.0 degree C to 21.0 degree C TSS-2.0 to 6.0 mg/l, Chloride-28.0 to 60.0 mg/l, Fluoride-0.33 to 0.67 mg/l, Sulphate- 26.0 to 46.0 mg/l, Nitrate- 7.20 to11.50 mg/l, Cyanide-<0.01 mg/l, Phenolic Compounds-<0.001 mg/l, Total Arsenic-<0.002 mg/l, Calcium-102.0 mg/l to 142.0 mg/l, Magnesium-28.0 to 56.0 mg/l, Cadmium-<0.001 mg/l, Total Chromium-<0.002 mg/l, Iron- 0.01 to 0.01 mg/l, Copper-<0.002 mg/l, Lead-<0.002 mg/l, Manganese-<0.02 mg/l, Mercury-<0.0005 mg/l, Selenium-<0.002 mg/l, Zinc-<0.01 mg/l, Total Coliform- 490.0 to 1770.0 MPN/100 ml	-
Effluent generation details and its treatment	Effluent sent to CMB – 382 m^3/day Leachate (357 m^3/day & sewage generation 3m^3/day) – 360 m^3/day 1. Leachate 2. Cooling Tower Blow down 3. Boiler Blowdown 4. Other industrial effluents Mode of treatment **1.** Leachate Treatment Plant through RO **2.** Central Monitoring Basin (CMB) Mode of reuse 1. 100% reuse of treated effluent & leachate 2. Treated water for FGCS & gas cooling, dust suppression and ash quenching 3. Green belt development 4. Domestic wastewater will be used as seed for LTP Zero liquid discharge will be adopted.	-
Noise levels Leq (Day and Night)	42.6 dB (A) to 54.8 dB (A) for the day time and 36.8 dB (A) to 42.6 dB (A) for the Night time. Control measures: • Acoustic walls for the control room, office rooms, and canteen will be provided • A mandatory PPE policy will be adopted in high-noise zones such as TG rooms • Audiometric tests for all persons working at high noise zones	
Traffic assessment study findings	The traffic study was performed on NH-344 M which is connected to project-site and traffic load NH-344 M was found to be moderate as per the respective road classification. The condition of the existing road is good.	-
Soil Quality at 8 Locations	Bulk density: 1.49 to 1.72 gm/cm^3; pH: 6.22 to 7.66; Electrical conductivity (EC); 238 to 324 µmhos/cm; Calcium content: 2.59 to 3.34 mg/100 gm; Sodium: 3.7 to 6.1 mg/100 gm; Potassium: 191.74 to 231.62 kg/ha; Nitrogen: 311.58 to 366.46 kg/ha;	-

<table>
<tr><th>Period</th><th>March, 2023 to May, 2023</th><th>Additional Study (if any)</th></tr>
<tr><td></td><td>Phosphorous: 13.89 to 19.94 kg/ha; Cation Exchange Capacity (CEC): 6.64 to 10.72 meq/100gm;
Organic Matter: 1.23% to 1.74%</td><td></td></tr>
<tr><td>Flora and fauna</td><td>61 Flora and 56 Fauna were found in the study area. As per the Wildlife-Protection Act 2022, Three Schedule-I, species
· Pavo cristatus,
· Herpestes javanicus and
· Accipiter badius
are found in the study area and Wildlife Conservation Plan has been prepared and submitted to DFO for their approval. Rs 54 Lakhs has been allocated for the Conservation Plan.</td><td>-</td></tr>
<tr><td>Hydrogeology study</td><td>· Bawana's aquifer systems predominantly consist of shallow alluvial aquifers.
· The hydrogeological setup includes unconfined to semi-confined aquifers, primarily composed of sand, silty sand, and kankar horizons.
· The depth of water level during Pre-Monsoon ranges from 1.25 mbgl to 66.01 mbgl.
· The depth of water level during Post Monsoon ranges from 0.62 mbgl to 66.75 mbgl.
· The source of water is reject blowdown water from the M/s Pragati Power Corporation Limited
· No groundwater will be withdrawn from any natural water bodies.
· Hence, there will be no impact on groundwater regime.
· A total of 5,085.3 m³ per annum will be harvested and supporting sustainable water management.
Rain water haversting
<table>
<tr><td>Total Built-up Area</td><td>7,539 m^2</td></tr>
<tr><td>Annual rainfall</td><td>674.5 mm/year</td></tr>
<tr><td>Annual rainfall</td><td>0.6745 m</td></tr>
<tr><td>Roof yield per annum</td><td>5,085.3 m^3/year</td></tr>
</table></td><td>M/s Mantec Consultants Pvt. Ltd., Noida</td></tr>
<tr><td>Impact study on biodiversity and aquatic ecology</td><td>· The project is based on ZLD concept and there will be no effluent discharge from the plant.
· Since, there is no major aquatic system in the area, the chances of impact on aquatic ecology would be insignificant.
· Minimum 40% greenbelt / green cover of the total project area will be developed as per CPCB guidelines. Plantation will be done in consultation with the local Forest Department.
· The excavated soil from the project site should be kept separately and can be used to boost restoration and green plantation activity.
· Planting fruit bearing tree for avifauna and other faunal species.
· Western Yamuna Canal is flowing adjacent to the project site. Utmost precaution should be taken to ensure no leakage or discharge of effluent takes place.
· All vehicles inside the project site should maintain speed limit and will not blow horn unless it is required.
· Awareness will be given to workers about the importance and conservation of terrestrial ecology and biodiversity.
· Extensive plantation should be undertaken in an around the project site.</td><td>M/s Mantec Consultants Pvt. Ltd., Noida</td></tr>
<tr><td>Risk assessment study</td><td>· Only flammable material is diesel/LDO for operations for 25 KL which will be provided with dykes and firefighting systems.
· Fire water pumps shall be installed along with adequate water storage</td><td>M/s Mantec Consultants Pvt. Ltd., Noida</td></tr>
</table>

Period	March, 2023 to May, 2023	Additional Study (if any)
	capacity. · Ensure Inspection and Maintenance of Pipelines of Boiler and other related equipments/instruments/connections like safety device, water level indicator, flanges etc. to avoid boiler explosion. · Special precautions like SOP will be considered during start-up and shut down failure of which may lead to fire box explosion/boiler explosion. · Periodical inspection and calibration of various types of electronic instruments shall be followed. · Ensure effective monitoring of the power plant safety. · Effective housekeeping to be maintained in the plant. · MSDS of the chemicals should be present at strategic locations and workers should be well trained to handle that chemical with appropriate PPE. · Gas monitoring equipments to be connected to the alarm (flammable oil). · Periodic Inspection and Maintenance of Fire Alarm & Fire Detection System to ensure its working when in need. · Periodic rehearsal of mock drill to ensure readiness to handle any emergency situation. · All safety precautions (SOP etc.) to be followed in any type of operation in the plant to avoid accidental situations. · Special precautions like no use of match boxes, cigarette lighters etc. also be followed to avoid fire in LDO storage area, loading/unloading of LDO tanker area. · SOP to be followed during loading/unloading of LDO to storage tank. LDO Tankers to be fitted with flame arrestors. Earthing/bonding during loading/unloading to be considered to avoid any static charge generation. · As per NFPA-85E, it is believed that improved instrumentation, safety interlocks and protective devices, proper operating sequences and a clearer understanding of the problem by both designers and operators can greatly reduce the risks and actual incidence of furnace/boiler explosions.	
Epidemiological Study	Recommendations · **Health Interventions**: · Strengthen primary healthcare services and disease surveillance in the Bawana area. · Focus on prevention and early diagnosis of both communicable and non-communicable diseases. · **Nutritional Support**: · Implement nutrition education and supplementation programs targeting deficiencies. · **Awareness Programs**: · Promote healthy lifestyle practices to reduce tobacco and alcohol use, especially among youth. · **Community Engagement**: · Involve the community in health education, sanitation improvement, and participatory health planning. **<u>Action plan:</u>** **<u>Within the facility operations</u>** • Annual medical tests for the workers who are directly exposed to MSW handling • Tie-ups with local hospitals for annual health checkups for all persons working in high-hazard areas • Masks and hand sanitation program for persons working in the MSW	International Institute of Health Management Research (IIHMR), New Delhi

Period	March, 2023 to May, 2023	Additional Study (if any)
	handling area • Health insurance coverage for all employees and workers working at the facility • Strict implementation of ESI policy for the contract workers **Within a 5 Km radius** • Ambient air quality monitoring at three locations • Collaborating with other WtE operators in the area to conduct periodic epidemiological studies in association with local authorities • Conducting awareness programs on the health and hygiene aspects JUIL allocated Rs. 55 Lakhs towards various community healthcare support initiatives	

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

Type of Waste	Source	Quantity (Daily) Metric Tons (MT)	Mode of Transportation	Disposal Method	Remarks
Recyclable	Process	2 MT	Road	Will be sold to registered recyclers	-
Manure (from composting)	Process	4 MT	Road	Used as compost/soil conditioner	Agreement with local farmers and horticulture departments will be made
Bottom Ash & Inert		408 MT	Road	Used for road construction and any unutilized material will be sent to ESLF	-
Fly Ash	Process	72 MT	Road	Supplied to cement industries/ash brick manufacturers and unutilized material will be sent to ESLF	-
Used Oil	Machineries	4 MT	Road	Wil be sold to registered recyclers	-

15. **Public Consultation**:

Details of advertisement given	Nav Bharat Times, Delhi (Hindi) - 26.11.2024 & Times of India (English) -26.11.2024
Date of public consultation	27.12.2024 at 11:00 A.M. to 1:00 P.M
Venue	Proposed Waste to Energy Project (30 MW), adjacent to TSDF for Hazardous Waste, Sector-5 Bawana, Delhi-110039.
Presiding Officer	Additional District Magistrate (North District), Govt. of NCT of Delhi.
Major issues raised	Air Pollution, Health, Employment, Waste Handling and Management etc.
No. of people attended	• 34 No. of Representations / Responses (Letters - 05 Nos & Emails - 29 Nos) received from the Public after 26.12.2024

Summary of issues raised during the public consultation:

Category	Key Concerns Raised	Responses Provided
Air Pollution	Now a days where pollution is on its peak and where we the residents specially those who are living near to Industrial area are already exhausted due to pollution	Ambient Air quality monitoring system will be installed in plant for tracking pollution levels that ensures compliance with environmental regulations and ensures protection of public health under EHS program of the proposed project.

Category	Key Concerns Raised	Responses Provided
	emerging by Industrial units.	
Medical & Health	There is already a big Landfill is working here, and AQI is also in dangerous zone.	Development of new landfill sites has also not been allowed by Delhi High Court. All emission parameters from the plant shall be within the prescribed limits. Ambient Air quality monitoring system will be installed in plant for tracking pollution levels, ensuring compliance with environmental regulations, and protecting public health.
Employment	Employment Generation	Noted with thanks and Employment will be provided to local people.
Waste Handling and Management:	The collection, transportation, and processing of waste at such a large scale could create health risks for workers and residents, especially if safety protocols are not strictly followed.	Waste will be received in closed hook loader in the plant. MSW will be stored in an enclosed pit which is maintained under negative pressure, which prevents the escape of any odor. Regular spray inoculum on the waste will be done. Plant will install spray system for odor management The WTE plant will not emit odor. Leachate Management System will be put in place.

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

S. No	Physical activity and action Plan		Year of implementation (Budget in INR Lakhs)					Total Rs. In Lakhs
			25-26	26-27	27-28	28-29	29-30	
MEDICAL & HEALTH FACILITIES								
1	Providing Medical Camps	Physical Nos	2	5	5	7	7	
		@Village	Bawana (JJ Colony)	Sanoth	Holambi Kalan	Ghoga	Holambi Khurd	
		Budget, Rs lakhs	5	10	10	15	15	55
SOLAR ENERGY DEVELOPMENT/INFRASTRUCTURE DEVELOPMENT								
1	Repair and maintenance of internal roads	Physical Nos	1	1	1	1	1	
		@ Village	Bawana (JJ Colony)	Sanoth	Holambi Kalan	Ghoga	Holambi Khurd	
		Budget, Rs lakhs	5	10	20	20	20	75
2	Solar Energy Development	Physical Nos						
		@ Village	Bawana (JJ Colony)	Sanoth	Holambi Kalan	Ghoga	Holambi Khurd	
		Budget, Rs lakhs	40	55	75	94	126	390
DRINKING WATER/WATER SHED DEVELOPMENT								
1	Providing of RO plant water	Physical Nos	1	1	1	3	1	
		@ Village	Bawana (JJ Colony)	Sanoth	Holambi Kalan	Ghoga	Holambi Khurd	
		Budget, Rs lakhs	2	2	2	6	2	14
GREENBELT DEVELOPMENT								
1	Greenbelt	Budget, Rs	3	5	3	3	3	17

	development in villages	lakhs						
EMPLOYMENT/SKILL DEVELOPMENT								
1	Providing skill development training to ITI & diploma passed local youth	Physical Nos	4 students/year	5 students/ year	5 students/year	5 students/year	5 students/ year	
		@Village	Local Youth from 10 km radius					
		Budget, Rs lakhs	1	2	2	2	2	9
SANITATION								
1	Renovation of Toilets & Distribution of dust bins	Budget, Rs lakhs	10	15	20	25	30	100
Total Cost, lakhs			**66**	**99**	**132**	**165**	**198**	**660**

16. **Cost of project**: The capital cost of the proposed project is Rs 660.0 Crores and the capital cost for environmental protection measures is proposed as Rs 91.605 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 14.155 Crores. The employment generation from the proposed project is 242 (during operation phase). The details of the cost for environmental protection measures are as follows:

Details of Cost Provision for Environmental Measures

S. No.	Particulars	Equipment/Measures Taken-other	Capital Cost (in Crores)	Recurring Cost per annum (in Crores)
1	Air Pollution Control	Flue Gas Cleaning System, SNCR, Anti-Smog Gun etc.	49.505	11.000
2	Water Pollution Control	WTP & LTP installation & Operating cost.	31.400	2.200
3	Noise Pollution Control	Acoustic enclosures & Personal Protective Equipment.	No extra capital investment is required for NPCS to be purchased with noise compliance	0.500
4	Environment Monitoring and Management	OCEMS/CAAQMS installation & Maintenance, Monitoring of Stack emissions.	3.000	0.170
		Manual Environmental and Stack Monitoring	0.14	---
5	Occupational Health	Provision of OHC for working personnel.	0.200	0.150
6	Green Belt	Pursuant to Battery Limit intensifying the greeneries inside and outside of the project site.	0.170	0.051
7	Wildlife Conservation Plan	Activities under biodiversity and habitat conservation	0.540	---
8	Others (Odour control management + Sanitization)	High Pressure Pump, Nozzle and its accessories for fogging unit/mist system & herbal solution spray.	0.050	0.084
9	Public Hearing Commitment	Medical & Health Facilities, Safe Drinking Water, Solar Energy/ Infrastructure Development, Employment/Skill Development	6.60	-
Total			**91.605**	**14.155**

17. **Employment Details**: Total manpower during Construction Phase shall be 630 (60 - direct & 570 – Indirect/contractual) and during Operational Phase shall be 242 (86 - direct & 156 – Indirect/contractual).

18. **Green belt development**: Proposed greenbelt will be developed in 6.0 acres (2.43 ha) which is about 40 % of the total project area. Thus total of 6.0 acres (2.43 ha) area (40 % of total project area) will be developed as greenbelt. Local and native species will be planted with a density of 2000 trees per hectare. Total no. of 4860 saplings will be planted and nurtured in 6.0 acres (2.43 ha) in 3-5 years. The action plan for green belt development is furnished as below:

• **Greenbelt Area**: 6 Acres (~40% of the total project area)
• **Number of trees**: 4,860 trees to be planted @ 2000 trees/ha
• **Native species** will be selected from the plantation:
• Ailanthus excelsa, Alstonia scholaris, Azadirachta indica, Bombax ceiba, Butea monosperma, Calistemon viminalis, Cassia fistula, Dalbergia sissoo, Ficus bengalensis, Ficus religiose, Melia azedarach etc.
• **Greenbelt layout**: 3-tier plantation around boundaries, roads & open areas
• **Tree spacing**: 2.5m x 2.5m grid for optimal canopy and coverage
• **Width**: Minimum of about 3 to 5 m along the periphery and internal roads

19. **Ash Management System**: The present project falls under Waste to Energy category and accordingly bottom ash, and fly ash utilization plan has been developed as per the current technically viable ash utilization programs

Details	Annual generation (Metric Tons Per Annum –MTPA)	Utilization	% of utilization	Balance quantity (MTPA)	No of storage silos with capacity
Bottom Ash & Inert	1,48,920	Use for road construction and any unutilized material will be sent to ESLF	-	Unutilized material will be sent to ESLF	-
Fly Ash	26,280	Supplied to cement industries/ash brick manufacturers	-	Unutilized material will be sent to ESLF	2 nos. of silos

20. **Summary of court cases**: There are no litigations pending against the proposed project.

21. **Written submissions**: The proponent submitted the following with respect to the temperature profiling in the boiler:
The boiler is equipped with multistage hydraulic reciprocating grate furnace. It is the state of art forward &/or reverse acting grate technology for typical Indian waste. It is a complete system that efficiently converts municipal solid waste into energy through controlled combustion.The boiler is composed of several auxiliary systems such as feeding equipment, feeding grate, incineration grate, hydraulic system, oil burner system, automatic control system, combustion air system, ash and slag discharging system, etc. It has a unique grate design and optimized air distribution system, to ensure the highest combustion efficiency and eliminate partial combustion, with advanced automatic combustion control system. The waste combustion zone is divided into following sections according to the combustion properties, where the waste is dried, burned, burned out and finally cooled:
1) the drying section,
2) the combustion section and
3) the slag cooling section;
The primary air enters the primary combustion zone of furnace through the chamber arranged under the grate. 1st section specializes in drying the waste to optimum combustion temperature. 2nd section ensures complete combustion above 950 °C temperature. Secondary air enters the secondary combustion zone of furnace through nozzles to enhance the turbulence, along with refractory in the first pass to ensure more than 2 seconds residence time. The continuing design of boiler includes top support, vertical, four pass, balance draft, single drum and natural circulation, water tube design. Further, the temperature profile of both the combustion zones and boiler passes is as follows:

Particular	**1st Pass Furnace**		**2nd Pass Outlet**	**3rd Pass Outlet**	**4th Pass Outlet**
	Primary Combustion Zone	**Secondary Combustion Zone**			
Flue Gas Temperature	1068 °C	1025 °C	661 °C	350 °C	190 °C

The Boiler is designed to maintain the temperature above 950 °C in the secondary combustion zone and ensure a gas residence time of more than 2 seconds in the secondary combustion zone.

Observations and deliberation of the EAC

22. The Committee observed and noted the following:

i. Instant proposal is for setting up of Waste to Energy Thermal Power Project of capacity 30 MW by M/s Jindal Urban Waste Management (Bawana) Limited located at DSIIDC Industrial Area, Sector 5, village Bawana, Sub-district Narela, District North Delhi, Delhi.

ii. The EAC took into consideration the KML file on the Google Earth presented by the project proponent along with DSS of the project site on PARIVESH.

iii. ToR for the proposed greenfield project was accorded on 10/01/2024. The site for the proposed project was selected after analysing three alternate sites. The Bawana site was found most suitable due to availability of adequate authorized land with the MCD in DSIIDC, Industrial Area, Nearness to water source from PPCL and no fresh water will be drawn up for industrial use except drinking water and no existence of Ecologically sensitive areas.

iv. Total land required for the proposed project is 6.07 Ha (15.0 Acres), falling within the DSIIDC industrial area, Bawana, Delhi and doesn't involve R&R issues. The land has been provided by Municipal Corporation of Delhi (MCD) to M/s. Jindal Urban Waste Management (Bawana) Limited vide concession agreement dated 27/02/2025.

v. The committee observed that a natural nallah is passing through the project site. Western Yamuna Canal is located at approx. 32 meters from the project site in South-West direction. No nallah diversion involved but the Nalla embankment shall be strengthen and green belt will be developed all along the periphery of the nallah for its conservation. The committee suggested that nallah should be kept intact and no leachate or waste water/solid waste shall be discharged/deposited in to the Nallah.

vi. There is no involvement of forest land. 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.

vii. The project site is not located within the Critically Polluted Area (CPA) / Severally Polluted Area (SPA) as per CEPI assessment 2018 of CPCB.

viii. The technology to be employed for this WTE project is RDF combustion based reciprocating forward feed grate technology. The power generation capacity will be 30 MW. The quantity of MSW requirement for the project will be 3000 TPD.

ix. The water requirement for the proposed project during operation phase is estimated as 625 m3 /day and approx. 7 m3/day of fresh water will be required for domestic purposes which will be met by the Delhi Jal Board (DJB). Requirement of water for industrial usage will be met from the blowdown reject water from the Pragati Power Corporation Limited (PPCL) or treated sewage from STP, DJB. No ground water shall be used for the proposed project. Zero Liquid Discharge will be for the proposed project.

x. The requirement of the construction power supply for the project would be met from the Tata Power Delhi Distribution Limited (TPDDL).

xi. The Committee deliberated on the baseline data and incremental GLC due to the proposed project. The committee noted that the proponent is providing hydrated lime injection for SO2 control, bag filter, Low NOX combustion system and provision for Selective Non-Catalytic Reduction (SNCR) for NOx control and stack with a height of 60 meters will be provided to control & regulate the air emission from the proposed project.

xii. For odour control, the committee noted that negative Pressure Ventilation in the MSW collection pit, ventilation air from MSW pit will be fired in the boiler and provision of fogging unit/mist system & herbal solution spray.

xiii. The committee noted that with respect to water pollution control, proponent will be using Air cooling system,

wastewater from raw water treatment facilities and the boiler section will be used for flue gas conditioning and dust suppression operations and leachate will be collected, treated, and reused in the main plant. Zero liquid discharge will be adopted.

xiv. The rejects/generated bottom ash will be processed in the bottom ash processing plant. After the processing materials which are not recyclable for further processing will be sent to Sanitary Landfill. Fly ash will supplied to cement industries/ash brick manufacturers and unutilized material will be sent to secured land fill.

xv. There are 3 Schedule I Species found in the study area and a Wildlife Conservation & Management Plan (WLCP) has been prepared and submitted to DFO for their approval. Rs 54 Lakhs has been allocated for the Conservation Plan.

xvi. The findings of epidemiological study report have been deliberated and the Committee noted that JUIL has allocated Rs. 55 Lakhs towards various community healthcare support initiatives.

xvii. Proposed greenbelt will be developed in 6.0 acres (2.43 ha) which is about 40 % of the total project area in a time frame of three to five years.

xviii. Public hearing for the project was held on 27.12.2024. The Committee looked into the videography of the public hearing proceedings, deliberated on the public hearing issues and written representations received along with the action plan submitted by the proponent to address the issues raised during the public hearing. The committee advised the PP to implement the PH action plan in a time bound manner.

xix. The capital cost of the proposed project is Rs 660.0 Crores and the capital cost for environmental protection measures is proposed as Rs 91.605 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 14.155 Crores. The employment generation from the proposed project is 242 (during operation phase).

xx. 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.

xxi. The Committee also deliberated on the comments received from Commission on Air Quality Management wherein it has been emphasized upon that proposed project shall undertake strict control measures to control the air pollution arising due to other activities linked to WTE plant construction and operation (e.g., C&D, transportation, road dust, etc) and all the Directions, Advisories and Orders issued by the Commission in this regard from time to time shall be followed strictly. The committee asked the proponent to ensure compliance with the same.

xxii. The EAC also deliberated on the 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.

Recommendations of the Committee:

23. The EAC after detailed deliberations on the information submitted and as presented during the meeting recommended for grant of Environmental Clearance to the proposed "*Waste to Energy Thermal Power Project of capacity 30 MW by M/s Jindal Urban Waste Management (Bawana) Limited located at DSIIDC Industrial Area, Sector 5, village Bawana, Sub-district Narela, District North Delhi, Delhi*", 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. Jindal Urban Waste Management (Bawana) Limited** for "*Waste to Energy Thermal Power Project of capacity 30 MW located at DSIIDC Industrial Area, Sector 5, village Bawana, Sub-district Narela, District North Delhi, Delhi*" 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.

30. 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.

31. 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. Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office, Regional Office (CZ), Kendriya Bhawan, 5th Floor, Sector-H, Aliganj, Lucknow - 226020.
4. The Chairman, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
5. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi – 32.
6. The Chairman, Delhi Pollution Control Board, 6th floor, B wing, Delhi Secretariat, I P Estate, Delhi-110 002.
7. The Member Secretary, Delhi Pollution Control Board, 6th floor, C wing, Delhi Secretariat, I P Estate, Delhi-110 002.
9. The District Collector, North Delhi, Delhi.
10. PARIVESH Portal.

Annexure 1

Specific EC Conditions for (Thermal Power Plants)

1. Environmental Management

S. No	EC Conditions
1.1	The incoming organic waste of 600 TPD shall be processed at bio-methanation facility and mixed waste of 2400 TPD shall be processed at proposed waste to energy plant as committed. All the waste received shall be kept under a covered storage facility equipped with impermeable base and provision for collection of leachate leading to a leachate treatment and disposal facility.
1.2	Project proponent shall take necessary precaution to minimize nuisance of odour, flies, rodents, bird menace and fire hazard in the waste storage pit, around & over windrows and in processing area.
1.3	Proponent shall ensure that pre-process and post-process rejects shall be removed from the compost processing facility on regular basis and shall not be allowed to pile at the site. Recyclables shall be sent to authorized recyclers. The non-recyclables having high calorific fraction (>1500 kcal/kg) shall be segregated and sent to waste to energy.
1.4	Project Proponent shall ensure that waste to be incinerated shall not be chemically treated with any chlorinated disinfectants and incineration of chlorinated plastics shall not occur. All the facilities in twin chamber incinerators shall be maintained to achieve a minimum temperature of 950℃ in secondary combustion chamber and with a gas residence time in secondary combustion chamber not less than 2 seconds. Incinerators shall be operated with such temperature, retention time and turbulence, as to achieve Total Organic Carbon (TOC) content in the slag and bottom ash less than 3%, or the loss on ignition is less than 5% of the dry weight. The CO2 concentration in tail gas shall

S. No	EC Conditions
	not be more than 7%.
1.5	Project proponent shall ensure that maximum utilization of ash generated in accordance with the ash utilization notification dated 31/12/2021 and its subsequent amendment. No ash pond is permitted within the project site. Any unutilized ash and inerts from processing of municipal solid waste in the proposed Waste to Energy Plant shall be sent to Engineered Sanitary Landfill (ESLF) for its safe disposal. In case the concentration of toxic metals in incineration ash exceeds the limits specified in the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, as amended from time to time, the Project Proponent shall send the ash to the Treatment, Storage and Disposal Facility for Hazardous Waste at Bawana in Delhi.
1.6	Project proponent shall install one continuous ambient air quality monitoring at suitable locations within the project site in consultation with DPCC as committed. The data from the CAAQMS shall be connected to CPCB server as well as SPCB server. The calibration of CAAQMS installed shall be carried out as per the calibration protocol for CAAQMS system specified by CPCB and records shall be maintained.
1.7	Online Continuous Stack Emission Monitoring System (OCEMS) shall be done through 24X7 online monitoring system. The emission Standards for Municipal Solid Waste based Thermal Power Plants as per Municipal Solid Waste Rules, 2016 dated 8.4.2016 (S.O. 1357 (E)) shall be complied (Refer Part C of Schedule II of Municipal Solid Waste Rules, 2016 dated 8.4.2016 (S.O. 1357 (E)). OCEMS shall be calibrated properly to ensure that data matches with the actual monitoring results.
1.8	The total water requirement for the proposed project is estimated as 989 m3/day, out of which 625 m3/day shall be met from blowdown reject water of Pragati Power Corporation Limited (PPCL) or treated wastewater from Sewage Treatment Plant (STP) of Delhi Jal Board (DJB) for industrial purposes and 7 m3/day fresh water shall be met from drinking water supply of DJB for domestic purposes. Air-Cooled Condenser shall be used to reduce fresh water requirement and no ground water abstraction shall be allowed.
1.9	Natural nallah passing through the project site should be kept intact and no leachate or waste water/solid waste shall be discharged/deposited in to the Nallah. It's embankment shall be strengthened and Green belt shall be developed all along the periphery of the nallah. Western Yamuna Canal located at 32 meters from the project site in South-West direction shall be protected.
1.10	Project proponent shall harvest rainwater in a storage tank within the plant premises and utilize the same for plantation, recharging water in the pond and domestic utilization as committed. PP shall provide separate garland drains to prevent mixing of leachate with stormwater. A record shall be maintained of water collected through rainwater and its supply system. PP shall get the water audit done every year to optimize the water requirement.
1.11	Project proponent shall implement the protective measure proposed in EMP in a time-bound manner. The budget earmarked for the same is Rs. 91.605 Crores (Capital) and Rs. 14.155 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 the concerned Regional Office for the activities carried out during the previous year.
1.12	Project proponent shall take prior permission from the Competent Authority to divert high tension line passing through the project site.

S. No	EC Conditions
1.13	Effluent of 360 KLD shall be treated through Leachate Treatment Plant. As committed by the Project proponent, Zero liquid discharge shall be adopted for the proposed plant. No wastewater will be discharged outside the project site. 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.
1.14	Project proponent shall implement the concurrent plantation plan in a time bound manner. Total area of 2.43Ha. (40% of total plant area of 6.07 Ha.) shall be developed as greenbelt in a time frame of 3-5 years. Three tier green belt all along the periphery of the project site shall be developed as greenbelt and green cover as per CPCB guidelines. The budget earmarked for the greenbelt 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	Project proponent shall carry out community plantation with incentive scheme by distributing 5,000 saplings per year for a period of five years. Further, PP shall provide basic facilities to the nearby schools such as drinking water, sanitation facilities and shall also develop greenbelt around the nearby schools. Further, PP shall organize quarterly awareness programs for school students to educate them on the significance and preservation of trees.
1.16	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.
1.17	Project proponent shall install LED display of air quality (Continuous AAQ monitoring) and stack emission (Continuous emission monitoring) 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.
1.18	Project proponent shall install adequate number of anti-smog guns at the periphery of the project boundary facing inwardly at a suitable height and explore the possibility for vertical gardens in order to bring down the particulate matter concentration in the area along with carry out Water Sprinkling on roads inside the plant area/ administrative areas on a regular basis to control the air pollution. A logbook shall be maintained for the activity and be in six-monthly compliance report.
1.19	Project proponent shall deploy mechanical road sweepers for everyday cleaning of the roads in and around plant site.
1.20	Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
1.21	Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.

S. No	EC Conditions
1.22	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
1.23	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the latest CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
1.24	Project proponent shall ensure that plastic waste generated from the plant except chlorinated plastics shall be used as RDF for the in-house incinerators. The chlorinated plastics 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 submitted by Project proponent.
1.25	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 Greenbelt development. The action in this regard shall be submitted concerned RO in six monthly report.
1.26	All the Directions, Advisories and Orders of Commission for Air Quality Management in National Capital Region and Adjoining Areas from time to time shall be complied upon by the project proponent.

2. Socio - Economic

S. No	EC Conditions
2.1	All the recommendations of the epidemiological study report by IIHMR Delhi shall be complied upon by the project proponent in a time bound manner and compliance status in this regard shall submitted along with the six monthly compliance report. In addition to this, proponent shall carry out a Root Cause Analysis (RCA) study to assess the prevalence of water borne diseases in the areas adjacent to the proposed project. The study report along with the recommendations shall be submitted to the Regional Office of the Ministry along with the six monthly compliance report.
2.2	The budget proposed for PH is Rs. 6.60 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 within a time frame of 5 years from the date of grant of EC. In addition to this, PP shall provide medical camps in the study area for better public health, strengthen existing roads, provide RO for drinking water, develop skills of local people, etc. as committed. Compliance status in this regard shall be submitted along with the six monthly compliance to the concerned Regional Office of MoEF&CC.

S. No	EC Conditions
2.3	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 under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 and Authorization under Solid Waste Management Rules, 2016 and Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016for the proposed project shall be obtained from the Delhi Pollution Control Committee.
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	Part A, B & C of Schedule II of Solid Waste Management Rules, 2016 which came into force vide S.O. 1357 (E) on 08.04.2016 as amended from time to time shall be complied for standards for composting, treated leachate (generated from waste) and incineration of Municipal Solid Waste.
1.2	Environmental Guidelines for Compressed Biogas Plant (CBG)/Bio-CNG Plants, 2022 of CPCB shall be followed for biomethanation plant based on municipal solid waste.
1.3	MoEF&CC Notifications on Ash Utilization S.O. 5481 (E) dated 31/12/2021 as amended from time to time shall be complied.

2. Ash Content/mode Of Transporatation Of Coal

S. No	EC Conditions
2.1	Waste shall be transported in covered vehicles and the wheel-washing facility shall be provided at the entry and exit of the plant.
2.2	PP shall transport fly ash / bottom ash / inerts in properly covered vehicles and ensure that no fugitive emission occurs in the air during loading, unloading and transportation.

3. Air Quality Monitoring And Management

S. No	EC Conditions
3.1	Project proponent shall manage the foul odour emerging as a result of waste processing as per CPCB guidelines issued from time to time.
3.2	Negative Pressure shall be maintained in the Waste Storage Pit from the waste pit. Pressure monitoring system showing the atmospheric pressure and pressure inside the waste pit shall be installed and the data shall be transferred to CPCB and DPCC through server.
3.3	Selective Non-Catalytic Reduction (SNCR) system or Low NOx combustion system shall be installed to achieve NOx emission standard as prescribed in Solid Waste Management Rules, 2016 or by DPCC whichever is stringent.
3.4	Hydrated lime and activated carbon injection system shall be installed for controlling SO2 and HCl emissions in flue gas. Bag Filter House made of PTFE (Polytetrafluoroethylene) with 130% design efficiency for controlling Particulate matter emissions shall be installed to ensure that particulate matter (PM) emission meet the stipulated standards of 30 mg/Nm3.
3.5	One common stack with a height of 60 meters shall be provided with continuous online monitoring instruments for SO2, NOx and Particulate Matter as per extant rules.
3.6	Exit velocity of flue gases shall not be less than 20-25 m/s. Project proponent shall ensure that all the parameters including TOCs in stack emissions to meet the standards as prescribed in Solid Waste Management Rules, 2016 or by DPCC whichever are stringent.
3.7	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, NOX within the plant area 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.
3.8	Adequate dust extraction/suppression system shall be installed in waste handling, ash handling areas and material transfer points to control fugitive emissions.
3.9	Appropriate Air Pollution Control measures shall 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

S. No	EC Conditions
	areas.

5. Human Health Environment

S. No	EC Conditions
5.1	Personnels handling municipal solid waste or being present on the tipping floor shall be provided with PPE like shoe covers, gloves, masks, etc.
5.2	A separate canteen far from the waste management area shall be provided for employees. All the basic sanitation facilities shall also be provided to all the employees.
5.3	Bi-annual Health check-up of all the workers is to be conducted. The study shall take into account chronic exposure of locals 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.
5.4	The PP should have one Community Health Center in the campus,where the citizens from nearby area can have access to it and get treatment.

6. Water Quality Monitoring And Management

S. No	EC Conditions
6.1	Proponent shall achieve specific water consumption of the WTE below 3.0 m3/MWhr.
6.2	Regular (at least once in six months) monitoring of groundwater quality in and around the proposed waste to energy plant 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.
6.3	The treated effluents emanating from the different processes such as RO & DM plant, boiler blow down, sewage, etc. conforming to the prescribed standards shall be recycled and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.
6.4	Wastewater generation of 274 KLD (191 KLD from RO & DM Plant + 57 KLD Cooling Tower water blowdown + 26 KLD from boiler blowdown) shall be sent to CMB and 108 KLD shall be recycled to raw water tank.
6.5	Leachate of 357 KLD and sewage of 3 KLD making the quantum as 360 KLD shall be treated collectively in Leachate Treatment Plant to meet the standards as laid down in Solid Waste Management Rules, 2016. Treated leachate shall be recycled and utilized in the process and for quenching ash within the premises of the proposed WTE plant.
6.6	Project proponent shall use the sludge obtained from the Leachate Treatment Plant as fuel into incinerator after dewatering by screw press technique.

7. Risk Mitigation And Disaster Management

S. No	EC Conditions
7.1	PP shall install radioactive sensors at the entry point of the Waste to Energy plant to detect any radioactive material in the receiving municipal solid waste.
7.2	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.
7.3	Only RDF shall be fed into incinerator for generation of energy and no other kinds of fuel shall be used.
7.4	Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
7.5	Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary.
7.6	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	Greenbelt of at least 5-50 metres thickness and densified @ 2500 trees per hectare, shall be developed in an area of 40% of the total plant area with indigenous plant species in accordance with CPCB guidelines. The greenbelt shall inter-alia cover an entire periphery of the plant.
8.2	In-situ/ex-situ Conservation Plan for the flora and fauna in the vicinity of the proposed site should be prepared and implemented.

9. Waste Management

S. No	EC Conditions
9.1	Municipal 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 compost, ash produced or any other substance, potential of leaching heavy metals into the surrounding areas as well as into the groundwater.
9.3	Ash shall be utilized as per provisions of the Notification issued by the Ministry's gazette notification vide S.O. 5481 dated 31.12.2021, S.O.6169 (E) dated 30.12.2021, S.O.05 (E) dated 01.01.2024 and amendment thereto.
9.4	Rejects/unutilized ash shall be disposed of in the Engineered Sanitary Landfill (ESLF). In case the concentration of toxic metals in incineration ash exceeds the limits specified in the Hazardous and

S. No	EC Conditions
	Other Wastes (Management and Transboundary Movement) Rules, 2016, as amended from time to time, the PP shall send the ash to the Treatment, Storage and Disposal Facility for Hazardous Waste at Bawana in Delhi.

10. Monitoring Of Compliance

S. No	EC Conditions
10.1	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.
10.2	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	Activities under Extended EMP 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 Extended EMP in compliance of the shall be submitted.