



NTPC Tamilnadu Energy Company Ltd

(A Joint Venture of NTPC Ltd & TNEB)

Vallur Thermal Power Project

Ref: NTECL/EMG/F7/ES-FormV:2024-25

Date: 09.05.2025

To
Joint Chief Environmental Engineer
Tamil Nadu Pollution Control Board
951/1, Poonamalle High Road,
Arunbakkam,
Chennai -106

Subject: Submission of Environmental statement in Form 5 (2024-25) from NTECL Vallur

Sir,

Please find the enclosed Environmental Statement report in form-5 by NTPC Tamilnadu Energy Company Limited for the year 2024-25

Thanking you

Yadala Apparao
AGM(EMG)

Enclosures:

- Form V 2024-25

Copy to:

- Additional Principal Chief Conservator of Forests, MOEF and Climate Change, 34, Cathedral road, Nungambakkam, Chennai – 34 (ro.moefccc@gov.in)
- DEE Gummidipoondi, TNPCB, SIPCOT, Gummidipoondi - 601201

ENVIRONMENTAL STATEMENT IN FORM - V

Environmental Statement for the year ending March 2025

PART A			
General information			
1	Name and Address of the unit	NTPC Tamilnadu Energy Company Limited,	
	Address	Vallur Thermal Power Project, Vellivoyal Chavadi Post, Ponneri Taluk Thiruvallur Dist., Chennai – 600 103.	
	Name of the Occupier	S K Sinha Chief Executive Officer	
2	Industry Category Primary (STC code), Secondary (STC code)	Red/ Large	
3	Production capacity	3 × 500 MW	
4	Year of establishment	Dates of commissioning: Unit 1: 28.03.2012, Unit 2: 28.02.2013, Unit 3: 28.02.2014	
5	Date of last environmental statement submitted	09.05.2024	
PART B			
Water and Raw material Consumption			
(i)	Water consumption (m ³ /day) 2024 -25 (Sea water is only taken)		
	Process	56,748 m ³ /day	
	Cooling	1,20,591 m ³ /day	
	Domestic	3,8,834 m ³ /day	
	Total water consumption	2,16,174 m ³ /day	
(ii)	Water consumption per unit of the product		
	Name of the Products	Water consumption per unit of product output L/KWh	
		(2023-24)	(2024-25)
	Electricity	11.911 L/KWh (Sea water)	9.11 L/Kwh (Sea water)
(iii)	Raw Material Consumption		
	Name of the raw material	Name of the product	Raw material consumption per unit of the product (Kg per Kwh)
			(2023-24) (2024-25)
	Coal	Electricity	0.728 Kg/Kwh 0.728 kg/Kwh

PART C				
Pollution discharged to environment/unit of output (Parameters as specified in the consent issued)				
(i) Water Pollution (2024-25)				
Trade effluent (Central Monitoring Basin outlet):				
Pollutants	Prescribed standards	Quantity of Pollutants discharged (mass/day)	Average annual value	Percentage of variation from prescribed standards with reasons
pH	5.5-9		7.30	Nil
Temperature	40°C		32 °C	Nil
BOD	30 mg/l	1137.65 Kg/day	12 mg/l	Nil
COD	250 mg/l	2580.92 Kg/day	28 mg/l	Nil
TSS	100 mg/l	6882.79 kg/day	74 mg/l	Nil
Flow	243000 KLD	91163.85 KL/day	91163.85 KLD	Nil
(ii) STP Outlet				
Pollutants	Prescribed standards as per CTO	Average annual value	Percentage of variation from prescribed standards with reasons	
pH	5.5-9	7.30	Nil	
TSS	30 mg/l	16.32 mg/l	Nil	
BOD	20 mg/l	7.50 mg/l	Nil	
(iii) Air Pollution (2024-25)				
Pollutant parameter	Prescribed standards	Quantity of Pollutants discharged (mass/day) (Kg/day)	Annual average value (mass/volume) mg/Nm³)	Percentage of variation from prescribed standards with reasons
Particulate matter				
a) PM Unit 1	50 mg/Nm³	1758.34	37.35	Nil
b) PM Unit 2		1222.35	29.53	
c) PM Unit 3		1906.09	38.83	
SO₂ emission				
d) SO₂ Unit 1	Presently no limit. 200 mg/Nm³ is to be met from January 2025.	46650.63	990.93	FGD (Flue gas desulphurization) installation is in progress to reduce SO₂ emission.
e) SO₂ Unit 2		37314.78	901.46	
f) SO₂ Unit 3		44843.43	913.53	
NOₓ emission				
g) NOₓ Unit 1	450 mg/Nm³ from January 2023.	14108.19	299.68	DeNOₓ system was installed in Unit 1 in Dec 2020, Unit2 in Sept 2021 and Unit 3 in August 2022.
h) NOₓ Unit 2		9160.67	221.31	
i) NOₓ Unit 3		9593.77	195.44	

PART D			
Hazardous Wastes (As specified under Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016)			
Hazardous Wastes	Total Quantity (Kg)		
	2023-25	2024-25	Remarks
a) From Process			
5.1 - Used Oil	50 MT	55 MT	
5.2 - Waste Oil	50 MT	12 MT	
33.1 - Empty Containers	45 MT	0.46 MT	
b) From pollution control facilities			
PART E			
Solid Wastes			
Solid Wastes	Total Quantity (Kg)		
	2024-25		
a) From process	Ash is generated from coal combustion. Ash utilization details are given in this report.		
b) From pollution control facilities			
(1) Quality recycled or reutilized within the unit	-		
(2) Sold	-		
(3) Disposal	-		
PART F			
Characteristic (in terms of consumption of quantum) of hazardous as well as solid wastes and disposal practice adopted for both these categories of wastes.			
Hazardous Waste			
Used/Spent oil, Waste Oil and empty containers of Paint and Oil are being stored in sealed drums under covered shed at NTECL and disposed to authorized recyclers through M/s MSTC auction. NTECL has awarded a contract to TSDF RE Sustainability Gummidipoondi for disposal of Hazardous Waste.			
Solid Waste			
Colour coded dustbins are distributed to every house in NTECL township. Solid waste is being segregated at source. Organic waste is being composted. Accumulated Plastic Waste is given to recyclers/pyrolysis agencies.			
➤ Accumulated Municipal solid waste was handed over to M/s ADS clearing systems who is authorized service provider of Greater Chennai Corporation.			
Wastes handed over to recyclers in the year 2024-25:			
➤ 165.1 MT of Ferrous waste			
➤ 26 MT of non-ferrous waste			
➤ 0.95 MT of E-Waste			

PART G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production

Complete Sea water-based plant

NTECL is a unique thermal power plant that entirely uses Sea water ($12,150 \text{ m}^3/\text{hr}$ at full load) for all its purposes thereby preserving scarce freshwater resource available on earth. A 20 MLD desalination plant is operational since inception for processing Sea Water.

NTECL operates on closed cycle cooling water system. Further, Ash water recirculation system is in service where ash pond effluent is circulated back to the station for ash mixing and disposal into ash pond. Sewage Treatment Plants are operational and treated water is entirely used for horticulture.

Additionally, a solar drinking water project of 125TPD that uses Sea Water and Solar Energy to produce Potable Water is erected at NTECL. BIS certificate for drinking water produced from NTECL Solar desalination Plant was obtained on 03.08.2022 and drinking water requirement is met through this system.



Fig 1: Solar Desalination Plant installed at NTECL

PART H

Additional measures/investment proposal for environmental protection including abatement of pollution or prevention of pollution

Electro Static Precipitator

Each Unit is connected to a highly efficient Electrostatic Precipitator (99.969 % efficiency) that maintains the Particulate Matter emissions from stack within $50 \text{ mg}/\text{Nm}^3$. Stacks for height 275 m are provided for wide dispersion of emissions into the atmosphere.



Fig 2: Electro Static Precipitator at NTECL

FGD construction and NO_x control measures

NTECL has to achieve SO_2 limit of $200 \text{ mg}/\text{Nm}^3$ before Dec 2024. NTECL awarded contract for FGD (Flue Gas Desulphurization) installation to M/s Tata Projects Ltd in April 2020 and the works are in progress.



Fig 3: FGD construction at NTECL

In order to meet NO_x emission limit of 450 mg/Nm^3 , NTECL has completed Combustion Modification in Unit 1 in Dec 2020, Unit 2 in Sept 2021, Unit 3 in Aug 2022. NO_x standards are achieved at NTECL well within the timeline stipulated by MoEF&CC.

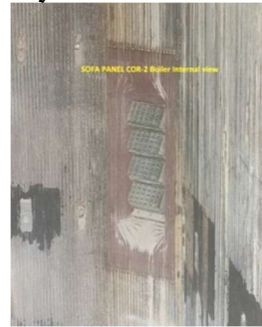


Fig 4: NO_x reduction – combustion modification works in boiler

Ash Utilization

There are 3 Ash Silos of capacity 1700 MT each for collecting Ash in Dry form. Bottom Ash is sent to Ash Dyke. NTECL has tied up with Cement, Bricks, Ash utilization at NTECL is shown in the table below.

Sl. No	Financial year	Ash generated (Million Tonne)	Ash utilized (Million Tonne)	Ash utilization (%)
1	2024-25	2.847	2.961	104.23%
2	2023-24	1.830	2.519	137.79 %
3	2022-23	2.947	2.050	69.58%
4	2021-22	2.447	1.910	78.09 %
5	2020-21	1.277	1.568	122.80%
6	2019-20	1.744	2.11	121.02%

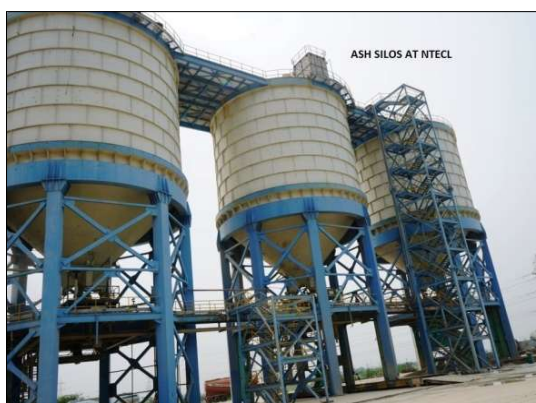


Fig 5: 3 No of Dry ash silos at NTECL

**Environmental monitoring**

- Effluent, stack, and Ambient Air Quality parameters are being transmitted continuously to TNPCB since 2015 and to CPCB since 2017.
- TNPCB annual environmental survey was conducted on 26.04.2024 and parameters are within permissible levels.
- Fortnightly monitoring by MoEF&CC recognized NABL accredited laboratory is being carried out regularly.

PART I

Any other particulars for improving the quality of the environment

Wind Barriers for Coal Stock yard

Wind barriers of 12 m height that are taller than coal stocks are erected in coal stock yard to catch coal dust. Wash water from coal handling area is collected at Coal Slurry Settling Pit, treated and sent for final disposal.



Fig 6: Wind barrier for coal stock yard at NTECL

Dust suppression, Dust extraction at Coal Handling Plant

Dust suppression system is installed at all transfer points of coal handling system to contain the fugitive dust due to coal movement.

Installation Dust Extraction System at coal handling area was completed and it was made operational in 2022-23.



Fig 7: Dust extraction sytem at Coal crusher house

Green belt development

Till March'24 NTECL has planted 36,359 trees inside and 24,000 trees outside its premises through Tamilnadu Forest Department.

NTECL has done Mangrove plantation through MS Swaminathan Research Foundation in 14.97 ha of its own land by adopting Fish bone canal method.





Fig 8: Green belt development at NTECL



Fig 9: Increasing Environmental awareness at NTECL on World Environment Day June 2024

World Water Day 2025

NTECL conducted various competition like slogan writing, dialogue & elocution for children of employees of NTECL, CISF and associates on account of World Water Day theme set by United Nations – “Glacier Preservation”





Fig 10. World Water Day 2025 celebrations

Environmental Awards to NTECL in 2024-25

NTECL was a Winner in CEE 3rd National Power-Gen Water Management Summit & Award 2025 under the categories of National Water Efficient Unit Coal above 500 MW and National Efficient Ash Handling Plant of the year – Public Sector.