



**एनटीपीसी लिमिटेड**  
(भारत सरकार का उद्यम)

**NTPC Limited**  
(A Govt. of India Enterprise)

**दर्लिपाली / Darlipali**

Ref: DSTPP/EMG/25/2023

Dated. 30.09.2024

To  
The Member Secretary  
State Pollution Control Board Odisha  
Paribesh Bhawan, A-11S, Nilakantha Nagar, Unit-VIII  
Bhubaneswar-751012, Odisha

**Sub: Annual Environment Statement of NTPC Darlipali for FY: 2023-24.**

Dear Sir,

With reference to the above mentioned subject, please find enclosed herewith the Annual Environment Statement of NTPC Darlipali for FY: 2023-24 as **Annexure-I**.

This is for your kind perusal please.

Thanking you.

Yours faithfully,

**R.B.Malik**  
(Business Unit Head)  
NTPC Darlipali.

**Copy to:**

The Regional Officer  
State Pollution Control Board  
Near Panposh Hockey Chowk,  
Panposh, Po- Panposh,  
Rourkela – 769 004, Dist – Sundargarh

दर्लिपाली सुपर थर्मल पावर प्रोजेक्ट, पोस्ट : दर्लिपाली, जिला : सुन्दरगढ़-770025 (ओड़िशा), दूरभाष : 06622-295114  
Darlipali Super Thermal Power Project, At/P.O : Darlipali, Dist : Sundargarh-770025 (Odisha), Tel : 06622-295114

पंजीकृत कार्यालय : एनटीपीसी भवन, स्कोप कॉम्प्लैक्स, 7, इन्स्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली-110 003

दूरभाष/Tel: 011-24360100, फैक्स/Fax : 011-24361018, वेबसाइट/Website : www.ntpc.co.in

Regd. Office : NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodhi Road, New Delhi- 110003

**Corporate Identification No-L40101DL1975G01007966**



A Maharatna Company

Darlipali

**Annual Environment Statement**  
**Darlipali Super Thermal Power Project,**  
**Stage-I (2x800 MW)**  
**Year 2023-24**



**NTPC Limited**  
**Darlipali Super Thermal Power Project**  
**PO: Darlipali, Dist- Sundargarh(Odisha), Pin: 770072**

**NTPC Limited**  
**Darlipali Super Thermal Power Project**  
**Dist.-Sundargarh (Odisha)**

**Form – V**

**Environmental Statement for the financial year ending 31<sup>st</sup> March 2024.**

**PART – A**

- |    |   |  |
|----|---|--|
| 1. | Name and address of the owner/occupier of the Industry operation or process | R.B.Malik<br>(Business Unit Head)<br>Darlipali Super Thermal Power Project<br>NTPC Limited<br>Dist: Sundargarh<br>Pin: 770072 (Odisha) |
| 2. | Industry Category   | Power Plant (Thermal)  |
| 3. | Name of products  | Electricity  |
| 4. | Production Capacity   | 1600 MW<br>(2x800 MW Thermal)  |
| 5. | Year of Establishment   | 2020 (COD of Unit#1),<br>2021 (COD of Unit#2),<br>(CTO valid till 31.03.2025)  |
| 6. | Date of Last Environmental Statement  | 31.08.2023   |

**PART –B**  
**(Water & Raw Material Consumption)**

**(i) Water Consumption m<sup>3</sup>/day (last FY)**

Process	:	*U#1&2 (Average) : ~95151 m <sup>3</sup> /day ( including Cooling)
Cooling	:	Included in process water
Domestic	:	~547 m <sup>3</sup> /day (Average)
Name of Products	Process Water Consumption per unit of product output	
	During the current Financial Year 2022-23	During the current Financial Year 2023-24
Electricity	2.62 lit / kwh	2.41 lit / kwh

**(ii) Raw material Consumption**

S.N	Name of raw material	Consumption of raw material per unit of output	
		During the current Financial Year 2022-23	During the current Financial Year 2023-24
(a)	Coal (kg/kwh) 8 MMT per year estimated @ 0.67 sp. coal)	0.740	0.774
(b)	Furnace Oil (ml/kwh)	0.623	0.36

### **PART –C**

**(Pollution Discharge to Environment / unit of output)**  
**(Parameters as specified in the consent issued)**

<b>Pollutants</b>	<b>Quantity of pollutants discharged (mass/day)</b>	<b>Concentration of pollutants discharges (mass/volume)</b>	<b>Percentage of variation from prescribed standards with reasons</b>
<b>(a) Water</b>			
i) pH	NIL	7.5-7.9	NIL
ii) TSS	NIL	4.14 mg/l	NIL
iii) COD	NIL	5.0 mg/l	NIL
iv) O & G	NIL	0.7 mg/l	NIL
v) BOD	NIL	2.5 mg/l	NIL
<b>(b) Air</b>			
i) Particulate matter (SPM)	nil	26.5 mg/Nm <sup>3</sup>	NIL

**PART –D**  
**(Hazardous wastes)**

**[As specified under hazardous wastes management and handling rules,1989]**

S.No.	Hazardous wastes	Total quantity	
		During the last Financial Year 2022-23	During the current Financial Year 2023-24
<b>a.</b>	<b>From process</b>		
1	Used oil	17.60 T/A	60 T/A
2	Waste containing oil	0.11 T/A	0.21 T/A
3	Oily Sludge (waste grease & Mobil )	0.39 T/A	0.58 T/A
4	Discarded containers used for hazardous chemicals	3000 Nos	7000 Nos
5	Spent Resin	6000 lit	12000 lit
<b>b.</b>	<b>From pollution control facilities</b>	Nil	Nil

**PART –E**  
**(Solid Wastes)**

S.No.	Solid wastes	Total Quantity (MT)	
		During the last Financial Year 2022-23	During the current Financial Year 2023-24
(a) From process			
1	Mill rejects/clinkers	nil	3447
2	Clarified sludge	nil	nil
3	Ash	38.8 LMT	43.09 LMT
(b) From pollution control facilities			
1	Sewage sludge	nil	nil
(C) Quantity recycled or reutilized within the unit.			
1	Fly Ash	nil	nil

## PART –F

**[Please specify the characterizations (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes]**

### Characteristics of Ash: Average

S.No.	Chemical Composition	%age by weight
i.	Si O <sub>2</sub>	62.6
ii.	Al <sub>2</sub> O <sub>3</sub>	28.5
iii.	Fe <sub>2</sub> O <sub>3</sub>	4.3
iv.	CaO	0.17
v.	MgO	0.83
vi.	Na <sub>2</sub> O	0.13
vii.	K <sub>2</sub> O	0.84
viii.	LOI	0.30
ix.	TiO <sub>2</sub>	1.84
x.	P <sub>2</sub> O <sub>5</sub>	0.40
xi.	So <sub>3</sub>	0.12

- (i) **Disposal practice of Hazardous Waste** - Darlipali Station has membership of TSDF and all the Hazardous waste generated from the plant processing is being disposed through TSDF.

- (ii) **Disposal practice of Solid Waste** -

#### a) Coal Ash:

Fly ash is being issued to various ash based industries (bricks, cement, blocks & RCM) free of cost based on their request to issue fly ash as per CTO condition from OSPCB.

Fly Ash bricks will be manufactured by NTPC Ltd/ Darlipali Super Thermal Power Project for internal use and community development.

Fly ash is being issued to NHAI for road embankment in Palma -Gumla in Jharkhand Angul-Sambalpur Rajamunda-Barkot and Bolangir, section in the state of Odisha and Pathalgaon section of Chattisgarh.

Ash is being sent to Dulanga mines for Fly-ash OB mixing pilot project.

Fly ash is being used for reclamation of abandoned stone quarry and low lying area as per OSPCB resolution No. 11047 dated 21.08.2017.

Solid Waste i.e. ash is sent to Ash Pond in the form of slurry and HCSD form. The Ash Pond is so designed that the solid settles down and clear water accumulates in water lagoon which is totally recycled through ash water recirculation system for Bottom Lagoon-II and lagoon-III.

Efforts are being made for use of fly ash in other processes.

**b) Used Oil:**

Used oil from various processes are being collected in covered MS Drums at a centrally located isolated storage area and action is under process as per OSPCB guidelines for disposal through authorized agencies.

**c) Secondary sludge:**

Secondary sludge from Sewage treatment plant is being used as manure for green belt development.

**d) Discarded containers:**

Discarded containers will be disposed to the registered suppliers through M/s MSTC.

**(e) Mill rejects:**

Mill rejects generated from station is being used in repairing of roads inside plant area as well as carpet coal at coal stock yard.

**PART –G**

**(Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.)**

- Fly ash is being issued to various ash based industries (bricks/asbestos/cement) free of cost.
- The oil water separator pit works as separator for oil leakage in fuel oil handling area and this oil is reused in the system
- The highly efficient ESP (99.91% efficiency) installed in the project reduces the emissions to the atmosphere to a great extent and reduces the power consumption.
- Dry ash collection & storage facility is provided as 3x700 MT HCSD silos.
- The water and steam cycles work in a closed system and only make up water is provided to replenish the losses in the system. The cooling water cycle also works in a closed loop and only make up water is taken in the system.



- The treated sewage sludge is being used as manure for Horticulture within the township premises which conserves the water resources.

## **PART –H**

### **(Additional measures / investment proposal for environmental protection including abatement of pollution/prevention of pollution.)**

- Closed loop cooling water system has been provided for control of Thermal Pollution.
- Multi-lagoon Ash Pond with Ash Water Recirculation system is in operation.
- Sewage Treatment Plant to treat domestic sewage is in operation from 17.01.2020. The treated water is used for Horticulture and plantation purpose.
- Effluent Treatment Plant is in operation since 01/12/2019 under recirculation mode.
- 3 Nos of coal settling pits are provided for making clear waste water & are in service.
- DFDS System at all required locations and water gun as sprinkler in coal stack yards have been provided to control fugitive emission.
- Two (02) nos. fly ash brick plant each of capacity 12000 bricks per day is under procurement.
- Green belts of sufficient width and density developed in and around Plant area. About 1,95,000 nos. of trees have been planted by DSTPP till 31.03.2024.

## **PART – I**

### **Miscellaneous:**

#### **(Any other particulars for improving the quality of the environment.)**

**Air Quality:** Ambient air quality and Meteorological data are being monitored continuously and the data is available to the public by means of digital display board at the entrance of the plant. The data is also being sent to OSPCB through RT-DAS. Third party monthly environment parameters monitoring is done and report is being submitted to OSPCB.

**Water Quality:** The total sewage is being treated through STP and the treated water is being used for horticulture purposes and green belt development.

**Waste Management:** Dry and wet solid wastes are being disposed of in a scientific manner. The wet waste generated from canteen and household kitchen are being used for compost preparation which finally utilized for horticultural plants.

**Ash Management:** Station is maximizing ash utilization through NHAI & PWD road construction projects, Dulanga mines OB mixing apart from supplying ash to ash brick plants near Darlipali. Station has further planned to utilize the ash for reclamation of abandoned quarry and low lying area.

**Survey / study:** Survey to know the probable avenues and the ash utilization potential was conducted (study) was also completed in FY 19-20 by NPC.

**Plantation/Afforestation:**

- In the, FY:2023-24, 50000 nos of saplings were planted including 30000 under Miyawaki system.
- Mass tree plantation on the eve of World Environment Day.
- More than 1.95 Lakhs nos. of trees have already been planted till 31.03.2024.
- Distribution of saplings to employees of the township.

**Awareness Programs:**

- Celebration of World Environment Day 5th June & World Water Day on 22<sup>nd</sup> March
- Mass plantation by employees and school children in permanent township and development of parks.
- Organizing various competitions on environmental awareness amongst Employees, Dependents, Associates and School children.
- Conducting Training programme on Environment.
- Display of Environmental awareness banners at strategic locations.
- Display of environment data at plant gate in LED Wall for public.
- Interaction with Fly Ash users and NHAI& PWD personnel for safe handling and transportation of ash.
- Advertisements (EOI) in National & Regional Newspapers on ash utilization.