



सन्दर्भ: एनटीपीसी /टांडा/पर्या.प्रबंधन/2023/2251

दिनांक: 14.09.2023

सेवा में,

सदस्य सचिव
उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड
पर्यावरण भवन,
बिल्डिंग नं. TC-12V,
विभूति खंड, गोमती नगर,
लखनऊ - 226010 (उ.प्र.)

विषय: वर्ष 2022-23 के लिए पर्यावरण विवरण (फॉर्म-V)

महोदय,

पर्यावरण अधिनियम - 1986 के अनुसार वर्ष 2022-23 के लिए हमारे संयंत्र का पर्यावरण विवरण (फॉर्म-V) आपके सूचनार्थ संलग्न पाएँ।

सादर सूचना एवं रिकॉर्ड हेतु प्रेषित।

धन्यवाद।

भवदीय,

अरुण कुमार सिंह

उप महाप्रबंधक (रसायन एवं पर्यावरण प्रबंधन)

प्रतिलिपि:

क्षेत्रीय अधिकारी कार्यालय
उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड,
1/17/104, रामनगर कोलोनी,
परिक्रमा मार्ग, अयोध्या- 224001

अरुण कुमार सिंह/ARUN KUMAR SINGH
उप महाप्रबंधक (रसायन एवं पर्यावरण)
Dy. General Manager (Chemistry & EMG)
एनटीपीसी लि० टाण्डा/NTPC Ltd. Tanda
विद्युत नगर/Vidyut Nagar
अम्बेडकर नगर/Ambekar Nagar
पिन-224238 (उ०प्र०)/Pin-224238 (U.P.)

पर्यावरण प्रबंधन समूह Environment Management Group

[FORM-V]

As per The Environment (Protection) Rules, 1986

ENVIRONMENT STATEMENT
FOR THE FINANCIAL YEAR ENDING 31st MARCH' 2023

PART – A

(i) Name and address of the owner/ occupier of the industry operation or process:

B. C. Polai, Chief General Manager
NTPC Limited,
Tanda Super Thermal Power Station
P.O.: Vidyutnagar, Dist.: Ambedkarnagar (U.P.) PIN: 224238.

(ii) Industry category : Coal Based Thermal Power Plant (Primary)
Primary (STC Code)
Secondary (SIC Code)

(iii) Production capacity : 4 Units of 110 MW each &
2 Unit of 660MW each

(iv) Year of establishment : Unit – I : 21.03.1988
Unit – II : 11.03.1989
Unit – III : 28.03.1990
Unit – IV : 20.02.1998
Unit – V : 07.11.2019
Unit – VI : 01.07.2021

(v) Date of the last environment statement submitted:

Environment Statement for Financial Year 2022-23 submitted to UPPCB on 22.09.2022.

PART – B

Water and Raw Material Consumption:

(i) Water consumption (m³/day):

a)	Process	1521
b)	Cooling water	73842
c)	Domestic Water	2500

Name of products	Process water consumption per unit of product output	
	During the previous financial year	During the current financial year
(1) Electricity	0.09 Ltr/Kwh	0.06 Ltr/Kwh

(ii) Raw material consumption:

Name of raw material	Name of product	Consumption of Raw material per unit of output	
		During the previous financial year	During the current financial year
1. Coal (kg/kwh)	Electricity	0.699	0.640
2. Oil (ml/kwh)	Electricity	1.180	0.720

PART-C

Pollution discharged to environment /unit of output
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (kg/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
(a) WATER			
TSS	-	41 mg/lit	Zero Liquid Discharge
O&G	-	BDL	Zero Liquid Discharge
pH	-	7.2-8.1	Zero Liquid Discharge
(b) AIR			
SPM	3045	62 mg/Nm ³	Nil

PART-D**HAZARDOUS WASTES**

(Specified under Hazardous Wastes/Management and handling Rules)

Hazardous wastes	Total Quantity	
	During the previous Financial year	During the current Financial year
a) From Process		
1- Used oil	15.75 KL	30 KL
2- Used Transformer Oil	NIL	NIL
3- Used acid lead batteries	5	NIL
b) From Pollution Control facilities	NIL	NIL

PART –E
SOLID WASTES

	Total Quantity (MT)	
	During the previous Financial year	During the current Financial year
(a) From Process: Ash Generation	22,56,429 MT	26,00,594 MT
(b) From Pollution Control Facility	NIL	NIL
(c) Quantity recycled or re-utilized within the Unit:		
(1) Sold for Cement and Brick manufacturing	6,57,576 MT	5,88,254 MT
(2) Ash Utilized as under -		
i.Land fill & ash dyke raising	88,590 MT	27,321 MT
ii.Brick making (in NTPC)	2,535 MT	2,460 MT
iii.Issue to cement industries	6,57,576 MT	5,88,254 MT
iv.Roads/Rail Embankment	17,96,600 MT	24,45,630 MT
v.Outside Brick units other than brick kilns	1,969 MT	Nil
vi.Outside ash-based products	Nil	Nil
vii.Others (Bottom ash cover)	Nil	Nil
viii.Agriculture	Nil	Nil
ix.Others (Export)	Nil	1,395 MT
Total	25,47,270 MT	30,65,060 MT

PART – F

Please specify the characterization (in terms of composition and quantum) of Hazardous as well as solid wastes and disposal practice adopted for both these categories of waste:

A. Hazardous waste:

Hazardous waste	Quantum of disposal
1- Used Oil	30 KL
2- Used Transformer Oil	NIL
3- Used acid lead batteries	NIL

Hazardous Waste disposal practice adopted: Used Oil disposed through authorized recycler by MoEF/ UPPCB.

B. Solid waste:

- Domestic waste is segregated into bio-degradable and non-biodegradable wastes and biodegradable waste is converted to useful biogas by bio-methanation and organic manure by vermi-composting.

Fly Ash:

Sl. No.	Solid waste (Ash)	Composition (%)
1	Loss on Ignition	0.64
2	Silica	60.33
3	Magnesium oxide	0.40
4	Iron Oxide	5.18
5	Calcium Oxide	2.06
6	Alumina	27.86
7	Available Alkalis	2.14
8	Chloride	0.015
9	Titanium dioxide	1.33
10	Phosphorus Penta oxide	0.53
11	Manganic Oxide	0.20
12	Sulphuric Anhydride	0.07

Ash Disposal practice adopted: Ash from furnace bottom and ESP collection hoppers is mixed with water. Ash slurry so formed is pumped into the ash dyke through pipe lines where ash particles settle down and the decanted water flows over an outlet in to Ash Water Recirculation System. This water is recycled to plant and used in Ash Handling. The quality of clear water recycled through AWRS is monitored regularly and records are being maintained and submitted regularly.

PART -G

[Impact of pollution abatement measures taken on conservation of natural resources on the cost of production]:

(1) Environmental Expenditure:

S. No.	Work Description	Expenditure, Rs. Lacs
a)	Tree plantation	40.00
b)	Hazardous Waste Disposal	2.00
e)	Horticulture Management	85.50
g)	Integrated Waste Management for colony	71.60
h)	Awareness Programs	2.54
	Total Expenditure	Rs. 201.64

PART – H

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

CONSERVATION OF TOPSOIL:

- a. About 27,321 MT ash is used in land filling and thereby saving equivalent quantity of topsoil of earth as natural resource.
- b. About 24,45,630 MT ash is used in road embankment and thereby saving equivalent quantity of topsoil of earth as natural resource.

CONSERVATION OF NATURAL RESOURCE:

- a. Limestone/ clinker: about 5,88,254 MT ash sold to cement industry, which has been used in making of Pozzolona Portland Cement (PPC), thus saving of equivalent quantity of Natural Resource Limestone/ clinker.
- b. Green House Gas emission avoided by usage of fly ash in cement manufacturing.
- c. Additional land for storage of ash avoided due to utilization of above quantity for cement production.
- d. Equivalent storage capacity is generated in ash dyke.
- e. Bio-methanation plant 500 kg/day capacity has been installed. The plant converts biodegradable kitchen waste generated from township residences into biogas which is used in guest house kitchen in place of LPG.
- f. Paper recycling facility is provided which converts wastepaper into useful products. The recycled paper products are used in hospital and co-operative stores helping in avoiding usage of single use plastic.
- g. Biomass pellet machine having a capacity of 250 kg/hour has been installed and pellets are being used as a substitute of coal. The agriculture/forest waste is collected and mixed with molasses to upcycle into pellets.

CONTROL OF POLLUTION:

- i. Flue Gas Desulphurization system for Unit-V and VI for control of SO₂ emissions is in commissioning phase.
- ii. New Effluent Treatment Plant facilities installed and commissioned.

- iii. Coal Slurry Settling Pit, Waste Service Water Sump with Oil Skimmers and Tube Settler system installed for treatment of various effluents and recycling of the treated effluent in various areas like ash handling, dust suppression, service water etc.
- iv. Mass tree plantation was carried out in the premises of NTPC Tanda.
- v. Dust Suppression Dust Extraction, sprinklers installed at wagon tippers, stock yard, crusher house, transfer points for controlling fugitive dust emission.

PART-I

Any other particulars for improving the quality of the environment:

- ❖ **Consents/Authorizations:** All consents/authorizations are available and valid.
 - Stage-I Consents are valid up to 31.12.2024
 - Stage-II Consents are valid up to 31.12.2025.
 - Hazardous Waste Authorization is valid up to 31.12.2025.
- ❖ **Annual Returns:** All the annual returns have been submitted before 30th June 2022.
- ❖ **Digital Display:** New Display board for environment parameter installed at main gate.
- ❖ **Hazardous Waste Storage & Disposal:** New shed provided for storage of various kinds of hazardous and other wastes. Wastes like Used Resin, Used Lamps/Tubes disposed of through TSDF.
- ❖ **Integrated Waste Management:** Domestic waste processing shed, storage compartments composting, Bio-methanation plant, shredding of horticulture waste, plastic waste compaction, sanitary waste portable incinerator provided for Integrated Waste Management for colony.
- ❖ **Online monitoring systems:**
 - PM, SO₂, NO_x analyzers installed in all the units.
 - Continuous Online Ambient Air Quality monitoring systems installed at 03 locations inside plant and colony premises.
 - Online Effluent Quality Monitoring Systems installed at final discharge point.
 - PTZ Camera installed at final discharge point.
 - Data transmission system with leased line connectivity has been provided.

❖ **Mission LiFE & World Environment Day Celebration:** This year, World Environment Day was celebrated with a thrust on Mission LiFE. Various activities were conducted associated with the seven themes of LiFE to mobilize our employees, their family members, and children, and public in and around township to become Pro-Planet-People.

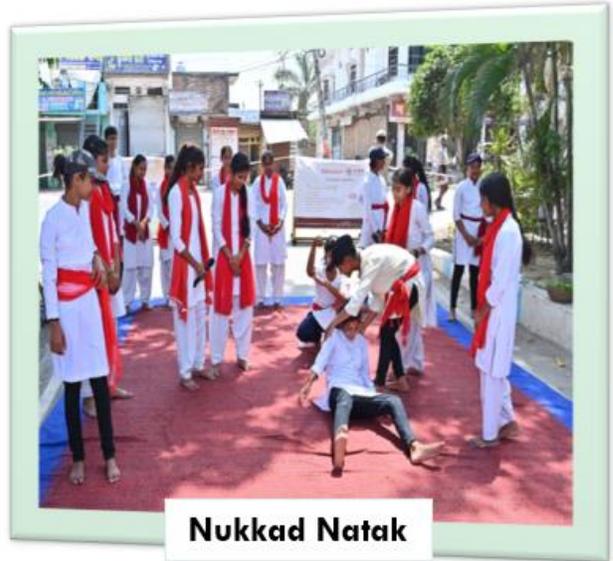
- i. Drawing, Essay writing, Quiz, Slogan writing competitions.
- ii. Nukkad Natak at Akbarpur Railway Station, Ayodhya Railway Station & township.
- iii. Fancy Dress, best out of Waste Model making competition.
- iv. Environmental oath to preserve the Environment to its wholesomeness.
- v. Mass Tree Plantation by employees.
- vi. Fruit tree sapling distribution to nearby villages.
- vii. To promote eco-friendly practices, an excellent alternative to single-use plastic bags, jute bags were distributed.
- viii. To encourage responsible disposal of electronic waste, an e-waste collection drive was organized.
- ix. To encourage adopting healthy lifestyles, yoga classes were conducted.

Environmental Initiatives and Awareness Programs





Mass Plantation



Nukkad Natak





Drawing Competition on WED 2023



Taking the Green Path: Beating Plastic Pollution for a Sustainable Tomorrow

NTPC Tanda is committed to its aim to take the green path and beat plastic pollution with this year's campaign #BeatPlasticPollution. The EMG Department of NTPC Tanda ensured to mobilize their employees, their family members and children, and public in and around township to become PRO-PLANET-PEOPLE under the MISSION LIFE.

At Saryu Ghat, dignitaries along with other employees, office bearers, family members and associates took the pledge to protect and preserve the environment. To promote eco-friendly practices, jute bags were distributed & a skit was performed by kids to increase awareness.

In addition to that, Mass Plantation was organized on the occasion which not only helped in combating climate change but also fostered a sense of corporate sustainability and community engagement.

Distribution of Eco-Friendly Jute Bags on WED 2023

Bio-methanation Plant for biodegradable food waste



500 kg/day capacity bio-methanation plant has been installed for sustainable management of biodegradable kitchen waste generated from township residences.

The plant converts the organic component into useful methane gas, fertile manure and nutrient rich liquid.

The plant produces biogas that replaces conventional fuels (LPG in guest house) and provides digested sludge that is used as organic manure.

Benefits of the bio-methanation:

- **Provides useful Bio-Gas, nutrient rich liquid and fertile manure.**
- **Biogas is renewable, eco-friendly, and clean source of energy.**
- **Green House Gas emission is avoided.**
- **Emission reduction due to LPG replacement.**
- **Odor free Faster waste processing.**
- **Waste processing free from rodent and fly menace.**

Organic Waste composting machine for plant canteen food waste



125 kg/day capacity Organic Waste composting ‘FOODIE’ machine has been installed for sustainable management of biodegradable waste generated from plant canteen.

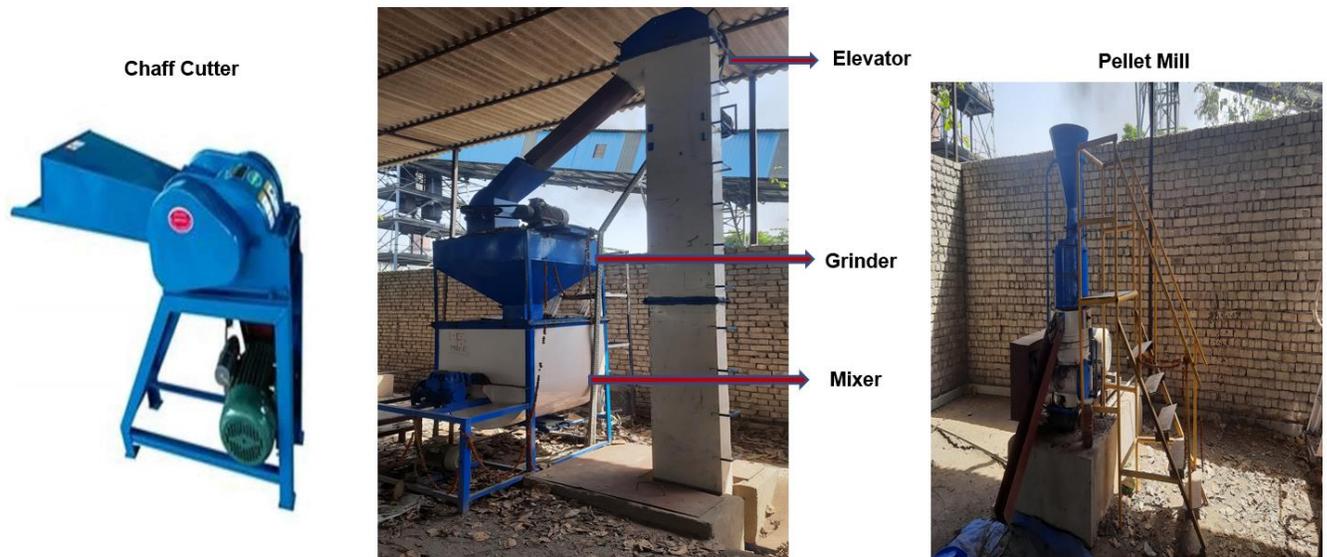
The machine converts the organic food wastes from canteen into useful, fertile, nutrient rich manure. It is a fully automatic composting machine which converts all kinds of organic waste into compost within 24 hours using its special microbes.

It works on the 3R Principle: Reduces garbage at source, Recycles organic waste into compost, Reuse compost for garden, plants.

Benefits of the waste composting machine:

- **Provides nutrient rich fertile manure.**
- **Faster waste processing.**
- **Odor free waste processing.**
- **Green House Gas emission is avoided.**
- **Waste processing Free from rodent and fly menace.**

Biomass Pellet Machine for Agricultural/Forest Waste



Biomass pellet machine having a capacity of 250 kg/hour has been installed for Agricultural/Forest Waste management to address the issue of stubble burning. The agriculture/forest waste is collected and mixed with molasses to upcycle into pellets. These upcycled pellets are then blended with coal in the combustion process which reduces greenhouse gas emissions.

Benefits of Biomass Pellet Machine:

- **Promotion of Sustainable Forestry.**
- **Reduction of Greenhouse gas emissions.**
- **Reduced dependence on fossil fuels.**
- **Alleviates the burden on landfills by diverting organic waste from disposal sites.**
- **Improved air quality resulting from reduced stubble burning.**



> Recycling of Waste Paper
 > Employment to 'Divyang' people
 > Utilization of Waste



Paper Waste Recycling System



Segregation at Source

Domestic Waste Management



Glass Waste

Highlights

- Expert Agency
- Segregation
- Processing Shed
- Compaction
- Shredding
- Incineration
- Recycling



Collection in segregated manner



PROCESSING UNIT FOR SOLID WASTE SEGREGATION AND DISPOSAL



Incinerator



Plastic Waste



Composting Facility



Compactor

Waste Processing Facilities



Hazardous Waste Storage Shed and Disposal



Green Belt Plantation through UP State Forest Department

SO₂ Control Systems

- Flue Gas Desulfurization being installed in Stage-II
- DSI Installed in Stage-I (Unit # 1 & 2)



Flue Gas Desulphurization and Dry Sorbent Injection System for SO₂ Control



CII-ITC Sustainability Award 2022