



लारा/ LARA

Ref: Lara:EMG:Env. Stmt. 21-22: 2022 /2047

September 21, 2022

To,  
The Member Secretary,  
Chhattisgarh Environment Conservation Board,  
Paryavas Bhawan,  
Atal Nagar Nava Raipur,  
Chhattisgarh.

**Subject: Environment Statement of NTPC Lara (2X800 MW) for the financial year 2021-22.**

Dear Sir,

The Environment Statement of NTPC Lara (2X800 MW) for the financial year 2021-22 is being attached with the letter for your kind information please.

With warm Regards.

Sign of Authorized Signatory

(DIWAKAR KAUSHIK)  
(CHIEF GENERAL MANAGER, NTPC Lara)

Copy To:

1. Regional Officer,  
Chhattisgarh Environment Conservation Board,  
Raigarh



**एनटीपीसी लिमिटेड**  
(भारत सरकार का उद्यम)  
**NTPC Limited**  
(A Govt. of India Enterprise)



Environment Statement  
For Lara Super Thermal Power Station  
(NTPC Ltd)  
Raigarh

(Year 2021 – 2022)

Period Ended 31.03.2022

By  
Lara Super Thermal Power Station  
(NTPC Ltd)  
Raigarh (Chhattisgarh)

**Form-V**  
(See Rule-14)

**Environment Statement for the Financial Year**  
**Ending 31<sup>st</sup> March 2022**

**Part-A**

<b>i</b>	Name and address of the occupier of the industry	Shri Diwakar Kaushik, Chief General Manager, Lara STPS, NTPC Ltd Chhapora, Tehsil-Pussore, Raigarh, Chhattisgarh PIN: 496440
<b>ii</b>	Industry category Primary -----(STC code) Secondary. -----(SIC Code)	Thermal Power Plant (Primary)
<b>iii</b>	Production capacity	2x800 MW Unit
<b>iv</b>	Year of establishment	Unit-I (800 MW): 01.10.2019 Unit-I (800 MW): 07.11.2020
<b>v</b>	Date of the last environmental statement submitted	21.09.2021

**Part-B**

**Water and Raw Material Consumption**

**1. Water Consumption M<sup>3</sup>/Day:**

<b>Sr No</b>	<b>Type of Activity</b>	<b>Consumption (M<sup>3</sup>/Day) During Previous financial year 2020-21</b>	<b>Consumption (M<sup>3</sup>/Day) During current financial year 2021-22</b>
1	Process (Boiler)	1286 M3/Day	702 M3/Day
2	Cooling	56223 M3/Day	63155 M3/Day
3	Domestic	164 M3/Day	481 M3/Day
4	Ash Water	8956 M3/Day	6436 M3/Day

**\*Annual Consumption average per day**

Name of the Product	Process(Boiler) Water Consumption Per Unit of Product Output	
	During the Previous Financial Year 2020-2021 (Lit. /Kwh)	During the Current Financial Year 2021-2022 (Lit. /Kwh)
	Electricity	0.078 Liter /KWH

## 2. Raw Material Consumption

S No	Name of the Raw Material	Name of the Product	Consumption of Raw Material per unit output	
			During the Previous Financial Year 2020-2021	During the Current Financial Year 2021-2022
1	Coal	Electricity	0.618 Kg/KWH	0.693 Kg/KWH
2	Fuel Oil	Electricity	1.179 ml/KWH.	0.66 ml/KWH

### Part-C

Pollution Discharge to Environment /Unit of Output  
(Parameter as Specified in the Consent Issue)

Pollutants	Quantity of Pollutants Discharged (Mass /day)	Concentrations of Pollutants Discharged/ Recycled (Mass/Volume)	Percentage of Variation from Prescribed Standard with Reasons
(a) Water			
pH	---	7.7	
TSS	ZERO	20.49 mg/lit	-79.51%
BOD	ZERO	9.97 mg/lit	-66.77%
COD	ZERO	29.92 mg/lit	-88.03%
O&G	ZERO	1.60 mg/lit	-84.00%
(b) Air: UNIT#1			
SPM	614.46 MT/Year (0.112 gm/kwh)	25.07 mg/Nm3	-16.43%
SO2	24918.97 MT/Year (4.531 gm/kwh)	1016.70 mg/Nm3	*
NOx	7083.29 MT/Year (1.288 gm/kwh)	289 mg/Nm3	*

(c) Air: UNIT#2			
SPM	641.49 MT/Year (0.109 gm/kwh)	24.88 mg/Nm <sup>3</sup>	-17.07%
SO <sub>2</sub>	26530.87 MT/Year (4.522 gm/kwh)	1029 mg/Nm <sup>3</sup>	*
NO <sub>x</sub>	7485.88 MT/Year (1.276 gm/kwh)	290.34 mg/Nm <sup>3</sup>	*

\* Timeline for SO<sub>2</sub> limit compliance is 31.12.2026 and for NO<sub>x</sub> limit compliance is 31.12.2024. NTPC Lara has awarded contract for installation of FGD to M/s L&T on 31.07.2018 for controlling SO<sub>2</sub> concentration in flue gas in compliance to the latest MOEF&CC emission norms dated 07.12.2015 for TPP. The installation of FGD is in progress and shall be completed within timeline.

#### **Part-D** **Hazardous Waste**

(As Specified Under Hazardous Waste (Management, Handling and Transboundary Movement Rules, 2016)

Authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 was granted by CECB, Raipur vide letter No.: 1433/HSMD/HO/CECB/2020 Raipur, dated 08.06.2020 valid upto : 03.06.2025. (Number of authorization 434 HO/HSMD/CECB/RAIPUR). Amendment was granted in the above existing authorization under the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 by letter number 7363 /HSMD/HO/CECB/2022 Raipur, Dated 18/01/2022 valid upto : 03.06.2025 (Number of authorization 434/HO/HSMD/CECB/NAVA RAIPUR ATAL NAGAR, RAIPUR).

The Authorization is granted for the following wastes and quantity generated during year 2021-22 is as below:-

Sr. No.	Type of hazardous waste with category	Permitted Quantity of Hazardous Waste	Actual Quantity Generated in 2021-22
1	Used or Spent oil (Schedule-I, Cat. No. 5.1)	100 T/Annum	4.77 T
2	Waste or residue containing oil (Schedule-I, Cat. No. 5.2)	10 T/Annum	NIL
3	Empty barrels/containers/liners contaminated with hazardous chemicals /wastes (Schedule-I, Cat. No. 33.1)	10,000 T/Annum	2.45 T (400 Nos.)
4	Spent Ion exchange resin containing toxic metals (Schedule-I, Cat. No.35.2)	2 T/Annum	NIL
5	Asbestos(Schedule - II, Class - B)	0.1 T/Annum	NIL

**Part-E**  
**Solid Waste**

Sr. No.	Solid Waste	Total Quantity (MT)	
		During the previous Financial Year 2020-21	During the current Financial Year 2021-22
(a)	From Process Mill Reject	8270 MT	28090 MT
(b)	From Pollution Control Facility : Ash	1352233 MT	32,34,172 MT
(c) (i)	Quantity recycled or re-utilized within the unit (Ash)	115000 MT (Ash Dyke Raising / Buttressing)	8,94,125 MT (Ash Dyke Raising / Buttressing)
		271 MT (NTPC Brick Mfg.)	807 MT (NTPC Brick Mfg.)
		12696 MT (Outside Brick Mfg.)	4203 MT (Outside Brick Mfg.)
(ii)	Land Filling	49011 MT	26,636 MT
(iii)	Agriculture (Research)	Nil	Nil
(iv)	Cenospheres	854 MT	1000 MT
(v)	Clay brick kiln	Nil	Nil
(vi)	UG Mines filling	Nil	Nil
(vii)	OC Mines filling	Nil	Nil
(viii)	Roads/ Rail Embankment	827776 MT	8,96,379 MT
(ix)	CLSM	Nil	Nil
(x)	Ash Concrete	Nil	Nil
(xi)	Bottom Ash Cover	Nil	Nil
(xii)	Cement industries	Nil	Nil
(xiii)	Sold Mill Reject	NIL	Nil
(xiv)	Disposed Ash	346625 MT	14,11,022 MT
(xv)	Disposed Mill reject	8270 MT	28090 MT

**Part-F**

Please specify the characterization (in term of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Hazardous waste generation & Method of disposal data (During financial Year 2021-22):

Sr. No.	Type of hazardous waste with category	Actual Quantity Generated in 2021-22	Remarks
1	Used or Spent oil (Schedule-I, Cat. No. 5.1)	4.77 T	Sent to Authorized Recycler
2	Waste or residue containing oil (Schedule-I, Cat. No. 5.2)	NIL	
3	Empty barrels/containers/liners contaminated with hazardous chemicals /wastes (Schedule-I, Cat. No. 33.1)	2.45 T (400 Nos.)	Sent to Authorized Recycler
4	Spent Ion exchange resin containing toxic metals (Schedule-I, Cat. No.35.2)	NIL	
5	Asbestos(Schedule - II, Class - B)	NIL	

The proposed method for disposal of items from Sr. No. 1 to 3 is through authorized recyclers and for item number 4 to 5 is through co-processing in cement plant or disposal into CTSDF.

The solid waste generated is Ash, which is majorly used for (i) Road construction, (ii) Private Ash Brick Plants (iii) Low lying area filling. Balance quantity of ash is stored presently in Ash Dykes.

Ash Generated at NTPC, Lara have following chemical composition:-

CHEMICAL ANALYSIS OF ASH												
S.N		Na2O	MgO	Al2O3	SiO2	P2O5	SO3	K2O	CaO	TiO2	MnO	Fe2O3
	Description	%	%	%	%	%	%	%	%	%	%	%
1	BOTTOM ASH	0.12	0.70	28.08	61.13	0.14	0.09	0.70	0.48	1.77	0.03	6.35
2	FLY ASH	0.11	0.72	29.03	60.88	0.26	0.10	0.85	0.52	1.82	0.03	5.28

### Part-G

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

Pollution control measures adopted has resulted in economization in consumption of natural resources and general improvement in the quality of environment has been achieved in and around the plant. In turn the cost of production generally increases but improves the quality of environment in the way of better health of neighborhood people and employees, which are incomparable.

### Part-H

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

<b>Sr. No</b>	<b>Description of Item</b>	<b>Investment Cost (Rs in crores)</b>
1.	FGD	485
2.	ZLD	9.08
3.	Electrostatic Precipitators	199
4.	Stacks	69.75
5.	Cooling Towers incl. Civil Works	124
6.	Ash Handling including AWRS Mechanical Work	139.33
7.	AWRS Building Works	1.29
8.	Ash pond dyke	67.44
9.	Water Treatment Plant (Effluent Treatment Plant, DM Plant, DM Plant Waste Treatment System)	49.0
10.	Dust Extraction & Suppression System	2.27
11.	Sewage Collection, Treatment & Disposal (STP)	3.5
12.	Green Belt & Afforestation	8.27
13.	Hariyar Chhattisgarh Scheme for Tree Plantation	9.29
14.	Compensatory Afforestation	3.91
15.	NPV for forest land diversion	9.50
16.	Deepening, re-excavation and renovation of nearly 15 ponds in nearby villages for water conservation	1.59
17.	Roof top solar power panels in main plant area of capacity 1.1648 MW	4.34
18.	Ash Utilization in NHAI Road Project & Outside Brick Manufacturing Plants in 2021-22	58.23
19.	Installation of Ash brick Plant	1.60
<b>Total</b>		<b>1246.39</b>



**Part-I**

**Any other particulars for improving the quality of the environment.**

- a) NTPC Lara has awarded contract for installation of FGD to M/s L&T on 31.07.2018 for controlling SO<sub>x</sub> concentration in flue gas in compliance to the latest MOEF&CC emission norms dated 07.12.2015 for TPP.
  - b) NTPC Lara has done 12000 nos Tree Sapling plantation by MIYAWAKI Method through Chhattisgarh Rajya Van Vikas Nigam Limited.
  - c) Rainwater Harvesting Ground Water Recharge Pits have been commissioned in Plant as well as Township.
  - d) Non-Biodegradable plastic waste being sent to Co-processor M/s/ Ambuja Cement Limited, Bhatapara, Chhattisgarh.
  - e) NTPC Lara has executed work for Zero Liquid Discharge package through M/s EFFWA INFRA & RESEARCH Pvt. Ltd.
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