NABHA POWER LIMITED

P.O. Box No -28, Near Nalash, Rajpura-140401, Punjab
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Letter.No.: NPL/HSE/RB/MoEFCC/AD/250930/1 Date: 30.09.2025.

Additional Director,
Ministry of Environment & Forests,
Integrated Regional Office,
Bays No. 24-25, Dakshin Marg
Sector 31-A, Chandigarh
Punjab.

Sub: Environmental Statement (Form-V) under Environment Protection Act, 1986 for Financial Year 2024-25.

Dear Sir,

This is with reference to the above-mentioned subject please find enclosed herewith Environmental Statement of M/s Nabha Power Ltd, 2x700 MW, Super Critical Thermal Power Plant for the Financial Year 2024-25.

This is for your kind reference and record please.

Thanking you,

Yours faithfully
For Nabha Power Limited

(Rajiv Bhandari) 30/09/2025
Sr. DGM HSE

Cc: Member Secretory, Punjab Pollution Control Board, Patiala, Punjab.

Nabha Power Limited

ENVIRONMENTAL STATEMENT REPORT
(2024 – 2025)

NABHA POWER LIMITED, VILLAGE NALASH, RAJPURA DISTRICT, PATIALA, PUNJAB

Index of the Report:

The Environmental Statement report is based on data generated for the period 1st April' 2024 to 31st March' 2025. The report consists of the following chapters:

- **Chapter 1.0 – Introduction**

This chapter provides background information, location of the plant, process being adopted and scope of the study.

- **Chapter 2.0 – Form – V**

Every person carrying on an industry, operation or process requiring consent under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) or both or authorization under the Hazardous Wastes (Management and Handling) Rules, 2016 issued under the Environment (Protection) Act, 1986 (29 of 1986) and amendments thereof shall submit an environmental statement for the financial year ending on the 31st March in Form V to the concerned State Pollution Control Board on or before the thirtieth day of September every year.

Chapter 1.0 – Introduction

1.0

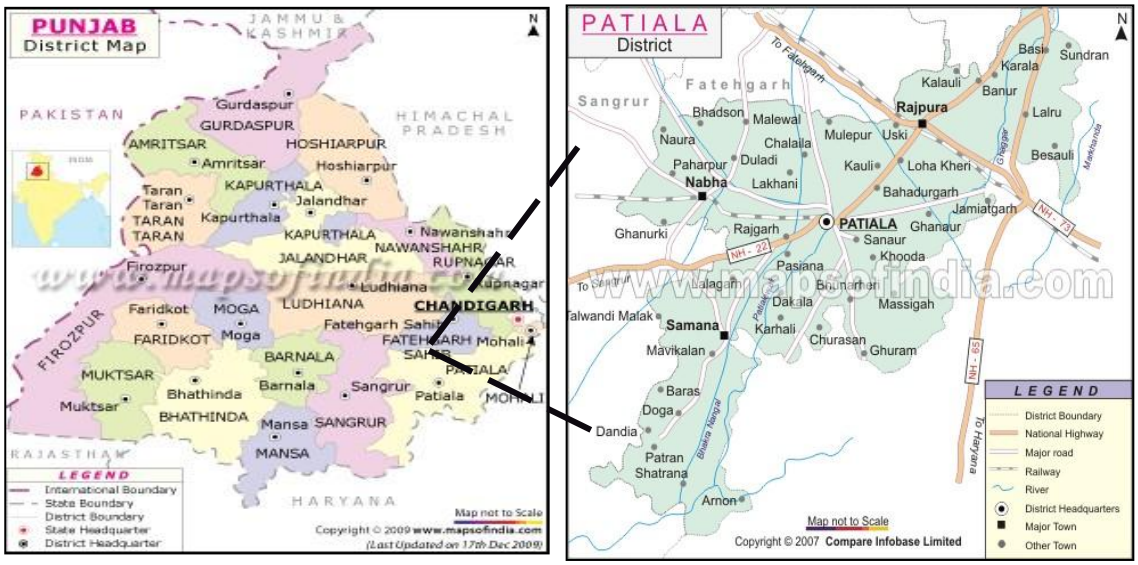
INTRODUCTION :

Nabha Power Limited (NPL), was established as Special Purpose Vehicle (SPV) by the erstwhile Punjab State Electricity Board (PSEB) to develop the Rajpura Thermal Power Project at a site near village Nalash, Distt Patiala, Punjab. An RFQ/RFP was floated by PSEB in line with the Case 2 competitive bidding guidelines, Govt of India (GoI) and L&T Power Development Limited (a wholly owned subsidiary of L&T) was identified as the lowest bidder. NPL signed a Power Purchase Agreement on 18th January 2010 with PSEB and the NPL was also transferred to L&T Power Development Limited as its wholly owned subsidiary on 18th January, 2010.

The 1400 MW power plant is constructed as a unit configuration of 2 x 700 MW units, with one steam turbine and one boiler for each unit.

NPL has two Pulverized Fuel Boilers, generating steam at 25.71MPa at 568°C with two Condensing Turbo Generator Sets each having generating capacity of 700 MW of power. Installation of associated mechanical and electrical equipment, auxiliary units like coal, ash handling plant, water treatment plant, cooling water system, electrostatic precipitators (ESPs), NOx control equipment etc. are part of the total installation.

Project Location:



1.1 Process Description:

The salient features of the power plant are given in **Table-1**

TABLE - 1

SALIENT FEATURES OF NABHA POWER LTD.

S. N.	Parameter	Description
1	Plant capacity	1400 MW (2 X 700 MW)
2	Main Stream Flow	2322.0 tons/hr
3	Generator	2 X 700 MW
4	Fuel	5.8 Million Metric Ton/Year
5	Ash Generation	6048 TPD
6	Water requirement and source	75 Cusec from Bhakra main canal
7	Total Effluent generation	• 12768 KLD with Zero Liquid Discharge • 50 KLD Domestic Effluent
8	Wastewater treatment	• Lamella clarifier • Pressure Sand Filter • Ultra-Filtration • Reverse Osmosis (RO)
9	Firefighting system	Adequate firefighting systems as per Tariff Advisory Committee (TAC)
10	Stack height and diameter at top (m)	275 m and 7.5 m
11	Air pollution control equipment's	• ESP with six passes along with nine fields in each pass are available. • Dust Extraction and Suppression system is available in coal handling area.

CHAPTER 2.0 – Form – V

FORM – V

(See rule 14)

Environmental Statement for the financial year ending the 31st March 2025

PART – A

1	Name and address of the Owner/Occupier of the Industry, operation of the process.	:	Nabha Power Limited, Post Box 28, Near Village Nalash, Distt. Patiala 140401, Punjab
2	Industry category	:	Red, Large.
3	Production Capacity	:	1400 MW
4	Year of establishment	:	2010
5	Date of the last environment statement submitted	:	September 27, 2024

PART – B

Water and Raw Material Consumption

(I) Water consumption in m3/day.

Process & Cooling : 55503.10
Domestic : 127.03
Ash Conveyance : 0.00*

(*Note: Ash conveyance is done through recovery water from ash pond)

Name of products	Process Water consumption* per unit of product output	
	During the previous financial year (2023-24)	During the current financial Year (2024-25)
	(1)	(2)
Electric Power	1.74 Liter/kWh	1.958 Liter/kWh

*Reported quantity includes water consumed in cooling as well.

(II) Raw Material consumption

S. No.	Name of raw material	Name of products	Consumption of raw material per unit output (Per Ton)	
			During the previous financial year (2023-24)	During the current financial year (2024-25)
1.	Coal as fuel	Electric Power	0.580 MT/MWH	0.579 MT/MWH

PART – C
Pollution discharged to environment/unit of output generated.
(Parameter as specified in the consent issued)

<table>
<tr><th>S. No.</th><th>Pollutants</th><th colspan="4">Concentration of Pollutants in discharge</th><th>Percentage of variation from prescribed standards with reason.</th></tr>
<tr><td>a.</td><td>Water (Industrial)</td><td colspan="4">Plant is designed on Zero discharge concept and entire treated effluent is being utilized in process again</td><td></td></tr>
<tr><td>b.</td><td>Water (Domestic)</td><td colspan="4">Domestic Sewage Treatment Plant
<table>
<tr><td>Parameter</td><td>Prescribed Std.</td><td>Observed Avg. Values</td></tr>
<tr><td>pH</td><td>6.5– 9.0</td><td>7.34</td></tr>
<tr><td>TSS (mg/l)</td><td>100</td><td>6.75</td></tr>
<tr><td>BOD (mg/l)</td><td>30</td><td>8.25</td></tr>
<tr><td>COD (mg/l)</td><td>-</td><td>23.75</td></tr>
<tr><td>Nitrogen (mg/l)</td><td>-</td><td>13.30</td></tr>
<tr><td>Phosphorus (mg/l)</td><td>-</td><td>1.11</td></tr>
<tr><td>Fecal Coliform (FC) MPN/100 ml</td><td>1000</td><td>417.50</td></tr>
</table></td><td>Monitored values of parameters are well within the prescribed limits.</td></tr>
<tr><td>c.</td><td>Air Emission Boiler Stack</td><td colspan="4">Emission from Boiler Stacks
<table>
<tr><td colspan="2">Parameters</td><td>Prescribed Standard (mg/Nm3)</td><td>Observed Avg. Values (mg/Nm3)</td></tr>
<tr><td rowspan="4">Unit-1</td><td>PM</td><td>50</td><td>45.46</td></tr>
<tr><td>SO_2</td><td>200</td><td>1076.28</td></tr>
<tr><td>NOx</td><td>450</td><td>301.45</td></tr>
<tr><td>Mercury</td><td>0.03</td><td>BLQ</td></tr>
<tr><td rowspan="4">Unit-2</td><td>PM</td><td>50</td><td>44.23</td></tr>
<tr><td>SO_2</td><td>200</td><td>1194.11</td></tr>
<tr><td>NOx</td><td>450</td><td>281.85</td></tr>
<tr><td>Mercury</td><td>0.03</td><td>BLQ</td></tr>
</table></td><td>I. As per MoEF&CC notification dated 11.07.2025, SO_2 compliance timelines for Category C TPPs have been exempted. Accordingly, both units of Nabha Power Limited are covered under this exemption.
II. PM, NOx, and Mercury emission values are well within the limits.</td></tr>
</table>

PART - D
Hazardous Wastes
(As specified under the Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2016.

S. No.	Hazardous Wastes	Total quantity of Hazardous Wastes generation	
		During the previous financial year (2023-24)	During the current financial year (2024-25)
I	Used oil / Spent oil (KL)-5.1	3.90	8.610
ii	Wastes or residues containing oil (MT)-5.2	2.10	1.48
iii	Empty barrels/containers/liners contaminated with hazardous chemicals / wastes (Nos) 33.1	994	977
iv	Spent ion exchange resin containing toxic metals (MT)-35.2	0.490	3.04
v	Chemical sludge from wastewater treatment (MT)-35.3	0.0	0.0

PART – E

Solid Waste

S. No	Solid Waste	Total quantity of Ash generation	
		During the financial year 2023-2024 (MT)	During the current financial year 2024-2025 (MT)
a.	From Process (Bottom Ash & Fly Ash)	2670394	2298615

PART – F

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

(i) Hazardous Waste Disposal from the entire premises:

Description of Haz. waste	Qty. of waste generated during the year FY 2024-2025	Qty. of waste disposed during the year FY 2024-2025.	Discharged from	Disposal Method
Used /Spent oil (KL)-5.1	8.610	8.610	Plant machines	Authorized recycler by PPCB
Wastes or residues containing oil (MT)-5.2	1.48	1.48	Plant maintenance Activities	TSDF
Empty barrels/containers/liners contaminated with hazardous chemicals /waste (Nos) 33.1	977	977	Chemical Handling Area	Authorized recycler by PPCB
Spent ion exchange resin containing toxic metals (MT) 35.2	3.04	3.04	DM Plant	TSDF
Chemical sludge from wastewater treatment (MT)-35.3	0.0	0.0	ETP	TSDF

Solid Waste:

Description of waste	Qty. of waste Generated during the Financial year 2024-2025 (MT)	Qty. of waste Disposed during the Financial year 2024-2025 (MT)	Disposal Method
Fly Ash & Bottom Ash	2298615	2298615	To Cement manufacturing, fly ash-based products (bricks or blocks & tiles), Ready mix concrete, and Construction of roads and flyover embankment.

PART – G

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

Following measures have been adopted for abatement of pollution, conservation of natural resources:

1. Conservation of Water: Cycle of Concentration (COC)

NPL is maintaining the Cycle of Concentration (COC) of Natural Draft Cooling Towers greater than 5 by reducing of blow down water of cooling tower to get desired quality of cooling water. By reducing the blow down of cooling water there is significant saving of raw water, which finally leads to the conservation of raw water.

2. Installation of Air Pollution Control Devices (ESP) at Main boiler Stack-

To restrict the dust load at the outlet of the chimney below 50 mg/Nm3, as prescribed by the MOEF&CC, adequate sized Electrostatic precipitators (ESP) have been provided for each unit. Each ESP is having 6 passes and 9 fields, any of which can be isolated for maintenance, as and when required, keeping the other paths in operation. The ESP is having a design efficiency of 99,99%. Each ESP is provided with adequate number of ash hoppers having capacity suitable for storing ash generated in a shift of 8 hours duration under 100% BMCR.

Pic-1. High efficiency ESP (99.99%) to control particulate matter

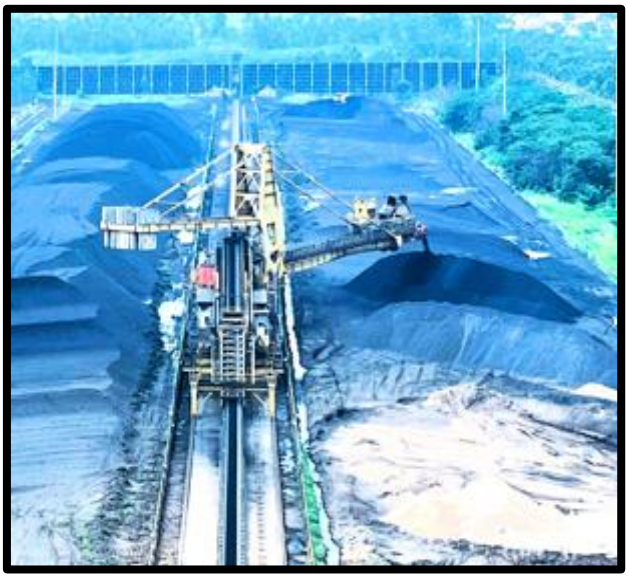
Pic-2. 275-meter-high Boiler stack for wider dispersion of dust and gaseous emissions

3.Measures taken to control fugitive emissions during coal handling

Pic-1 Covered conveyors for transfer of coal from Wagon tippler to coal bunkers for abatement of fugitive emissions.

Pic-2 Dust suppression (sprinkler system) provided at each coal stockpile to arrest Dust.

Pic-3 Three side coverage by wind screen to control fugitive emissions due to wind flow.



Pic-4 Automated and Mechanized Coal Handling System to minimize manual operations.

4. Extensive plantation in and around the plant- For the Forestation and Greenery Development Program at our Plant, NPL has a fully committed team of skilled horticulturists. Around 2.50 lac plants have been planted in a green belt inside and outside the plant. Additionally, wherever there is available open space inside the plant premises, landscaping areas are created to enhance the beautification of the plant.

Pic-1 Green belt around coal stockpile area.

Pic-2 Green belt around plant premises.

Pic-3 Green belt along boundary.

Pic-4 Green belt on both sides of road.

5.Plant is designed on Zero liquid discharge Concept: All kind of process wastewater is collected in Common Monitoring Basin and is recycled / reused for plant cooling purpose and transportation of bottom ash to ash dyke being maintained in plant premises.

Pic-1 Effluent Treatment Plant.

6.Solid waste management: 100% of generated fly ash is being utilized by cement plants, brick/Block/tiles industries and RMC plants. The transportation is made through closed bulkers to avoid fugitive emissions.

Pic-1 Transportation of Fly-ash in closed bulkers.

7. Acoustic Enclosures for Noise mitigation: Acoustic enclosures have been provided for noise generating equipment to attenuate noise levels. All Equipment's are confirming. noise regulation norms prescribed by regulatory authorities.

Pic-1 Acoustic enclosure provided at Turbine Generator.

Pic-2 Acoustic enclosure provided at Diesel Generator.

8. Online Continuous Ambient Air Quality monitoring and Online emission monitoring inside the Plant premises.

Pic-1 Four numbers of Continuous Ambient Air Quality Monitoring stations have been installed inside plant in consultation with PPCB officials to monitor ambient air quality.

Pic-2 Continuous emission monitoring system installed at main stack for measurement of Particulate Matter & Gaseous Emissions.

9.Sewage Treatment Plant (STP) of 50 KLD capacity to treat domestic sewage from industry and the treated wastewater is used for horticulture/plantation purpose**.**

Pic-1 Sewage Treatment Plant

10.Hazardous waste Management: The hazardous wastes generated from the plant operation are stored at Hazardous waste storage shed. The wastes are being disposed off to the authorized recycler and TSDF within timeline given in prescribed standard.

Pic-1 Hazardous waste storage shed to collect and store Hazardous waste generated from plant.

7. Strict measures are adopted for the control of following:

- **Dust**: Electrostatic precipitators (ESP), Bag filters, Fixed and portable water sprinklers, closed/covered conveyors, fully mechanized coal handling and Ash Handling Systems, use of PPEs etc.

- **Heat**: Insulation and cladding of hot parts (boiler, steam pipelines etc.), installation of Air handling units, Air Conditioners to mitigate heat effects.

- **Noise**: Acoustic barrier/enclosures, timely maintenance of Equipment, PPE's, Green Belt etc.

- **Vibration**: Vibration studies of Equipment and timely maintenance of the same.

- **Radiation:** Radioactive studies of Ash & Coal are carried out on a six-monthly basis from MoEF&CC recognized Labs. Analysis for the presence of radioactive elements in coal & ash is being performed by MoEF&CC approved laboratory.

PART – H

Additional measurers/ investment/Expenses/ proposal for Environment protection including abatement of pollution / prevention of pollution.

Details of Expenses Incurred for Environment Protection Measures FY 2024-25

S.No.	Particulars	FY 2024-25
A	**Air Pollution**	**Total Amount (Rs)**
1	Cost of Energy Consumption in ESPs/Bag Filters	7,32,79,291
2	Cost of Maintenance of Ash Silos	2,30,000
3	Cost of operation of Dust Suppression and Extraction System	13,56,711
4	Cost of electrical spares & consumables for ESP maintenance	6,35,060
5	Cost of electrical services for ESP	21,68,089
6	AMC Services for ESP	32,18,327
7	Unit#2 Annual Overhauling Services	21,48,868
8	ESP Spares & Consumables	11,62,193
	Water Pollution	
9	Cost of Energy Consumption in STP	73,895
10	Cost of Energy Consumption in ETP	64,83,651
11	Cost of Chemical used at ETP and STP	48,94,245
	Environment Monitoring Expenses	
12	Cost of Manpower	13,31,040
13	Cost of Consumables	1,72,000
14	Cost of running of Environment monitoring vehicle	5,27,742
15	AMC/Calibration for environment monitoring equipment.	46,671
16	AMC/Calibration/ maintenance of online environment monitoring equipment.	36,16,000
	Third Party MoEF&CC approved laboratory testing charges.	
17	Third Party MoEF&CC approved laboratory testing charges for AAQ, Stack, Waste Water, Fly Ash, Bottom Ash etc.	2,84,299
18	PPCB Environment Monitoring charges	1,47,228
	Infrastructure Development	
19	Construction of Roads	2,38,70,634
20	Provision of Wind shields at CHP	12,40,713
	Green Belt Development & Maintenance	
21	Development and Maintenance of Green Plants	81,82,819
22	Expenses for 'Nanak Bagichi' at Badali Maiki and Cholti Kheri	2,53,000
	Solar Harnessing Expenses	
23	Solar Harnessing and maintenance Expenses	4,10,000
	Salary & Wages of HSE Professionals	
24	Salary & Wages of HSE Professionals	57,67,078
	Ash Dyke Management	
25	Expenses for Ash Dyke Maintenance (Civil)	71,55,000
26	Expenses for Ash Dyke Maintenance (Mechanical)	2,10,000
	Energy Consumption for transportation of Bottom Ash.	
27	Energy Consumption for transportation of Bottom Ash & Fly Ash	8,96,69,738
	Training, Subscription, Studies & Legal Updates and Promotional Activities	
28	Subscription & Legal Updates	17,700
29	World Environment Day Celebration	12,672
30	Expenses for Epidemiology Study	4,72,000
	Disposal of Hazardous Waste	

31	Disposal of Hazardous Waste charges	2,28,243
32	Bio-Medical Waste disposal charges	26,682
	Housekeeping Expenses	
33	Housekeeping Expenses	1,03,86,363
34	Compliance Audit for Ash disposal	3,64,373
	Total in Rupees	**25,00,42,325**

PART – I

Any other particulars for improving the quality of the environment.

1. Open areas inside plant are either grassed or concreated to control the fugitive emissions.
2. A thick three tier plantation is developed around ash dyke to control fugitive emissions.
3. Continuous water spraying on roads for controlling the fugitive emission.
4. Utilization of Road Sweeping machine to control particulate emission by vehicle movement inside the plant.
5. Disposal of Hazardous waste generated inside the plant through TSDF.
6. Bio Medical waste is disposed through authorized CBMWTF.
7. Disposal of E-Waste generated inside the plant through authorized recycler.