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o/c

VL/OPCB/002/2025 – 255
September 22, 2025

The Member Secretary,
State Pollution Control Board, Odisha,
Parivesh Bhawan, A/118,
Nilakantha Nagar, Unit-VIII,
Bhubaneswar – 751012

Sub: Submission of Environment Statement for 2024-25 of 2400 MW Thermal Power Plant of Vedanta Limited, Jharsuguda

Ref: Rule 14 of the Environment (Protection) Rules, 1986

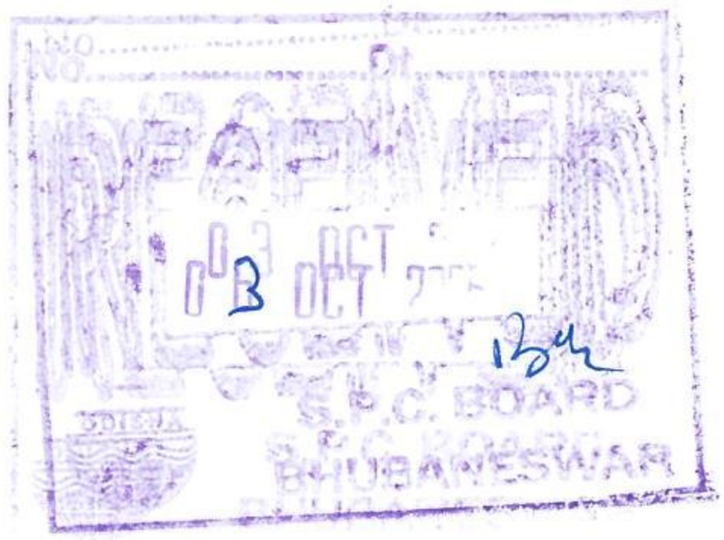
Dear Sir,

This has reference to the captioned subject and the cited reference. Please find the Environment Statement of 2400 MW Thermal Power Plant of Vedanta Limited, Jharsuguda for 2024-25 duly filled in Form- V.

Thanking You,

Yours Faithfully,

Dr. Amit Kumar Tyagi
Head - Environment



Enclosed: Environment Statement in Form-V

CC: The Regional Officer, State Pollution Control Board, Odisha, Jharsuguda

VEDANTA LIMITED ,JHARSUGUDA
Vill- Bhurkamunda, P.O- Kalimandir, Dist- Jharsuguda (Odisha)- 768202
T +91-664 566 6000 F +91-664 566 6267 www.vedantalimited.com

REGISTERED OFFICE : Vedanta Limited 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India.
CIN: L13209MH1965PLC291394

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Head - Environment

OFFICE STATE POLLUTION CONTROL BOARD, ODISHA
RECEIVED
25/09/25
JHARSUGUDA
REGIONAL OFFICE, ODISHA

Enclosed: Environment Statement in Form-V

CC: The Regional Officer, State Pollution Control Board, Odisha, Jharsuguda

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ENVIRONMENTAL STATEMENTS

FORM-V

(See Rule 14)

The Ministry of Environment & Forest vide its notification dated March 1992 directed all industries which need to have consent under Water (Prevention & Control of Pollution) 1974 and Air (Prevention &Control of Pollution) 1981 to file the Environmental statement every year. This is to be filed for the period ending March by September every year. The format for the same is as follows:

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

PART-A

(i)	Name and address of the owner / occupier of the industry operation or process	:	Mr. Arun Misra, Executive Director, Vedanta Limited, 2400MW Thermal Power Plant (TPP), Banjari, Jharsuguda - 768202
(ii)	Industry category Primary – (STC code) Secondary – (SIC Code)	:	Red A Thermal Power Plant
(iii)	Production capacity – Units	:	2400 MW (4 X 600)
(iv)	Year of establishment	:	2010
(v)	Date of the last environmental statement submitted	:	25th September 2024

PART-B Water and Raw Material Consumption

(i) Water consumption m^3/d

Process : 1476.529

Cooling : 86032.241

Domestic : 2987.458

Name of Product	Process water consumption per unit of product output	
	During the previous financial year	During the current financial year
Electricity (4 X 600 MW)	1.924 m^3/MWH	2.052 m^3/MWH

(ii) Raw material consumption

Name of raw material	Name of products	Consumption of raw material per unit of output	
		During the previous financial year	During the current financial year
Coal	Electricity (4 X 600 MW)	0.745 MT/MW (at GCV 3096 Kcal/Kg)	0.729 MT/MW (at GCV 3162 Kcal/Kg)
LDO		0.00024 KL/MW	0.00023 KL/MW

Polluting Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw material used.

PART-C

Discharged to environment / unit of output specified if the consent issued.

Pollutants			Quantity of pollutants discharged (mass/day)	Concentration of pollutions in discharges (mass / volume)	Percentage of variation from prescribed standards with
(a)	Water		Nil (ZLD)	Nil (ZLD)	Nil (ZLD)
(b)	Air				Within the prescribed limits
	UOM		kg/day	mg/Nm^3	
	TPP Unit - 1	PM	2932.901	44.675	
		SO_2	87799.585	1337.083	
		NO_x	22931.588	349.333	
	TPP Unit - 2	PM	2643.392	41.008	

	SO_2	77169.335	1196.833
	NO_x	19620.314	304.333
TPP Unit - 3	PM	2894.289	45.575
	SO_2	85332.830	1343.083
	NO_x	21772.146	342.667
TPP Unit - 4	PM	2819.259	44.125
	SO_2	85771.314	1342.500
	NO_x	22373.104	350.250

PART-D

HAZARDOUS WASTAGES

(As specified under Hazardous Wastes / Management and handling Rules, 1989)

Hazardous Waste		Total Quantity (Kg)	
		During the previous financial year	During the current financial year
(a) From process			
1	Used / Spent Oil	46580	13900
2	Wastes / Residue Containing Oil	654	1690
3	Spent Resin / Ion Exchange Resin Containing Toxic Metal	0	0
4	Discarded Containers / Barrels / Liners Contaminated with Hazardous Waste / Chemicals	0	0
5	Insulated copper wire scrap or copper with PVC sheathing including ISRI-code material namely "Druid"	NA	0
(b) From pollution control facilities		0	0

PART-E

Solid Waste

		Total Quantity	
		During the previous financial year	During the current financial year
(a)	From process	Nil	Nil
(b)	From pollution control facility		
	Ash (Fly ash + Bottom ash)	49,18,265.840 MT	47,55,029.059 MT
(c)	(1) Quantity recycled or re-utilized within the unit		
	Ash (Fly ash + Bottom ash)	Nil	Nil
	(2) Sold	Nil	Nil
	(3) Disposed		
	Ash (Fly ash + Bottom ash)	54,89,579.689 MT (In Sustainable Avenues)	51,58,828.659 MT (In Sustainable Avenues)

PART-F

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

Characterization & Disposal Practice of Hazardous Wastes

Sl. No.	Category of Hazardous Waste as per the Schedules I, II and III of these Rules	Waste Description	Composition	Quantum (T/A)	Disposal Practice
1	Schedule – I Stream - 5.1	Used or Spent Oil	As per HW Rules, 2016 (Schedule V) Polychlorinated biphenyls (PCBs): < 2 ppm Lead: 100 ppm Arsenic: 5 ppm Cadmium + Chromium + Nickel: 500 ppm Polyaromatic hydrocarbons (PAH): 6 %	120	Disposal through Actual Users authorized by SPCB, Odisha

2	Schedule – I (Stream - 5.2 & 33.2)	Wastes or Residues Containing Oil	Silica as SiO_2: 23.93 % Alumina as Al_2O_3: 17.35 % Iron as Fe_2O_3: 21.94 % Calcium as CaO: 8.47 % Magnesium as MgO: 3.61 % Sodium as Na_2O: 4.11 % Potassium as K_2O : 8.05 % Titanium as TiO_2: 1.14 %	10	Disposal in Authorized Hazardous Waste Incinerator
3	Schedule – I Stream – 35.2	Spent ion exchange resin containing toxic metal	Silica as SiO_2: 11.22 % Alumina as Al_2O_3: 21.29 % Iron as Fe_2O_3: 4.84 % Calcium as CaO: 13.59 % Magnesium as MgO: 5.53 % Sodium as Na_2O: 17.39 % Potassium as K_2O : 2.07 % Zinc as ZnO: 1.88 %	100	Co-incineration in CPP for energy recovery
4	Schedule – I Stream -33.1	Empty barrels /containers /Liners contaminated with Hazardous Chemicals/ Wastes	-	50	Captive reuse/disposal through original supplier/Actual users authorized by SPCB, Odisha
5	Schedule -IV Stream -7	Insulated copper wire scrap or copper with PVC sheathing including ISRI-code material namely "Druid"	-	50	Disposal through Actual Users having valid authorization from SPCB, Odisha

Characterization & Disposal Practice of Solid waste:

Sl. No.	Waste Description	Composition	Quantum (Tons/Day)	Disposal Practice
1	Ash	Silicon dioxide ($Si0_2$): 61.60 - 62.03 % Aluminium Oxide (Al_2O_3) + Iron Oxide (Fe_2O_3): 32.24 - 33.66 % Magnesium Oxide (MgO): 1.01 - 1.21 %	18,000	Utilization as per fly ash notification, 31st December 2021 and amended thereof. Rest to be disposed

				in High concentration slurry disposal to Lagoon - 1 & 3 of Katikela ash pond, Pond 3 of ash pond at Kurebaga, Lagoon-1 of Siriapali ash pond and other designated sites allowed by SPC Board.

PART-G

In respect of the pollution abatement measures taken up on conservation of natural resources and on the cost of production.

(A) Air Pollution Reduction Projects

- Separated Over-fire air (SOFA) installed in Unit 2 Boiler to reduce NOx emissions.
- Ash Conveying Pipeline replaced to minimize leakages.
- Unit 1 & Unit 2 ESP Overhauling done (Collecting, Emitting and Rapping system replacement).
- Replacement of Fabric Filter bags in Unit 1 (17520 Bags) & Unit 2 (5840 Bags).
- Revamping of Dust Extraction System of all Bunker Units
- Upgradation of fixed rain guns at crushed coal yard to automatic sensor based.

(B) Water Conservation Programs

- Overgrounding of service water line has been completed to reduce the underground pipeline leakages.
- Siriapali ash pond decant water recycled through 500 m3/hr ETP with RO in the Process.
- Increase in cooling water COC from 6 to 7 reducing water consumption by dosing of sulphuric acid.
- Two Rooftop Rainwater Harvesting Structures has been installed and harvested water is being utilized in the process.
- Continuous Operation of 500 m3/hr ETP with RO system.
- Regular preventive maintenance of Effluent Treatment Plant with RO system to achieve desired norms. Treated water is being reused in the process.

(C) Energy Conservation Initiatives

- Fabric Filter Purging System modified to improve Efficient Pulsing.
- GEHO and Auxiliary System running hours reduced by increasing Fly Ash Utilization.

- U#1 Condenser jet cleaning for vacuum improvement and to improve condenser cleanliness factor
- U#1 Condenser Air ingress reduction by performing helium leak & flood test points
- U#1 NDCT Fills replacement for reduction of cooling tower outlet temp thereby increased in vacuum
- U#1 Flue gas duct revamping & bellow replacement, Fabric filter bags replacement for reduction of ID fan currents
- U#2 Flue gas duct revamping, APH seal & sector plate replacement for reduction of ID fan currents
- U#2 condenser chemical cleaning for vacuum improvement and SCC reduction
- U#2 NDCT Fills replacement for reduction of cooling tower outlet temp thereby increased in vacuum
- U#2 Turbine overhauling for cylinder efficiency improvement
- U#2 Boiler penthouse sealing for excess air restrictions thereby combustion optimization
- U#2 SOFA duct installation & burner modification for superheater spray reduction and NOx optimization
- U#2 FF bags replacement for reduction of ID fan currents.

(D) Solid Waste Management:

- Achieved more than 100 % ash utilization in various sustainable avenues such as cement plants, brick manufacturing, construction of roads/flyover embankments etc.

PART-H

Additional measures/investment proposal for environment protection including abatement of pollution prevention of pollution.

(A) Investment Proposals:

Air Pollution Control:

- Overhauling of Unit 4 ESP and Fabric Filter (FF) Bags replacement
- Ash conveying Pipeline & Bag filter replacement in all Terminal Ash Silo top to minimize fugitive emission
- CHP rain guns dust suppression preventive maintenance done to improve effectiveness for controlling yard dust emission.

Water pollution Control:

- Regular preventive maintenance of Effluent Treatment Plants to achieve desired norms. Treated water is being reused in the process.

Solid Waste Management:

- Achieved more than 100 % ash utilization in various sustainable avenues such as cement plants, brick manufacturing, construction of roads/flyover embankments etc.

(B) Investment Proposals:

- Installation of additional sprinkler at CHP area to reduce fugitive emission.
- Refurbishment of Coal Bunker Dust Extraction system.

Energy Conservation Initiatives:

- Unit 4 Air Pre Heater seals, Fabric filter bags replacement & flue gas duct reconditioning is to be done for auxiliary power consumption reduction by ID fan current reduction (Potential APC saving ~ 0.35% on unit level).
- Unit 4 Condenser chemical cleaning followed by eddy current test for condenser vacuum improvement.
- Unit 4 Natural draft cooling tower fills replacement (25%) to reduce the cooling tower outlet temperature by 1.3 *C thereby gain in heat rate.
- Unit 4 Separated over-fire air (SOFA) tuning for bottom ash unburnt carbon reduction thereby improve boiler efficiency.
- Unit 4 penthouse flexible sealing & seal trough dip plate revamping to reduce the SH/RH spray flow for heat rate improvement & NOx emission reduction.
- Unit 4 Air Pre Heater basket jet cleaning to reduce flue gas exit temperature and thereby gain in heat rate.

PART-I

Any other particular for improving the quality of the environment.

- We have taken up a mass plantation drive outside plant premises in an area of approx. 50 acres with 1 lakh saplings under MoEF&CC drive-Ek Ped Maa Ke Naam.
- Implemented Integrated Management System (IMS) across 2400 MW Thermal Power Plant for better quality, pollution control and improve health of people working in the plant.
- All important Environmental Days Celebrated to build up Environmental awareness among employees and community.
- Regular Awareness Session, TBTs & various training conducted for awareness and rally campaign in Vedanta Jharsuguda complex towards Environment protection, climate change and Biodiversity conservation.