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**TSM-CPP/SPCB/TS-03/2025-02/198**  
**August 27, 2025**

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

**Subject:** Environmental Statement for the financial year 2024-25 for M/s. Tata Steel Limited, TSM - CPP

**Reference:** 1. Consent Order No. 6567/IND-I-CON-6306 dated 28.03.2025

Dear Sir,

In reference to the captioned subject and letter cited above, we are submitting herewith the "Annual Environmental Statement (Form-V)" duly filled in the prescribed format for the Tata Steel Limited, TSM-CPP At: Ganthigadia, PO: Nuahata, Via: Banarpal, Dist.: Angul, Odisha, for the financial year 2024-25 .

This is for your kind information and necessary record please.

Thanking you

Yours faithfully,

**For Tata Steel Limited TSM CPP**

  
**Rajesh Kumar Agrawal**  
**Chief Power Systems**

**Encl: As above**

**Copy to:**

1. The Regional Officer, Odisha State Pollution Control Board, Angul, Odisha.
2. Deputy Director General, MOEF&CC, Integrated Regional Office (EZ), A/3, Chandrashekarapur, Bhubaneswar-751023

**TATA STEEL LIMITED**

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Corporate Identification Number L27100MH1907PCC000260 Website [www.tatasteel.com](http://www.tatasteel.com)



**[FORM-V]****(See rule 14 of The Environment Protection Act, 1986)****Environment Statement for the financial year ending 31<sup>st</sup> March 2025****PART – A**

<b>General Information</b>		
	Name of the Company	<b>TSM-CPP (Formerly known as M/s. Angul Energy Limited)</b>
1.	Name & Address of the owner/occupier of the industry, operation or process	Sri Rajesh Kumar Agrawal, Chief Power Systems TSL-TSM CPP At: Ganthigadia PO: Nuahata Via: Banarpal Dist.: Angul Pin: 759128, Odisha
2.	Industry Category	-
	Primary (STC Code),	Coal Based Thermal Power Plant
	Secondary (STC Code)	Category -Red
3.	Production capacity-Units	Production Capacity: 465 MW (2x150 MW + 1x165 MW)
4.	Year of establishment	2010
5.	Date of last environment statement submitted	27 <sup>th</sup> September,2024 vide letter no.- TSM-CPP/SPCB/TS-03/2024-13/160

**PART – B**

<b>Water &amp; Raw material Consumption</b>		
<b>1: Total Water Consumption (m<sup>3</sup>/d)</b>		
<b>Water Consumption</b>	<b>During the previous Financial Year 2023-24</b>	<b>During the current Financial Year 2024-25</b>
<b>Industrial Process Consumption</b> (Inside Works as Makeup water)	523	540
<b>Industrial Cooling Consumption</b> (Inside Works for Cooling Tower)	13291	13043
<b>Domestic Consumption</b> (Inside Works as Drinking water)	90	90

<b>2: Water Consumption per unit of the product (m<sup>3</sup>/MWh)</b>		
<b>Name of the Products</b>	<b>Process Water Consumption per unit of product m<sup>3</sup>/MWh)</b>	
	<b>2023-24</b>	<b>2024-25</b>
Electricity	2.57	2.36

3: Raw Material Consumption (Works):			
Name of Raw materials	Name of Products	Consumption of raw material per unit of product (MT/MW)	
		During the previous Financial Year (2023-24)	During the current Financial Year (2024-25)
Coal	Electricity	0.862	0.764

### PART – C

#### Pollution discharged to Environment per unit of Output (Parameters as specified in the Consent issued)

##### (a) Water:

Pollutants	Quantity of pollutants discharged (mass/day)		Concentrations of pollutants discharged (mass/volume)		% of variation from prescribed standards
	(Tonnes/day)		(mg/l)		In % (referring CTO)
	2023-24	2024-25	2023-24	2024-25	2024-25
TSS	Zero discharge is being maintained. Effluents are being treated in ETP/STP and reused.				
COD					
Ammonia as N					
BOD					
Phenols					
Cyanide as CN <sup>-</sup>					

##### (b) Air:

Parameters	2023-24	2024-25	2023-24	2024-25	2024-25
	Tons/day		mg/Nm <sup>3</sup>		In % (referring CTO)
PM	0.63	0.61	26.6	27.24	(-) 46 %
SO <sub>2</sub>	20.41	20.46	944.5	986.02	(+) 64%
NO <sub>2</sub>	1.95	2.31	94.8	126.60	(-) 72%

As per MoEF&CC notification vide No. G.S.R.682 (E) dtd.05.09.23, SO<sub>2</sub> emission reduction timeline has been extended up to 31<sup>st</sup> December 2027. Lime injection project is under construction stage.

## 1. Surface Water Quality

Parameter	Unit	Kisinda Nalla		Lingra Nalla	
		U/S	D/S	U/S	D/S
pH Value	-	6.92 – 8.58	7.32 – 8.35	6.78 - 8.50	7.36 - 8.56
Colour	Hazen	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)
Temperature	°C	25 – 25.3	25 – 25.2	25 – 25.2	25 – 25.2
Total Suspended Solids	mg/l	3.8 - 31.2	2.6- 28.3	3.2-14	4.1-18.2
Ammoniacal Nitrogen	mg/l	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)
Arsenic as As	mg/l	BDL(DL:0.005)	BDL(DL:0.005)	BDL(DL:0.005)	BDL(DL:0.005)
BOD, 3days at 27°C	mg/l	2.1-5.6	2.0-5.6	2.6-5.3	3.2-6.4
Boron as B	mg/l	BDL (DL:0.25)	BDL (DL:0.25)	BDL (DL:0.25)	BDL (DL:0.25)
Cadmium as Cd	mg/l	BDL (DL:0.001)	BDL (DL:0.001)	BDL (DL:0.001)	BDL (DL:0.001)
Calcium as Ca	mg/l	18.1-80.8	16.5-80.8	13-89.0	16.8-64.4
Chlorides as Cl	mg/l	8.6-158.4	9.7-148.5	11.1-152	13.2-126
COD	mg/l	9.6 – 28.0	12.0 – 23.0	3.4 – 20	7.8 - 28
Copper (as Cu)	mg/l	BDL (DL:0.02)	BDL (DL:0.02)	BDL (DL:0.02)	BDL (DL:0.02)
Cyanide as CN	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
Fluoride as F-	mg/l	0.22 - 4.2	0.21 – 6	0.13 - 1.2	0.17 - 2.6
Free Ammonia	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
Hexa Chromium as Cr <sup>+6</sup>	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
Iron as Fe	mg/l	0.96 – 5.4	0.14-4.9	0.18 – 2.0	0.16-1.0
Lead (as Pb)	mg/l	BDL (DL:0.005)	BDL (DL:0.005)	BDL(DL:0.005)	BDL(DL:0.005)
Manganese (as Mn)	mg/l	BDL (DL:0.02)	BDL (DL:0.02)	BDL (DL:0.02)	BDL (DL:0.02)
Mercury (as Hg)	mg/l	BDL (DL:0.0002)	BDL(DL:0.0002)	BDL(DL:0.0002)	BDL(DL:0.0002)
Nickel (as Ni)	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
Nitrate as N	mg/l	0.36 – 0.86	0.16 – 1.14	0.60 – 1.89	0.11 – 3.89
O&G	mg/l	BDL (DL:1.4)	BDL (DL:1.4)	BDL (DL:1.4)	BDL (DL:1.4)
Phenolic Comp	mg/l	BDL (DL:0.001)	BDL (DL:0.001)	BDL(DL:0.001)	BDL(DL:0.001)
Phosphate as P	mg/l	0.11 - 0.85	0.07 - 0.84	0.10 – 0.29	0.10 to 0.40
RFC	mg/l	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)
Selenium (as Se)	mg/l	BDL (DL:0.005)	BDL (DL:0.005)	BDL(DL:0.005)	BDL(DL:0.005)
Sulphide (as S) mg/l	mg/l	BDL(DL:0.05)	BDL(DL:0.05)	BDL(DL:0.05)	BDL(DL:0.05)
TKN	mg/l	BDL (DL:0.3)	BDL (DL:0.3)	BDL (DL:0.3)	BDL (DL:0.3)
Total Chromium (as Cr)	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)

Parameter	Unit	Kisinda Nalla		Lingra Nalla	
		U/S	D/S	U/S	D/S
Total Nitrogen Content	mg/l	0.51-2.02	0.68 – 1.55	0.74 - 2.08	0.60 - 4.68
Vanadium (as V)	mg/l	BDL(DL:0.05)	BDL(DL:0.05)	BDL(DL:0.05)	BDL(DL:0.05)
Zinc (as Zn)	mg/l	BDL (DL:0.02)	BDL (DL:0.02)	BDL (DL:0.02)	BDL (DL:0.02)

**NB:** U/S: Upstream; D/S: Downstream; BDL: Below Detection Limit; Zero liquid discharge is being maintained.

## 2. ETP Treated Water Quality

Parameter	UOM	ETP-1		
		Min	Max	Avg
pH	-	6.93	8.15	7.54
Total Suspended Solid	mg/l	13	37	25
Chemical Oxygen Demand (COD)	mg/l	19	45	32
Biochemical Oxygen Demand (BOD) (27 ° C for 3 days)	mg/l	3.5	7	5.25
Iron as Fe	mg/l	0.27	0.72	0.495
Oil & Grease	mg/l	<5	<5	<5

## 3. Sewage Treatment Plant -Treated outlet quality

Parameter	UOM	TSM-CPP STP			Colony STP		
		Min	Max	Avg	Min	Max	Avg
pH	-	6.51	7.81	7.16	6.5	7.85	7.18
Total Suspended Solid	mg/l	18	42	30.00	23	53	38.00
Biochemical Oxygen Demand (BOD) (27° C for 3 days)	mg/l	8.7	44	26.35	9	32	20.50

## 4. Ambient Air Quality

Parameters	UoM	CAAQMS-2			CAAQMS-3			CAAQMS-4		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
PM <sub>10</sub>	µg/m <sup>3</sup>	69.64	243.09	62.52	105.4 6	193.0 9	153.3 7	41.5 1	188.9 4	109.6 7
PM <sub>2.5</sub>	µg/m <sup>3</sup>	26.51	113.0 5	63.4 9	35.40	96.96	57.40	14.8 7	92.00	52.75
SO <sub>2</sub>	µg/m <sup>3</sup>	21.52	23.40	22.7 8	2.13	10.18	5.18	5.24	8.10	6.10

Parameters	UoM	CAAQMS-2			CAAQMS-3			CAAQMS-4		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
NO <sub>x</sub>	µg/m <sup>3</sup>	4.61	12.45	9.70	16.17	19.37	18.09	7.25	33.54	18.54
CO	mg/m <sup>3</sup>	0.43	0.92	0.72	0.73	1.27	0.90	0.21	0.69	0.36

Parameters	UoM	CAAQMS-5			CAAQMS-6			CAAQMS-7		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
PM <sub>10</sub>	µg/m <sup>3</sup>	64.21	242.45	139.81	85.08	187.03	132.93	79.19	246.13	143.32
PM <sub>2.5</sub>	µg/m <sup>3</sup>	22.33	103.72	55.80	32.33	63.79	45.04	30.45	126.09	64.16
SO <sub>2</sub>	µg/m <sup>3</sup>	8.11	18.79	13.15	8.74	19.60	14.10	8.13	50.66	32.08
NO <sub>x</sub>	µg/m <sup>3</sup>	7.37	26.89	14.02	14.77	26.53	20.87	14.65	22.41	17.18
CO	mg/m <sup>3</sup>	0.26	0.96	0.58	0.43	1.00	0.75	0.74	1.15	0.88

CAAQMS 2: Near TSM-CPP Boundary; CAAQMS 3: Near CRM; CAAQMS 4: Near Water Complex; CAAQMS 5: Near Coke Oven 2; CAAQMS 6: Near Wagon Tippler; CAAQMS 7: Near Material Gate

Values are derived from 24 hourly average data except CO values are derived from 8 hourly average data.

## **PART – D**

<b>Hazardous Wastes</b> <b>(As specified under The Hazardous and Other Wastes (Management &amp; Transboundary Movement) Rules, 2016)</b>		
Hazardous waste	Total Quantity (MT)	
	During the previous Financial Year (2023-24)	During the current Financial Year (2024-25)
<b>(a) From Process</b>		
Used Oil	12.27	6.64
Waste residue containing oil	0.077	0.001
Insulation Waste	36.44	16.63
Discarded Container Barrel/Liners contaminated with Hazardous waste chemicals	603 Nos.	2.0
<b>(b) From Pollution Control Facilities: NIL</b>		

**PART – E**  
**Solid Wastes**

**Total Quantity Generated**

Name of the Waste	Total Quantity Generated (MT)	
	During the previous Financial Year (2023-24)	During the current Financial Year (2024-25)
<b>(a) From Process</b>		
Bottom Ash	100585	103217
<b>(b) From Pollution Control Facilities</b>		
Fly Ash	672865	729696

**(c) (1). Quantity Recycled/Reutilized within the Unit**

Name of the Waste	Total Quantity Recycled/Reutilized within the Unit (MT)	
	During the previous Financial Year (2023-24)	During the current Financial Year (2024-25)
1. Ash (internal and external brick manufacturing unit)	140241	187005

**(c) (2). Quantity Sold**

Name of the Waste	Total Quantity Sold (MT)	
	During the current Financial Year (2023-24)	During the current Financial Year (2024-25)
Fly Ash (Cement Manufacturing unit)	191913	374956

**(c) (3). Total Quantity Disposed/Stored**

Name of the Waste	Total Quantity (MT)	
	2023-24	2024-25
1. Ash (Used for quarry filling and low-lying area reclamation)	52753	26501
2. Ash (Used for road making)	348687	244901
3. Stored in interim ash pond	0	

## **PART – F**

**Chemical Composition of majority of waste as produced in process of TSM-CPP operation is given below:**

<b>Name of the Wastes</b>	<b>Chemical Composition (%)</b>				<b>Disposal Method</b>
Fly Ash	SiO <sub>2</sub>	55.30	Na <sub>2</sub> O	0.07	<ul style="list-style-type: none"><li>• Supply to cement plant and to bricks manufacturing unit free of cost on door delivery model.</li><li>• Supply to NH construction.</li><li>• Reclamation of stone quarry.</li></ul>
	Al <sub>2</sub> O <sub>3</sub>	28.93	K <sub>2</sub> O	0.28	
	Fe <sub>2</sub> O <sub>3</sub>	3.70	Cr <sub>2</sub> O <sub>3</sub>	0.02	
	TiO <sub>2</sub>	1.25	NiO	0.01	
	MnO <sub>2</sub>	0.05	CuO	0.01	
	CaO	0.02	ZnO	0.016	
	MgO	0.10	BaO	0.061	
	P <sub>2</sub> O <sub>5</sub>	0.04	SO <sub>3</sub>	0.10	
	Cl <sup>-</sup>	0.50	LoI	3.00	
	F	4.8			
Bottom Ash	SiO <sub>2</sub>	55.51	Na <sub>2</sub> O	0.07	<ul style="list-style-type: none"><li>• Supply to cement plant.</li><li>• Supply to NH construction.</li><li>• Reclamation of stone quarry.</li></ul>
	Al <sub>2</sub> O <sub>3</sub>	16.30	K <sub>2</sub> O	0.25	
	Fe <sub>2</sub> O <sub>3</sub>	11.84	Cr <sub>2</sub> O <sub>3</sub>	0.01	
	TiO <sub>2</sub>	0.80	NiO	0.01	
	MnO <sub>2</sub>	0.23	CuO	0.01	
	CaO	0.40	ZnO	0.01	
	MgO	1.37	BaO	0.01	
	P <sub>2</sub> O <sub>5</sub>	0.17	SO <sub>3</sub>	0.12	
	Cl <sup>-</sup>	6.05	LoI	1.55	
	F	1.76			



## **PART – G**

<b>Sl. No.</b>	<b>Pollution abatement measures taken in 2024-25.</b>	<b>Impact of pollution control measures on conservation of natural resources and cost of production.</b>
1	Effluent Recycling Facility	Reduction of Specific Water consumption
2	Green Belt Development	Green belt development is under progress in and around the plant complex by planting indigenous species. 33% of the area (includes Plant, R&R and CSR) has been covered under green belt development. Plantation of saplings is being done regularly based on the availability of vacant areas.
3	<ul style="list-style-type: none"> <li>• Installation of High Frequency Transformer Rectifier (HFTR)</li> <li>• Pneumatic conveying of ash from ESPs to silos</li> <li>• Optimize ash handling Operation</li> </ul>	Reduction in Particulate Matter (PM), Fugitive Emission and to be continued
4	Installation of 50 kWh Solar Panel	Reduction in aux power consumption and carbon footprint.

<b>Cost expenditure of Pollution Control for the period April-24 to March-25</b>	
<b>Description</b>	<b>Expenditure in crores</b>
Air Pollution Control	53.14
Water Pollution Control	2.36
Solid Waste Management	37.85
Hazardous Waste Management	0.05
<b>Total</b>	<b>93.40</b>

## **PART – H**

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

- Improvement in water recycling facility for reducing the specific water consumption.
- Increase in utilization of ash percentage in brick and cement manufacturing.
- Exploring utilization of paddy straw and other residue as fuel, as recommended in the trial run study.

## **PART – I**

### **Any other undertaken project for improving the quality of environment:**

- Dual-fuel Firing System: Installation of additional COG/Natural Gas burner alongside existing coal-fired burner at CFBC Boiler No. V with investment 44 Crores. This facilitates simultaneous dual firing to reduce:
  - Coal consumption reduction from 86 to 60 TPH.
  - CO gas flaring reduction from 11.6 to 0.5 %.
  - Ash generation reduction from 41 to 28 TPH.
  - Carbon emission reduction from 1077711 to 917643 tCo2e p.a.
  - SOX emission reduction from 1076 to 770 Mg/Nm<sup>3</sup>.
- Scientific Studies: Completed studies w.r.t Carbon sequestration, use of biomass pellet and biodiversity
- Reduction in energy consumption ~20% per cooling tower fan with the use of energy efficient blades. (5nos completed out of 22nos).
- Certifications: Achieved ISO 14001:2015, ISO 9001:2015, and ISO 45001:2018 certifications for environmental, quality, and occupational health & safety management.

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