



JSWSL/ENV/GOV/KSPCB/FORM-V/2026-27/47
24.09.2026

o/c

JSW Steel Limited

Vijayanagar Works :
P. O. Vidyannagar - 583 275,
Dist. Ballari, Karnataka, India.
CIN. : L27102MH1994PLC152925
Phone : +91 8395 250 120-30
Fax : +91 8395 250 132/142
Website : www.jsw.in

To,

**Member Secretary,
Karnataka State Pollution Control Board,
5th Floor, #49, Parisara Bhavan, Church Street,
Bangalore-560 001**

Sub: Submission of Environment Statement (Form-V) for the Financial Year 2025-26 – JSW Steel Limited, Vijayanagar Works

Ref: Consent Order No. 354798 valid from 01/07/2026 to 30/06/2031

Dear Sir,

With reference to the subject cited above and the Consent Order No.354798, valid from 01.07.2026 to 30.06.2031, we are submitting herewith the **Environment Statement in Form-V** for the **M/s. JSW Steel Limited**, located at Toranagallu Village, Sandur Taluk, Ballari District, Karnataka for the financial year **2025-26 (April 2025 to March 2026)**.

The Environment Statement has been prepared in compliance with the provisions of the **Environment (Protection) Act, 1986** and other applicable statutory requirements. The same is being submitted for your kind perusal and record.

Thanking You,
Yours faithfully

For M/s JSW Steel Limited



Godavarthi Jaya Prakash
Head - Environmental & Sustainability
Authorized Signatory



Enc: Form V

CC:

- I. Environmental officer, KSPCB, Regional Office, 4th Main, Kuvempunagara, Bellary 583104
- II. Director, Regional Office MOEF (SZ), Kendriya Sadana, IV Floor, E&F Wing, 17th Main Road, Koramangala, Bangalore-560034
- III. Regional Director, CPCB, A-Block, Nisarga Bhavan 1st & 2nd Floor, 7th D Cross, Thimmaiah Road, Shivaji Nagar, Bengaluru-560079.

Regd. Office : JSW Centre,
Bandra Kurla Complex,
Bandra (East), Mumbai - 400 051

Phone : +91 22 4286 1000
Fax : +91 22 4286 3000



Part of O. P. Jindal Group



ENVIRONMENTAL STATEMENT

For Financial Year 2025-2026



BY

JSW STEEL LIMITED
VIJAYANAGAR WORKS

P.O. Vidyanagar, Toranagallu Village, Sandur Taluk, Ballari District

ENVIRONMENTAL STATEMENT

of



M/s JSW STEEL LIMITED, VIJAYANAGAR WORKS TORANAGALLU

for

**Financial year from 01st April, 2025 - 31st March, 2026
(In the prescribed Form # 5)**

**As specified by Rule 14 of The Environment (P) Rules, 1986
&**

Notified by G.S.R. # 396 (E) dated 22.4.1993

PART-A**GENERAL INFORMATION ABOUT THE PLANT****Statutory Clearances Details:**

1. JSW Steel Limited has been granted Amendment to Environmental Clearance vide EC identification no. EC24A1001KA5580178S and File no. J-11011/489/2009-IA.II(I) dated 18.09.2026 for 13 MTPA Crude Steel Production capacity wherein the proposal for split/transfer of Coke Oven 6 and its associated facilities from EC of M/s JSWSL to M/s JVML along with land area of 27.55 Ha along with rationalization of total project area with respect to split proposals, and amendment in certain EC conditions and further administrative consolidation/amalgamation of all previous Environmental Clearances into a single consolidated Environmental Clearance was approved.
2. CFO and HWM Authorization renewed for further period of 5 years Vide CCO Order No: 354798 Dtd: 13.07.2026 valid upto 30.06.2031.
3. Biomedical Waste Management One - Time Authorization for operation of Occupational Health Facilities within the plant Authorization No. 214246 PCB ID: 278097, dated 07.04.2025.
4. Biomedical Waste Management One - Time Authorization for operation of Occupational Health Facilities within the Townships (included in CCO)
 - Vidyanagar Health Centre - No. 222463 Dated 11.08.2026
 - Hill Side Township Clinic – No. 222535 Dated: 14.08.2026
 - OPJC Occupational Health Centre - No. 222466 Dated 11.08.2026
 - Employees Utilization Dispensary, Shankar Hill Town - No. 222465 Dated 11.08.2026
5. JSW STEEL LIMITED has been granted as a Brand Owner Regn. No. BO-17-000-08-AAACJ4323N-23 dated 10-05-2023, registration as a Brand Owner; and Importer Regn. No. 2025030808544868041 dated 06-07-2025, registration as an Importer for disposal of Plastic waste w.r.t plastic packaging as per EPR Action Plan under rule-13(2) of the Plastic Waste Management Rules, 2016, as amended.

1.	Name and address of the owner/ occupier of the industry operation or process	:	Mr. Murugan P K - President, JSW Steel Limited , Vijayanagar Works, Toranagallu, Ballari, Karnataka
1.a	Authorized person for the occupier	:	Mr. Godavvarthi Jaya Prakash Head - Environment & Sustainability, JSW Steel Limited, Vijayanagar Works, Toranagallu, Ballari, Karnataka
2	Industry category	:	Primary Metallurgical Industry
	STC Code	:	14 (a)

3a.	Production capacity	:	Integrated Steel Plant (Crude Steel) 13 MTPA
b.	Units		
Sl. No	Manufacturing facilities	Capacity	
1	Ore Beneficiation plants – 19.5 MTPA		
	Ore Beneficiation plant -1 & 2	1x2.5 MTPA 1 x 4.5 MTPA 1x7.5 MTPA 1x5.0 MTPA	
2	Pellet Plants – 16.8 MTPA		
	Pellet Plant 1	1 x 5.0 MTPA	
	Pellet Plant 2	1 x 5.0 MTPA	
	Pellet Plant 3	1 x 6.8 MTPA	
3	Sinter plants – 12.65 MTPA		
	Sinter plant 1	1 x 2.30 MTPA	
	Sinter plant 2	1 x 2.30 MTPA	
	Sinter plant 3	1 x 5.75 MTPA	
	Sinter plant 4	1 x 2.30 MTPA	
4	Coke Oven – Recovery Type – 6.5 MTPA		
	Coke Oven 3	1 x 1.5 MTPA	
	Coke Oven 4	1x 2.0 MTPA	
	Coke Oven 5	1 X 3.0 MTPA	
5	Hot metal – Corex – 1.6 MTPA		
	Corex 1	1 x 0.8 MTPA	
	Corex 2	1 x 0.8 MTPA	
6	Hot metal - Blast Furnace – 12.07 MTPA		
	Blast Furnace 1	1 x 2.5 MTPA With 3 x 170 TPD VPSA system	
	Blast Furnace 2	1 x 2.17 MTPA	
	Blast Furnace 3	1x 4.4 MTPA	
	Blast Furnace 4	1 x 3 MTPA	
7	Metal Granulation Plant	1 x 2.7 MTPA	
8	Pig Caster (MGP) – 12000 TPD		
	Pig casting machine	1 x 1200 TPD	
	Pig casting machine	3 x 3600 TPD	
9	Steel Melting Shop – 13.2 MTPA		
	Steel Melting Shop 1 BOF	1 x 3.8 MTPA	
	Steel Melting Shop 2 BOF	1 x 6.4 MTPA	
	Steel Melting Shop 3 EAF	1 x 1.5 MTPA	
	Steel Melting Shop 3 ZPF	1 x 1.5 MTPA	
10	Slab Casters – 11.2 MTPA		

	SMS 1 Slab Caster 1 – 3.2 MTPA	
	Slab caster 1 & 2	2 x 1.05 MTPA
	Slab caster 3 & 4	1.1 MTPA
	SMS Slab Caster 2 – 6.4 MTPA	
	Slab caster 5, 6, 7, 8	4 x 1.6 MTPA
	SMS Slab Caster 3 – 1.6 MTPA	
	Slab caster 9	1 x 1.6 MTPA
11	SMS Billet Caster – 4.5 MTPA	
	Billet caster 1	1 x 1.5 MTPA
	Billet Caster 2	2 x 1.5 MTPA
12	Lime plant (along with Lime Grinding Units) – 5400 TPD	
	Lime Calcination plant 1	4 x 300 TPD
	LGU 1	1 x 50 TPD
	Lime Calcination plant 2	4 x 300 TPD + 3 x 600 TPD
	LGU 2 & 5	2 x 400 TPD
	Lime Calcination plant 3	2 x 600 TPD
	LGU 3 & 4	2 x 400 TPD
13	Finishing Mill/ Hot Strip Mill – 9.2 MTPA	
	Hot strip mill 1	1 x 4 MTPA
	Hot strip mill 2	1 x 5.2 MTPA
14	Cold Rolling Mills – 6.4 MTPA	
	Cold Rolling Mill 1 – 1.8 MTPA	
	Pickling Line cum Tandem Cold Mill - 1	1 x 1.8 MTPA
	Continuous Galvanizing Line 2 & 3	2 X 0.45 MTPA
	Color Coating Line	1 X 0.5 MTPA
	Electrolytic cleaning Line	1 x 0.7 MTPA
	Batch Annealing Furnace	1 X 0.7 MTPA
	Annealing cum Coating Line	1 X 0.2 MTPA (Silicon Steel)
	Cold Rolling Mill 2 – 2.3 MTPA	
	Pickling Line cum Tandem Cold Mill - 2	1 x 2.3 MTPA
15	Continuous Galvanizing line 1	4 x 0.25 MTPA
	Continuous Annealing line 1 & 2	2 x 0.95 MTPA
	Cold Rolling Mill 3 – 2.3 MTPA	
	Pickling Line cum Tandem Cold Mill - 1	2.3 MTPA
	Continuous Galvanizing Line 4	0.4 MTPA
	Recoiling Cum Inspection Line	0.2 MTPA
	Automatic Packaging Line	16 Coils/Hr
	Acid Regeneration Plant	12000 Liters/Hr
	Wire Rod Mill – 1.8 MTPA	
	Wire Rod Mill 1	1 x 0.6 MTPA
16	Wire Rod Mill 2	1 x 1.2 MTPA
	Bar Rod Mill – 2.2 MTPA	
	Bar Rod Mill 1	1 x 1.0 MTPA
	Bar Rod Mill 2	1 x 1.2 MTPA
17	Captive Power Plants – 830 MW	
	Captive Power Plants 1	100 MW (Gas Based)
	Captive Power Plants 2	130 MW (Gas Based)

	Captive Power Plants 3	300 MW (Coal + Gas based)
	Captive Power Plants 4	300 MW (Coal + Gas based)
18	Slag Grinding and Mixing unit	0.2 MTPA
19	Oxygen Plant	1 X 900 TPD
Auxiliaries		
1	PCF Coal Grinding unit	1 X 2.0 MTPA
2	Lime Briquetting plant (Including Dolo)	1000 Tonnes per month
3	Coal Briquetting plant	2 unit of 0.3 MTPA
4	Coke Dry Quenching (CDQ)	4 units of 3.5 MTPA with power plant of 76 MW
5	Coal Drier	100 tph (3 nos.)
6	Top gas recovery turbine for BF 3&4	2 unit of 12.4 MW
7	Top gas recovery turbine for BF 1	1 unit of 4 MW
8	JSW Airport	1 Number (Runway: 1987m x 30m)
9	Biogas Plant	1 x 1 TPD 1 x 6 TPD
10	JSW Steel Processing Centre Units	1 x 0.5 MTPA
11	Slime ponds along with Slime Recovery Plant (1 No) of capacity 1 x 5 MTPA(Thickner 1 x 1750 m ³ /Hr), MSW Plant (1 x 50 TPD) and other facilities	575 acres
12	Waste Heat recovery	At Sinter plants 2, 3 & 4 & Blast Furnace 3 & 4
13	Gas fired boilers	4 units of 1 x 60 TPH & 3 x 60 TPH
14	Mobile crushing and screening units	30,000 TPD (12 no's- Crushers of 175 tph) (15 no's - screening plants of 200 tph)
15	Batch mixing plants for civil works	1000 m ³ /hr.
16	Research and Development Centre (R&D)	1 No
17	Fabrication Yard	1 No
18	Automobile machinery Workshop	1 No
19	Brick Making plant	1 No
20	Precast plant for civil works	1 No
21	I-Shop	3000 TPA
22	Rh Degasser at SMS-2	1.9 MTPA
23	Rubber mill at CRM-1	1 unit - 550 rolls per month
24	Auto scarfing of slabs	150000 tonnes per month
26	RMHS	1 X 6 MTPA 1 x 10 MTPA With wagon tippler & Stack Reclaimer

27	CCL 1 (Color Coated Line)	1 x 0.6 MTPA
28	Corex slag & clinker Grinding & mixing unit	0.2 MTPA (1x 2 lakh tons per annum)
29	BOF slag crushing plant	80000 TPM
30	Incinerators	1000 kg/hr
31	Micro pellet plant (2050 TPD)	1 x 0.75 MTPA
32	Mill Scale Briquetting plant	1 x 0.22 MTPA
33	Waste to Wealth Plant	1 x 0.22 MTPA
34	Metal Recovery Plant/Slag to Sand Plant	17000 TPD
35	Granulated Iron making slag	2.5 MTPA (1 X 40 TPH, 2 X 125 TPH)
36	BOF Slag sand & aggregate plant	1 x 6 MTPA
37	Alumina kilned LHF Briquetting plant	1 x 0.11 MTPA
38	Carbon Recovery Plant	500 TPD
39	Carbon Capture Unit in Blast Furnaces for CO ₂ Sequestering (Reduction in CO ₂ emission footprint by approx 50%)	500 TPD
40	Resource Derived Fuel Plant	1 X 10 TPD
41	Coke Oven 5 (Auxiliary Facilities - CDQ, RO & Benzoyl recovery)	1 x 3 MTPA
42	Import and Utilization of Low Sulphur Pet Coke limited to 10% of its feedstock in Recovery type Coke ovens – 3, 4 and 5 with Sulphur content not exceeding 3% installed at 13 MTPA Integrated Steel Plant.	9,28,000 Metric Tonnes Per Annum
43	Raw Material Handling Section	6 MTPA
44	Ash Pond	AP1: 26.7 acres AP2: 30 acres
45	Townships	5 No's 1. Vidyanagar and Lake View Township 2. Vijay Vittal Nagar Township 3. Shankar Hill (Gudda) Township 4. Sunrise Valley Township 5. Hill Side Township

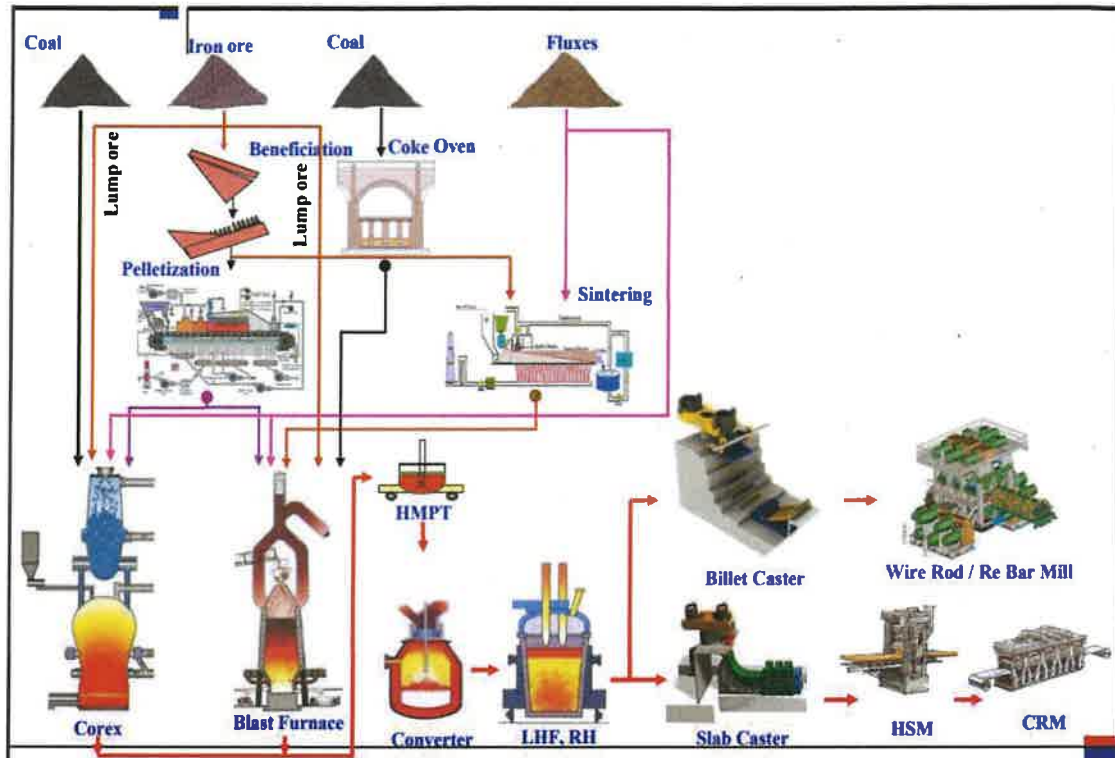
Township Facilities

Sl. no	STP Location	Capacity (m ³ /day)	Technology/ Recycle & Reuse
1	Vidyanagar including Sports Complex, Lake View and IIS	1500	MBR/FAB Type. Recycled to 5 MTPA process and Green belt
		1000	Reed bed. Reused for Green belt

Sl. no	STP Location	Capacity (m3/day)	Technology/ Recycle & Reuse
		400	MBR Type. Reused for Green belt
		200	Reed bed. Reused for Green belt
2	Industrial Plant including VV Nagar	1200	SBR/SAFF technology Recycled in CRM-2 process through ETP and R.O plants
3	Shankar Hill town	3000	MBR Technology. Recycled in CRM-2 process through R.O plants
4	Hill Side Township	1560	MBR Technology. Recycled to 5MTPA process and Green belt
5	Sun rise Valley	900	MBR Reused for Green belt
Total treatment facilities capacity		9760 m3/day	

4	Year of establishment	:	1994
5	Date of the last environmental statement submitted	:	24.09.2025

PROCESS FLOW SHEET



Process Description for 13 MTPA Integrated Steel plant

The manufacturing process is through the conventional route of blast furnace (BF)-basic oxygen furnace (BOF) route with continuous casting of liquid steel to slabs and / billets followed by steel finishing operations to meet the specific quality and shape requirements of the consumers.

The principal process steps involved are;

- (i) Agglomeration through Pelletizing & Sintering of iron ore fines with coke and recycled dusts to make pellet & sinter burden for Blast Furnace.
- (ii) Iron making in Blast Furnaces (BFs) and COREX units from lump iron ore and agglomerates with coal /coke and fluxing materials;
- (iii) Coke making in by-product recovery type coke ovens;
- (iv) Conversion of hot metal to liquid steel by oxygen blowing in BOFs followed by refining of liquid steel in ladle furnaces with addition of alloying materials for micro adjustment of steel chemistry;
- (v) Continuous casting of refined liquid steel to slabs/billets in suitable casters;

- (vi) Hot rolling and cold rolling operations to produce various types of shaped steel products of desired size and dimensions.

A. Ore beneficiation plant: The alumina content of iron ore is required to be lowered to levels acceptable for iron production in blast furnaces. This is carried out in an ore beneficiation plant where the ore is washed with water to separate the gangue materials. The slime is collected in a slime pond for future use. There are two ore beneficiation plants.

B. Coke making:

Metallurgical coke is used as the reductant for reduction of iron ore to produce hot metal. Metallurgical coke is produced by carbonizing the coking coal at a temperature of around 1200°C in absence of oxygen atmosphere in closed door multiple tall ovens. The volatile matter is liberated resulting in formation of coke due to carbonization in the ovens. The energy necessary for the carbonization process is provided by the Blast furnace or the coke oven gases.

The crude coke oven gas, having a potential heat value is cooled, separated from tars, naphthalene and ammonia to produce clean coke oven gas for use as plant fuel in various heating applications.

C. Agglomeration:

a) Sintering: Sintering is a high temperature (1200-1300°C) process for agglomeration of iron ore fines with coke breeze and other fluxes like limestone, and recyclable solid wastes like lime fines, BOF sludge, BF flue dusts etc which are blended in base mix yard.

b) Pelletisation: Pelletizing is a high temperature operation (1200-1400°C) for agglomeration of iron ore fines (smaller than those used for sintering) with coke breeze & fluxes. The mix is passed through a pelletizing disc where green pellets of 10-12mm dia are produced. These are then sent to indurating furnace to produce pellets.

D. Iron making

a) Blast Furnace: Sized iron ore, pellet, sinter and coke along with other fluxing materials are charged to the tall vertical BF for production of hot metal in presence of hot blast air. The temperature within the furnace is above 1600°C. The gangue minerals present in the iron ore are converted to slag known as BF slag and 'Fe' content of the oxide ore gets converted to molten iron due to reduction of iron oxides of the ore with carbon present in

the coke. In order to have adequate carbon for reduction purpose, as well as to reduce coke consumption, powdered coal is injected into the furnace. The hot iron metal after desulphurization with carbide compound is ready for conversion to steel in BOF. For balancing the hot metal production and consumption, provision of pigging of the hot metal becomes necessary. The BF slag is granulated by water jetting and granulated BF slag produced can be used for cement making. The BF gas containing mostly Carbon monoxide (CO) is cleaned in venturi scrubbers, to bring down the dust level in the gas to below 5 mg/N cu m. The cleaned BF gas is used as plant fuel and for heating the BF stoves to produce hot blast air.

b) COREX: Liquid iron is also produced in COREX process using pellets and coal as raw materials. The process also produces a useful by product gas "COREX" gas which is used in mills. COREX process uses oxygen instead of air used in Blast Furnace. The reduction and melting is carried out in two chambers as done in Blast Furnace.

E. Lime calcinations:

Burnt lime (CaO) is required for steel making. Limestone is burnt in the tall vertical limekilns at a temperature of around 1050°C to produce burnt lime. The energy required for the endothermic reaction is provided by fuel gases. The burnt lime collected at the bottom of the kilns is screened. Lime dusts are recycled to the Sinter Plant.

F. Steel making: In the Steel Melt Shop (SMS), the desulphurised hot metal along with burnt lime and fluxing agents is charged to the BOF. Carbon present in the hot metal is oxidized by controlled blowing of oxygen. The temperature of BOF is around 1700°C, with the energy generated by the combustion of carbon present in the hot metal. The BOF gas having carbon monoxide and dust passes through the wet gas cleaning plant, comprising of venturi-scrubber where the dust in the gas is separated due to inertial impaction. The water containing dust is treated in a water treatment plant and recycled to the system. The clean BOF gas depending on 'CO' content is recovered and used as a fuel within the plant. After tapping of BOF slag, the crude liquid steel is poured and transferred to ladle for further refining and chemistry adjustment in the subsequent steel refining operations. In this special type of ladle, crude liquid steel is vacuum-degasified and chemistry adjusted by addition of micro alloys to produce liquid steel of desired chemistry. Thereafter, the refined liquid steel is continuously cast to the slabs/billets in the casting machines.

G. Hot rolling of slabs / billets: The slabs/billets are reheated to a temperature of around 1250°C in walking beam type reheating furnace. After descaling of heated slabs/billets/blooms by high pressure water jet, the same is hot rolled in separate mills to produce shaped products like hot rolled coils, wire rods, sections, rebars, plates etc. The products are ready for dispatch. Some of the intermediates like slabs and billets are also sold outside for carrying out finishing operations at the customer end.

H. Cold rolling: The coil from the hot strip mill is further processed in a cold rolling mill to produce value added products. In the CRM, the coils are pickled using hydrochloric acid to remove scales adhering to the surface of the coils. The pickled coil is further rolled in cold reversing mills to the desired thickness. A portion of the cold rolled coils are then processed in the batch/continuous annealing furnaces to produce annealed steel products. The heat energy for the annealing operation is provided by the fuel gases. The balance portion of the cold rolled coils is coated to produce special coated products. There is a provision for two types of coating of steel viz., galvanizing and color coating. While the galvanized cold rolled products are used mainly in the construction industry, the color coated products find wide application in the white goods sector.

I. Power Plant: In the process of manufacture of steel in the CO-BF-COREX-BOF routes, a large volume of fuel gases are generated from COREX, Coke ovens, Blast furnaces and BOF shops. While these gases are used in various heating applications, there will be a surplus amount of gases that can be used to produce power. In this, the surplus gases are burnt in a boiler to raise steam at high pressure which is used to generate power. The process steam required for the process is generated using gaseous fuel.

The generation of power from the surplus gases is an environment friendly option, as it eliminates the use of coal as the fuel for power generation along with its associated environmental problems like emissions of oxides of nitrogen & sulphur and disposal of fly ash.

J. JSW steel has the following Captive Power Plant:

- CPP-1: 100MW power plant based on COREX & BF gas.
- CPP-2: 130MW power plant based on heat from BF gas & COREX / Mixed gas.
- CPP-3 & 4: 2 x 300MW coal(Imported & Domestic Coal) & gas based power plant.

- K. Slag to Sand Plant:** The granulated slag has pluzzonic properties and can be used in cement making. Thus the granulated slag is finding wide application in the cement industry as a raw material for slag cement. The slag is finely ground and mixed with ground clinker in suitable portion for manufacture of cement. The ground slag also finds application as an admixture in civil construction. A 0.2mtpa cement plant is in operation within JSW Steel complex.
- L. Coal driers:** In order to conserve energy, coal driers are installed to reduce the moisture in coal fed to the corex unit.

PART –B

WATER AND RAW MATERIAL CONSUMPTION

i. Water consumption in m³/d

Type of water	Water consumption in m ³ /day	
	During the last Financial Year (2024-25)	During the current Financial Year (2025-26)
Industrial	71062	84318
Domestic & Gardening (Plant)	4382	3688
Domestic & Gardening (Township)	10549	14160

ii. Process water consumption per unit of product

Name of Products	Process water consumption per unit of products (m ³ /tcs)	
	During the last Financial Year (2024-25)	During the current Financial Year (2025-26)
Crude Steel @ 13MTPA	2.36	2.58

Consumption of Raw Material

Raw material consumption per unit of product

Name of Material	Financial Year 2024-25		Financial Year 2025-26	
	Crude Steel Production- 11683972 tons (11.68 MTPA)		Crude Steel Production- 11683972 tons (10.197 MTPA)	
	Consumption in tons	Rate kg/tcs	Consumption in tons	Rate kg/tcs
Hard Coal	2140321	183.18	1620384	158.91
Semi Hard Coal	2699658	231.06	953980	93.55
Semi Soft Coking Coal	697768	59.72	689614	67.63
Pet Coke	235675	20.17	160574	15.75
Anthracite	319027	27.30	331125	32.47
PCI Coal	1107892	94.82	959123	94.06
Corex Coal	3042580	260.41	3,124,391	306.40
Steam Coal	2698756	230.98	1,822,055	178.68
Coal fines	1920267	164.35	1,892,084	185.55
Purchase Coke	335508	28.72	237,578	23.30

Iron Ore lumps	3658709	313.14	4,418,204	433.28
Iron Ore fines	22898985	1959.86	31,394,448	3078.77
ROM	59877	5.12	0	0
Pellet	68955	5.90	196736	19.29
Limestone	3982212	340.83	4170395	408.98
Dolomite	2562534	219.32	1979889	194.16
Quartzite	15133	1.30	5564	0.55
BHQ	57953	4.96	54563	5.35
Bentonite	87487	7.49	82420	8.08
DRI in IM	62899	5.38	269337	26.41

PART-C

POLLUTION DISCHARGED TO ENVIRONMENT / UNIT OF OUTPUT

WATER AND AIR

a) Water

All the effluent generated from the steel plant complex is collected in the three number of guard ponds and the slime generated from ore beneficiation plant is collected in the slime pond located within the plant premises.

Water from the above is treated in various treatment facilities and recycled within the steel plant and will be reused for dust suppression, green belt development, firefighting and other less critical applications. The water from guard ponds is recycled within the plant.

- JSW Steel Limited had provided Extensive water recirculation and recovery system to ensure Zero discharge from the plant premises.
- All the process units are equipped with the extensive water recirculation system with treatment facility (ETP), i.e. Clarifier / Thickener, Pressure Filters and cooling tower to recirculate water back to process.
- The remaining treated water meeting stipulated standards as per Schedule – 6 of EP Act, 1986 are collected in guard ponds GP-01, GP-02 & GP -03 and utilized in the secondary application such as ore washing, dust suppression, fire-fighting, slag quenching and green belt development.
- The details of the guard pond are given below

S.No	Guard pond	Capacity (m3)	Treated Blow-down water Source
1.	Guard pond #1	1,25,000	CRM 2, LP mills, HSM2, SMS2, PP1, BP1, CPP1, WWP, BF1 &2, Corex 1 &2, SMS 1 , I shop, HSM1
2.	Guard pond #2	1,25,000	DRI & SMS3, BF3, 60 TPH boiler and CPP2, Coke Oven 3, 4 & CDQ, JSWEL, GP3, GP1, WRM -2 and BRM -2.
3.	Guard pond #3	20,000	BF-4, CO-5, SP-2, 3 and 4.
Total Capacity		2,70,000 m³	

- The water collected in guard ponds and again reused internally for secondary purposes in processes like Pellet Plants, sinter plants, Coke Oven Batteries for moisture addition purposes, as Makeup water of Ore Beneficiation Process, Fire-fighting circuit and Dust suppression at various units, Vehicle washing, slag quenching and green belt development inside the plant premises, Townships and in surrounding hillock regions.
- The guard ponds are de-silted/rejuvenated periodically and their water holding capacity restored. This Financial Year Guard Ponds are de-silted and rejuvenated and maintenance work of pumps and pump houses has been undertaken and the ponds are taken online for storage. This will ensure that there is no over flow from the Guard Ponds.
- We have taken special measures for reduce the water flow towards the Guard Ponds, by ensuring the operation of Individual water treatment units as below:-

Water Pollution Control Equipment	Nos
RWTPS	9 Nos
Water Circulation System	8 Nos

Guard Ponds	4 Nos
ETP's	9 Nos
RO Plant	10 Nos
Sewage Treatment Plant (STP)	8 Nos
ZLD for Coke Ovens	2 No
CO2 injection project in SMS -01	1 No (500 m ³ /Day)
Rapid Clarifier System for ID fan flushing water of SMS-1	1 No (800 m ³ /Day)

- To sustain Zero Discharge, above latest and advance treatment technologies such as water circulation system – 8 No; Guard ponds – 4 No; ETPs – 9 No; RO Plant – 10 No; Sewage Treatment Plant (STP) based on MBR Technology – 8 No; ZLD for Coke Ovens – 2 No; CO2 injection project in SMS1 – 1 No; Rapid Clarifier System for ID Fan flushing water of SMS1 – 01 No.
- With the above water pollution control system they are recycling and reusing water back to process and ensure zero discharge.
- The four designated outlets are equipped with the continuous effluent monitoring system which are connected to CPCB server.

b) Air:

Quantity of pollutants measured around the plant is given below

Pollutants (Air)	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants discharged (mass / volume)	% of variation from prescribed standards
	T/day	mg/Nm ³	%
Dust emission (PM)	3.49	19.92	-60.16%
SO ₂ emission	9.69	310.68	-61.17%
NO _x emission	2.30	147.15	-70.57%

NAAQ Standard:

NATIONAL AMBIENT AIR QUALITY STANDARDS (2009)

Pollutants	Time Weighted Average	Concentration in Ambient Air		Methods of Measurement
		Industrial, Residential, Rural and other Areas	Ecologically Sensitive Area (Notified by Central Government)	
Sulphur Dioxide (SO ₂), µg/m ³	Annual * 24 Hours **	50 80	20 80	-Improved West and Gaeke Method -Ultraviolet Fluorescence
Nitrogen Dioxide (NO ₂), µg/m ³	Annual * 24 Hours **	40 80	30 80	-Jacob & Hochheiser modified (NaOH-NaAsO ₂) Method -Gas Phase Chemiluminescence
Particulate Matter (Size less than 10µm) or PM ₁₀ , µg/m ³	Annual * 24 Hours **	60 100	60 100	-Gravimetric -TEOM -Beta attenuation
Particulate Matter (Size less than 2.5µm) or PM _{2.5} , µg/m ³	Annual * 24 Hours **	40 60	40 60	-Gravimetric -TEOM -Beta attenuation

Continuous Ambient Air Quality Monitoring at 06 stations FY2025 - 26

JSW Steel Vijayanagar works has installed 06 number of Continuous Ambient Air Quality Monitoring Stations around the JSW Steel Complex. Continuous Emission monitoring of PM₁₀, PM_{2.5}, SO₂, NO_x & CO is being done at all 06 CAAQMS Stations. The data of all CAAQMS Stations is being transferred to CPCB/KSPCB Portal.

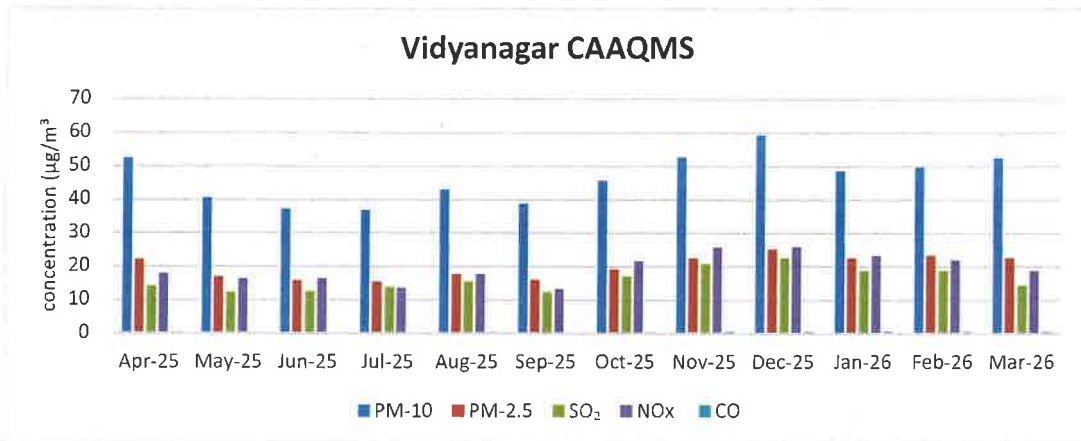
The location details of 06 CAAQMS Stations is as follows:

1. Vidyanagar
2. Vaddu
3. Shankar Hill Township
4. 10 MT
5. Sulthanpur
6. VV Nagar Township

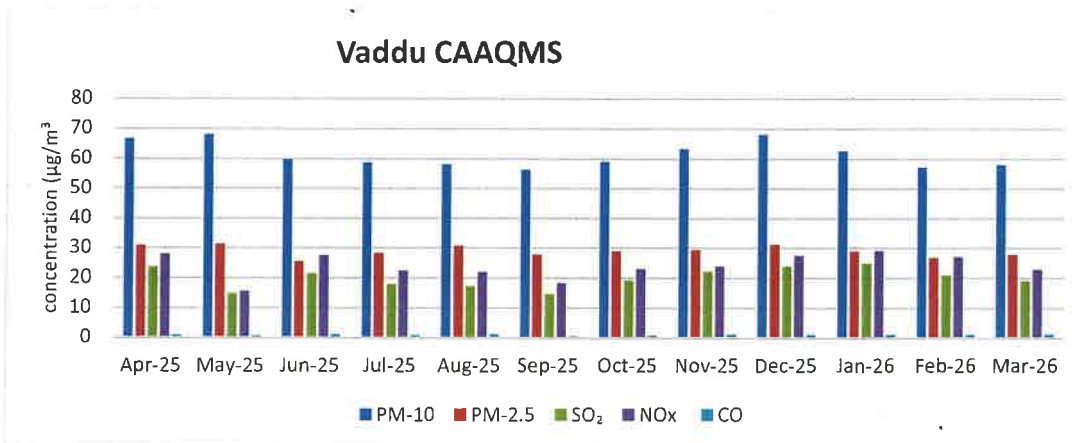
**Continuous Ambient Air Quality Monitoring Stations**

The data reported here is based on the time weighted average standard of 24 hrs as stipulated in NAAQS 2009.

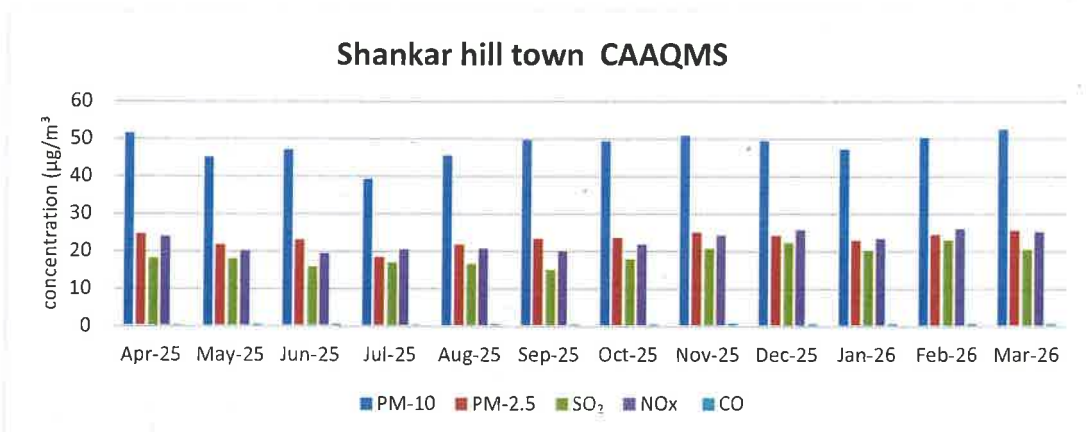
Continuous Ambient Air Quality Station Report – Vidyanagar 2025-26



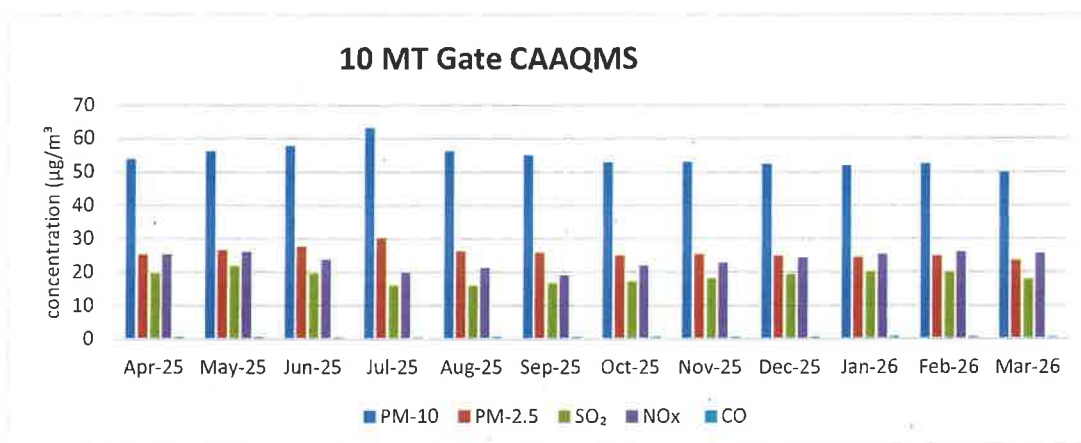
Continuous Ambient Air Quality Station Report – Vaddu 2025-26



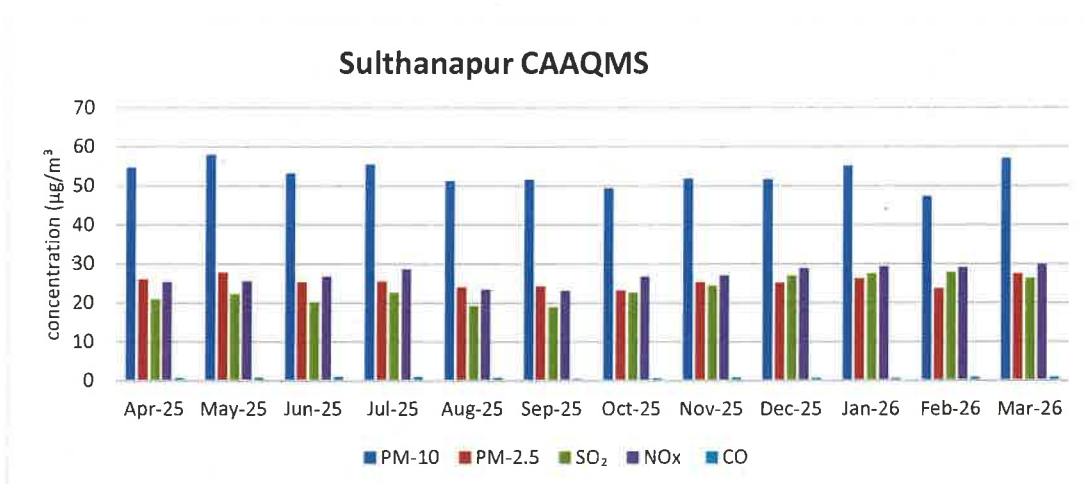
Continuous Ambient Air Quality Station Report – Shankar Hill Township 2025-26



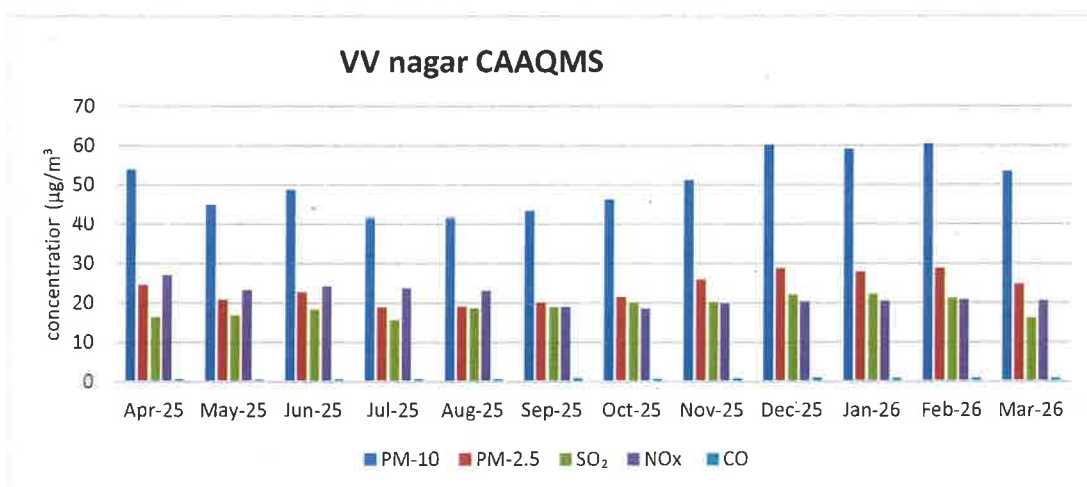
Continuous Ambient Air Quality Station Report – 10 MT 2025-26



Continuous Ambient Air Quality Station Report – Sulthanpur 2025-26



Continuous Ambient Air Quality Station Report – VV Nagar Township 2025-26



Ambient Air Quality Monitoring (Manual) at 12 stations FY 2025-26

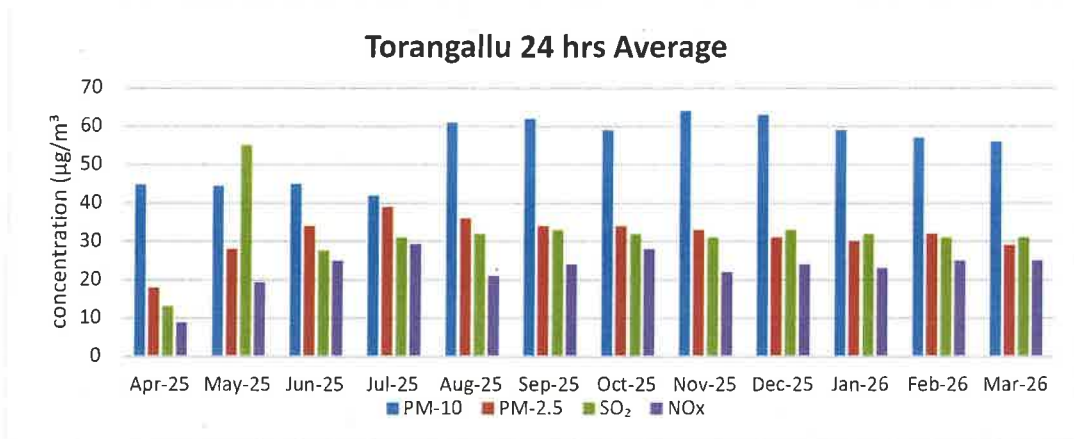
We are manual monitoring Ambient Air Quality Monitoring at 12 locations in nearby villages

1. Toranagallu
2. Vaddu
3. Basapur
4. Talur
5. Kurekuppa
6. Gadiganur
7. Kuditini
8. Sultanpur
9. Karadidhama
10. Hampi
11. Vidyanagar
12. Sultanpur MSW Site

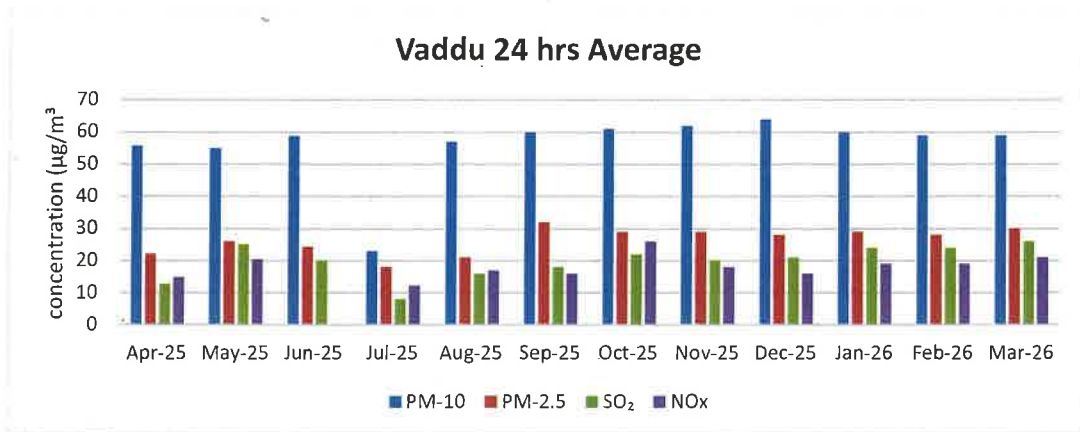


Ambient Air Quality Manual Monitoring Stations

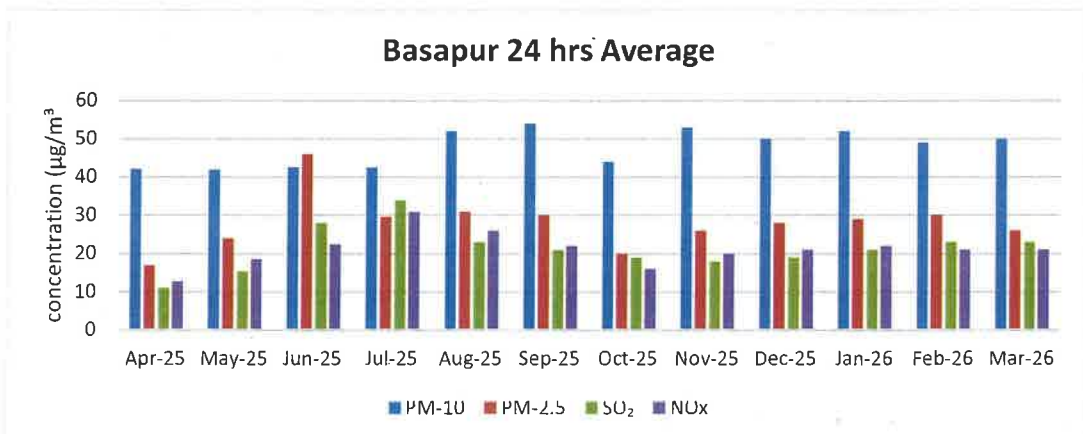
1. Torangallu



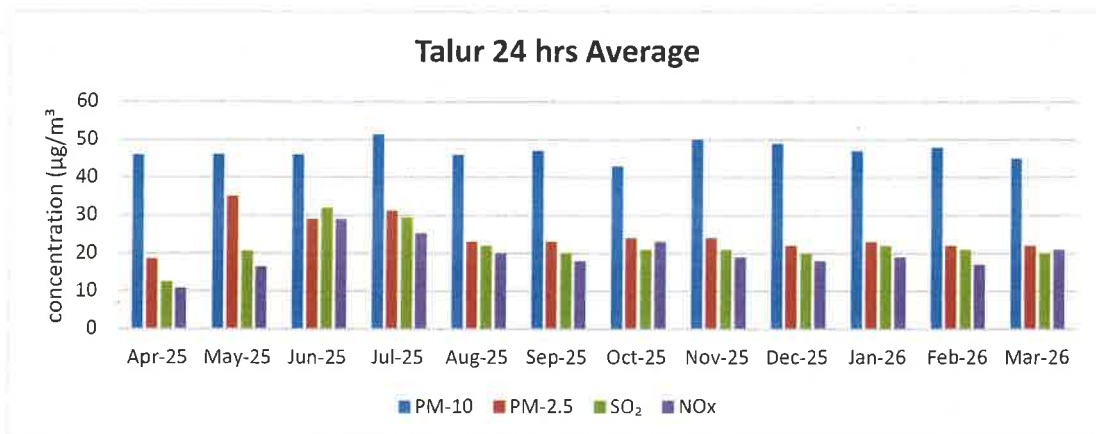
2. Vaddu AAQMS



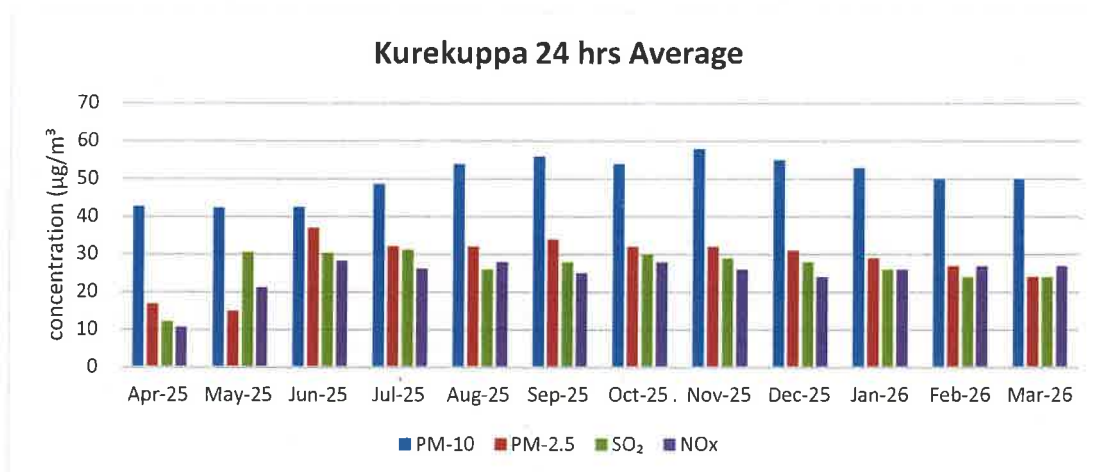
3. Basapur



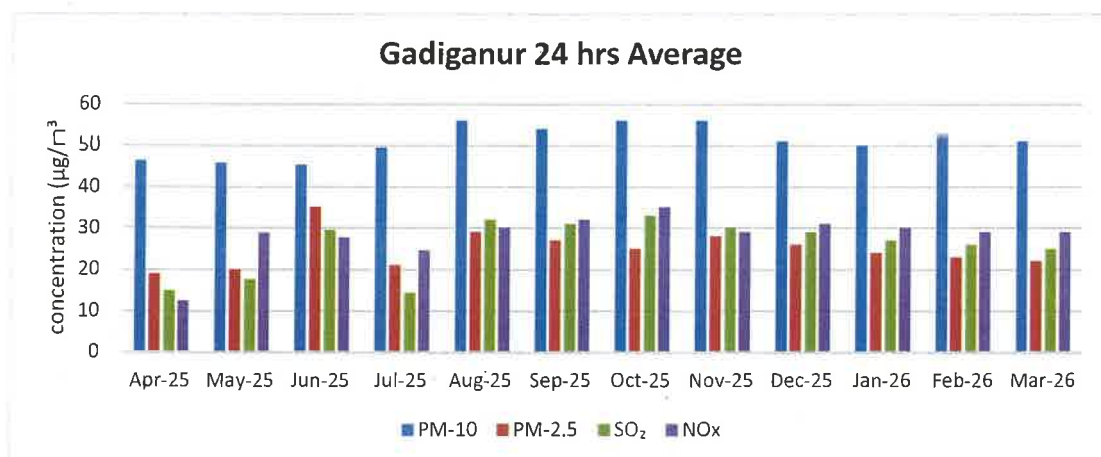
4.Talur



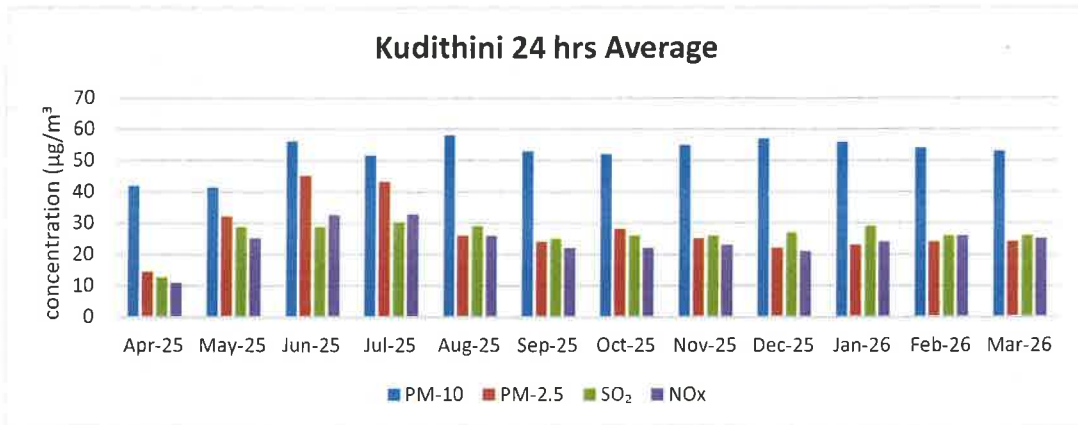
5.Kurekuppa



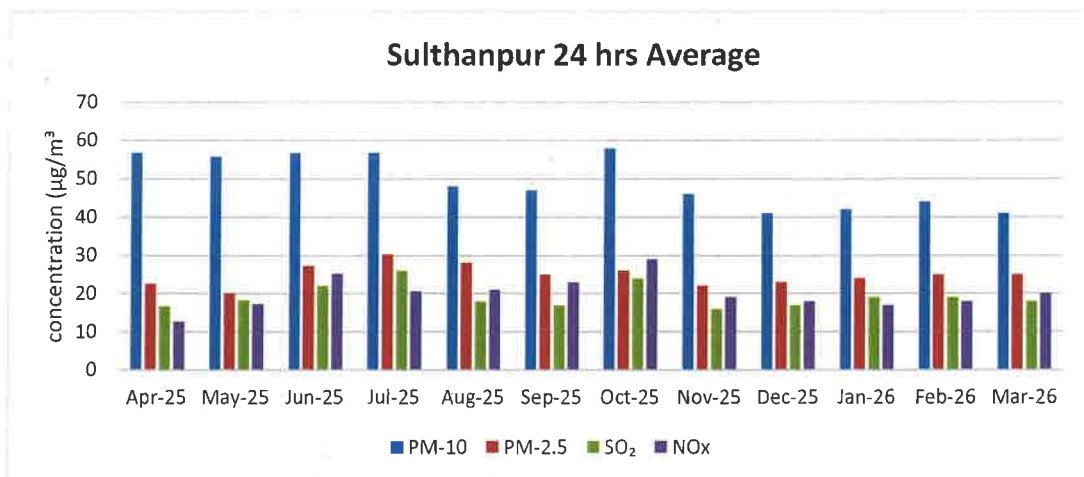
6.Gadiganur



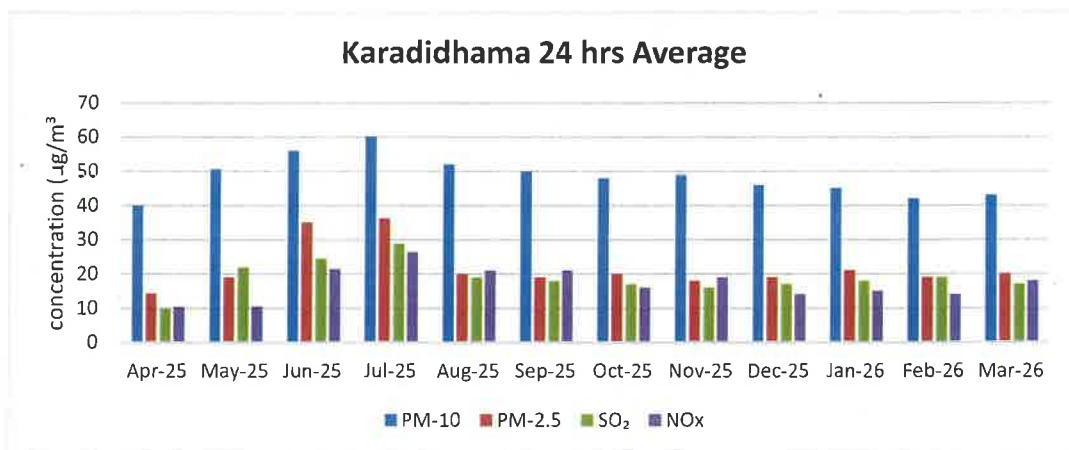
7. Kudithini



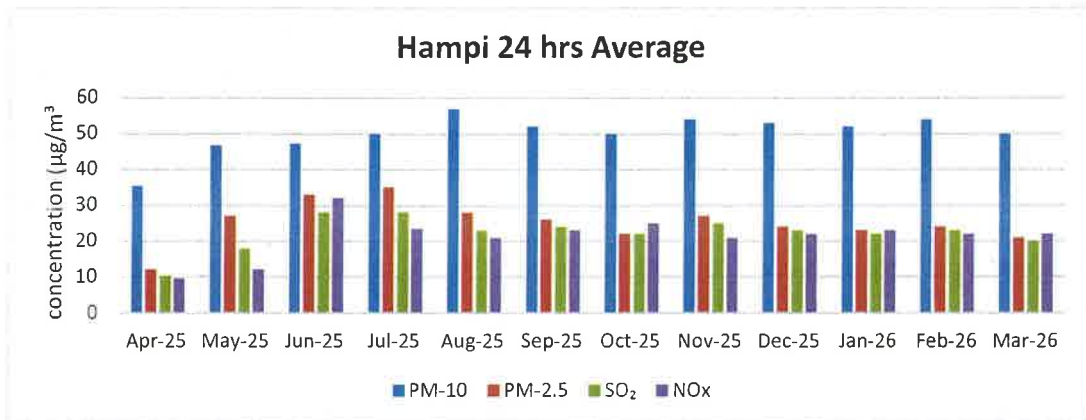
8. Sulthanpur



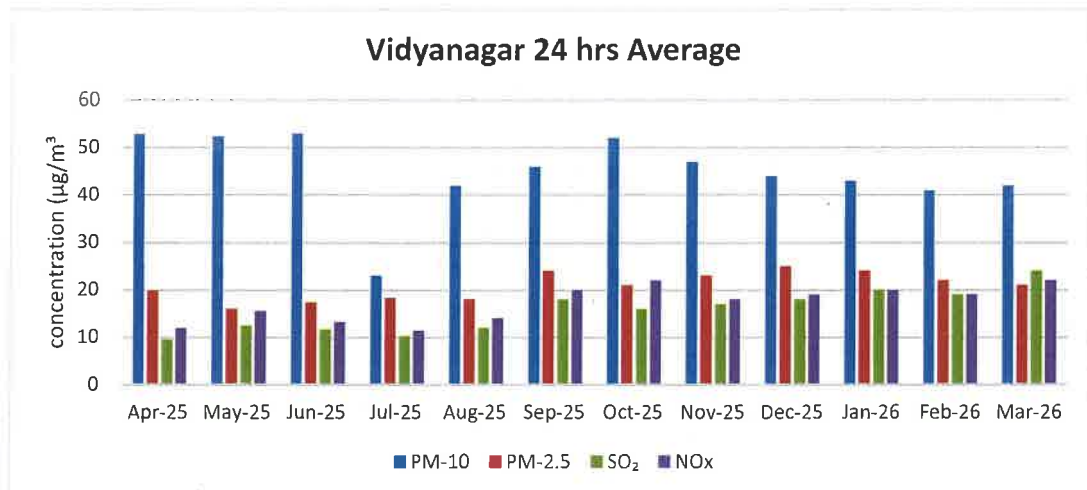
9. Karadidhama



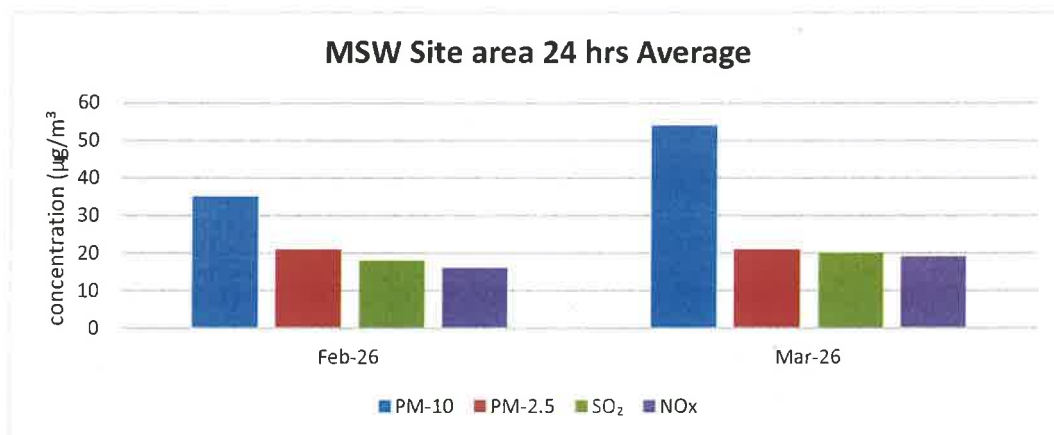
10. Hampi



11. Vidyanagar



12. MSW Site area



PART-D

**HAZARDOUS WASTES
METHOD OF DISPOSAL**

Hazardous Waste Generation in MT/A

Sl. No.	Category	Hazardous Waste disposed	Consented Qty	Total HW Generated in 2024-25	Total HW Disposed in 2025-26	Method of disposal
A Waste Sold to Recyclers						
1	5.1	Used Oil	800 MT/A	76.67	76.67	Sold to Authorised Recyclers
2	4.1	Waste Oil	1000 MT/A	422.80	422.80	
3	33.1	Empty Barrels / containers/liners containing with Hazardous Waste	800 MT/A	299.84	299.84	Shall be stored in a secure manner and handed over to the Authorised Recyclers
4	33.1	Discarded plastics container	50 MT/A	11.416	11.416	Shall be stored in a secure manner and handed over to the Authorised Recyclers
5	35.4	Oil & grease skimming residue (Emulsion Slurry)	2000 MT/A	1160.87	1160.87	Sold to Authorised waste oil Recyclers
6	6.2	Zinc fines or dust or Ash or skimming in dispersible forms (Zinc dross)	40,000 MT/A	2629.12	2629.12	Sold to Authorised Recyclers/ TSDF
B Waste Sent for co-processing						
1	35.2	Spent Ion Exchange Resin containing toxic metals (Spent Nickel catalyst)	30 MT/A	Nil	Nil	As per HWA, to be Co-processed in cement kiln or Used in micro pellet making
2	35.3	Spent carbon from WTP/ETP	100 MT/A	Nil	Nil	As per HWA, to be Co-processed in cement kiln or Used in micro pellet making
C Waste sent to Authorized TSDF for pre-processing/Landfill						
1	35.3	Chemical Sludge from Waste water treatment	1800 MT/A	614.07	614.07	Sent to Authorised TSDF for Pre - Processing

		(Impure sulphur)				
2	18.4	Chromium Sludge from Water Cooling Tower	300 MT/A	103	103	Sent to Authorised TSDF for Pre - Processing
3	35.3	Chemical Sludge from Waste Water Treatment (ZLD Salt)	6000 MT/A	838.52	838.52	Sent to Authorised TSDF for disposal
D	In-house treatment/ Internally used					
1	12.1	Acid residue & Alkali residue	400 MT/A	184.359	184.359	Treated internally in ETP
2	13.1	Waste pickled liquor Wet basis (Dry Basis)	200000 MT/A	INTERNAL - 124980 KL (37494 MT) OUTSIDE (Neotrex) - 1276.5 MT (382.95 MT)	INTERNAL - 124980 KL (37494 MT) OUTSIDE (Neotrex) - 1276.5 MT (382.95 MT)	Treated internally
3	35.3	Chemical Sludge from Waste water treatment (ETP sludge)	12000 MT/A	1056.96	1056.96	Used in pellet making Micro-Pellet plant
4	37.2	Ash from incineration of hazardous waste, flue gas cleaning residue (Non Hazardous Waste not included)	100 MT/A	96.32	96.32	As per HWA, Shall be stored in a secure manner and handed over to the captive Incinerator and Used back in Micro Pellet Plant
5	13.4	Decanter Tank Tar sludge	1000 MT/A	733	733	Fed to Oven for making of Coke
6	13.5	Tar storage tank residue	800 MT/A	257.93	257.93	Fed to Oven for making of Coke
7	37.1	Oily Sludge from mills (Sludge from wet scrubber)	7000 MT/A	665	665	Used in micro pellet making/Incinerator
8	35.2	Spent Iron Catalyst	100 MT/A	0	0	Shall be stored in a secure manner and

						Used back in Micro Pellet Plant
9	35.2	Spent ion exchange resin containing toxic metals.	50 MT/A	0	0	As per HWA, Co-processed in cement kiln or Fed to Oven for making of Coke(Presently not generated)
E	Incinerated in Captive Incinerator					
1	5.2	Oil soaked cotton waste	100 MT/A	93.5	93.5	Incinerated
2	36.2	Spent carbon or filter medium (Filters & filter materials which have organic compound)	150 MT/A	29.8	29.8	Incinerated
F	Other Waste					
1	Sche III - Part B B1200	Schedule III - Part - B - 1200 - Blast Furnace Granulated Slag (arising from the Manufacture of Iron and Steel)	58,00,000 MT/A	4213976.84 MT	4213976.84 MT	1-Sold to cement plant for Cement Manufacturing (PSC), 2-used as alternate aggregate for river sand
2	Sche III - Part B B1210	Schedule III - Part - B - 1210 Slag Arising from the Manufacture of iron and steel including slag as a source of Titanium Dioxide and vanadium (BOF Slag)	3100000 MT/A	2004639.55 MT	2004639.55 MT	Used for Mill Scale Briquetting, Base mix , Consumed internally
3	Sche III - Part B B1210	Schedule III - Part - B - 1210 Slag Arising from the manufacture of iron and steel including slag as a source of	6,00,000 MT/A	333491.1 MT	333491.1 MT	Used in Electric Arc Furnace

		Titanium Dioxide and vanadium (EAF Slag)				
4	Sche III - Part B B1230	Mill scale arising from the manufacturing of Iron and steel	1,95,000 MT/A	133975 MT	133975 MT	Used in Mill Scale Briquetting Plant

PART - E

SOLID WASTES

Generation and Utilization of Solid waste in MT/A

Category	UOM	Solid Waste FY 2025-26		
		Generation	Utilisation	Location
Iron Making Slag	MT	4213773	4213773	Dry Pit Slag is sold to Gammon/ Sultanapur/Cement Plant & Granulated Slag is Sold as Slag/Sold as sand
Steel Making Slag	MT	2479362	2479362	Sent to Micro Pellet Plant, Sent for Metallic separation & used back in the process, Sent to Base mix/Sent for PS balls making
Sludge	MT	505746	505746	Sent to Waste to Wealth Plant, Designated to MPP, Base Mix
Process Dust	MT	434304	434304	Internally used
Mill scale	MT	133975	133975	Sent to Base Mix
Ash from CPP	MT	139970.42	139970.42	Fly ash based products (bricks), Cement manufacturing, Ready Mix Concrete, Ash & Geo-Polymer based construction material, Construction of roads, road & fly over embankment
% Utilisation	100			

Note:

Iron making slag constitutes Dry Pit Slag from BF-1,2,3,4; Corex 1,2 & Granulated Slag from BF-1,2,3,4; Corex 1,2

Steel making slag constitutes BOF Slag (SMS 1&2); EAF Slag (SMS 3)

Other Wastes:-

Category	UOM	Total Quantity (During the previous financial year 2024-2025)	Total Quantity (During the current financial year 2025-2026)
E-waste	MT	64	16.2
Electrical Scrap	MT	--	116.12
Battery Waste	MT	81.21	67.98
Plastic Waste	MT	154.46	92.3
Other Non - Hazardous Waste	MT	182.18	163

Note:

1. JSW Steel Limited is registered as Importer and Brand owner under Plastic Waste Management Rules 2022 and its subsequent amendments for fulfilling the Extended Producer Responsibility for Plastic Packaging received/sent from the premises. As part of the EPR Compliance, the target for exchange for the FY 2025-26 is fulfilled during this FY in CPCB EPR Portal.

Solid Wastes from Townships

Category	UOM	Total Quantity (2024-2025)	Total Quantity (2025-2026)
Municipal Solid Waste	MT	6450	2878
Horticulture Waste	MT	2700	101

PART -F

CHARACTERISTICS OF WASTE

Generation, Chemical Composition and disposal of Solid Wastes

Sl. No.	Type of Waste	Typical Chemical Analysis (and size)	Mode of Utilization/ Disposal
Blast Furnace (BF)			
1	Blast Furnace Air Cooled Slag	CaO- 35.84, SiO ₂ -32.78, Al ₂ O ₃ -17.82, MgO-6.59, FeO-0.66, MnO- 1.0, TiO ₂ -0.89, Na ₂ O-0.17, K ₂ O-0.45, S-0.605	For Road making purpose as a sub base material.
2	Blast Furnace Granulated slag	CaO- 35.84, SiO ₂ -32.78, Al ₂ O ₃ -17.82, MgO-6.59, FeO-0.66, MnO- 1.0, TiO ₂ -0.89, Na ₂ O-0.17, K ₂ O-0.45, S-0.605	Selling to Cement Making Plants and as slag sand, an alternate of river sand.
3	Blast Furnace Flue Dust	Fe(t)-32.25;SiO ₂ -2.96;Al ₂ O ₃ -4.57;CaO-3.25;MgO-1.42;TiO ₂ -0.11;P ₂ O ₅ -0.11;SO ₃ -0.66;Na ₂ O-0.26;K ₂ O-0.15;ZnO-0.99;LOI-39.04	Re-used in waste to wealth to recover Fe & C
4	Blast Furnace Sludge	Fe(t)-27.13;SiO ₂ -3.91;Al ₂ O ₃ -4.31;CaO-4.76;MgO-1.64;TiO ₂ -0.11;P ₂ O ₅ -0.11;SO ₃ -0.69;Na ₂ O-0.18;K ₂ O-0.25;ZnO-0.64;LOI-44.26	Re-used in waste to wealth to recover Fe & C
5	Blast furnace bag filter dust	Fe(t)-57.03, Fe (M)-1.22, FeO-7.496, C-9.87, S-0.089;SiO ₂ -1.06;Al ₂ O ₃ -0.039;CaO-6.90; MgO-0.83;TiO ₂ -0.027;P ₂ O ₅ -0.006;Na ₂ O-0.010;K ₂ O-0.077;SO ₃ -0.01ZnO-0.001	Reused in micro pellet plant, further to sinter making
Corex			
6	Corex Slag (Dry Pit Slag)	CaO- 35.84, SiO ₂ -32.78, Al ₂ O ₃ -17.82, MgO-6.59, FeO-0.66, MnO- 1.0, TiO ₂ -0.89, Na ₂ O-0.17, K ₂ O-0.45, S-0.605	For Road making purpose as a sub base material. c
7	Corex Granulated slag	CaO- 35.84, SiO ₂ -32.78, Al ₂ O ₃ -17.82, MgO-6.59, FeO-0.66, MnO- 1.0, TiO ₂ -0.89, Na ₂ O-0.17, K ₂ O-0.45, S-0.605	Selling to Cement Making Plants and as slag sand, an alternate of river sand.
8	Corex Coal Drying Plant Coal Dust	FC= 58-62%,Ash =10-13%,VM= 26-30%	Re-used in Blast Furnace for Pulverized Coal Injection (PCI).
9	Corex GCP Sludge	Sio ₂ -8.74, Fe ₂ O ₃ -58.44, Al ₂ O ₃ -5.21, CaO-5.195, MgO-1.843,TiO ₂ -0.190, Na ₂ O-0.003,K ₂ O-0.152, P ₂ O ₅ -0.238, C-18.278; S-0.455	Re-used in waste to wealth to recover Fe & C
10	Corex classifier sludge	Sio ₂ -8.73, Fe ₂ O ₃ -52.70, Al ₂ O ₃ -5.855, CaO-7.26, MgO-2.47,TiO ₂ -0.232, Na ₂ O-0.002,K ₂ O-0.183, P ₂ O ₅ -0.308,	Reused in micro pellet plant, further to sinter making
11	Corex bag house dust	Fe(t)-51.10, Fe (M)-0.43, FeO-2.18, C-3.11, S-0.118;SiO ₂ -5.90;Al ₂ O ₃ -5.02;CaO-9.647; MgO-2.192;TiO ₂ -0.176;P ₂ O ₅ -0.070;Na ₂ O-0.061;K ₂ O-0.098;SO ₃ -0.106;ZnO-0.001	Reused in micro pellet plant, further to sinter making
Direct Reduced Iron (DRI)			

Sl. No.	Type of Waste	Typical Chemical Analysis (and size)	Mode of Utilization/ Disposal
12	DRI sludge	Tfe % - 76.32 ; Mfe % - 44.90 ; Carbon – 1.55% ; Sulphur – 0.010, SiO ₂ -7.02, Al ₂ O ₃ -3.58, CaO-1.7, MgO-0.224,	Re-used in base mix further to Sinter plant.
13	Product fines	Tfe % - 83.22 ; Mfe % - 76.31 ; Metz – 91.70 FeO – 8.91% ; Carbon – 2.78% ; Sulphur - 0.006.	Re-used in base mix further to Sinter plant
14	Oxide fines	Fe(T) – 63.64% , FeO- 1.61% , SiO ₂ - 3.51%, Al ₂ O ₃ - 1.79%, CaO-1.74%, MgO-0.31%, MnO-0.05%, TiO ₂ -0.15%, P – 0.033%, Na ₂ O- 0.023%, K ₂ O- 0.216%, ZNO-0.003%, LOI-1.04%	Re-used in base mix further to Sinter plant
Steel Melting Shop – 1&2 (SMS-1&2 BOF)			
15	Fume Extraction System(FES) Dust	T.Fe – 30.46, Fe (M)- 2.4, FeO-6.32, CaO -32.31%, MgO – 5.707, SiO ₂ – 4.77%, Al ₂ O ₃ – 2.07%, C- 5.84, S-0.632, P ₂ O ₅ -0.312,	Re-used in micro pellet plant further to sinter making
16	Mill Scale	Fe (T)-70.72, FeO-49.76, Fe(M)-10.06, C-0.240, S-0.007, SiO ₂ -1.33, Al ₂ O ₃ -0.38, CaO-0.76, MgO-0.361, MnO-1.386, TiO ₂ -0.026, P-0.029	Used for mill scale briquetting for further use in BOF as coolant
17	GCP sludge	Fe(T) – 67.10% , Fe (M)- 34.75 FeO- 34.51% , SiO ₂ – 2.38%, Al ₂ O ₃ – 0.53%, CaO-13.02%, MgO-3.214%, MnO-0.084%, TiO ₂ -0.057%, P ₂ O ₅ – 0.114%, Na ₂ O- 0.004%, K ₂ O-0.158%, ZnO-0.061%, C-1.80%, S-0.093.	Re-used in micro pellet plant further to sinter making
18	Ladle Furnace(LF) Slag	Fe ₂ O ₃ -4.40, SiO ₂ -3.27, Al ₂ O ₃ -35.0, CaO-42.0, MgO-9.90, MnO-1.95, TiO ₂ -0.250, P ₂ O ₅ -0.110, K ₂ O-0.015, Na ₂ O-0.030,	Re-used in micro pellet plant further to sinter making
19	BOF slag	Fe ₂ O ₃ -23.0, SiO ₂ -12.11, Al ₂ O ₃ -1.63, CaO-45.16, MgO-8.38, MnO-3.12, TiO ₂ -0.580, P ₂ O ₅ -2.27, K ₂ O-0.020, Na ₂ O-0.003,	Used in micro pellet plant, blast furnace and sinter as source of flux, as scrap in BOF and bund construction
Steel Melting Shop - 3 (SMS-3 EAF)			
20	Fume Extraction System(FES) Dust	Fe ₂ O ₃ -68.60, SiO ₂ -3.44, Al ₂ O ₃ -0.57, CaO-11.20, MgO-5.16, MnO-0.705, TiO ₂ -0.065, P ₂ O ₅ -0.454, K ₂ O-2.53, Na ₂ O-1.01,	Used in mill scale briquetting plant further in SMS
21	Electric Arc Furnace (EAF) slag	CaO – 28-32, MgO – 5 - 7, SiO ₂ – 14 - 16, Fe – 20 - 24, Al ₂ O ₃ – 3 - 5, P ₂ O ₅ – 0.5 - 0.8	Used as scrap in BOF and For Road making purpose as a sub base material & for making sub base of Inter plant railway network.
22	Ladle Furnace(LF) Slag	Fe ₂ O ₃ -4.40, SiO ₂ -3.27, Al ₂ O ₃ -35.0, CaO-42.0, MgO-9.90, MnO-1.95, TiO ₂ -0.250, P ₂ O ₅ -0.110, K ₂ O-0.015, Na ₂ O-0.030,	Re-used in micro pellet plant further to sinter making

Sl. No.	Type of Waste	Typical Chemical Analysis (and size)	Mode of Utilization/ Disposal
23	Mill scale	Fe (T)-73.73, FeO-49.86, Fe(M)-12.35, C-0.243, S-0.007, SiO ₂ -1.72, Al ₂ O ₃ -0.35, CaO-0.26, MgO-0.109, MnO-2.310, TiO ₂ -0.043, P-0.043	Used for mill scale briquetting for further use in BOF as coolant
24	Combustion Chamber Dust	Fe (T)- 67.69, SiO ₂ -2.61, Al ₂ O ₃ -1.02, CaO-4.21, MgO-1.07, MnO- 0.026, TiO ₂ -0.094, P-0.108, S-0.013, Na ₂ O-0.048, K ₂ O- 0.032, Total alkali-0.08, ZnO-0.001, Mfe-2.81, FeO-43.01	
Hot Strip Mill- 1&2 (HSM-1&2):			
25	Mill Scale	Fe (T)-69.84, FeO-57.16, Fe(M)-13.270, C-0.240, S-0.008, SiO ₂ -4.17, Al ₂ O ₃ -1.17, CaO-3.25, MgO-0.477, MnO-0.354, TiO ₂ -0.046, P-0.007, Na ₂ O-2.083, K ₂ O-0.023	Used for mill scale briquetting for further use in BOF as coolant
26	Sludge	Fe (T)-67.57, FeO-14.14, Fe(M)-0.52, C-0.71, S-0.010, SiO ₂ -1.50, Al ₂ O ₃ -0.37, CaO-0.83, MgO-0.54, MnO-0.52, TiO ₂ -0.016, P ₂ O ₅ -0.106, Na ₂ O-0, K ₂ O-0.018	Used for mill scale briquetting for further use in BOF as coolant
Wire Rod mill			
27	Mill scale	Fe (T)-73.75, FeO-59.68, Fe(M)-2.10, C-0.179, S-0.008, SiO ₂ -0.6, Al ₂ O ₃ -0.11, CaO-0.15, MgO-0.080, MnO-0.627, TiO ₂ -0.010, P-0.013,	Used for mill scale briquetting for further use in BOF as coolant
28	Sludge	Fe (T)-69.53, FeO-56.01, Fe(M)-0.009, C-2.14, S-0.031, SiO ₂ -1.58, Al ₂ O ₃ -0.79, CaO-0.72, MgO-0.268, MnO-0.333, TiO ₂ -0.023, P ₂ O ₅ -0.044,	Re-used in micro pellet plant further to sinter making
Bar rod mill			
29	Mill scale	Fe (T)-73.75, FeO-59.68, Fe(M)-2.10, C-0.179, S-0.008, SiO ₂ -0.6, Al ₂ O ₃ -0.11, CaO-0.15, MgO-0.080, MnO-0.627, TiO ₂ -0.010, P-0.013,	Used for mill scale briquetting for further use in BOF as coolant
30	sludge	Fe (T)-69.53, FeO-56.01, Fe(M)-0.009, C-2.14, S-0.031, SiO ₂ -1.58, Al ₂ O ₃ -0.79, CaO-0.72, MgO-0.268, MnO-0.333, TiO ₂ -0.023, P ₂ O ₅ -0.044,	Re-used in micro pellet plant further to sinter making
Lime calcinations Plant :			
31	Dolo (Dolime) Fines	CaO: 51.31, MgO: 40.26, SiO ₂ : 1.04, Al ₂ O ₃ : 0.23, Fe ₂ O ₃ : 0.26, LOI: 4.73	Re-used in CRM, Corex, and Sinter Plant.
32	Lime Fines	CaO: 93.12, MgO: 1.05, SiO ₂ : 1.19, R ₂ O ₃ : 1.60, LOI: 3.89	Re-used in CRM, Corex, and Sinter Plant.
33	Bag house Fines (Lime/Dolo dust)	CaO: 38.86, MgO: 11.94, SiO ₂ : 6.85, Al ₂ O ₃ -2.08, MnO-0.069, P ₂ O ₅ -0.076, LOI-35.77	Re-used in micro pellet plant further to sinter making
Refractory:			

Sl. No.	Type of Waste	Typical Chemical Analysis (and size)	Mode of Utilization/ Disposal
34	Used Refractory Bricks	MgC birck MgO:97%, CaO:1.5%, Fe ₂ O ₃ :0.5%, SiO ₂ :0.7%, Al ₂ O ₃ :0.2%, HA Brick Al ₂ O ₃ :70%, Fe ₂ O ₃ :3%	Sold to authorized recycler
35	Refractory Dust	MgO:75%, Fe ₂ O ₃ :3.6%, CaO:20%, SiO ₂ :0.6%, Al ₂ O ₃ :0.3% Castable : Al ₂ O ₃ :85-90%, Fe ₂ O ₃ :1.5%, CaO:06%	Used in bund construction
Cold Rolling Mill (CRM-1&2) :			
36	Iron Oxide from Acid Regeneration Plant(ARP)	Fe ₂ O ₃ -98.21, SiO ₂ -0.314, Al ₂ O ₃ -0.340, CaO-0.034, MnO-0.318,	Re-used in Mill Scale Briquetting Plant & PP-2.
37	Zinc dross	Recoverable Zn-85%, Impurities-15%	Selling to Authorized Recyclers/Re processor
38	Effluent Treatment Plant (ETP) Sludge	Fe ₂ O ₃ -39.81, SiO ₂ -6.27, Al ₂ O ₃ -0.65, CaO-14.60, MgO-3.11, TiO ₂ -0.030, Na ₂ O-0.160, P ₂ O ₅ -0.810, LOI-33.07, C-14.95	Re-used in micro pellet plant further to sinter making
Coke Ovens			
39	CDQ dust	FC-85.34, VM-0.99, Ash-13.67	Re-used in micro pellet plant further to sinter making
Power Plant:			
40	Bottom Ash	Silica:41-42%, Aluminum Oxide: 20-22%, Iron Oxide: 5.04%, Calcium Oxide: 1.7 %, Magnesium Oxide: 0.94%, SO ₂ +SO ₃ : 0.54%, Na ₂ O+K ₂ O: 0.92%, Titanium Oxide: 0.44%, Phosphorus Pentoxide: 0.32%, Loss of Ignition: 29.82%	Used for bricks manufacturing
41	Fly Ash	Silica:50-55%, Aluminum Oxide: 20-25%, Iron Oxide: 6.22%, Calcium Oxide:1.5-2%, Magnesium Oxide: 0.2-0.3%, SO ₂ +SO ₃ : 0.48%, Na ₂ O+K ₂ O: 0.975%, Titanium Oxide: 0.18%, Phosphorus Pentoxide: 0.24%, Loss of Ignition: 14.23%	Sold to Cement Making /Brick Manufacturing

Other Wastes

Category	UOM	Disposal
E-waste	MT	Sent to Authorised E-waste recyclers/vendors
Battery Waste	MT	Sent to Authorised Battery waste recyclers/vendors

PART – G

**IMPACT OF THE POLLUTION CONTROL MEASURES
TAKEN ON CONSERVATION OF NATURAL RESOURCES**

CONSERVATION OF NATURAL RESOURCES

➤ WATER ENVIRONMENT

JSW receives water from Tunga Bhadra (TB) Dam and Almatti Dam. Our Vijayanagar plant has launched a comprehensive water stewardship initiative aimed at maximising effluent treatment and increasing the use of treated water from water treatment facilities and sewage treatment plants. This approach includes immediate actions and long-term technological advancements to conserve and recycle water resources. Currently, our efforts are focused on enhancing water treatment capacity by auditing Existing RO Plants and increasing the use of treated water from RO and from sewage treatment plants. This includes reusing secondary water and minimising process losses. We are addressing water leakage and seepage to prevent wastage and improving RO system efficiency. We are also implementing measures to maximise recycling from guard ponds. Process effluents are collected and settled in three separate guard ponds, with the water reused in secondary processes and horticultural activities. RO plants have been installed at various sites to efficiently reuse and recycle process effluents, significantly decreasing freshwater use. Sewage water is treated through our sewage treatment plant and utilised for process operations in CRM – 2, RO feed and horticultural purposes. To optimise wastewater discharge, we are minimising discharge and maximising recycling. This involves improving the Cycles of Concentration (CoC) in our cooling towers to reduce wastewater blow down, lowering filter backwash frequency, and increasing the use of guard pond water in processes. Desilting of guard pond 1 and 2 has enhanced its capacity and supporting increased secondary usage. Going forward, our short-term goals include streamlining processes for efficient water use, implementing advanced RO technology for better water treatment, and expanding guard pond capacity for maximum water retention. Through continuous innovation and a holistic approach to water stewardship, we aim to set new standards in responsible water management within the industrial sector, safeguarding valuable resources for future generations.

Water Pollution Control Measures implemented:

JSW Steel adopts a structured management approach, awareness, and technological intervention, to not only conserve water but also provide safe and steady water resources for industrial as well as human use within its operations. The Company has taken extensive initiatives in this direction.

JSW Steel Limited has been conserving water through following interventions in FY25-26:

1. Enhancing capacity utilisation of RO plants has increased water availability by ~1,000 m³/day.
2. Chemical Pyrophosphate dosing in cooling towers to increase the COC in BF- 3 & 4 Water savings of ~530 m³/day.
3. Further, to ensure Zero Discharge from the premises we have taken the following measures:-
 - a. We have provided individual water treatment units at major water intensive shops. The treated water is recirculated back into the process. All the process

units are equipped with the extensive water recirculation system with treatment facility (ETP), i.e. Clarifier / Thickener, Pressure Filters and cooling tower to recirculate water back to process.

- b. The remaining treated water meeting stipulated standards as per Schedule – 6 of EP Act, 1986 are collected in guard ponds. We have 3 No of Guard Ponds the details of the Guard Ponds are as below:-

S.No	Guard pond	Capacity (m3)	Treated Blow-down water Source
1.	Guard pond 1	1,25,000	CRM 2, LP mills, HSM2, SMS2, PP1, BP1, CPP1, WWP, BF1 &2, Corex 1 &2, SMS 1 , I shop, HSM1
2.	Guard pond #2	1,25,000	DRI & SMS3, BF3, 60 TPH boiler and CPP2, Coke Oven 3, 4 & CDQ, JSWEL, GP3, GP1, WRM -2 and BRM -2.
3.	Guard pond #3	20,000	BF-4, CO-5, SP-2, 3 and 4.
Total Capacity		2,70,000 m³	

- c. The water collected in guard ponds and again reused internally for secondary purposes in processes like Pellet Plants, sinter plants, Coke Oven Batteries for moisture addition purposes, as Makeup water of Ore Beneficiation Process, Fire-fighting circuit and Dust suppression at various units, Vehicle washing, slag quenching and green belt development inside the plant premises, Townships and in surrounding hillock regions.
- d. The guard ponds are de-silted/rejuvenated periodically and their water holding capacity restored. This Financial Year Guard Ponds are de-silted and rejuvenated and maintenance work of pumps and pump houses has been undertaken and the ponds are taken online for storage. This will ensure that there is no over flow from the Guard Ponds.
- e. We have taken special measures for reduce the water flow towards the Guard Ponds, by ensuring the operation of Individual water treatment units as below:-

Water Pollution Control Equipment	Nos
RWTP	8 Nos
Water Circulation System	8 Nos
Guard Ponds	4 Nos
ETP's	9 Nos
RO Plant	10 Nos
Sewage Treatment Plant (STP)	8 Nos
ZLD for Coke Ovens	2 No
CO2 injection project in SMS -01	1 No (500 m ³ /Day)
apid Clarifier System for ID fan flushing water of SMS-	1 No (800 m ³ /Day)

Recycling of water up to 40,000 -45000 m³/day in non-critical applications through all the guard ponds.

Water Pollution Control Systems in JSW Steel



Ceramic Membrane
First in World



RO Plant



Guard Pond



ZLD Plant at Coke oven
First in World



Membrane Bio-reactor



CRM 1 RO



WRM 2 RO



The following Sewage Treatment plants were implemented at town ship and the treated sewage was ZLD at Coke ovens recovered and reused.



Evaporator – ZLD



**10 nos of RO Plants producing
42,000 m3/day**

Water and Effluent Management



**MBR+RO+ZLD plant at Coke
Oven (4000 m3/d)**



**10 nos of RO Plants
producing 42,000 m3/day**



**Multiple Effective Evaporator
for ZLD plant**



**Raw water reservoir (35 Mn
m3)**



CO2 injection system at SMS



Rapid Clarifier System

Reverse Osmosis Plant Capacities Details:-

1. RO Plants (13 MTPA):-

Sl. No.	Unit	Location	Treatment Technology	Capacity m3/Hr
1	SMS-1, HSM-1, GP-1	HSM 1	RO	125
2	CO3 & CO4	CO4	RO and ZLD	250
3	CO 5	CO5	RO and ZLD	475
4	DRI,BOC,SMS-3,GP-2	DRI	RO	170
5	CRM2, SHT, VV NAGAR STP, HSM-2	CRM 2	RO	330
6	WRM-2	WRM 2	RO	55
7	JSW ENERGY	JSW ENERGY	RO	300
8	CRM-1	CRM 1	RO	160
9	BRM-1	BRM 1	RO	50
10	SRP RO	SRP	RO	475

5. We have installed and operating RO plant with capacity 9000 m³ at Slime Recovery Plant for treatment of Seepage water and the same after treatment is collected in permeate tank and reused in Ore beneficiation plant and other process operations.
6. Further for treatment of domestic sewage from plant and townships we have provided 7 No of STPS's with water treatment facility of 8780 m3/day. The treated water is reused for secondary purposes in townships, process water in CRM units and for Green belt development in plant premises and in the surrounding regions.

The following Sewage Treatment plants were implemented at township and the treated sewage was recovered for process as a makeup water

Sl. no	STP Location	Capacity (m3/day)	Technology/ Recycle & Reuse
1	Vidyanagar including Sports Complex, Lake View and IIS	1500	MBR/FAB Type. Recycled to 5 MTPA process and Green belt
		1000	Reed bed. Reused for Green belt
		400	MBR Type. Reused for Green belt
		200	Reed bed. Reused for Green belt
2	Industrial Plant including VV Nagar	1200	SBR/SAFF technology Recycled in CRM-2 process through ETP and R.O plants
3	Shankar Hill town	3000	MBR Technology. Recycled in CRM-2 process through R.O plants
4	Hill Side Township	1560	MBR Technology. Recycled to 5MTPA process and Green belt
5	Sun rise Valley	900	MBR Reused for Green belt
Total treatment facilities capacity		9760	day

1. We have provided 3 No of Rain Water harvesting ponds with overall with water holding capacity of 3,97,22,000 m³. Due to incessant rain the rainwater ponds have reached its capacity.
2. We have installed water flow meter and Continuous Effluent Quality Monitoring system (CEQMS) at discharge points of Guard Ponds for the continuous monitoring of the Flow and pH. The same is connected to KSPCB/CPCB Portals and data being uploaded regularly.
3. In addition to this, we are conducting manual monitoring of the effluents through NABL accredited laboratory to assure the effluents are meeting stipulated norms and results of the same are summarized.
4. During rains, the water holding capacity of Guard Ponds may get saturated and overflow after retention time meeting the stipulated standards into surrounding region. To ensure increase in water holding capacity we have taken up de-siltation of guard ponds periodically.
5. Provided pipe line from Plant to nearest mines to consume excess treated blow down from Guard ponds for Dust suppression & Horticulture.

➤ **AIR Environment**

In an integrated Steel Plant, dust emissions are the major air emission concerns. Various efforts to control the particulate (dust) stack emissions have resulted in reduction of emissions to 0.37 kg/tcs in 2025-26. The reduction was possible by carrying out capital repairs of ESP at Pellet and sinter plants. We have taken extensive air pollution control measures in the plant to control the dust emission.

The details of Air pollution control measures implemented are as follows:

- a. Installation of junction houses has resulted in control of fugitive emissions.
- b. The following Air pollution control system to meet the emissions.

Air Pollution Control Equipments	Nos
Electrostatic Precipitators	11 Nos
Bag houses	281 Nos
Scrubbers	30Nos
Wind Curtains	3.5 Kms
Dry fog systems in Junction Houses of Raw Material Handling systems RMHS	180 Nos

- c. High efficiency ESPs/ Bag filters in Pellet Plant, up gradation of SMS 1 & SMS 2 secondary dedusting.
- d. Installation of Charging emission control by SOPRECO (Single Oven Pressure Reduction in Coke Ovens)
- e. Installation of Emission reduction via MEROS (Maximum Emission Reduction of Sinter) in Sinter Plant
 - f. Dry fogging and bag filter based Dust Extraction system in material handling
 - g. Control in Charging and pushing Emission in Coke Ovens
 - h. Installation of Low NO_x stage combustion burners in HSM
 - i. Installation of dust suppression system for conveyors FC1, FC2 to reduce work area emissions

- j. Installation of mist canons for blast furnace stock house and JH14-15



Mist Canon for blast furnace stock house and JH14-15

- k. In addition to the above all the internal roads have been paved and concreted and tree plantation done on either sides of the road
- l. Vacuum sweeping of the roads and road wetting is done on regular basis.
- m. Vacuum sweepers are being operated in the shop floors to capture all fugitive dust.
- n. Source mounted dedusting unit installed for a moving stacker-reclaimer unit at Raw Material Handling System
- o. Dust suppression nozzles installed for RMHS junction house JH 9A- In-house developed.

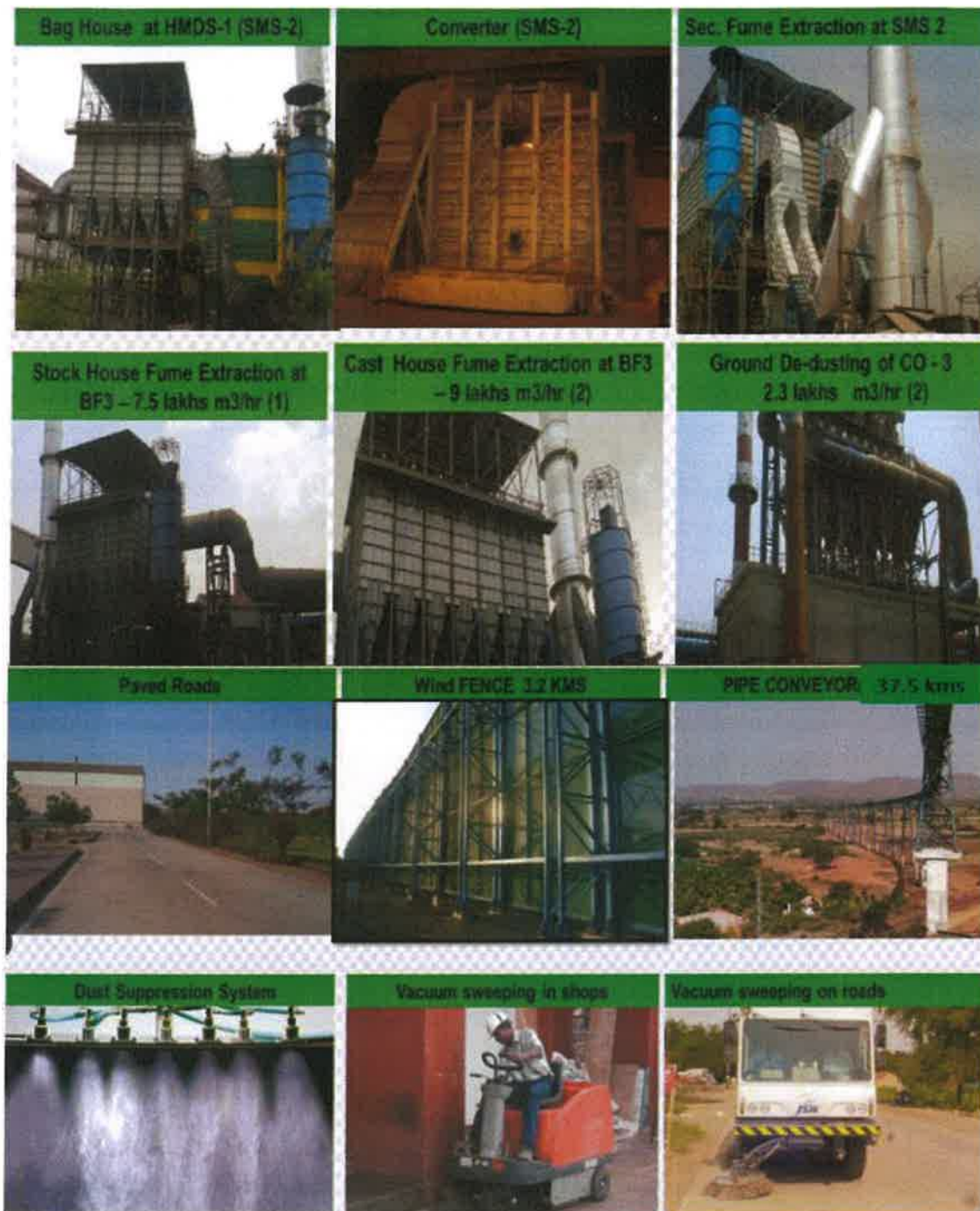
With the above air pollution control measure in place air quality impact on the surrounding villages is minimal.



Source mounted dedusting units for SR4 - RMHS



Dust suppression nozzles for JH 9A - RMHS



C. SOLID WASTE MANAGEMENT

- Collection and reuse of steelmaking slag that has resulted in Post metal recovery, used as coolant in steelmaking and redirected for use in the micro pelletisation plant.
- KR Slag consumption at base mix has resulted in better solid waste utilization.
- JSW Vijayanagar has taken a significant step towards sustainable steelmaking by replacing limestone with LD slag, a by-product of the Steel Melting Shop, in its blast furnace operations. Traditionally used as a flux, limestone combustion releases CO₂, and its mining exacerbates environmental degradation. Likewise, LD slag's disposal and storage can prove particularly challenging, often leading to unsustainable land use. After detailed analysis, it was established that 2 kg of LD slag could replace 1 kg of limestone without compromising furnace performance. The utilization of LD Slag in Pellet Plant 1 leading to the reduction of raw flux consumption.
- SMS-4 dust is now being consumed in both Sinter Plant 1 and Pellet Plant 1.
- Reduction in Conveyor belt consumption costs at Pellet Plant 1 through the implementation of best practices
- Yield improvement in Wire Rod Mill-1, Bar Rod Mill 1 & 2.
- Fly ash usage commenced at Pellet Plant 1 helping to lower bentonite consumption.
- Application of waste glass wool in concrete to improve flexural strength outcome in Piloting the use of waste glass wool as a fiber reinforcement in concrete to enhance its tensile capacity and overall strength, within optimised dosage limits.
- Fly ash was also used For embankment of fly over near Buvanahalli Village and currently work is ongoing for flyover embankment near Daroji Flyover bridge for construction of NH 63 Road connecting Ballari and Hosapete.



PART – H

**ADDITIONAL MEASURES / INVESTMENT PROPOSAL
FOR ENVIRONMENTAL PROTECTION**

Proposed Investment (2026-27) for environment protection in JSW Steel Limited (Capex 26-27)

Sl. No.	Project Title	Budget (Rs. in Crs)
1	Air Pollution control monitoring	1.04
2	Water and Waste Water recycle	55
3	Other Environment Projects	1.76
Grand Total		57.8

Environmental initiatives

- Rice husk and wood-based biochar were attempted and both studies underscore the technical viability and environmental promise of using bio-based fuels in pelletisation. These interventions have the potential to reduce the CO₂ emissions by 12.42 kg/ton of pellet.
- Development of a beneficiation process for iron recovery from pond tailings. To study material behaviour and reduce silica content below 6.0%, the feed was screened into size fractions. The higher sized portion was crushed and processed through a spiral concentrator, followed by High Gradient Magnetic Separation (HGMS) after further grinding. This modified circuit enhanced overall Fe by 1%, improved Fe recovery by 4%, and reduced tailing losses by 2.2%.
- Commissioned India's largest green hydrogen facility at Vijayanagar, featuring a 25 MW renewable-powered electrolyser that supplies 5,000 Nm³/hour of green hydrogen for the DRI process.
- Commissioned India's first 20 MW floating solar power plant at Vijayanagar.
- Promoted a low-carbon logistics ecosystem through the enterprise wide deployment of electric vehicles, LNG trucks, and inland waterways, alongside the introduction of India's first electric locomotive for captive logistics at Vijayanagar.
- Installed machine learning-driven heat optimisation and hot metal silicon prediction models to improve process efficiency resulting in the reduction of 66,282 tCO₂
- Deployed Hot Stove Optimisation Models across all Blast Furnaces to improve combustion efficiency, optimise fuel mix, and maintain consistent temperature delivery resulting in the reduction of 70,920 tCO₂
- Reused KR and LD slag across BF, SP, and PP operations to replace conventional fluxes partially resulting in the reduction of 56,736 tCO₂
- Installed a Waste Heat Recovery Boiler system to capture industrial waste heat and generate steam resulting in a reduction of 24,465 tCO₂

- Injected 5,000 Nm³/hr of green hydrogen in the DRI process resulting in a reduction of 21,255 tCO₂
- Increased external scrap utilisation to 3,37,000 tonnes, representing 70% y-o-y growth.
- Implemented Single Oven Pressure Control (SOPRECO) in coke ovens to improve pressure control, operational stability, and production efficiency resulting in a reduction of 14,184 tCO₂
- Advancing process decarbonisation through digital innovation under the ambit of Project SEED at Vijayanagar in FY 2025-26 serve as salient examples of this commitment. (i) A hot stove heat optimisation model, (ii) Hot Metal Silicon (HM Si) prediction model, these initiatives have abated 200,000 tCO₂ since their introduction, accentuating how digitalisation and technology are emerging as powerful catalysts in advancing our mission to create measurable environmental value.
- 80% of our primary steel production in India is now ResponsibleSteel™ certified.
- Deployed Advanced Process Control technology at Pellet Plant 3 to enable real-time monitoring and automatic optimisation of critical operating parameters, reducing variability and improving process stability resulting in the Energy savings of 57,846 Gcal
- Installed a Calorific Value Analyser at Coke Ovens 3 and 4 to facilitate precise, real-time measurement of fuel gas quality, supporting improved process control and combustion stability resulting in the Energy savings of 27,245 Gcal
- Reduced blast furnace gas flaring through improved gas utilisation and enhanced operational efficiency resulting in the Energy savings of 24,113 Gcal
- Systematically identified and arrested compressed air leakages across the Hot Blast Furnace filter area at Pellet Plant 1, reducing air losses and improving overall system reliability resulting in the Energy savings of 16,190 Gcal
- Improved load management at Sinter Plant 3 through elimination of idle running and operation of compressors at optimum efficiency levels aligned to real-time process demand resulting in the Energy savings of 13,260 Gcal
- Installed Variable Frequency Drives at Pellet Plant 1 to enable dynamic motor speed control in response to process demand, curtailing unnecessary power consumption during partial load operation resulting in the Energy savings of 8,528 Gcal
- Deployed an electric locomotive for the intra-facility transport of raw materials and finished products resulting in the Energy savings of 1,061 Gcal
- In FY 2025-26, we launched the first phase of an ambitious initiative to integrate green hydrogen into the Direct Reduced Iron (DRI) process at our Vijayanagar ISP, which previously relied exclusively on COREX gas. By injecting nearly 5,000 Nm³/hr of green hydrogen derived from a 25 MW captive electrolyser powered by hybrid

renewable energy into the DRI shaft furnace, the initiative achieved emissions savings of 30 kg CO₂ per ton of DRI by displacing a sizable portion of the carbon-rich COREX gas previously utilised in the process.

- In FY 2025-26, we launched an innovative zinc-dust-to-cement programme at our Vijayanagar ISP. This initiative redirects the zinc-laden dust captured by the facility's cyclone separator systems, which mitigate particulate matter emissions emanating from blast furnaces and refine flue gases to eliminate impurities that would otherwise prevent their reuse, for deployment as an economically valuable input in the Group's cement-manufacturing operations located in Nandyal. By repurposing nearly 300 tonnes of zinc dust in FY 2025–26.
- Diverted ironmaking slag for use as an input in neighbouring cement production operations. Recycled 100% of accumulated ironmaking slag by supplying it to JSW Cement's plant located adjacent to the facility as a raw material for cement production.
- Collected and reused steelmaking slag through multiple pathways, including conversion into construction sand, utilisation in micro-pellet production, and reuse as process coolant. Achieved 100% utilisation of steelmaking slag.
- Strategically repurposes KR and LD slag across BF, SP, and PP operations to replace conventional fluxes partially resulting in a Flux reduction of 17 kg/tcs
- Commissioned SOPRECO technology to control emissions during charging operations at Coke Oven 3, Battery 1 resulting in a reduced charging emissions from >120s to <35s.
- Conducted capital repairs of sinter plant ESPs, including major electrode replacements across process ESPs of sinter plants 1, 2, 3, and 4 resulting in a reduced process ESP emissions from 50 mg/Nm³ to <35 mg/Nm³.
- This year, driven by our belief that technology serves as a powerful enabler of sustainability monitoring, we deployed 11 AI-powered cameras across our Vijayanagar ISP. These cameras—strategically placed at the facility's foremost air emissions hotspots—leverage computer vision technology, machine learning algorithms, and Internet of Things (IoT) sensors to detect, quantify, and monitor pollutants in real time. They also enable the differentiation of emissions, smoke, fire, and steam condensate that are often indistinguishable to the human eye.
- Implemented Dissolved Air Flotation (DAF) technology at SMS 2 to treat and reuse water from Induced Draft (ID) fan systems, annualised freshwater savings of 3,57,700 m³
- Treated and redirected blowdown wastewater for secondary use applications within the facility, diverting it from discharge streams into productive reuse circuits, annualised recycling of 1,56,95,000 m³ of wastewater.

- Commissioned a Reverse Osmosis (RO) system for Coke Oven 5, annualised recycling of 15,69,500 m³ of wastewater.
- Improved the efficiency of the existing reverse osmosis (RO) systems across the facility, annualised recycling of 3,90,915 m³ of wastewater.
- Treated 4,300 m³/day of GP2 wastewater using the existing Dissolved Air Flotation (DAF) system, achieved up to 80% reduction in oil and grease content, and reduced turbidity from 60 NTU to <10 NTU.
- Re-used wastewater collected and treated at Vijayanagar Works for dust suppression on haul roads surrounding Tunga and Bhadra mines. Reused 12,400 kilolitres of wastewater, supporting dust control and maintaining PM10 levels below 70–80 µg/m³ and PM2.5 below 30–40 µg/m³.
- Completed BF #3 augmentation in records time saving significant production cost.
- Electrification of personnel mobility: Vehicular traffic associated with the daily movement of personnel across our expansive plant campuses represents a diffuse but cumulatively significant source of exhaust emissions and localised air quality degradation. We have accordingly initiated the progressive deployment of electric vehicles and buses for employee transport within and beyond our facility boundaries. By transitioning away from internal combustion engine-based mobility, this initiative reduces vehicular exhaust concentrations in and around our operational sites, contributing to improved ambient air quality for our workforce and the communities in close proximity to our facilities.
- Waste segregation at source In-house from townships and plants. In house integrated municipal waste processing facility provided, wherein the horticulture waste is processed and used as manure, organic waste is composted and used as manure. In organic waste like plastic scrap is sent to Cement plant at Nandyal for disposal.
- Local considerations in FY 2025-26 progress - 26,00,000 beneficiaries reached
 - (i) Conducted learning support programmes, remedial education sessions, digital literacy initiatives, and school engagement activities to improve access to quality education and learning outcomes, a total of 1,98,000 beneficiaries reached.
 - (ii) Conducted health consultations in surrounding communities, organised health screening and nutrition awareness camps, facilitated access to healthcare services, and promoted preventive healthcare practices among vulnerable populations a total of 1,91,200 beneficiaries reached.
 - (iii) Conducted waste segregation and recycling awareness drives, community clean-up initiatives, and capacity-building programmes to promote responsible waste management and environmental sustainability, a total of 1,18,950 beneficiaries reached.

- (iv) Conducted farmer-training programmes on sustainable agricultural practices, crop management, soil health, water conservation, and livelihood diversification to enhance farm productivity and income, a total of 50,000 beneficiaries reached.
- (v) Conducted awareness campaigns on safe water usage, sanitation and hygiene practices, environmental conservation, and community cleanliness while supporting access to improved WASH facilities, a total of 7,036 beneficiaries reached.
- (vi) Conducted sports coaching sessions, tournaments, fitness activities, and youth engagement programmes to encourage physical well-being, teamwork, and talent development, a total of 1,725 beneficiaries reached.
- To help address these health risks, we launched Humraahi – Holistic Wellness for Truck Drivers in Vijayanagar, Karnataka, a total of 9036 truckers benefitted.
- We have positioned ourselves as one of the first steelmakers globally to deploy Plastic Injection Technology (PIT) at Scale. During FY 2025-26, we successfully injected 230 tonnes of plastic waste across our steelmaking operations at Vijayanagar, preventing its on-site accumulation and disposal in landfills.
- This year, we deployed India's first electric locomotive for the captive transport of materials and finished products at JSW Vijayanagar Works.
- As of FY 2025-26, the deployment of over 130 electric buses across our operations at Vijayanagar
- Conducted a large-scale plantation drive across JSW Complex focused on growing ecologically significant keystone species across the facility's operational footprint. Planted 82,295 saplings, enhancing green cover, biodiversity and carbon sequestration potential across the site.

As part of its Corporate Social Responsibility (CSR) initiatives, the organization focuses on Waste Management, Water Management, and the Sakhi program, promoting environmental sustainability and community well-being

Activities under the Waste Management Project

- i. The Solid Waste Management Program, implemented across 20 villages under Vaddu, Toranagallu, Bannihatti, Taluru, Taranagara, Anegundi, and Sanapura Gram Panchayats, along with Kurekuppa Town Municipality in Vijayanagara and Koppala locations, promotes source-level waste segregation, door-to-door waste collection, and waste sorting and recycling systems through community awareness and participation. The initiative covers 23,842 households and shops, benefiting approximately 118,950 people.

- ii. Wet, dry, and hazardous waste are managed separately. Recyclable waste is sent to sorting and recycling centers, while non-recyclable waste is supplied to cement plants for use as Alternative Fuel and Raw Material (AFR).
- iii. The program focuses on reducing waste at the source while promoting sustainability through community awareness, training, and active participation

Rainwater Harvesting and Initiatives

- i. Construction of check dams
- ii. Repair and restoration of existing check dams
- iii. Nala desilting for improved water flow and storage capacity
- iv. Construction of farm ponds for water storage and agricultural use
- v. Installation of rooftop rainwater harvesting structures
- vi. Formation and strengthening of Water User Committees
- vii. Conducting water awareness camps across 25 villages to promote sustainable water management practices

Project Sakhi – Plastic Upcycling Initiative

- i. Project Sakhi is a special initiative focused on upcycling used Multi-Layer Plastic (MLP) waste into sustainable products. The program supports women from vulnerable communities by identifying, counselling, and training them in high-quality bag manufacturing through single-use plastic upcycling.
 - ii. Under this initiative, **7,01,010 pieces of single-use plastic waste** have been upcycled to produce **15,578 fabric sheets**, resulting in the manufacturing of **2,365 sustainable products** while promoting environmental sustainability and livelihood opportunities.
- Constructed a watch tower at Narihalla Dam, Taranagara, to support environmental sustainability by enabling effective monitoring and protection of natural resources, biodiversity, and surrounding ecosystems.

PART – I

MISCELLANEOUS

1. Key Performance Indicators:

The key environment performance parameters for Iron & Steel industry is being measured for benchmarking with best practices in the industry. Though, there are no regulatory norms, these parameters provide a guide for overall improvements. The KPI for 2025-26 is given below:

Key Performance Indicators	
Year	2025-26
Parameters	
Specific water consumption (m ³ /tcs)	2.41
Dust emission (kg/tcs)	0.37
SO ₂ emission (kg/tcs)	1.68
NO _x emission (kg/tcs)	1.08
Solid Waste Utilization (%)	100
Specific Energy Consumption (Gcal / tcs)	6.00

As compared to previous Financial Year, there has been reduction in Dust, So₂ and No_x emissions by 0.04 Kg/tcs, 0.37 kg/tcs and 0.18 kg/tcs respectively.