



स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED
भिलाई इस्पात संयंत्र
BHILAI STEEL PLANT

क्र. म.प्र.प्र.(पर्या.प्रबंधन विभाग)/बी-7/287

दिनांक: 14/10/2024

प्रति,

सदस्य सचिव
छत्तीसगढ़ पर्यावरण संरक्षण मंडल,
पर्यावास भवन
नार्थ ब्लॉक सेक्टर - 19
नया रायपुर (छ.ग.)-490099

विषय:- पर्यावरणीय विवरण (Environment Statement) वर्ष 2023-24.

महोदय,

भिलाई इस्पात संयंत्र का वर्ष 2023-24 का 'पर्यावरणीय विवरण' प्रतिवेदन कृपया अवलोकनार्थ संलग्न है ।

धन्यवाद सहित।

भवदीय

(उमा कटोच)

महा प्रबंधक प्रभारी (पर्यावरण)

प्रतिलिपि :

क्षेत्रीय अधिकारी,
छत्तीसगढ़ पर्यावरण संरक्षण मंडल,
5/32 बंगला, भिलाई
दुर्ग, छत्तीसगढ़

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Bhilai 490 001, Chhattisgarh, Website www.sail.co.in

हर किसी की जिंदगी से जुड़ा हुआ है सेल

There's little bit of SAIL in everybody's life

(FORM-V)

(See Rule 14)

Environmental Statement Report

(पर्यावरणीय विवरण)

for the financial year ending the 31st March 2024

Ref: The Gazette of India, Extraordinary,
Part-II, Section 3(1)
Ministry of Environment & Forests, Govt. of India
Notification dated April 22, 1993



STEEL AUTHORITY OF INDIA LIMITED
स्टील अथारिटी ऑफ इण्डिया लिमिटेड

BHILAI STEEL PLANT

भिलाई इस्पात संयंत्र

BHILAI, CHHATTISGARH, 490 001

भिलाई - 490001; छत्तीसगढ़

PART-A

- (i) Name and address of the owner/
occupier of the industry : Shri Anirban Dasgupta
operation or process : Director Incharge
Steel Authority of India Ltd.
Bhilai Steel Plant,
Bhilai - 490 001
(C.G)
- (ii) Production Capacity/ Annum : 7 Million Tonne Crude Steel
- (iv) Year of establishment : 1956
- (iv) Date of the last environmental : 30.09.2023
Statement report submitted.

PART-B

Water and Raw Material Consumption:

(1) Water consumption (m³/day):

	During the financial year 2022-23	During the financial year 2023-24
Process	7607247 m3	8467026 m3
Cooling	13471297 m3	14993838 m3
Domestic	49497887 m3	49395335 m3

(2) Raw Material Consumption:

(a) Raw Material consumption at Blast Furnaces

Name of Products	Water consumption per unit of product (m ³ /TCS)	
	During the financial year	During the financial year
	2022-23	2023-24
Steel	2.749	2.746

Name of Raw Material	Name of Product	Consumption of Raw Material per unit of output (Kg/T of product)	
	Hot Metal	During the financial year 2022-23	During the financial year 2023-24
Coke		447.6	454.9
Iron ore		571	497
Sinter/Pallets		1080 /91.0	1070/91.0
Limestone		48.8	39.1
Coal Dust		119.7	120
Nut Coke		17.1	23.2
Manganese Ore		0.305	0.1
Quartzite		0.11	0.41
BOF Slag*		18.5	13.0
Scrap		8.4	7.4
Coal Dust		119.7	120

*Solid Waste (BOF Steel Slag) generated in plant is recycled.

(b) Raw Material Consumption at Steel Melting Shop-II

Name of Raw Material	Name of Product	Consumption of Raw Material per unit of output (Kg/T of product)	
	Crude Steel	During the financial year 2022-23	During the financial year 2023-24
Hot metal		1032	1033.3
Scrap		108.4	93.2
Iron ore/ Pallets		1.02 / 0.07	0
Lime/lime briquettes		65.16	66.4
Limestone		0	0
Silico-manganese		17.54	18.0
Ferro-silicon		1.60	1.80
Ferro-manganese		0.02	0.09
Aluminum		0.56	0.50
Cal Dolomite		26.75	25.50

(PART_B Continued)

(c) Raw Material Consumption at Steel Melting Shop-III

Name of Raw Material	Name of Product	Consumption of Raw Material per unit of output (Kg/T of Product)	
	Crude Steel	During the financial year 2022-23	During the financial year 2023-24
Hot metal		1033.78	1036.3
Scrap		81.92	74.6
Iron ore		24.91	27.3
Lime/lime briquettes		81.56	82.5
Limestone		0.02	0
Silico-manganese		15.43	16.33
Ferro-silicon		02.91	2.50
Ferro-manganese		0.090	0.1
Aluminum		0.26	0.39
Cal Dolomite		26.86	27.56

PART-C

Pollution Generated
(Parameters as Specified in the consent issued)

(a) Effluent

Pollutants	Unit	Norm	Concentration (Annual Avg)	Percentage variation From proscribed Standards with reasons
(a) Water				
pH	-	5.5-9.0	7.70	Nil
Temperature	°C	40 max*	30	Nil
Suspended Solids	mg/L	100	41	Nil
BOD at 27°C	mg/L	30	17	Nil
COD	mg/L	250	49	Nil
Oil & Grease	mg/L	10	1.87	Nil
Phenolic Compounds	mg/L	1.0	0.76	Nil
Ammonical Nitrogen	mg/L	50	9.76	Nil
Cyanide	mg/L	0.2	0.06	Nil

*shall not exceed 5°C above the receiving water temperature.

(PART-C continued)

(b) Air Emissions:

A. Particulate Matter

Shops	Stack		Norm mg/Nm ³	Concentration (Annual Avg) mg/Nm ³	%Deviation From Norm
	total	working			
COB	11	7	50	43.40	Nil
SP-II	2	2	50	44.60	Nil
SP-III	2	2	50	45.58	Nil
BF _s	6	6	50	27.30	Nil
SMS-II-LF	2	2	50	43.68	Nil
SMS-III	1	1	50	43.00	Nil
PBS	4	4	50	43.40	Nil
BRM	1	1	50	19.00	Nil
WRM	1	1	50	18.00	Nil
MM	1	1	50	18.00	Nil
RSM(with URM)	2	2	50	21.00	Nil
RMP-I	2	1	50	-	Phased out completely.
RMP-II	3	3	50	41.00	Nil
RMP-III	5	5	50	43.00	Nil
PM(RHF)	2	2	50	18.00	Nil

B. Sulphur Dioxide

Kg/T of H₂SO₄

DCDA Sulphuric Acid Plant	1	1	2.5	1.95	Nil
Total	46	41			

PART-D
Hazardous Wastes

(As specified Hazardous Waste (Management, Handling and Transboundary Movement) Rules,2008)

Hazardous Wastes		Total Quantity (in Tonnes/KL)	
		During the year (2022-23)	During the year (2023-24)
(a)	From Process		
1.	Used/ Spent Oil	103.07KL	196.98KL
2.	Acid Tar Sludge	608.17T	Nil
3.	Tarry Waste	378.852T	276.314 T
4.	Tar Storage Tank Residue	860.125T	733.215T
5.	i)ETP Sludge from DAF	763.11T	1009.553 T
	ii)ETP Sludge from Bio reactors	-	-
	iii) Skimmed Oil	-	200 T
6.	Spent solvent	-	-
7.	Filter cake	122.00T	37.00 T
8.	Discarded containers of Hazardous chemicals	375.459T	300.90 T
9.	i) Non Ferrous (copper compounds & Cables, Brass dross)	133.54 T	67.99 T
	ii)Lead & Lead compounds	-	-
10.	Discarded Asbestos	0.05 T**	0.05 T**
11.	Mercury arc rectifiers tanks	NIL	NIL
(b)	From Pollution control facilities	NIL	NIL

**Asbestos waste (B-1) : Stored in drums at kept inside rooms under lock & key.

PART-E
Solid Wastes

Description	Total Quantity (Unit'000T)	
	During the financial year 2022-23	During the financial year 2023-24
(a) From Process	4484.76	4969.73
(b) From pollution control facilities	483.85	512.14
(c) Quantity recycled or re-utilized	4149.00	2796.58

PART-F

Please specify the characteristics(in terms of concentration and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Description of Wastes	Quantity	Mode of Disposal		Remarks
		Recycled/Sold	Dumped/Stock	
	'000 Tonnes	'000 Tonnes	'000 Tonnes	
(a) Hazardous Wastes	2625.022(T) + 196.98 KL	2604.98(T) + 96.00 KL	57.302(T) +130.80 (KL)	Previous Stock sold along with current quantity.
(b) Solid Wastes				
BF Slag	3489109	3225895	263215	
LD Slag	726245	400619	325626	
THF Slag	0	11367	-	Previous Stock sold
Mill Scale	153102	153102	-	
Lime & Dolo fines	483775	483775	-	
Refractory Wastes	19583	10783	8800	
Sinter Dust	87352	87352	-	
BF Flue dust	64346	68736	-	Previous Stock sold along with current quantity
Fly ash	599	599	-	
Sludge(BF+SP+THF)	81900	0	81900	
LD Sludge	28373	83822	-	Previous Stock sold along with current quantity
Cinder	0	0	-	

PART-G

Cost of Production during 2023-24

	2022-23	2023-24
1.BF Coke - Dry	45993	39582
2. Hot Metal	38648	35596
3. Crude Steel		
a. Steel Melting Shop-II	54158	50131
b. Steel Melting Shop-III	51260	47231

PART-H

Additional investment proposal for environmental protection including abatement of pollution

Description	Cost in Rs. Lakh (during 2023-24)
Installation of secondary emission control system (DOG House) for converters at Steel Melting Shop-II	41189.00 (411.89 Crs) Contract signed on 15/12/2023 with MECON. Project is in Progress)
Installation of Bag filters to replace wet scrubbers for waste gas cleaning at Line Kilns of RMP-2	395.00 (Project Completed on 12/08/2024.)
Cast house de-fuming system of BF-7	2167.00 (Project Completed)
Installation of ESP at Sinter Dispatch Route (Jn. House #17, 20, 27) of SP-II	1345.00 (Commissioning test completed. (from 14/05/2024 to 17/05/2024)
ESP based de-dusting system at SP-II for work-zone/fugitive emission control	298.70 (Project Completed)

PART-I

Miscellaneous

Any other particulars in respect of environment protection and abatement of pollution

1. To enhance solid waste management the following initiatives have been taken
 - Sale of Unprocessed SMS-3 slag.
 - Sale of SMS filter cake total **134.057** Tonnes to outside agencies.
 - Sale of SMS-2 primary sludge previous stock sold along with current quantity total **110035** Tonnes to outside agencies.
 - Recycling of SMS-3 primary sludge in sinter plants.
2. BSP has won the Kalinga Environmental Excellence award for the year 2022 in June'23 at Rourkela for exceptional performance in Environment Management.
3. BSP has received the Greentech PCWM Award for the year 2023 in August'24 at Guwahati for exceptional pollution control and waste management activities.
4. BSP has received the CII Energy Excellence Award for the year 2023 in September'24 at Hyderabad for efficient energy management and innovative waste management practices.
5. PG trails for PCB plant have been successfully completed in December-2023. EnMD have started operating the plant from 01/01/2024.
6. SAIL,BSP has participated & displayed the PCB model at PCB fair held in May-2023 at Geneva, Switzerland as part of Conference of Parties (COPs) under Stockholm convention. The booth was setup by "SAIL/BSP, UNIDO & MoEFCC" was adjudged the best booth of the fair.
7. Bhilai Steel Plant, in order to comply with statutory condition of 100% utilization of solid waste is exploring the conversion of LD slag to sand through M/s PROMAN INFRASTRUCTURE SERVICES PVT. LTD, Bangalore. About 10 T of LD slag was converted to sand at M/s PROMAN Bangalore site for use as runner sand at Blast furnaces to explore the feasibility of runner dressing by using grounded LD slag . During the trials, use 25 % grounded LD slag sand as a cast house runner dressing material along with runner sand proved to be successful.
8. A new innovative initiative has been started to make paver blocks from BOF slag without the need for fuel. The paver blocks manufactured at the SAIL GREEN TILES PLANT have a compressive strength of M-50 (specified compressive strength of 40 N/mm²) as per IS 15658:2006. Till now about these blocks have been used at car parking at JLN hospital , RMP-3, BF-8 cast house and Bhilai Club.
9. During this year about 40215 trees have been planted in township and plant area. About 100 trees has been planted at SLF site to comply with EC conditions.
10. For building awareness on green technologies & importance of CO₂ emission reduction, environment management department has initiated through HRD a new training program titled "ENVIRONMENT PROTECTION & INNOVATION FOR CARBON REDUCTION (EPIC)" in October-2023. The program intends to cover all executives & Non-executives of BSP.