



Ref.: AA/E&S/2020/ 604

Date: 07/08/2020

To

The Regional Officer

State Pollution Control Board,
Plot No.1070, Hospital Road, Modipara,
Sambalpur – 768 002, Odisha

Sub.: Submission of Environmental Statement (Form – V) for the FY 2019 – 20.

Ref.: Environment Clearance (EC) Letter No.J-11011/136/2009-IA-I (1) dated 29th Nov. 2012 and amendments dated 14/06/2013, 14/08/2018 & 20/07/2020.

Dear Sir,

With reference to the Clause No. XIII, General Conditions of the Environmental Clearance, please find attached herewith the Annual Environment Statement for the year 2019-20 in Form-V.

We request for acknowledgement of receipt of the letter.

Thanking you,

Yours faithfully,
For Aditya Aluminium


(Kailash Nath Pandey)
President & Unit Head

Copy to:

1. The Director, Eastern Regional Office, MoEFCC, A/3, Chandrasekharpur, Bhubaneswar.
2. The Member Secretary, State Pollution Control Board, A/118, Nilakanthanagar, Bhubaneswar.

Hindalco Industries Limited

Aditya Aluminium: At/P.O.: Lapanga - 768 212, District: Sambalpur, Odisha, India
T: +91 663 2536 247 | Fax: +91 663 2536 499 | E: hindalco@adityabirla.com | W: www.hindalco.com
Registered Office: Ahura Centre, 1st Floor, B-Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093
Tel: +91 22 6691 7000 | Fax: + 91 222 6691 7001
Corporate ID No.: L27020MH1958PLC011238

FORM – V

(See rule 14)

Environmental Statement for the financial year ending the 31st March 2020.**PART – A**

Name and address of the owner/ occupier of the industry operation or process.	Mr. Kailash Nath Bhandari 5, New House Road, Sector 7 Jodhpur 342004, Tel No- 0291- 2549948
Industry category	Large scale Industry (Red Category)
Production capacity	6x150 MW CPP & 0.38 MTPA Aluminium Smelter
Year of establishment	2013-14
Date of the last environmental statement submitted	20 th September 2019

PART – B**(1) Water Consumption (m3/Day):**

Process:	} 32584 m3/day (avg.)
Cooling :	
Domestic:	1323 m3/day (avg.)

Sl. No.	Name of Products	Process water consumption per unit of product output	
		During the Previous Financial Year 2018-19	During the Current Financial Year 2019 -20
1	Aluminium Metal	0.86 m3/ MT	0.99 m3/ MT
2	Power	2.05 m3/MWH	2.06 m3/MWH

ii) Raw Material Consumption

Sl. No.	Name of raw materials	Name of products	Consumption of raw material per Unit of output	
			During the Previous financial year 2018-19	During the current financial year 2019-20
1	Coal	Power	0.68 Kg/KWH	0.69 Kg/KWH
2	Alumina	Aluminium metal	1.907 ton / ton of metal	1.915 ton / ton of metal
3	Carbon		0.414 ton/ ton of metal	0.412 ton/ ton of metal
4	Energy (electricity)		14,199 KWH/ ton of metal	14,116 KWH/ ton of metal
5	AlF ₃		13.5 kg / ton of metal	11.99 kg / ton of metal

PART – C

Pollution discharged to environment/unit of output
(Parameter as specified in the consent issued)

1) Pollutants	Units & Parameters		Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	% of variation from prescribed standards with reasons
a) Water			Nil	NA	NA
b) Air	UOM		Kg/Day	mg/Nm ³	Within the prescribed limits.
	CPP Unit -1	PM	540.6	45.03	
		SOx	12228.0	1069.31	
		NOx	2826.7	266.51	
	CPP Unit -2	PM	690.3	44.88	
		SOx	17106.1	1066.91	
		NOx	4374.5	284.00	
	CPP Unit -3	PM	468.2	41.20	
		SOx	10858.7	1003.88	
		NOx	3055.2	269.47	
	CPP Unit -4	PM	661.7	42.66	
		SOx	17637.5	1090.33	
		NOx	4417.7	282.21	
	CPP Unit -5	PM	712.3	44.07	
		SOx	16996.6	1056.79	
		NOx	4577.6	283.07	
	CPP Unit -6	PM	606.9	45.57	
		SOx	14684.2	1112.53	
		NOx	3839.1	288.36	
	GTC -1	PM	487.98	10.12	
		Total Fluoride	28.11	0.59	
	GTC -2	PM	369.92	7.69	
		Total Fluoride	27.56	0.58	
	FTC -1	PM	23.21	9.53	
		Total Fluoride	1.42	0.58	
	FTC -2	PM	12.37	8.42	
Total Fluoride		0.87	0.59		

Note: All the emission values are expressed as annual average value.

PART – D**Hazardous Wastes**

(As specified under Hazardous Waste Management and Handling Rules, 1989)

Hazardous Waste	Waste category	UOM	Total Generated Quantity	
			During the previous financial year 2018-19	During the current financial year 2019-20
a) From Process	Used Oil	KL	38.155	68.381
	Waste containing Oil	MT	Nil	1.896
	Spent Pot lining (Cathode Residues)	MT	4131.25	5390.702
	Pot Lining Scraps and Wastes	MT	14	4.95
	Rejected lining of furnace(Refractory)	MT	Nil	Nil
	Shot Blasting Dust (Containing Fluoride)	MT	747	737.1
	Ladle Cleaning Residue	MT	73.4	120.48
	Rejected AlF ₃ Bags	No's	25316	27539
	Aluminium Dross	MT	2537.79	2474.71
	Aluminium Dross Residue*	MT	1925.5	1779.0
	Fluoride contaminated waste (Spilled waste from pot line)	MT	1865.77	2276.52
	Drain cleaning sludge	MT	Nil	1.4
	Floor sweeping/house-keeping waste	MT	215	143
	ETP sludge	MT	180	123
	Used anode Butts of Aditya	MT	46521.28	47139.41
Pre-processed Used Anode Butts received from M/s Hindalco Industries Ltd, Hirakud.	MT	19393.75	20383.03	
Discarded containers/ Liners used of storage of Hazardous Chemicals	MT	0.5753	0.1792	

	Spent Resin	MT	Nil	Nil
b) From pollution control facilities	Tar containing waste (from FTC)	MT	12	12
	Rejected filter bags (GTC & FTC)	Nos.	27500	35579

* Aluminium Dross Residue is generated during recycling of aluminium dross in the dross processing unit.

**PART – E
(Solid Wastes)**

	Category	UOM	Total Quantity	
			During the previous financial year 2018-19	During the current financial year 2019-20
(a) From process	Fly ash and Bottom Ash Generated	MT	1471257.09	1486657.5
(b) From pollution control facility	Supplied to Cement industries	MT	924687.97	1073733.9
(c) (1) Quantity recycled or re-utilized within the unit (2) Sold	Utilized for road making	MT	0	0
	Utilized for Dyke raising	MT	8500	0
	Utilized for low lying area development/filing	MT	203973.73	97684.2
	Supplied to Bricks Manufacturing	MT	460.85	13596.4
	Ash Utilized from Previous Stock (stored in Ash Pond (MT))	MT	0	135418.7 (75712 MT used in ash pond dyke raising, 55690 MT in low lying area development & 4016.71 MT supplied to cement plant)
(3) Disposed	Sent to Ash Pond	MT	333634.87	301642.6

PART – F

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

Sr. No.	Name of Hazardous Waste	UOM	Qty. of generation in FY 2019-20	Qty. of Disposal FY 2019 -20	Mode of Disposal
1	Used Oil	KL	68.381	32.97	Sold to authorize recyclers.
2	Waste containing oil	MT	1.896	1.896	Incinerated in PF Boilers.

3	Spent Pot lining (Cathode Residues)	MT	5390.702	2381.85	Sold to authorize re-Processing units i.e. Green Energy Resources, Sambalpur
4	Pot Lining Scraps and Wastes	MT	4.95	18.95	Disposed in CHW-TSDF
5	Rejected lining of furnace(Refractory)	MT	NIL	NIL	Not generated
6	Shot Blasting Dust (Containing Fluoride)	MT	737.1	776.51	Disposed in CHW-TSDF
7	Ladle Cleaning Residue	MT	120.48	130.65	Disposed in CHW-TSDF
8	Rejected Filter Bags (GTC/FTC)	No's	35579.0	21905	Burnt inside the electrolytic pots.
9	Rejected AIF ₃ Bags	No's	27539	25719	Burnt inside the electrolytic pots.
10	Aluminium Dross	MT	2474.71	2106.2	213.86 MT Reused along with bath materials in pots and 1892.366 MT processed in dross Processing unit.
				120.48	Send to recycler or pre-Processor, M/s Shivam Metallurgicals Pvt Ltd.
11	Aluminium Dross Residue	MT	1779.0	1641.9	The Disposed in CHW-TSDF
				158.8	Send to recycler or pre-Processor, M/s Shivam Metallurgicals Pvt Ltd.
12	Fluoride contaminated waste (Spilled waste from pot line)	MT	2276.52	2632.25	Disposed in CHW-TSDF
13	Drain cleaning sludge	MT	1.4	0	To be disposed in CHW-TSDF.
14	Floor sweeping/house-keeping waste	MT	143	89.22	Disposed in CHW-TSDF
15	Tar Containing Waste (FTC conditioning dust)	MT	12	12	Reused in green anode making
16	ETP sludge	MT	123	154.94	Disposed in CHW-TSDF
17	Used anode Butts of Aditya	MT	47139.41	47546.62	Reused in Green Anode Plant for making green anode.
18	Pre-processed Used Anode Butts generated from M/s Hindalco Industries Ltd, Hirakud.	MT	20383.03	20403.35	Reused in Green Anode Plant for making green anode.

19	Discarded containers/ Liners used of storage of Hazardous Chemicals	MT	0.1792	0.21	Supply to authorized party.
20	Spent Resin	MT	0	0	Not generated
Sr. No.	Solid Waste		Quantity of generation in FY 2019-20	Quantity of disposal FY 2019-20	Mode of Disposal
1	Fly Ash and Bottom Ash	MT	1486657.5	1073733.9	Supplied to Cement industries
		MT		0	Utilized for road making
		MT		0	Utilized for Ash Pond dyke raising
		MT		97684.2	Utilized for low lying area development/filing inside the plant premises
		MT		13596.4	Supplied to Bricks Manufacturing
		MT		135418.7	Ash Utilized from Previous Stock (stored in Ash Pond (MT))
		MT		301642.6	Sent to Ash Pond

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

Pollution abatement measure taken on conservation of natural resources are as follows:

A. Water Pollution Control Measures:

1. We have implemented integrated waste water management system first time in the country by mixing both the waste water of CPP & Smelter areas which are collected in a Guard Pond of 65,000m³ capacity and then treated with a RO based ETP of 300 cum/hr capacity and the permeate water is send back to the Power Plant for reuse.
2. Separate drainage system constructed for collection of initial rain water & waste water and the guard pond of 65,000 cum capacity is constructed close to the ETP, to store waste water and storm water from Smelter and waste water from CPP.
3. The Effluent Treatment Plant (ETP) of 300 Cum/hr capacity is coupled with double Staged Reverse Osmosis system and is the latest ETP plant in the Odisha.

4. Two nos. of Sewage treatment plants (STP) established in Plant and Township separately for 600 KLD and 300 KLD respectively. The treated water from STPs used for greenbelt and gardening purposes.
5. The water consumption in power plant is reduced by adopting the Dry bottom ash collection system for PF boilers first time in Odisha and increased CoC of Cooling water which reduces the generation of waste water.
6. Ash pond is lined with HDPE liners to prevent contamination of ground water.
7. The decanted water from the ash pond is reused in ash handling.
8. Rain Water harvesting pond established inside the township for reuse in gardening/horticulture purposes
9. Rain water recharge structures made in the township buildings/multifacility complexes.

B. Air Pollution Control Measures :

1. ESPs having two parallel gas paths of 99.9% efficiency installed in each units of CPP to achieve the emission level within 50 mg/Nm³. One ESP path in maintenance while the plant is in operation is a unique procedure developed in Aditya Aluminium to improve overall efficiency of ESP.
2. Three no of HFTR (High Frequency Transformers with Pulse) installation completed in CPP unit to further reduce the PM emission level, for remaining units it is under progress.
3. One no of SOFA (Secondary Overfired Air) System installed in CPP Unit-1 to reduce the NOx emission level within 300 mg/Nm³, order placed for FGD in CPP. CTE application submitted to OSPCB.
4. Tri-Flue Stacks with 275 m height installed for wider dispersion of pollutants.
5. 12 nos. of Bag filters installed in Coal Handling Plant & Ash Handling Plant for fugitive dust control.
6. 20 nos. of Dust suppression & DFDS system installed in coal handling/conveying circuit (Excluding Coal yard) & 4 nos. of dust suppression & dry Fog System installed in ash silo areas.
7. Gas Treatment Center (GTC) with dry scrubbing system installed in Pot Line for recycling of fluoride and venting out clean air through the stack having 100 m height.
8. Larger anodes and hyper dense phase system (HDPS) for dust free alumina transfer installed in pot room, zero alumina leakage from receipt to consumption stage gives us the best "specific alumina consumption/ton of Aluminum".

9. Fume Treatment Center (FTC) installed and attached to ABF for recovery of Fluoride and vents out clean air to atmosphere
10. 63 nos. of De-dusting system installed at Alumina Handling, Coke Handling, Green Anode Plant, Anode Rodding Shop, Bath Recycling Shop, Carbon Recycling Shop, Anode Baking Furnace and other areas of Smelter for control for fugitive emission and recycling of the dust collected in the bag filters. Vacuum cleaning system installed of Green Anode Plant makes the Plant very much clean.
11. Mechanized road sweeping machine deployed for cleaning of all internal roads and shop floors to minimize fugitive dust emission from roads.

C. Solid Waste Management Practice:

1. Maximum quantity of ash is being send to Cement Plants.
2. 100% Tarpaulin cover during transportation ash and coal is ensured.
3. Ash is being supplied to cements plant from the ash pond.
4. Low lying area development inside the plant is being as per the OSPCB guideline

D. Hazardous Waste Management Practice :

1. All the hazardous waste is being kept inside covered storage shed with display of SOPs and MSDS and maintaining record in Form - 3 for all the hazardous waste generated.
2. Exploring maximum recycling of Hazardous Waste generated from Smelter like Shot blasting dust, Aluminium Dross, Skimmed coke, GTC/FTC and Other DE system used filter bags, Alf3 bags and tar containing waste etc.
3. Butt generated is completely recycled and preprocessed used anode butt received from Hirakud Smelter is also reused in green anode making.
4. Aluminium Dross is being re-processed in the dross processing unit, aluminium metal is recovered and residue generated is send to CHW-TSDF for disposal and actual users for recuse/recycling.
5. SOPs & MSDS displayed near the hazardous waste handling & storage areas.
6. Manifest & TREM card system is being followed judiciously.

E. Green Belt Development :

1. Thick green belt developed around the plant boundary, with a density of approx. 1000 no's/acres and more than 4, 66,500 no's of trees planted with in an area of 741 acres till 2019-20. Plantation activity for FY 20-21 is under progress.

PART – H

Additional measures/investment proposal for environmental protection including abatement of pollution, prevention of pollution:

Areas	Investment made till 31.03.2020 (lakhs)
Water pollution control system	5056.59
Air pollution control system	66614.42
Solid Waste Management System	20696.33
Hazardous Waste Management System	1722.41
Biomedical Waste Management System	18.8
Total (Lakhs)	94108.55

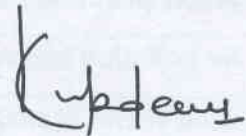
1. A solar power project of 30 MW (DC) capacity (PV Based) is established inside the plant for generation of green energy (renewable).
2. Food waste is being used in Vermi-Composter in colony areas for conversion of food waste & organic wastes for generation manure and which is being used in gardening purposes.
3. Two no's of Mechanized housekeeping machine used for cleaning of internal roads to keep control on the fugitive dust emission from roads during vehicle movement.

PART – I

Any other particulars for improving the quality of environment:

1. Implemented Integrated Management System (ISO 9001 & ISO 14001) for better quality & environmental management system and control, ISO 45001 & ISO 50001 certification is under progress.

2. Training to employees for hazardous waste management.
3. Phase-wise greenbelt development work is under implementation to achieve 33% of the project area under greenbelt/green cover.
4. Environmental laboratory established for monitoring and analysis of environmental pollutants.
5. Celebrating Environmental promotional activities like World Environment Day, Van Mahotsav, National Safety Day/Week, etc.
6. Promote the principles of waste prevention, reduction, reuse, recycling and recovery to minimize waste generation and strengthen the practices for management of wastes through "Value from Wastes Programme".
7. Raise environmental awareness at all levels of our operations, through training and effective communication, participation and consultation.



(Authorized Signatory)