

Sasan Power Limited

CIN: U40102MH2006PLC190557

6 X 660 MW Sasan Ultra Mega Power Project
Gram: Siddhi khurd
Post Office: Tiwara
Singrauli – 486 886
Madhya Pradesh, INDIA
www.reliancepower.co.in

Ref: SPL/EMG/MPPCB/ES/ 2022-23/19

Date: 07th –Sept.-2022

To,
The Member Secretary
Madhya Pradesh Pollution Control Board
Paryawaran Parishar, E-5, Arera Colony
Bhopal-462016
Madhya Pradesh

Sub: Submission of Environmental Statement Report for FY:2021-22 of Sasan Power Limited.

Sir,

With reference to the aforementioned subject, we are submitting herewith Environmental Statement Report for FY: 2021-22 of Sasan Power Limited for your kind perusal please.

Kindly acknowledge the receipt of the report.

Thanking You,

Yours faithfully,

For Sasan Power Limited


(Sachin Mohapatra)
Chief Executive Officer

Cc: The Regional Officer, M.P Pollution Control Board, Singrauli, Madhya Pradesh.

Encl: 1. Environmental Statement Report FY:2021-22.

ENVIRONMENTAL STATEMENT FORM-V
(See rule 14)

Environmental Statement for the financial year ending with 31st March, 2022.

PART-A
General:

i. Name and address of the owner/ Occupier of the industry Operation or process.	Sh. Sachin Mohapatra Sasan Power Limited Village- Sidhikhurd, Post- Tiwara District- Singrauli (M.P)		
ii. Industry category	Red (Electricity Generation)		
iii. Production capacity	3960 MW (6 x 660MW)		
iv. Year of establishment	Unit No.	Installed Capacity (MW)	C. O.D Date
	3	660	16.08.2013
	2	660	28.01.2014
	4	660	12.04.2014
	1	660	27.05.2014
	5	660	26.12.2014
	6	660	27.03.2015
v. Date of the last environmental Statement submitted.	05.07.2021		

PART - B
Water and Raw Material Consumption:

 I. Water consumption in m³/Day.

Process: 2083 m³/day (DM water)
Cooling: 154717 m³/day (Raw clarified water)
Domestic: 2496 m³/day (Raw clarified water)

Name of Products:

Nature of Products	Total Water Consumption per unit of product output	
	During the previous financial year (2020-2021)	During the current financial year (2021-2022)
Electricity	1.80 Litter/KWH	1.73 Litter/KWH

ii. Raw material consumption:

Name of raw materials	Name of Products	Consumption of raw material per unit of output	
		During the previous financial year (2020-2021)	During the current financial year (2021-2022)
Coal	Electricity	18.22 MMT	18.31 MMT
LDO	
HFO	
HSD		3071 KL	3090.30 KL
		Specific Consumption	
Coal		0.55 kg/KWH	0.56 kg/KWH
LDO	
HFO	
HSD		0.092 ml/KWH	0.0946 ml/KWH

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

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants Discharged (mass/volume)	Percentage of variation from Prescribed standards with reasons.
(a) Water	Waste water generated in the process including sewage are treated in ETP and STP. Treated waste water is being re-used for ash handling, dust suppression and gardening.		
(b) Air			
Stack Emission	PM:< 50 mg/Nm ³	Ambient air quality & Stack emission monitoring reports are submitted regularly to CPCB / MoEF / MPPCB.	Monitored values are within CPCB / MPPCB limits
Ambient Air	--		

PART-D
HAZARDOUS WASTES:

(As specified under Hazardous Wastes (Management & Handling Trans-boundary Movements Rules, 2008, Amendment 2016)

Hazardous Wastes	Total Quantity (MT)	
	During the previous financial year (2020-2021)	During the current financial year (2021-2022)
5.1- Used Oil/Spent Oil	23.07 MT	47.44 MT
5.2- Oil Soaked Cotton	5.18 MT	2.09 MT
33.1 Empty Chemicals drums	4.46 MT	16.08 MT
35.2- Chemical Spent Resin	4.01 MT	6.640 MT
35.3 - Chemical sludge from waste water treatment	0.26 MT	0.430 MT

PART. E
SOLID WASTE (ASH):

Solid Wastes	Total Quantity (MT)	
	During the previous financial year ((2020-2021))	During the current financial year (2021-2022)
a. From process	5027016.0 MT (Total Ash) 4021613.0 MT (Fly Ash) 1005403.0 MT (Bottom Ash)	5347484.0 MT (Total Ash) 4277987.0 MT (Fly Ash) 1069497.0 MT (Bottom Ash)
b. From Pollution Control facility	NIL	NIL
c. Quantity recycled or re-Utilised within the unit.		
1. Ash Utilization:		
I. Agriculture	--	---
II. Cement	26670 MT	0.0 MT
III. Brick Making	1400 MT	36019 MT
IV. Land Filling	89550 MT	0.0 MT
V. Ash Dyke Bund raising	2097776 MT	2762425 MT
VI. Others.	520 MT (RMC) 195 MT(Cenosphere) 1440 MT (for testing purposes in Coal mines)	971 MT (RMC) 0 MT (Cenosphere) 0 MT (for testing purposes in Coal mines)
Disposed in Ash Dyke-	2809465.0 MT	2548069.0 MT

The scrap (metal pieces, insulation waste, packing plastics, wooden planks etc.) generated from activities are collected, stored in scrap yard and sold to outside vendors.

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.

Hazardous Waste

Sasan Power Limited is the member (Membership No. PIWMPL-HzW-SGL-604) of Treatment, Storage & Disposal facility located at Pitampur, Dhar, Madhya Pradesh, which is authorized by the MP Pollution Control Board. Hazardous Waste being generated from the process includes used oil (drained from machineries/ equipments) oil soaked cotton, Chemical Sludge, Spent ion exchange resin & discarded chemical containers. An authorization is already taken from the MPPCB for the same vide no. H-47839, which is valid up to 28.02.2023. Hazardous waste is stored in hazardous waste storage yard & being taken by the SPCB/CPCB authorized recyclers/ TSDF facility only.

Solid Waste:

- For the collection of dry fly ash, silos have been provided with pneumatic system & bottom ash is led to the ash dyke through pipeline in wet slurry mode.
- Organic waste conversion machine is installed for the utilization and conversion of domestic kitchen waste in to green manure. General solid waste is being disposed of through In-house waste management manpower.
- SPL has installed 02 No. paper pen making machine for re-utilization of waste papers with the help of M/s. IIWM-Bhopal.
- SPL has also installed water less urinals, as a green initiative to reduce the consumption of water during flushing.
- Plastic waste generated in plant and outside the plant area is collected, shredded in plastic shredding machine and being used for making bitumen roads.

PART-G

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

The following practices are adapted for the pollution control & conservation of natural resources:

1. Tri-flue stack with height of 275 m are provided as per the CPCB guidelines for better dispersion of emissions and keep the concentrations within MPPCB/CPCB specified standards.
2. High efficiency Electrostatic Precipitators (ESPs) are provided for the control of dust emissions in to flue gas.

3. Dust Extraction system along with bag Filters have been installed at Coal Silo, Coal bunker, Intermediate Silo & Ash Silo to arrest the fugitive emissions.
4. Roof sheeting and side cladding in conveyor galleries and TPs are installed to control fugitive dust
5. Dust suppression system is installed at coal transfer points.
6. Rain-gun type water sprinklers are installed in the Coal Stockyards for the control of fugitive emissions.
7. Mist canyons are installed at coal transfer houses for the control of fugitive dust.
8. Belt washing system, coal settling pits and waste water recovery system are installed at transfer house for the dust suppression and water recovery.
9. Water spraying system is installed in ash pond area for controlling the ash fugitive emissions, if any.
10. Low NOx burners are installed in fuel combustion system for controlling NOx emissions
11. Effluent Treatment Plant (ETP) and Sewage Treatment Plants (STP) are installed to control water pollution.
12. Rain Water harvesting is being practiced in the plant premises, which helps in ground water recharging.
13. Good housekeeping is maintained within the plant premises.
14. Green belt has been developed in & around the plant periphery to control the dispersal of dust particles and attenuate the noise generated during the process.

Because of the adaptation of aforementioned methods, the quality of emissions and discharges are maintained well within below the permissible limits prescribed by the MoEF&CC / CPCB / MPPCB.

PART. H

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

SPL is regularly monitoring ambient air, stack, noise level, water quality and soil quality in and around the plant premises. All the emissions and discharges are meeting the permissible limits prescribed by MoEF / CPCB / MPPCB. It is proposed to further strengthen the monitoring and reporting process. Ash Water Recovery System is installed for further reuse of ash water. Green belt development within plant premises is proposed to be accelerated.

Details of recurring cost for the implementation of Environmental Management Plan are as follows:

Recurring expenditure for the year 2021-22 is as follows:

SN	Description	Cost in INR Crores
1	Environmental Lab Equipment Services	0.02
2	AMC of CAAQMS, OEMS, CEMS and data transfer	0.11
3	Environmental Monitoring in and around SPL	0.16
4	Annual Pest Control Services	0.10
5	Study on Environmental damage & cost assessment	0.38
6	Celebration & Awareness Program on Env.	0.02
7	Environmental External audit & annual report	0.37
8	Greenbelt Development	0.89
9	Occupational Health Monitoring	1.00
10	O&M Cost of ETP & STP	0.15
11	Env., Horticulture and CSR Manpower	1.53
12	Training Cost	0.45
13	Solid Waste Management	0.10
14	Disposal of hazardous waste through TSDF	0.06
15	Hydrological Study	0.18
16	Statutory Compliance fee	0.50
17	Pre-monsoon inspection & study of ash dyke and low lying area	0.03
18	Expenditure on CSR activities	0.46
	Total	6.51

PART. I

Any other particulars for improving the quality of the environment

The part – I of any Environmental Statement report is perhaps the best scale to measure various parameters of the plans, target, achievements and ultimate impact. SPL has made sincere efforts to visualize the general environmental scenario and implemented plan for the associated improvements. Some highlights are mentioned below:

1. Environmental Laboratory:

Environmental laboratory has been established to analyse environmental parameters for quality and quantity checks.

2. Pollution monitoring and control equipment's:

Three (03) nos. of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) and Continuous Emission Monitoring System (CEMS) in flues of all the operational units are installed. Electronics Display board is provided at the main gate for public data display. Online Effluent Monitoring system is installed in ETP (CMB) outlet. Online system data is being transferred to PCB server. IP based surveillance camera is also installed focused towards ETP outlet drain and stack emission and linked with CPCB server on real time basis.

List of pollution control equipment's are as follows:

S No.	Plant Activities	Pollution Control Measures
1	Coal Yard	Dust Suppression System.
2	Coal Handling system	Dust Suppression System.
3	Coal Handling area	Coal Settling Pit
4	Coal Transfer Point	Dust Suppression System
5	Coal bunkers / secondary crusher house	Dust extraction system with bag filters
6	Coal Transfer House	Belt washing system and mist foggers Coal settling ponds with water recovery system
7	Boilers (Dust control)	Electrostatic Precipitators (ESPs)
8	Boilers (emission dispersion)	275 meter high stack
9	DM Plant	Neutralization Pit.
10	Cooling Tower blow-down & CPU regeneration waste	Effluent Treatment Plant (ETP)
11	Oily waste water from fuel oil handling area	Effluent Treatment Plant (ETP)
12	Domestic Effluent	Sewage Treatment Plant (STP)
13	Fly Ash Storage Silos	Bag Filters.
14	Fly Ash & Bottom Ash Disposal	Ash Pond
15	Ash Water	Ash Water Recirculation System (AWRS)
16	Vehicle Movement	Water Sprinkling System.
17	Reduction of Gaseous Emission	Low NOx Burners

3. Management of Waste:

- **Solid waste:** Organic waste conversion machine is installed for the utilization of organic waste generated from canteens of plant area and township area.. Organic waste converted into valuable green manure, is being re-used in horticulture.

In order to ensure the proper and safe dispose of the other solid wastes, SPL has hired the services of manpower and doing in house waste management in safe and environment friendly way.

- **Plastic waste:** Plastic waste generated in plant and outside the plant area is collected, shredded in plastic shredder machine, and re-used for making bitumen roads.
- **Paper waste:** Waste paper generated at site is being used for making Paper pen; machine is installed in R&R colony of Surya Vihar and run by Self Help Women Group. Apart from its internal consumption, paper pens are also distributed free of cost by SPL in schools located nearby plant area.
- **Domestic waste:** Domestic waste water generated at site is being treated by STP and re-used for green belt development.
- **Bio-Medical Waste:** Bio-medical waste generated at site is disposed off through MPPCB authorized vendor- M/s. Indo Water Management and Pollution Control Corporation, Satna.
- **Battery Waste:** Battery waste generated at site is collected and stored at designated place . Battery waste either given to OEM as by back scheme or sale to authorize recycler certified by pollution control board.
- **E- waste:** E- waste generated at site is collected and stored at designated place . E waste either given to OEM as back scheme or sale to authorize recycler certified by pollution control board. SPL is life time member of E waste collection and disposal facility M/s Unique Eco Recycle.

4. Weather monitoring Station:

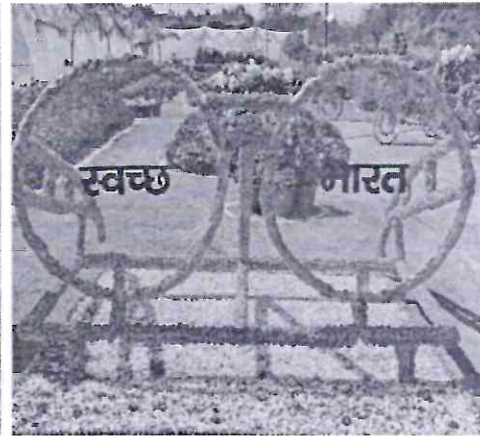
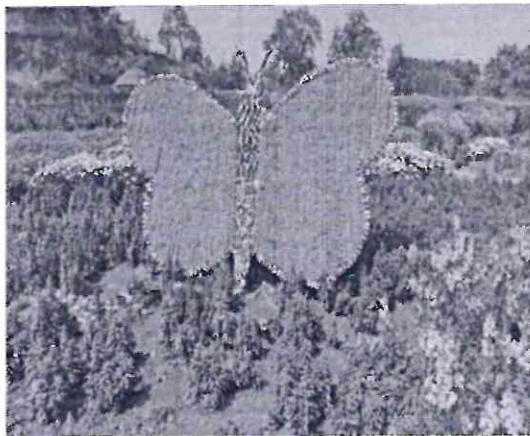
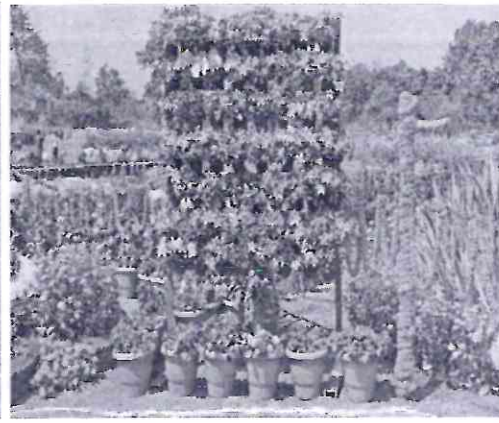
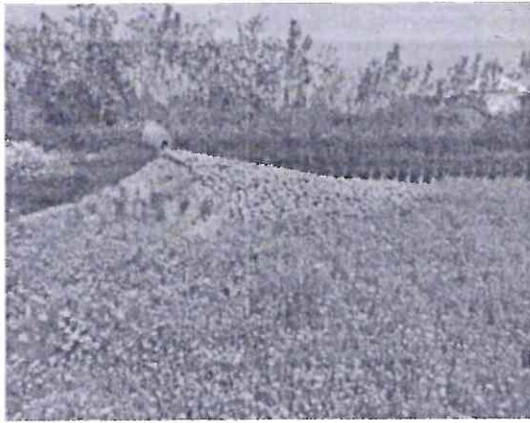
SPL has installed online weather monitoring system to monitor site specific micro-meteorological data such as Rainfall, Wind Direction, Wind Speed, Temperature, Humidity and atmospheric pressure.

- 5. Deployment of E- vehicles:** With the thought of saving of natural resources, E- Rickshaw, E- Scooty and E-cycles are provided to employees for movement within plant premises.

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

- World Ozone Day, World Water Day, World Sparrow Day, Earth Day & World Environment Day etc. celebrated at SPL with great enthusiasm to create awareness among Employee's, Workers & nearby Villagers.



SL

Sachin Mohapatra

**(Chief Executive Officer)
Sasan Power Limited**

Date: 07-Sept.-2022