


NTPC SIPAT
CII Power plant Summit 2024





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NTPC Sipat Station - 2980 MW

First Super Critical Power Plant of NTPC

Location	• Sipat, Bilaspur
Nearest Rail head	• Bilaspur
Nearest Airport	• Bilaspur (30KM) & Raipur (155 KM)
Capacity (2980 MW)	• St-I (3 X 660 MW): 1980 MW: • St-II (2 X 500 MW): 1000 MW
Commercial Operation	St-I (1980 MW): 01Aug'2012 St-II (1000 MW): 01 Jan'2009
Proposed Expansion	Stage-3 : 1X800 MW Ultra Super Critical

Sipat Super Critical Boiler (2980 MW, 660 MW X 3 + 500 X 2 MW)

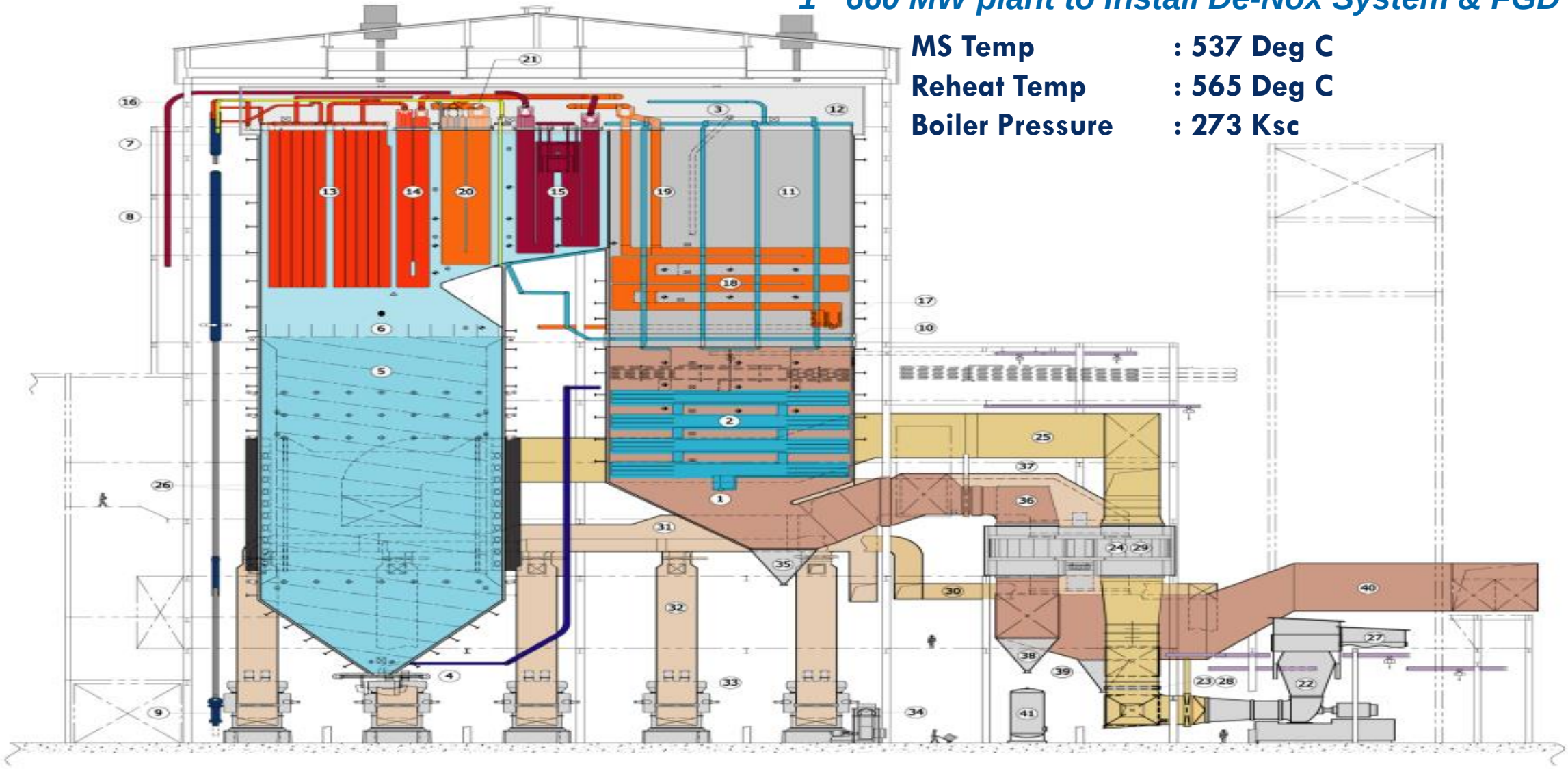
1st Supercritical project of NTPC

1st 660 MW plant to install De-Nox System & FGD System

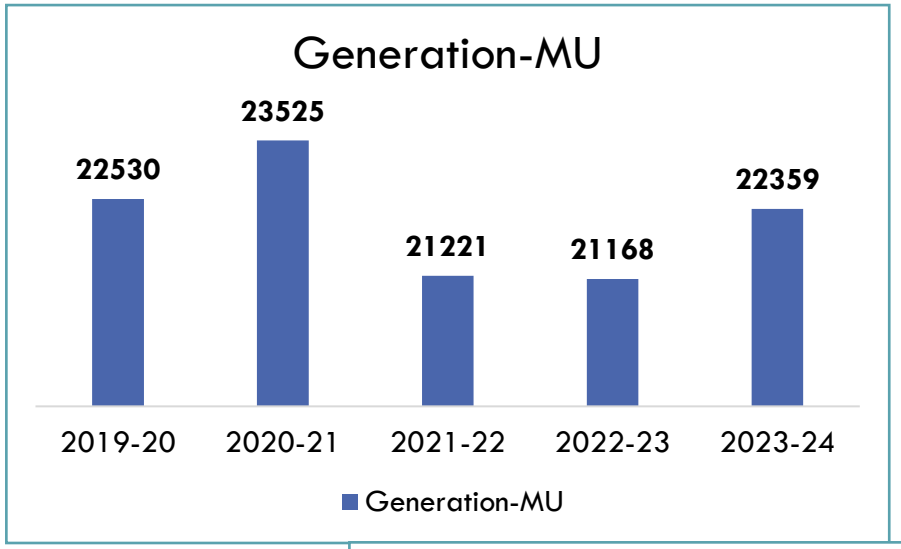
MS Temp : 537 Deg C

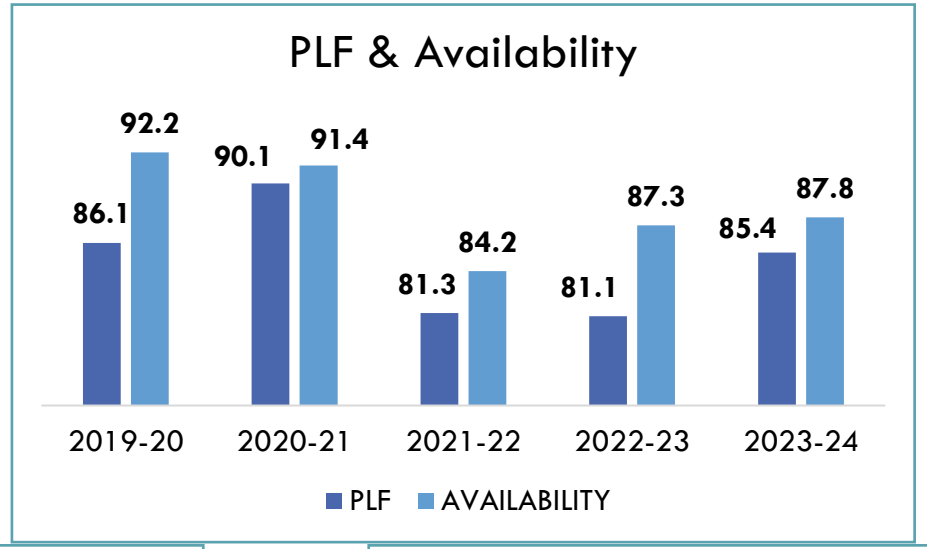
Reheat Temp : 565 Deg C

Boiler Pressure : 273 Ksc

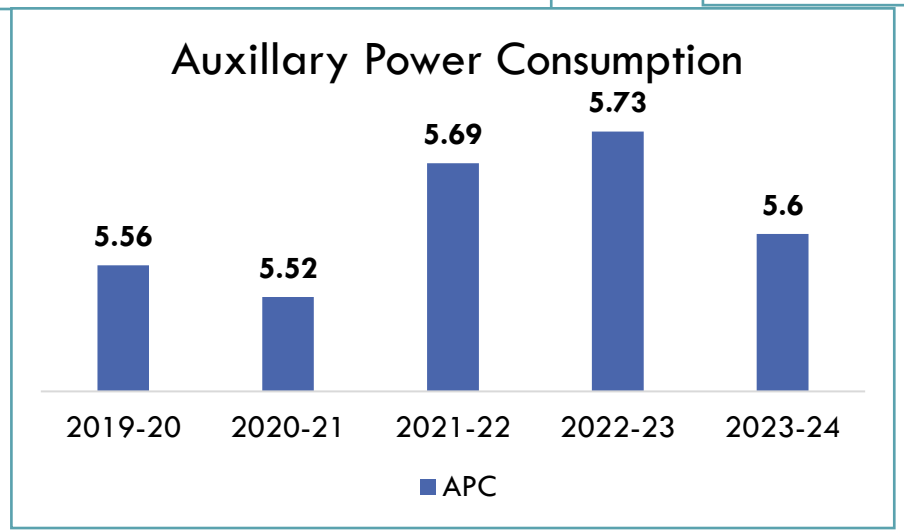


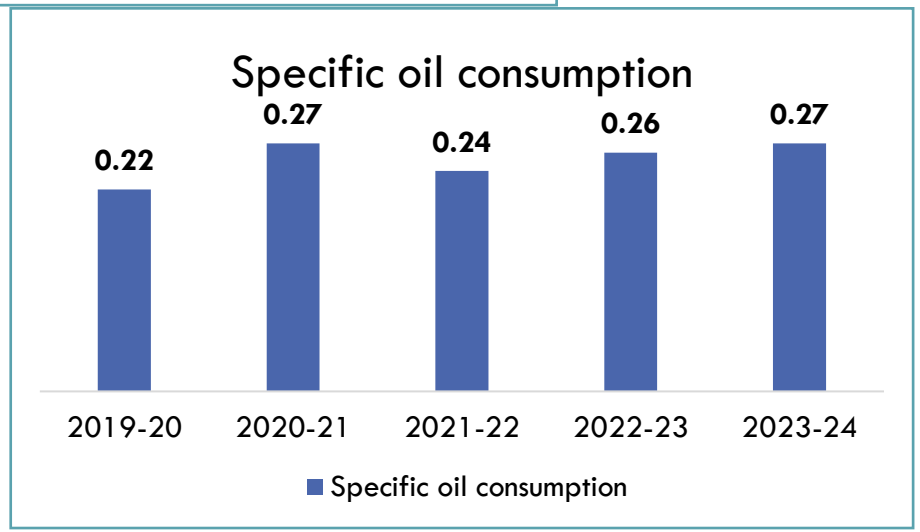
SIPAT: Consistent performer over the years





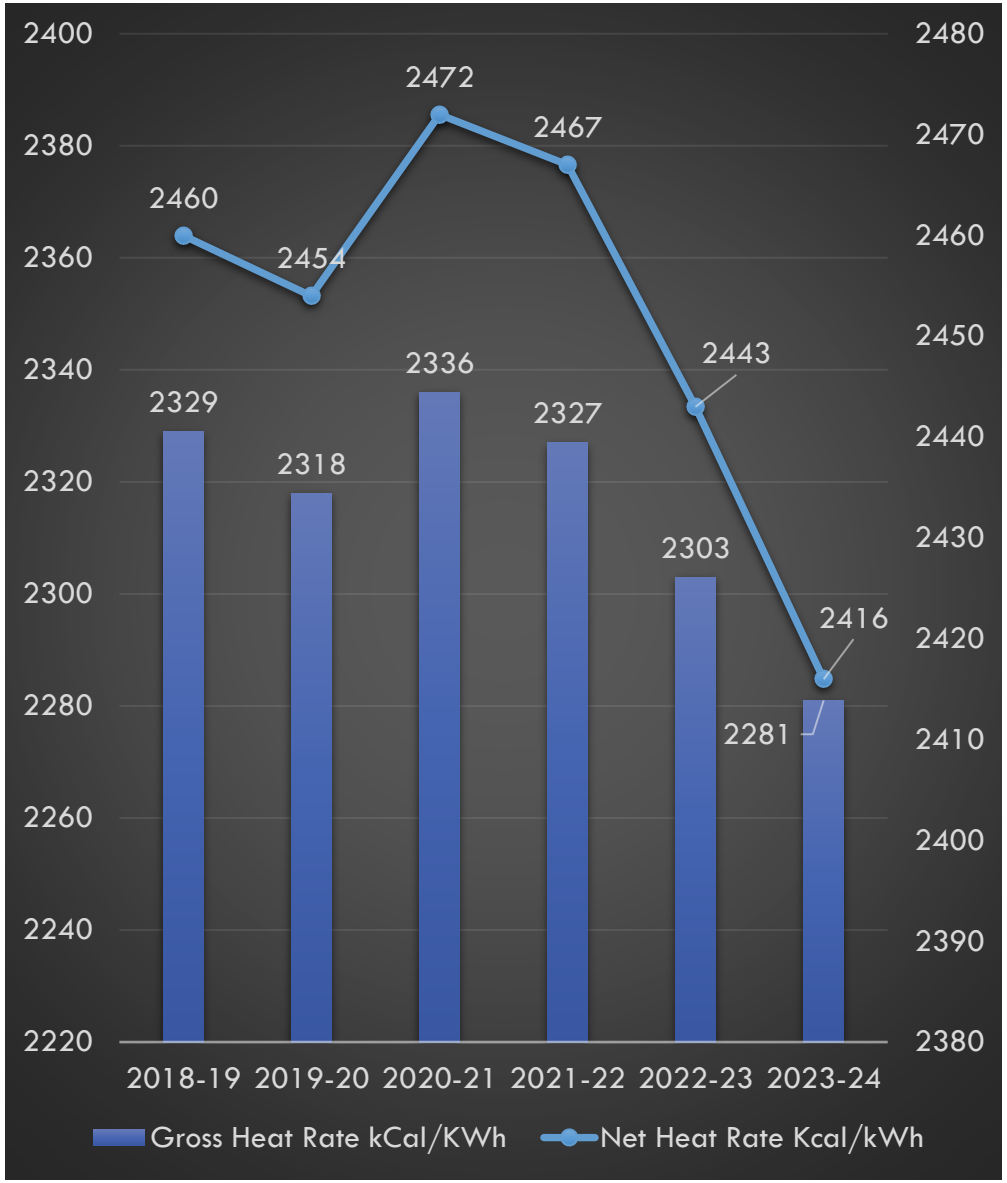
APC is Best among all NTPC Station





Gross & Net Heat Rate Trends

- CERC has fixed a normative Heat Rate for NTPC Sipat at 2338 kcal/kwhr based on the technology.
- NTPC Sipat is a consistent improver of Net Heat Rate.
- Despite high planned outage (10.71 %) resulting in lesser PLF Heat Rate improved by 29 Kcal/kWh.
- Improvement in APC 0.13 % & Heatrate 22 Kcal/kWh.



Benchmarking with NTPC Best

APC Benchmarking- With NTPC Mauda

Plan

- CERC APC norms tightening.
- Similar supercritical units at NTPC Mouda.
- Mauda units best in APC among all NTPC for FY 2022-23.

Do

- Co functional team created at NTPC Sipat for visiting NTPC Mauda and doing benchmarking study.

Check

- APC analysis at sub system level.
- Specific energy consumption for each system calculated in KW/MW.

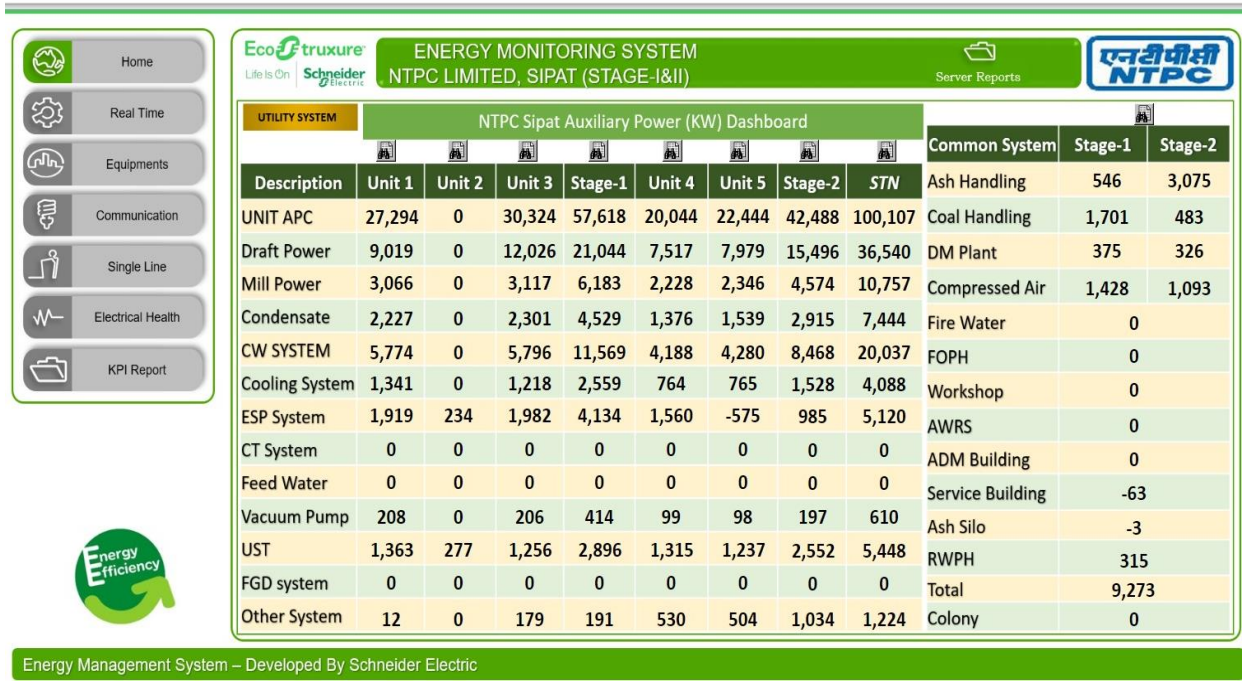
Act

- Upgradation of Energy manage system.
- Duct repair by thickness mapping and refractory lining at high erosion zones.
- High Pressure Jet Cleaning with boroscopy.

SN	Description	Sipat-Stg I 660 MWX3	Mouda - Stg II 660M WX2	ECI-Sipat	ECI-Mouda (KW /MW)
		KW	KW	KW / MW	KW / MW
1	Draft Power	33501	18800	16.9	14.2
2	Milling Power	9986	7538	5.0	5.7
3	Condensate System	6772	5012	3.4	3.8
4	CW System	17404	10728	8.7	8.1
5	ESP System	5702	4510	3.0	3.4

Upgraded Energy Management System With Mobile Alerts

Real time Dashboard

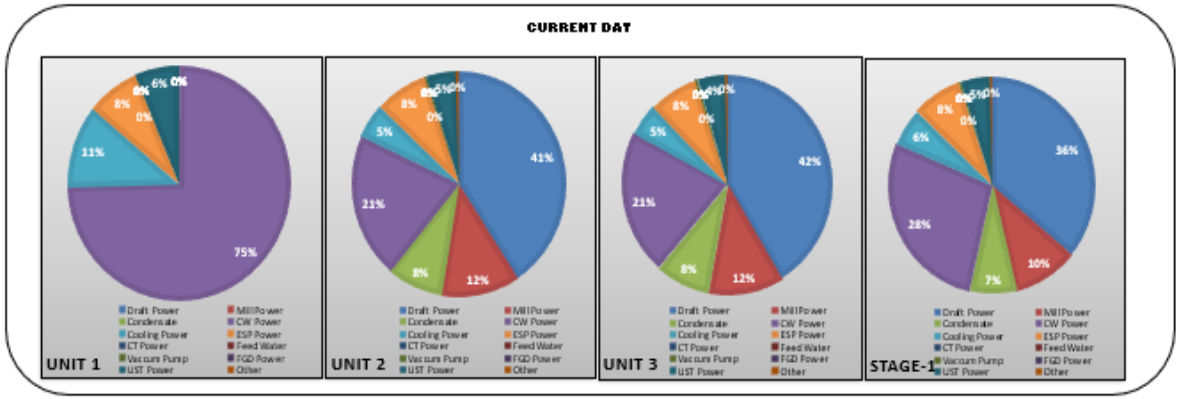


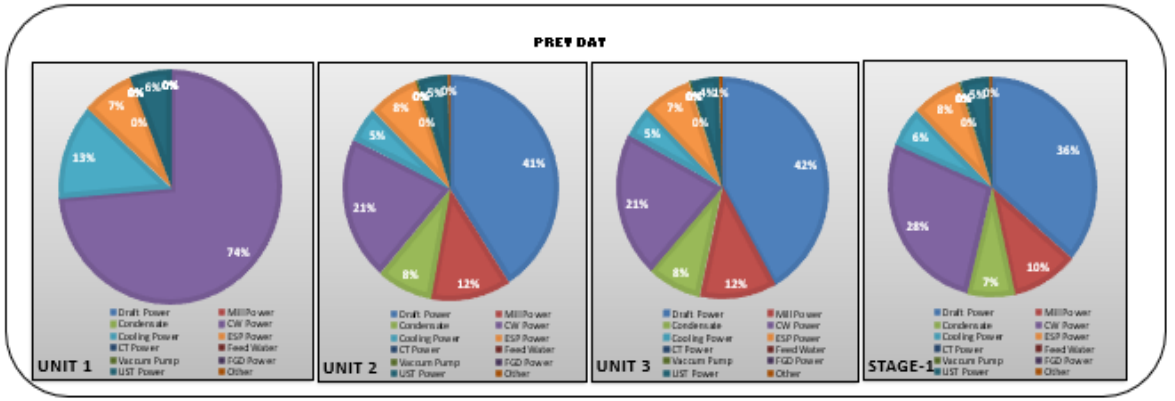
Description	Unit 1	Unit 2	Unit 3	Stage-1	Unit 4	Unit 5	Stage-2	STN
UNIT APC	27,294	0	30,324	57,618	20,044	22,444	42,488	100,107
Draft Power	9,019	0	12,026	21,044	7,517	7,979	15,496	36,540
Mill Power	3,066	0	3,117	6,183	2,228	2,346	4,574	10,757
Condensate	2,227	0	2,301	4,529	1,376	1,539	2,915	7,444
CW SYSTEM	5,774	0	5,796	11,569	4,188	4,280	8,468	20,037
Cooling System	1,341	0	1,218	2,559	764	765	1,528	4,088
ESP System	1,919	234	1,982	4,134	1,560	-575	985	5,120
CT System	0	0	0	0	0	0	0	0
Feed Water	0	0	0	0	0	0	0	0
Vacuum Pump	208	0	206	414	99	98	197	610
UST	1,363	277	1,256	2,896	1,315	1,237	2,552	5,448
FGD system	0	0	0	0	0	0	0	0
Other System	12	0	179	191	530	504	1,034	1,224

Common System	Stage-1	Stage-2
Ash Handling	546	3,075
Coal Handling	1,701	483
DM Plant	375	326
Compressed Air	1,428	1,093
Fire Water	0	
FOPH	0	
Workshop	0	
AWRS	0	
ADM Building	0	
Service Building	-63	
Ash Silo	-3	
RWPH	315	
Total	9,273	
Colony	0	

Day Report System Wise

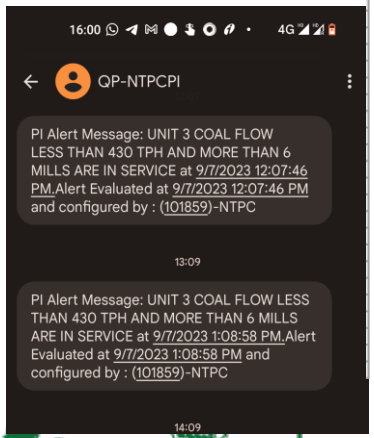
	24-Jul-2023	Today				Prev Day				
	Description	UNIT 1	UNIT 2	UNIT 3	Stage-1	UNIT 1	UNIT 2	UNIT 3	Stage-1	Remark
1	APC%	0.00	4.70	4.57	4.64	0.00	4.69	4.62	4.64	
2	UNIT APC	0	30538	29605	60144	0	30713	29893	60605	
3	Draft Power	0	11425	11260	22685	0	11486	11539	23025	
4	Mill Power	3	3281	3131	6415	0	3383	3190	6574	
5	Condensate	0	2359	2267	4626	0	2365	2282	4647	
6	CW Power	5797	5850	5807	17454	5797	5848	5803	17448	
7	Cooling Power	885	1405	1315	3605	1028	1405	1317	3750	
8	ESP Power	600	2208	2048	4856	596	2172	2036	4803	
9	CT Power	0	0	0	0	0	0	0	0	
10	Feed Water	0	0	0	0	0	0	0	0	
11	Vaccum Pump	0	102	104	206	0	102	104	206	
12	FGD Power	0	0	0	0	0	0	0	0	
13	UST Power	490	1249	1154	2894	450	1249	1156	2855	
14	Other	0	103	99	202	0	103	135	237	
		7775	27982	27186	62943	7871	28112	27562	63544	



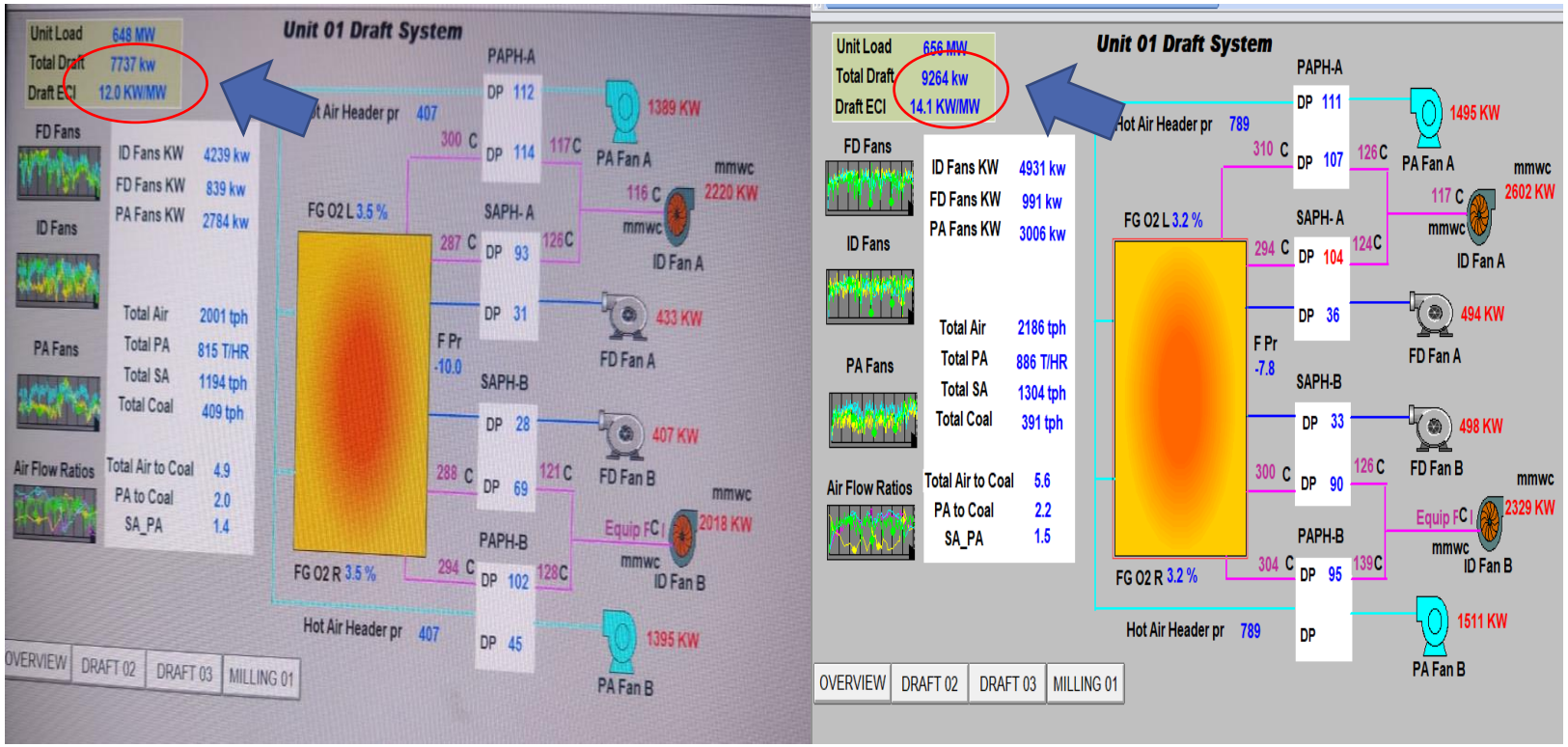


Power trends

Pi Alert sample message



Sustainable Improvement in Draft Power



Draft power reduction by duct repair, thickness mapping, NMEJ repair, **Refractory lining on flue gas guide vanes & area prone to erosion.**

Unit 1 & Unit 2 overhauling completed 8-10 months ago and draft power still maintaining at 8000KW, approx. 1300KW better than pre-overhauling level

Sustained Condenser Performance Improvement

High pressure Jet cleaning done at 700-800Kg/cm2 in Unit 1.

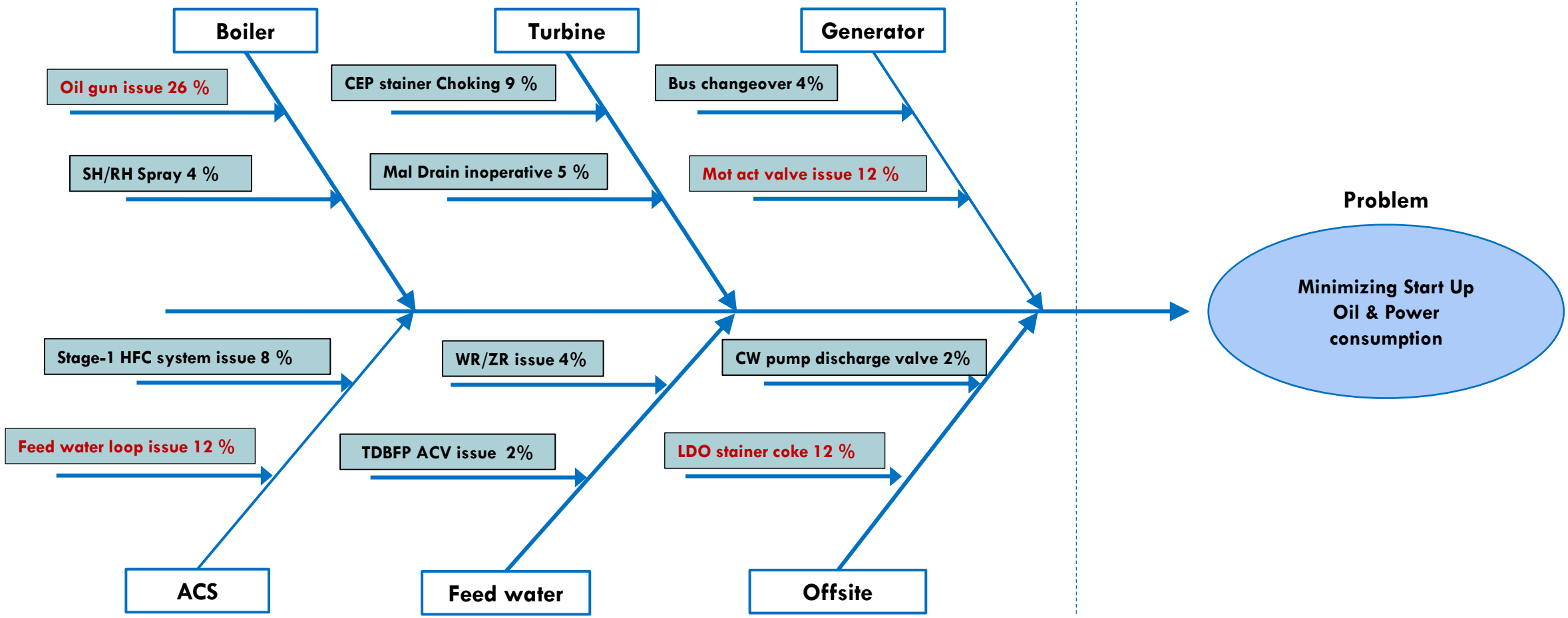
Jet cleaning followed by bullet cleaning done in Unit 1.

Continuous monitoring done by boroscopy to repeat jetting if dirty tube persists.

The condenser vacuum in unit 1 improved more than design. Vacuum in U1, 73mmHg against a design of 77mmHg.

Sustained Heat Rate Improvement: Despite poor Cooling Tower performance in Rainy season, No heat rate loss due to vacuum

Minimising Startup Oil Consumption & Startup Power



Bench Marking

External : PAT (perform Achieve and Trade)

NTPC Sipat is Notified by BEE under PAT cycle VII

Baseline : 2418 kCal/kWh @ 2018-19

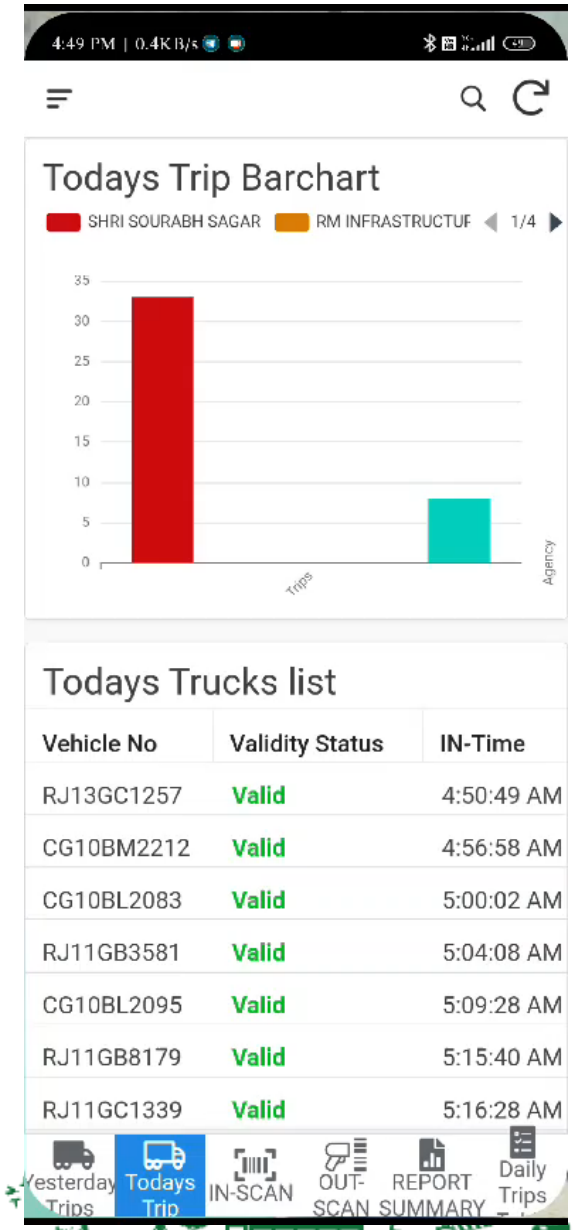
Target : 2412 kCal/kWh Assessment Year 2024-25.

PAT CYCLE	PERIOD	Aassessment Year	NHR TARGET	NHR ACHIEVED	ESCERTS
PAT CYCLE-I	2012-15	2014-15	2484	2438	+36443
PAT CYCLE-II	2016-19	2018-19	2430	2424	+13499
NTPC SIPAT TRADED CYCLE-1 ESCERTS ON IEX AND EARNED APPX 3 Cr.					
PAT CYCLE-II M&V AUDIT , AEA RECOMMENDED FOR 13499 ESCERTS					

New Initiatives, Technology & Process Improvement Projects

IOT BASED ASH TRUCK GATE ENTRY SYSTEM For Reducing Dry Ash Dispatch Time (In house)

Sample From Site



PC and Printer for CISF for viewing and Printing reports

Real Time Dashboard (Android, Apple, Windows)

ASH TRUCK ENTERY

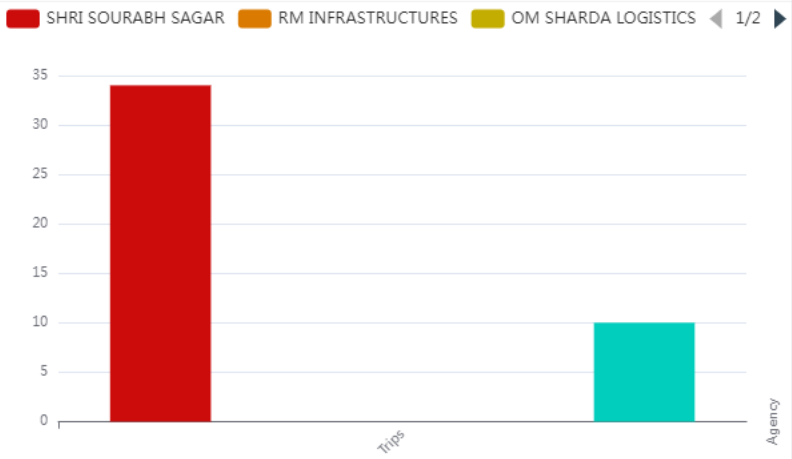
Search REPORT SUMMARY

REPORT SUMMARY

SUMMARY

Description	Data
12/27/2023	
Total Truck Trips	44
Total Truck Inside Plant	24
12/26/2023	
Total Truck Trips	50
Total Truck Inside Plant	0

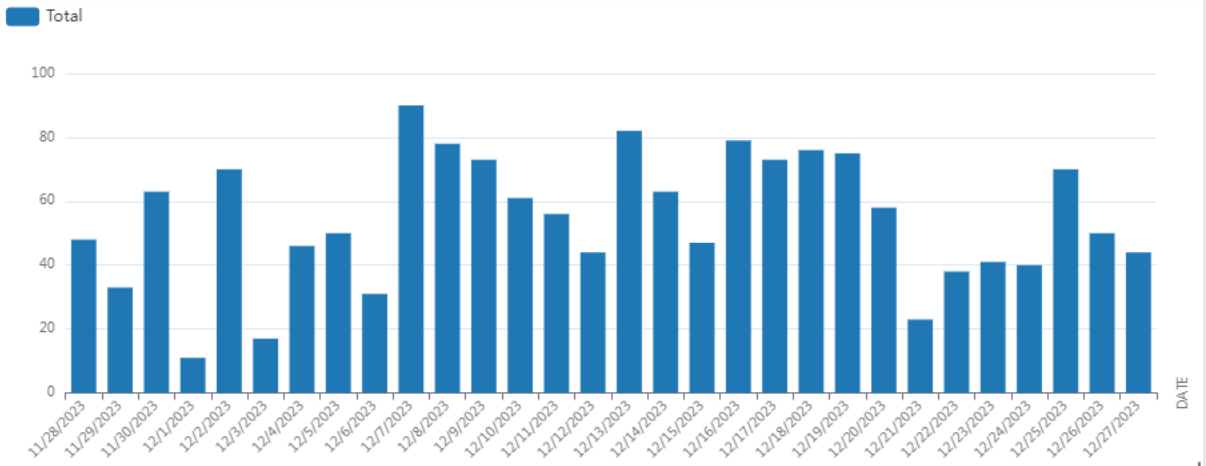
Todays Trip Barchart



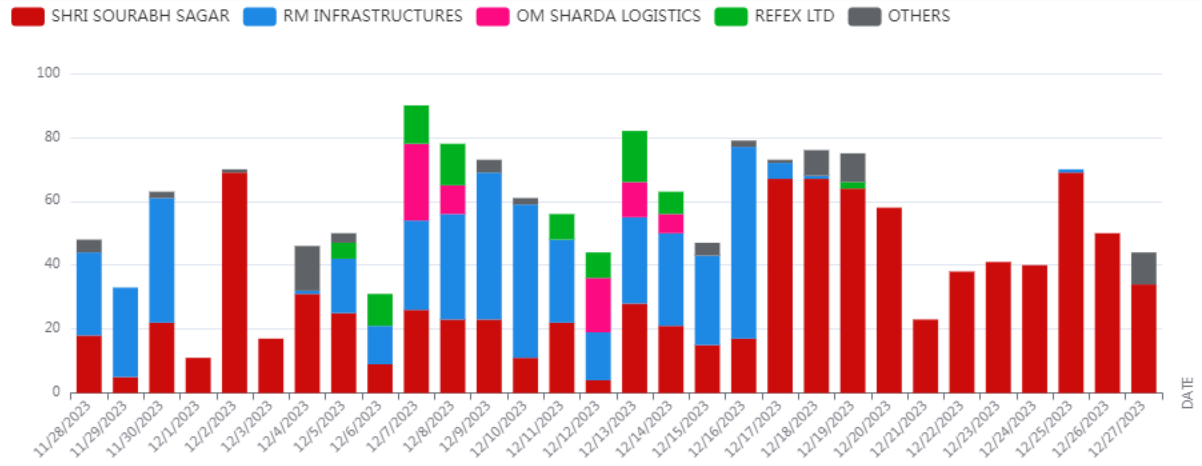
Agency Wise Trips

Agency	Todays Trips	Yesterdays Trip	Day before Yest
SHRI SOURABH SAGAR	34	50	69
RM INFRASTRUCTURES	0	0	1
OM SHARDA LOGISTICS	0	0	0
REFEX LTD	0	0	0
OTHERS	10	0	0
Total	44	50	70

Daily Total Trips Trend



Daily Agency trips Trend



In House Application for Generation Monitoring

Implemented in 24 NTPC Projects.
Won NTPC National Professional Circle Championship for This application
* Pan NTPC implementation of NEW WBES data fetching

ABT Version 6.1 (WR ER and NER) Dated: 14/2/2023

ABT / RAMP RATE MONITORING SYSTEM — Sipat, STAGE-1

Block : 86 | 21:15-21:30 | Time Left 13:20

SG+AGC	AG
1802	1853

10% Dev Limit	Dev (MW)	DEV (%)
100	51.81	2.88

INST FREQ	AVG FREQ	PRED FRQ
50.00	50.011	50.00

UI within +/-10%

Original SG : 1856.3
90% SG : 1702
110% SG : 1902
Inst Gen : 1842.02
Avg AGC : -54.67
Isnt AGC : -64.16
Predicted Gen : 1843
Day Tot DSM (Rs) : 0.48 Lakh
DAM : Rs. 7.60
RTM : Rs. 12.00

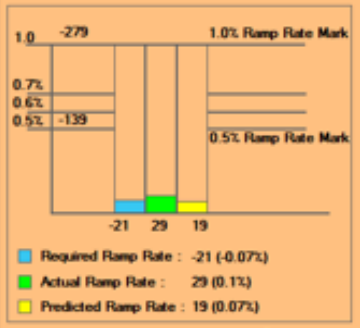
Asking Rates :
49.95 Hz : 49.94 Hz
50.03 Hz : 50.03 Hz
90% SG : 1908.03 MW
110% SG : 2133.03 MW

Asking Rate For SG: 1795

RTDA Rate (P)/KWh): 40.34 ECR : 169
Normative SG(MW): 1856.25 SAVE

Block Net DSM : 0
DSM Charges: 21888
Fuel Cost: -21888
RTDA Charges: 0

RAMP RATE PREDICTION



Todays Total Ramps : 0

Ask Rate

	SG	0.5 %	1 %
SET POINT	1801.58		
ASKING	1795		
Dev	52		

No Ramp

SYSTEM STATUS

OK Internet connection
OK PI Connection
OK Fetching SG
Counter : 819
Rev No 184
SG Fetching Time : 15/02/2023 09:13:33 PM
System Time : 15 Feb 2023, 09:16:43 PM
DAM : 15/02/2023 RTM : 15/02/2023

CONTROL SECTION

Start Application
Display Report | Export Report
Raw PI Data | Settings
Monochromatic | Voice Test | About

Block	Orginal SG	SG+AGC	AG	UI (%)	Avg Fre
84	1856.25	1797.03	1804.89	0.4	50.0
85	1856.25	1822.18	1824.66	0.1	49.9
86	1856.25	1801.58	1853.39	2.9	50.0
87	1856.25				
88	1856.25				
89	1856.25				
90	1856.25				
91	1856.25				

Next Block Schedule

Block No	Block SG	Ramp Rate
87	1856	No Ramp

LOAD AND AGC

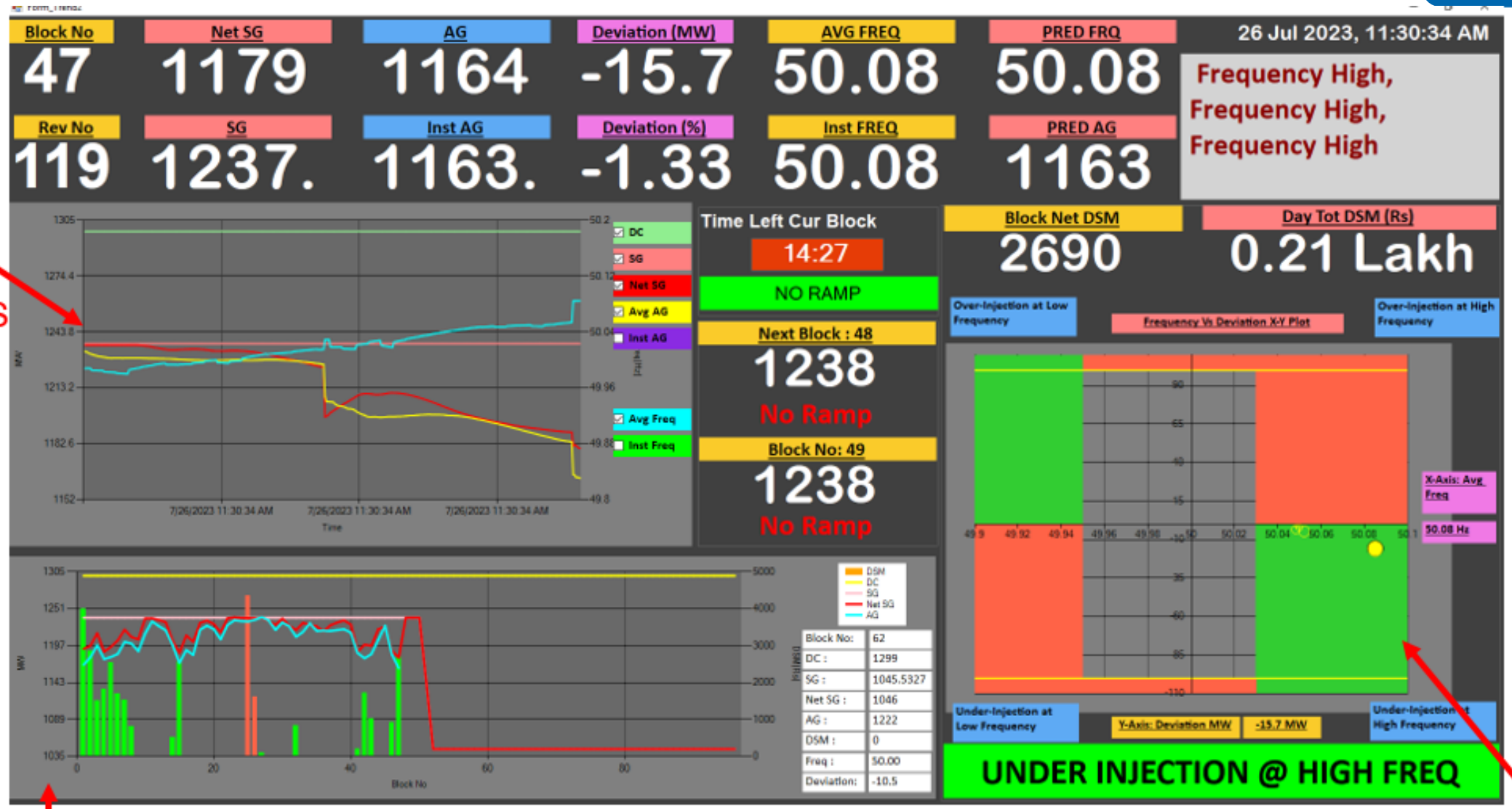
Unit No	Unit1	Unit2	Unit3	Tot(Nor)
Load	643	646	646	
Inst AGC	-23	-23	-23	-68.4(-64.2)
Avg AGC	-20	-19	-19	-58.3(-54.7)

Application initialized and ready to use

LAST ALERT AND SYSTEM LOGS

15/02/2023 09:15:25 PM: Error in Fetching SG got resolved
15/02/2023 09:15:20 PM : SG Updating
15/02/2023 09:15:20 PM: PI connection ok
15/02/2023 09:15:15 PM : Voice Alert : Application initialized and ready to use
15/02/2023 09:15:07 PM: Connected to PI Server :
15/02/2023 09:15:03 PM: Internet connection Restored
15/02/2023 09:15:03 PM: Error in Fetching SG

Trending & Prediction for Correct Operation



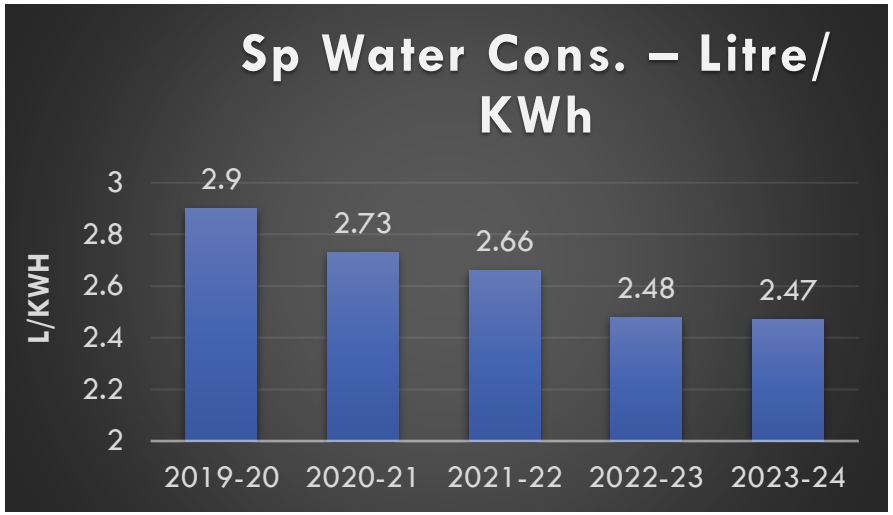
3. REAL TIME TRENDS

1. REAL TIME VISUAL SUMMARY FULL DAY DSM REPORT

2. X-Y PLOT

Environment Management

Water Conservation

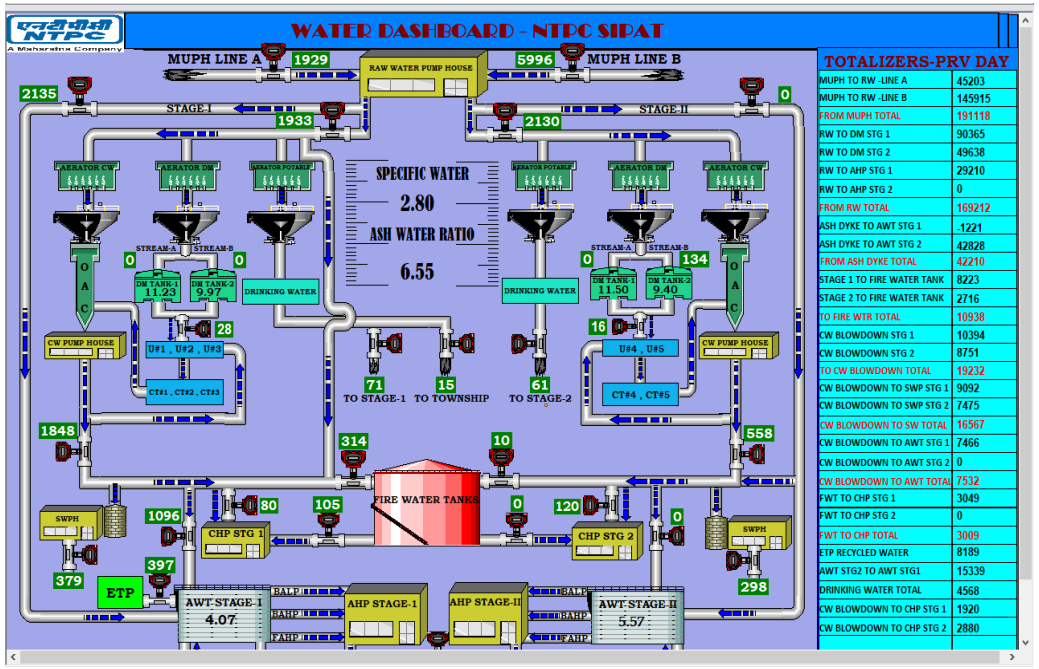


Initiatives :

- Higher Cycle of Concentration (COC ~ 5)
- Zero Liquid Discharge (ZLD)- Complied
- Water Dashboard with water balance sheet.
- Rain Water Harvesting Systems
- Performance Optimization Group (POG)
- HDPE Lining in the Reservoir.

Water Dashboard: ***Real time monitoring of water consumption.***

Selected for PAN NTPC implementation



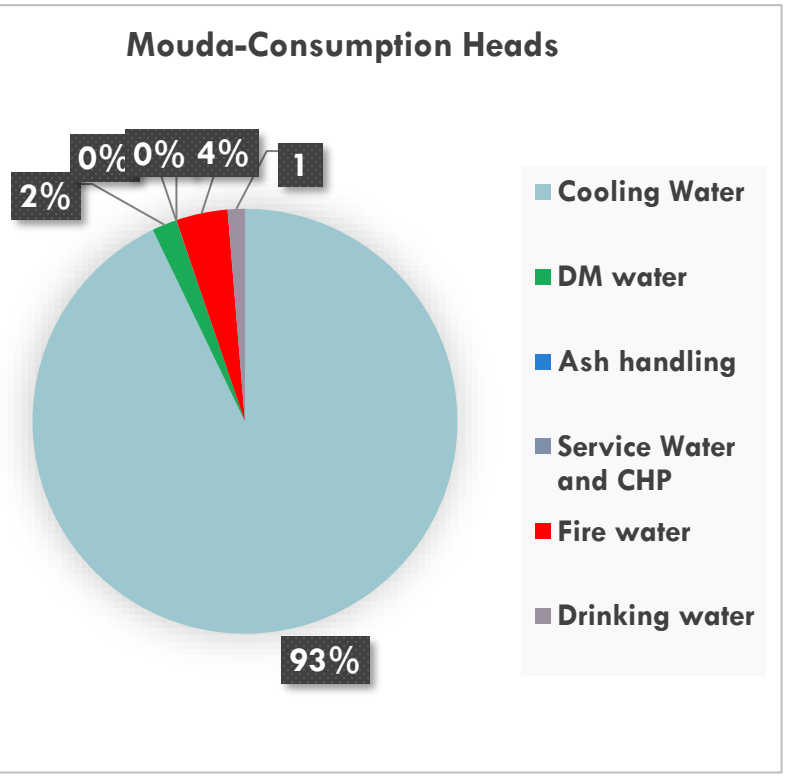
Reservoir Seepage arrest : HDPE lining for reducing water

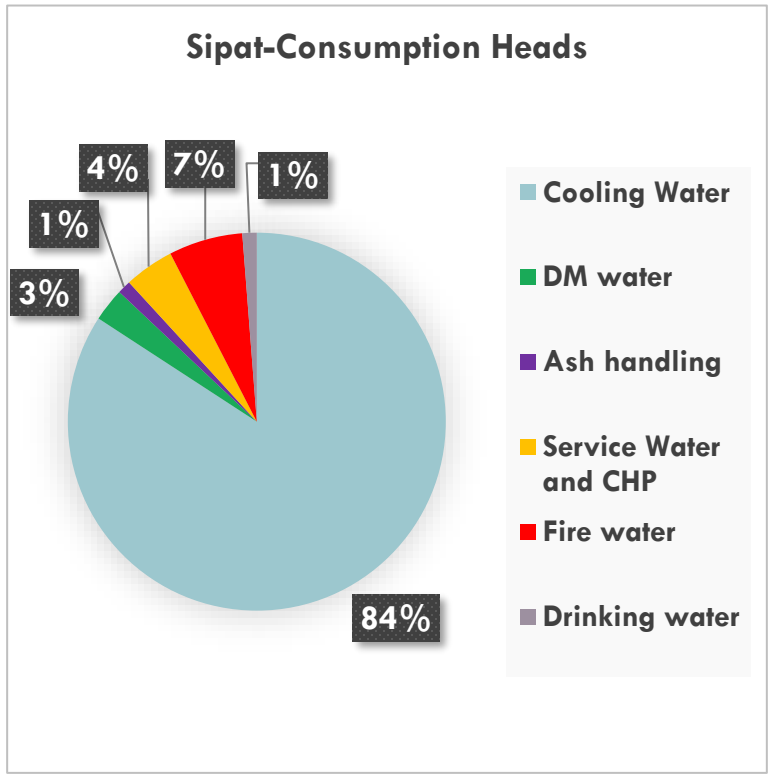
- Total Reservoir Capacity : 4.8 MCM.
- Water Saving : 4 MCM year
- Water Cost saving : Rs 4.6 Cr
- Pumping power Saving : 2.27 MU's / Rs 45 Lac per year.
- Total Investment : Rs 27 Cr
- A Floating Solar of 26 MW is under advance stage of Tendring.

Rainwater Harvesting

- 4 Nos of Rainwater Harvesting facilities installed.
- Modular, in-house design, fabrication and erection.
- Rainwater collected at storm water channel – existing infrastructure.
- Used in plant processes after a filtration process - gravity sand bed filter.
- **Total Savings:**
- Water Savings = 0.5 million m^3

Water Consumption Benchmarkng – NTPC Mauda





Specific water consumption : Mouda-2.16; Sipat 2.48Lt/unit

Only one reservoir in Mouda, capacity leading to reduced seepage and evaporation losses.

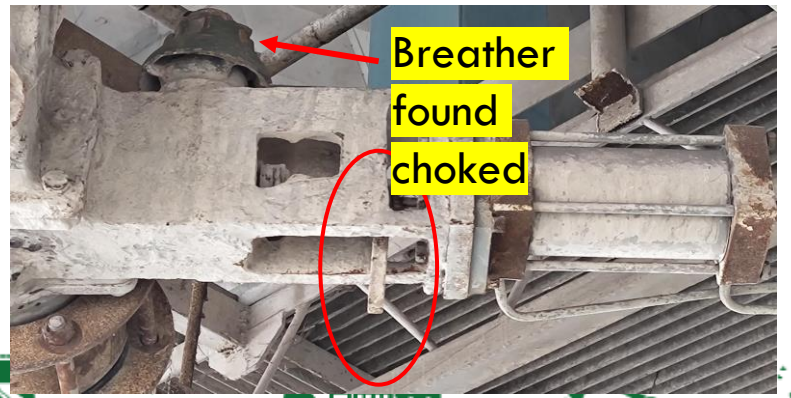
Dry ash utilisation 100% in Mouda due to high demand.

Special project for Dry Ash evacuation taken up at Sipat

Special project for Dry Ash evacuation at Sipat

New technology UseApplication of Ultrasonic Leak Detector

Problem identification : Material Handling Valve frequent Malfunction

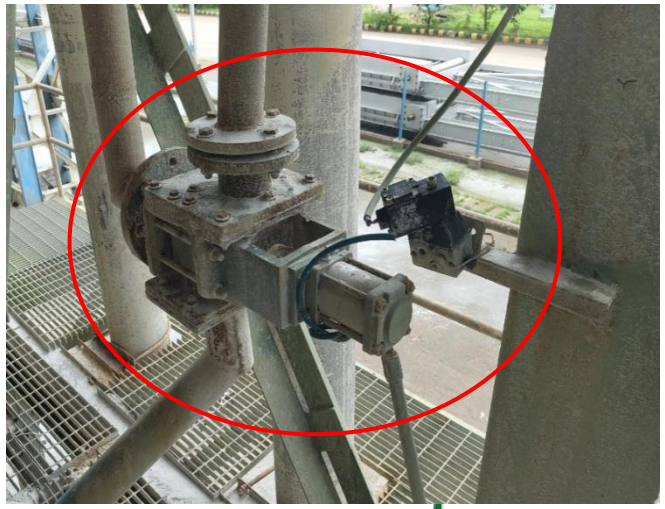


MHV malfunction resulted in

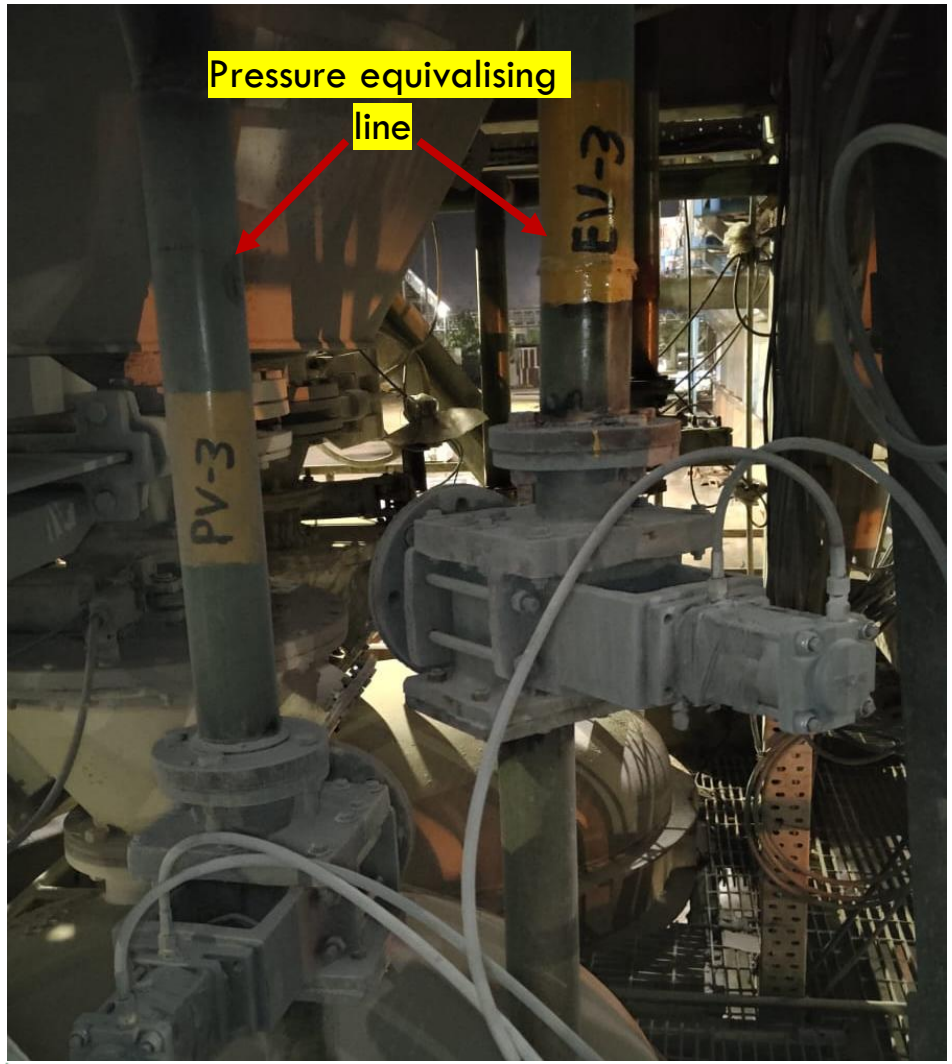
- Slow Dry ash evacuation and forcing wet ash handling.
- Increased water consumption and dyke filling.

3 Way Pressure Equalising Valve Non Functional

Non-Functional



Modification in Buffer Hopper 4A



Air Ingress at MHV to Hopper/ ash line connection through use of acoustic leak detector

Issue of poor suction vacuum in Ash evacuation header from ESP.

Air Ingress point identification by use of technology (acoustic leak detector).

Line header vacuum improvement achieved (250 mmwc), resulted in reduction of vacuum pump/FAHP running.

For Fugitive Dust control at Ash Dyke

Beshram Plantation

1.25 lakh sq mtr. area covered by Tarpaulin

Environment Management : Scrap/Waste Disposal

Segregation of wastes generated at NTPC-Sipat is being done. Waste management at NTPC-Sipat is presented as per the flow chart given below- NTPC Has sold 10.73 Cr form Scrap sales form Scrap sales.

Waste Management at Sipat Plant

Hazardous Wastes

- **Used Resin-** Disposal through **TSDFs** at Pithampur, MP
- Coal mill Reject 50 K MT
- **Insulation Waste-**Disposal through (**TSDFs**) at Pithampur, MP
- **Silica Gel**-Disposal through **TSDFs** at Pithampur, MP
- **Used Oil 196 Kl**-Sale through approved (MOEF&CC/SPCB/CPCB) recycler
- **Discarded containers**-auctioned

Non -Hazardous Wastes

- **Ferrous**- 2400 MT Sold Out
- **Non-ferrous**- being sold out
- **HDPE Tarpaulin** Sheet- 10 MT auctioned

Other wastes

- **Bio Medical Waste (BMW)**-being disposed through common BMW treatment facility operator Evercare International (Chhattisgarh)
- **E-waste**- 12 MT auctioned
- **Batteries-** 35 MT auctioned
- **Wood**- auctioned

Waste Management at NTPC-Sipat Township

- Municipal Solid Waste (Biodegradable)- used in bio methanation plant within premises
- Municipal Solid Waste (Non-Biodegradable)- disposed through recyclers.
- Plastic Waste- co-processed in Cement Kiln of Ambuja Cements Limited Bhatapara

Out of the BOX

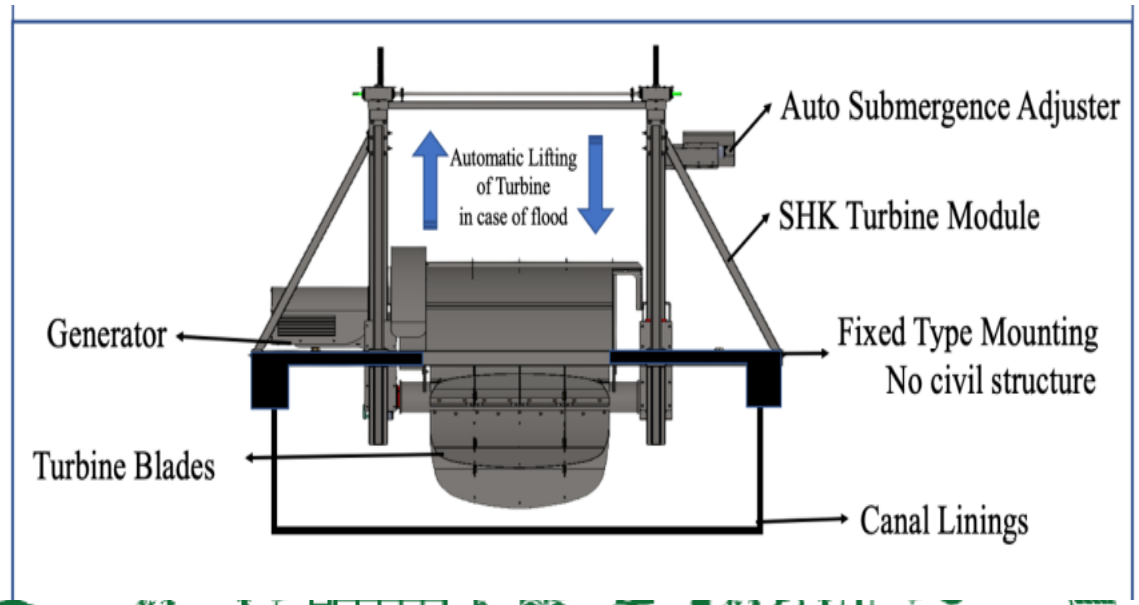
Harnessing Hydro power from Cooling Tower discharge

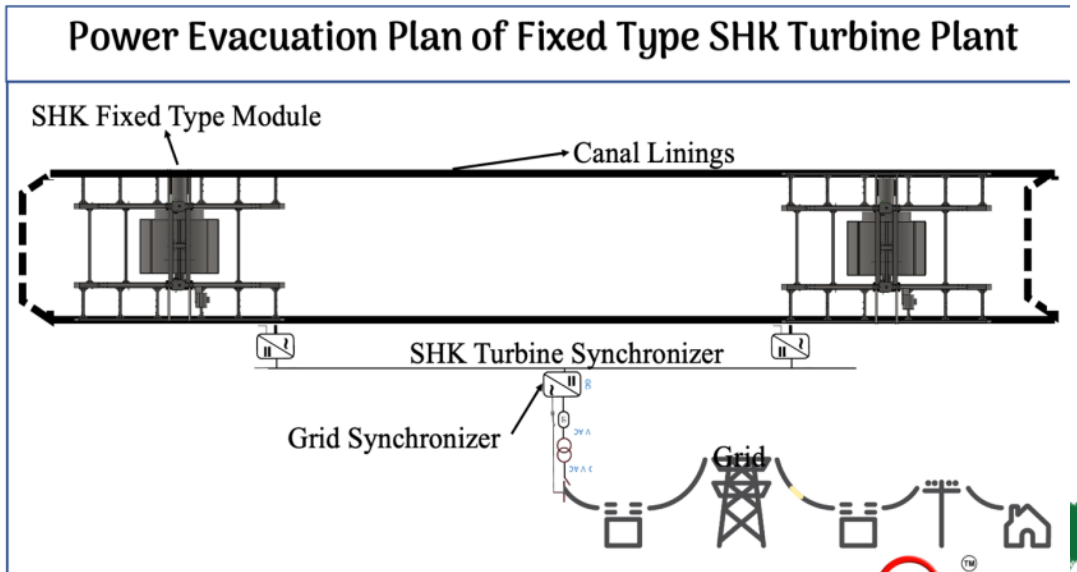
Site for the project

Site to Harness Energy- Cooling Tower Discharge Canal – Stage 1

- **Location :**
  - **Stage 1 Cooling Tower Discharge after the bucket strainer**
  - **Canal dimension: 4.5m(Width) x 3.5m (Depth) x 85m (length)**
  - **Approx. Minimum water velocity 1m/sec**

Turbine Design





Project Abstract & Feasibility

SN	Parameter	Details
1	Site location	6 no canal in stage 1 Cooling Tower discharge
2	Module in each canal	3 X 10KW
3	Capex (including Maint cost 5 yrs)	Rs 2.5 Lakh/KW (for 18 modules)
4	Capacity	180 KW (Total 6 x 3 x 10KW)
5	Annual Energy generation	1.44 MUs
6	Unit cost of Sipat (FY 2022-23 Avg)	Rs 3.17/ unit
7	Pay-back period	9.9 years
8	Useful life of Hydro turbine	40 years

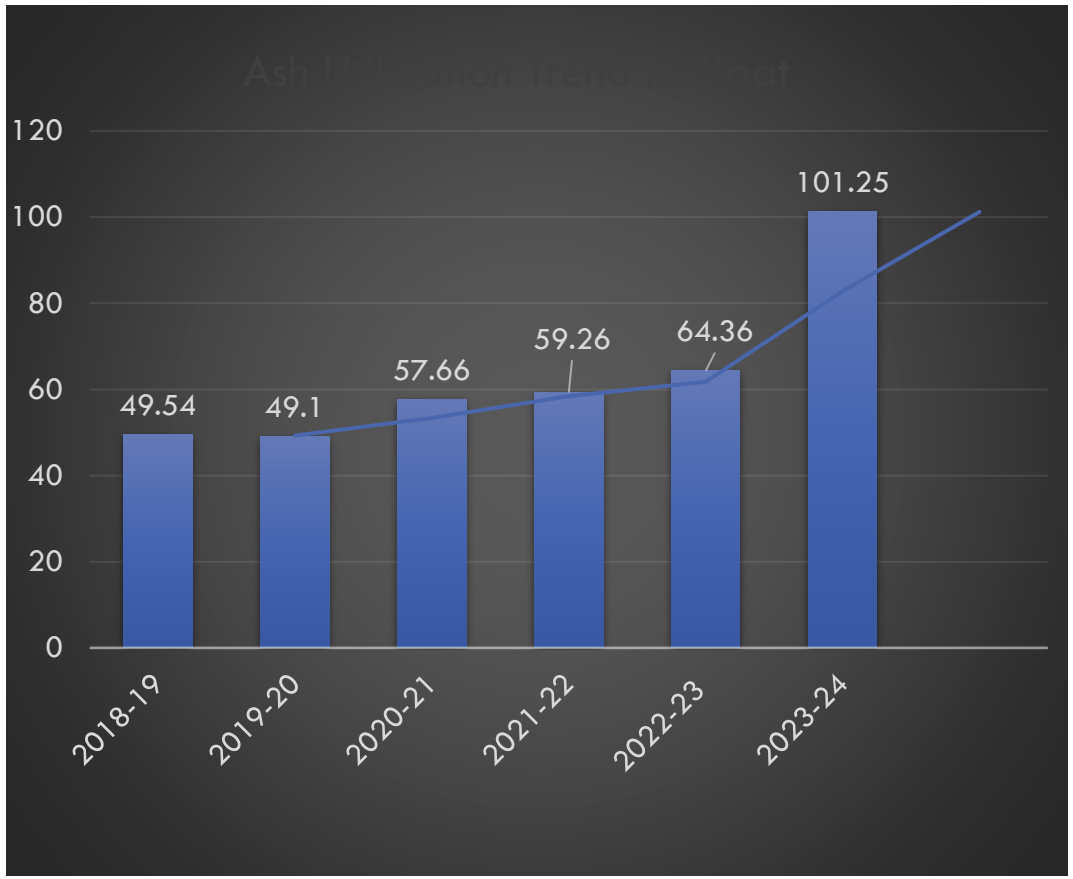
Moving towards Net Zero Township

Total Installed capacity kWp (DC)	* Under installation by Station (kWpDC)	Under installation through NVVN/ NTPC RE (kWpDC)	Township Yearly Energy Consumption (MU)	Yearly Solar Generation (MU)	Energy Shortfall (MU/kWe)	Remarks
800	373	26000	9.02	0.82	8.20/940	1. 373 kW PO Awarded. Material u/transit. 2. Floating solar(26MW) in reservoir#1B : through NTPC RE. (Award – 15Jul'24) 3. 2.3MW Ground mounted NIT Done, BOD-22.07.24 4. CW Hydro turbine proposal of 1.5 MW being expedited.

	National Average*	Sipat (Total consumption)
Per Capita Electricity Consumption National per annum (in KWh)	1255	1227

Township water consumption LMC	Rainwater reuse in plant. LMC	Per capita water consumption. Lts/day	STP kLd
3.76	5.2	187	1500

Ash Utilization (%)



Ash Utilization Plan FY'2024-25

- Total Ash generation (Projected) : 54 LM^3
- AU planned for FY 24-25 : 112.9 %
- Ash Utilization Target for FY'24-25 : 60.96 LM^3

Highest ever DFA (Dry Fly Ash utilization of 10.82 LMT in FY23-24, using HMDC (Hydro Mix dust conditioner).

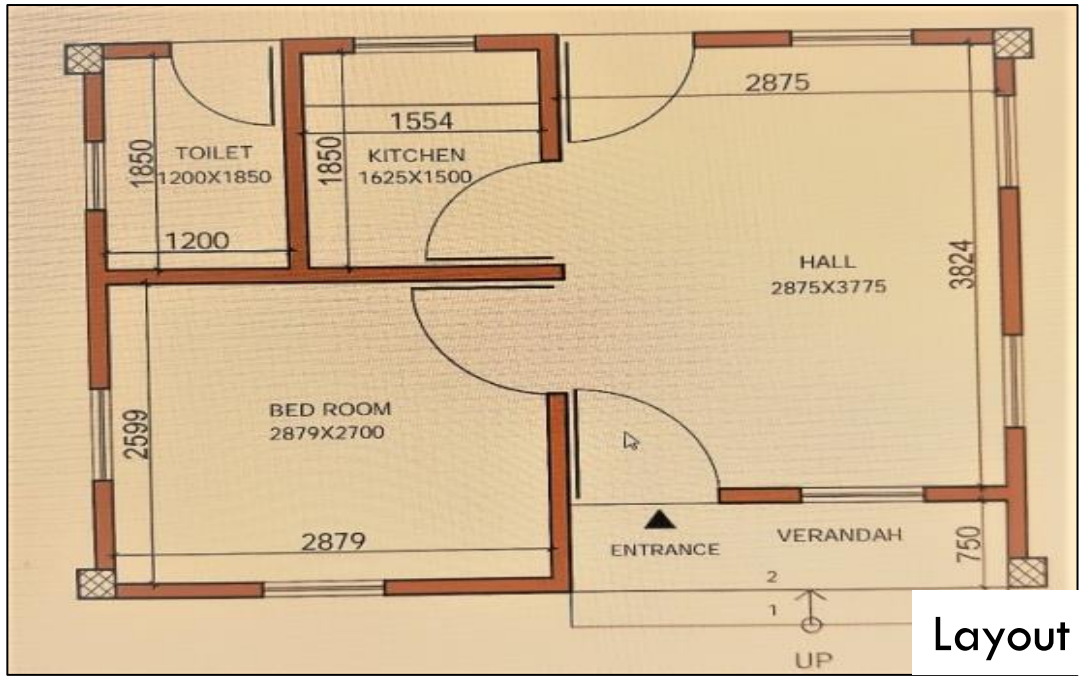
LOW-COST GREEN HOUSING (LCGH) AN INNOVATIVE APPROACH

Salient features

- **Cost:1.25 Lakh**
- **Area – 322 sq feet**
- **Ash Utilization- 40 T per house**
- NO use of natural sand & aggregates
- **In-house manufactured Ash products used:**
  - i. Aggregates
  - ii. Interlocking wall block
  - iii. Bottom Ash
  - iv. Paver blocks
  - v. Tiles
  - vi. Ash Based Ventilators
  - vii. Door and Window frames

LOW-COST GREEN HOUSING (LCGH)

LOW-COST GREEN HOUSING (LCGH) AN INNOVATIVE APPROACH



Layout


Bedroom


Hall

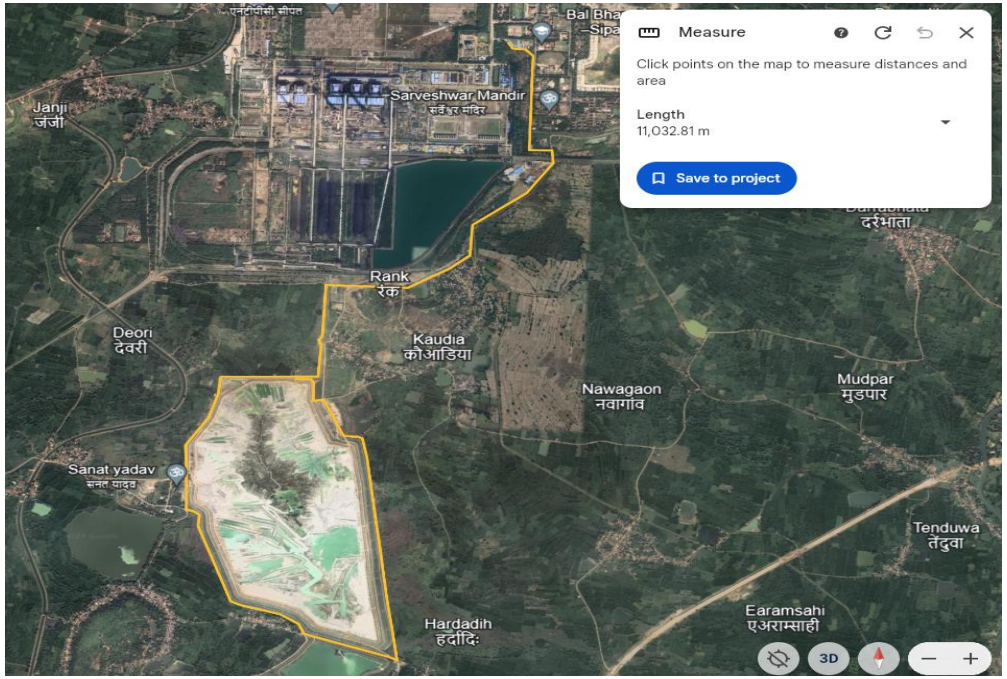

Kitchen


Toilet

Dry Ash Dispatch by Rail to Cement companies

Total number 13 rakes dispatched in current year to cement industries.

Geo Polymer Concrete (GPC) ROAD STATUS



GPC Road from **SAMAWESHI BHAWAN to Dyke-1 is under construction**

Status:

8.6 km/11 km completed

Expected date of completion : 30-11-2024

ASH BASED VALUABLE PRODUCTS

Pre-Cast Wall

Park Bench

Wall Block

Chair and Table

ASH BASED VALUABLE PRODUCTS

Tetrapod

Fencing Column

Park Table

Paver Blocks

Cement Based Aggregates

ASH BASED VALUABLE PRODUCTS

NACA

HUME PIPE

GPC ROAD -ASH DYKE

PAVER BLOCKS

LWA

ASH BASED VALUABLE PRODUCTS

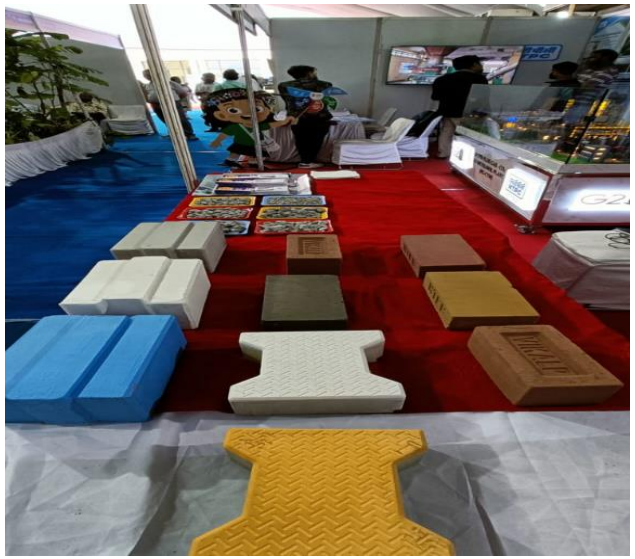
Boundary Wall

Nano concrete Aggregate

Paver & Wall blocks

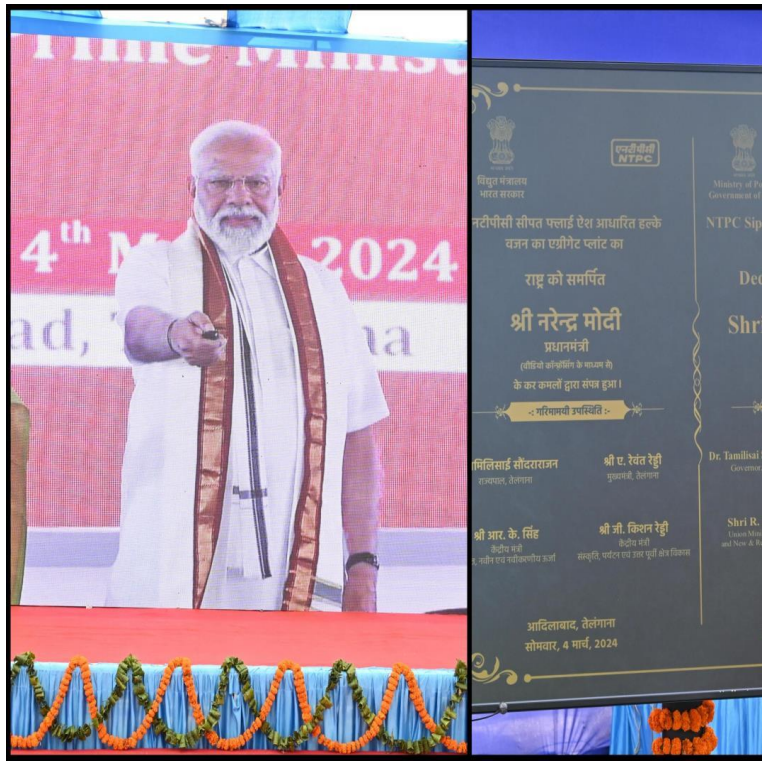
Block production

Ash products- Displayed in exhibition

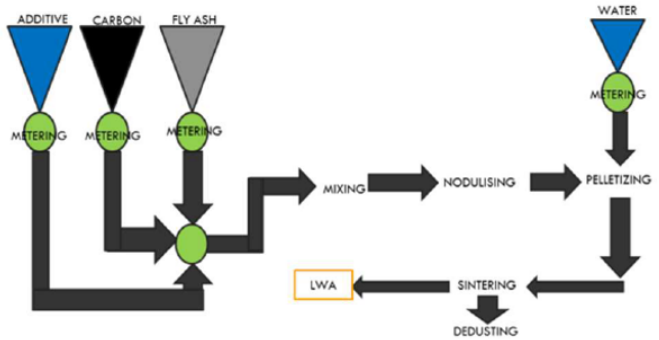


NTPC SIPAT LWA PROJECT, PILOT TO PRODUCTION

Inauguration BY Hon'ble PM



LWA Facility

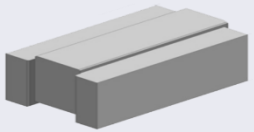


- Light Weight Aggregate (LWA) plant Sipat
- Fly ash based Light weight aggregate as an alternate for natural stone concrete
- 50000 Ton capacity plant under commissioning, first lot to be produced by 30.09.23
- Cost of LWA Rs 1700/Ton
- Cost of Natural Stone aggregate: Rs 2000 / Ton
- Trail production done on

ASH TECHNOLOGY- PROJECTS

SN	Project	Salient features	Status
1.	**Geopolymer Lab Set up** • 20 TPD equipment • Testing facilities 	• In-House Production & Testing of Ash based products • Development of Design Mix for new products and on going projects	• Infrastructure set-up completed • 20 TPD machine installed and commissioned • GPCA produced (20 KG) • Testing of GPCA under progress Water absorption - <18%, Impact /Abrasion value-<40%, etc
2.	GPCA 	• In house development of GPCA (Geo Polymer Coarse Aggregate) • Substitute for Natural resources • Huge potential for bulk ash utilization (80%)	The Projects are done to establish the techno commercial viabilities of the technology. The alternate use of Ash in making aggerate and sand will make save natural resources and will result in resolving ash disposal issue.
3.	NACA 	• In house development of NACA (NANO Concrete Aggregate) • Substitute for Natural resources • Potential for bulk ash utilization (70%)	

Ash Technology: NI projects

SN	Project	Project/Benefit	Status
4.	Ash to Sand	• Bulk ash utilization • Conservation of natural resources • Revenue Generation	• Under implementation
5.	Interlocking Wall Blocks 	• No need of plastering and mortar • Geopolymer/high volume fly ash based cement blocks possible	

12000 Interlocking paver blocks used in Sipat

Ash to Sand Facility at NTPC Sipat

Pellet making machine

Pelletization of Biomass generated in plant premises – to cofire with coal (200 kg/hr)

TREE PLANTATION

Tree Plantation Since Inception : 1170801

Plant Growth in 4 Months

Miyawaki Technique

✓ **Growing dense forest in limited space**

Mission 1 Lakh Trees in FY 2023-24

Miyawaki plantation at DM Plant

Miyawaki plantation at DM Plant

Tree plantation Plan in FY 2023-24		
1.	MGR Track (completed)	25,000
2.	DM Plant (Miyawaki) Completed	23,000
3.	Bhilmi Village (Miyawaki) In progress	32,000
4	Uchbhati village (Miyawaki) PO placed	32,000
	Total	**1,12,000**

800 KW ROOF TOP SOLAR PV AT NTPC SIPAT

Type	Location	Installed Capacity
Rooftop Solar PV	NTPC Sipat Hospital	50 KW
Rooftop Solar PV	Administrative Building	100 KW
Rooftop Solar PV	Solar PV at various building inside the plant	650 KW

Upcoming Solar PV in Sipat:

- 200 KW Solar for Township power consumption, work started.
- 173KW in switchyard and office building
- 26 MW Floating solar in reservoir are, work under award.
- 2 MW ground mounted solar in switchyard area planned.

Flue Gas Desulphurisation (FGD)

- FGD implementation:
  - Unit 1 & Unit 3 FGD Hot gas In Achieved
  - Unit 3 FGD Gypsum production started

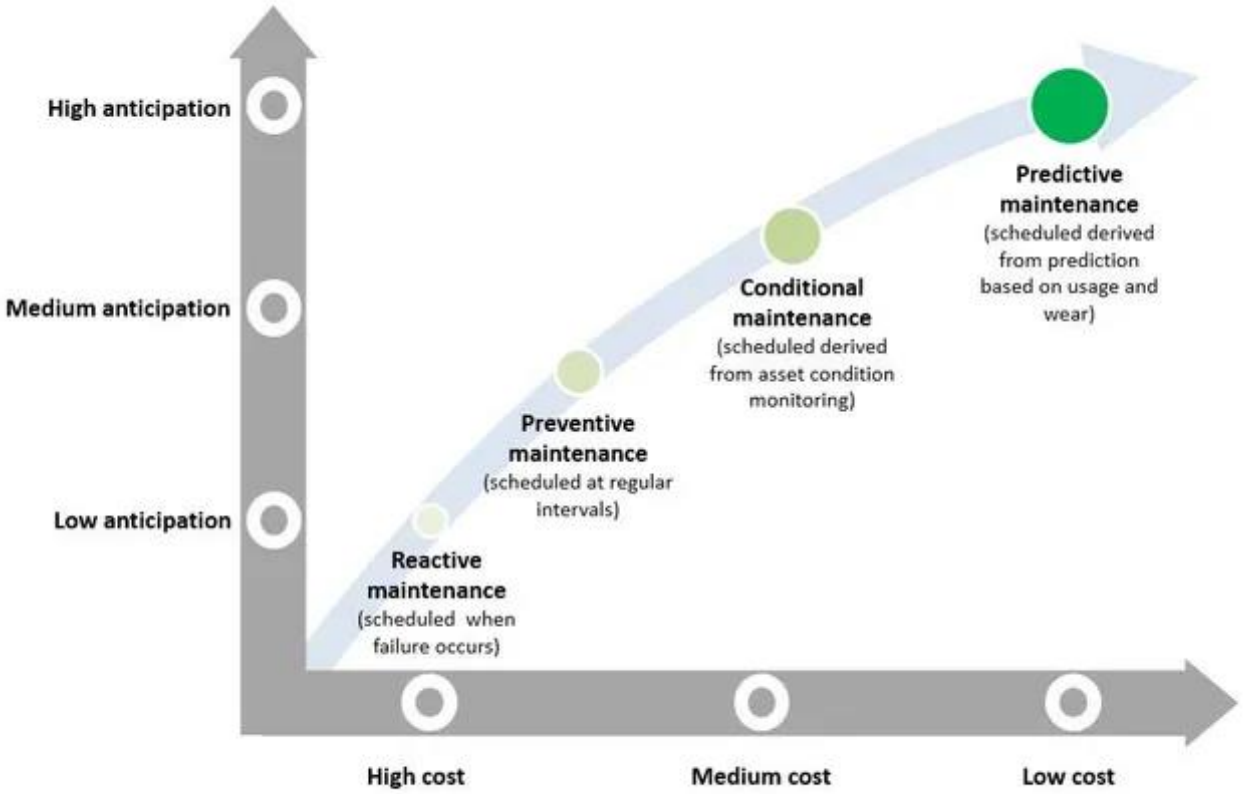
Energy Savings projects implemented in last 3 years

S. No	Year	Nos of Energy Saving Projects	Investment (INR Millions)	Electrical Saving (Million kWh)	Thermal Saving (Million Kcal)	Total Saving (INR Million)
1	2020-21	11	46.5	25.3	80850	82.13
2	2021-22	7	114.78	13.64	158400	109.17
3	2022-23	5	63.0	15.94	167556	134.1
4	2023-24	6	49	32.52	26337	69

Highlight of FY 2023-24

- Repair/ Overhauling of identified mills with higher specific energy consumption
- Air ingress in duct and boiler attended during Unit overhaul
- Optimising FAHP Pump running hours.
- Stage-1& 2 CT Fill replacement.
- Condenser water box cleaning

Condition Monitoring



Condition Monitoring Cont.....

Condition Monitoring Summary			
	Equipments	Exception Reported	Due
WDA	178	0	0
DGA	71	0	0
Thermography	508	40 (Under observation)	

S.No.	Plant Sample (Equipment Name)	Testing Date	Frequency (months)	Particle Quantifier PQ index	Next Testing Due	Limits
BMD Equipments						
1	MILL -1A	15-07-2024	3	16	15-10-2024	Mill gear box oil-500 (w/o side filtration)
2	MILL -1B	15-07-2024	3	12	15-10-2024	
3	MILL -1C	15-07-2024	3	10	15-10-2024	
4	MILL -1D	15-07-2024	3	23	15-10-2024	
5	MILL -1E	15-07-2024	3	11	15-10-2024	Mill GB - 200 (with side filtration)
6	MILL -1F	15-07-2024	3	10	15-10-2024	
7	MILL -1G	15-07-2024	3	12	15-10-2024	
8	MILL -1H	15-07-2024	3	10	15-10-2024	
9	MILL -1J	15-07-2024	3	10	15-10-2024	Ball mill- 100
10	MILL -1K	15-07-2024	3	22	15-10-2024	
11	MILL -2A	15-07-2024	3	9	15-10-2024	Others (APH, Fan, etc.)-25
12	MILL -2B	15-07-2024	3	10	15-10-2024	
13	MILL -2C	15-07-2024	3	11	15-10-2024	
14	MILL -2D	15-07-2024	3	10	15-10-2024	APH GBX-50
15	MILL -2E	15-07-2024	3	11	15-10-2024	
16	MILL -2F	15-07-2024	3	15	15-10-2024	
17	MILL -2G	15-07-2024	3	10	15-10-2024	
18	MILL -2H	15-07-2024	3	12	15-10-2024	
19	MILL -2J	15-07-2024	3	11	15-10-2024	

S.No.	Equipment Name	Testing Date	Frequency (months)	OK/Not OK	Next Testing Due		Last testing observation if any
137	CF MOTOR - 1A		1				
138	CF MOTOR - 1B	2024-07-09	1	Ok	09-08-2024	S/D	
139	VAC P/P MOTOR - 1A						
140	VAC P/P MOTOR - 1C					S/D	
141	VAC P/P MOTOR - 1B	2024-07-09	1	Ok	09-08-2024	S/D	
142	AWU - 1	2024-07-09	1	Ok	09-08-2024		
143	AWU - 2					S/D	
144	SEAL OIP P/P MOTOR - 1A					S/D	
145	SEAL OIP P/P MOTOR - 1B	2024-07-09	1	Ok	09-08-2024		
146	TDBFP - 1A ROP	2024-07-09	1	Ok	09-08-2024		PANEL SIDE : Y:72.6,B:72.9
147	TDBFP - 1B MOP	2024-07-09	1	UNDER OBSERVATION	09-08-2024	PANEL SIDE : R: 69.7	
148	MOP - 1A	2024-07-09	1	UNDER OBSERVATION	09-08-2024	PANEL SIDE : Y: 75.3	
149	TDBFP - 1A VAC P/P - B	2024-07-09	1	Ok	09-08-2024		
150	TDBFP - 1B VAC P/P - A	2024-07-09	1	Ok	09-08-2024		
151	MDBFP - 1A AOP	2024-07-09	1	Ok	09-08-2024		
152	MDBFP - 1B AOP	2024-07-09	1	Ok	09-08-2024		
153	PRIM WATER MOTOR - 1A	2024-07-09	1	Ok	09-08-2024		PANEL SIDE : R:72.6
154	SEAL AIR FAN MOTOR - 1B	2024-07-09	1	Ok	09-08-2024		
155	SGECW MOTOR - 1B	2024-07-09	1	Ok	09-08-2024		
156	AWU - 7	2024-07-09	1	UNDER OBSERVATION	09-08-2024	PANEL SIDE : B:69.2	PANEL SIDE : B:67.2
157	AWU - 8	2024-07-09	1	UNDER OBSERVATION	09-08-2024	MOTOR DE END : 66.3	MOTOR DE END :81.5
158	PAPH MOTOR - 1A	2024-07-09	1	Ok	09-08-2024		
159	PAPH MOTOR - 1B	2024-07-09	1	Ok	09-08-2024		
160	SAPH MOTOR - 1A	2024-07-09	1	Ok	09-08-2024		
161	SAPH MOTOR - 1B	2024-07-09	1	Ok	09-08-2024		
162	AC SCANNER MOTOR	2024-07-09	1	Ok	09-08-2024		

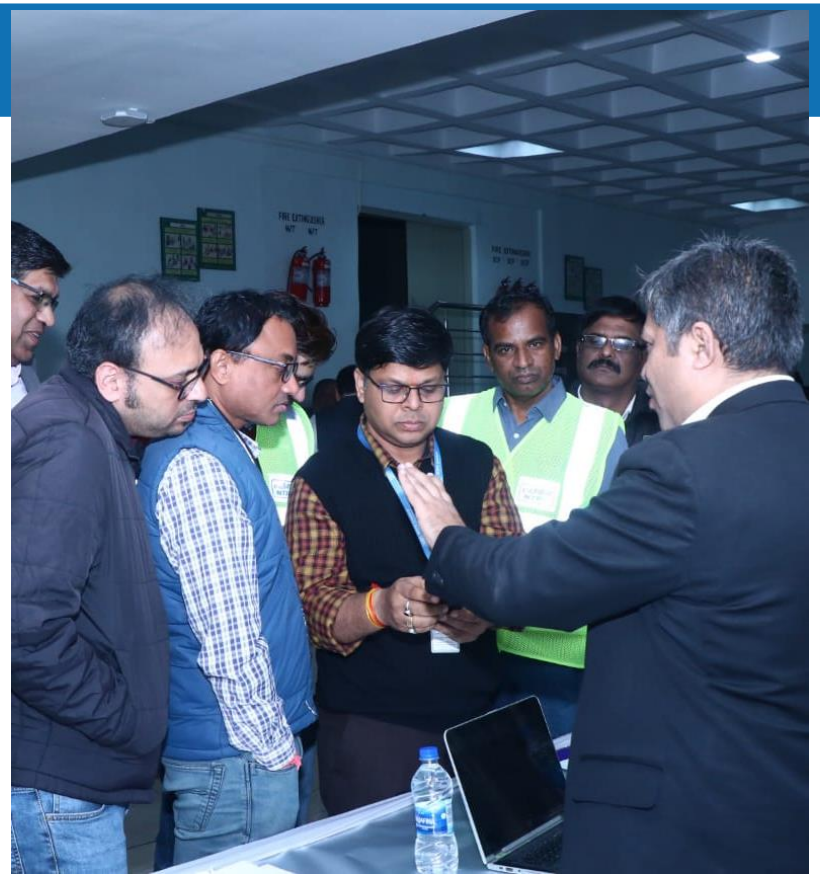
INVENTORY MANAGEMENT

@ NTPC Sipat

Inventory Reduction Action plan - Through SAP

SN	Strategy	Action Plan	Remarks
1	Procurement after Stringent Scrutiny	Procurement being done strictly on basis of need, consumption pattern , stock in pipeline & present stock.	FY 23-24-Procurement initiated - 132 Cr/ Consumption – 166 Cr (Inventory Reduction of 34 Cr.)
2	Review of mapping of "Minimum" Critical Spares in SAP	Departments to review Inventory for critical tagging. (50 Cr inventory already tagged as critical)	Inventory is being further reviewed for critical tagging. Target 31.07.24
3	ZSPR to ZCSP Conversion & transfer of inventory	Identification of ZSPR which are currently tagged as ZCSP	13.2 Cr material identified & note initiated for conversion to ZCSP
4	Review of material issued to Vendor	Booking of Free issue material issued to Vendor after reconciliation.	Vendor store inventory has reduced from 5 Cr to 2.48 Cr.
5	Reviewing items lying in blocked codes	Inventory lying in blocked codes is being reviewed.	Blocked code amounting to 9 crs have been cleansed

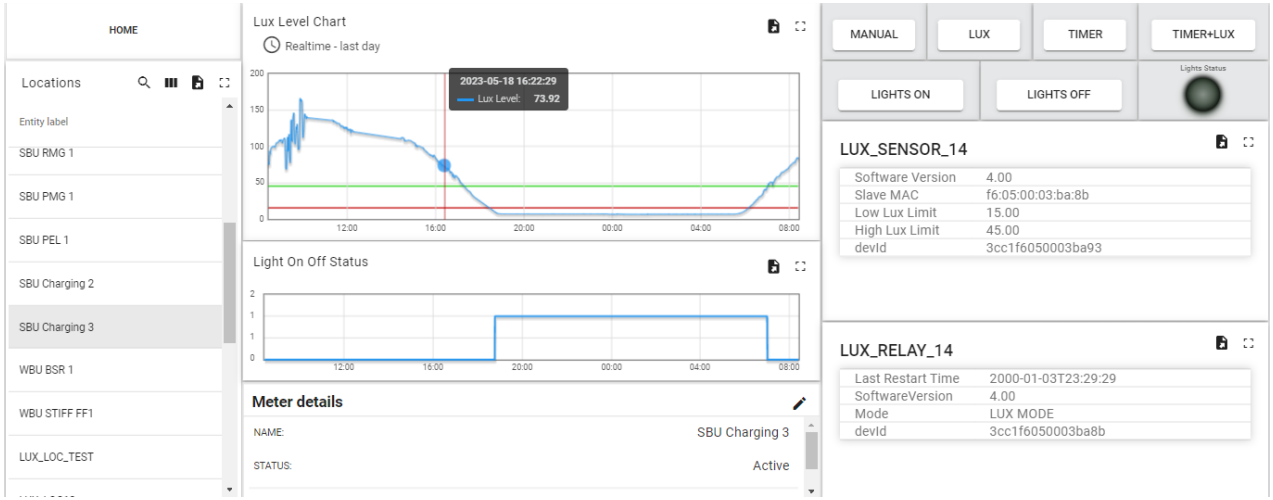
Learning from last CII Event.



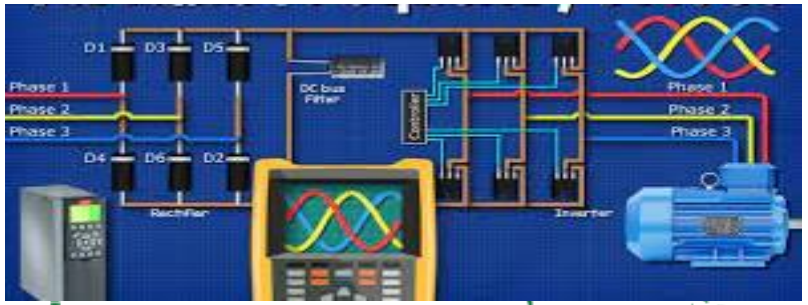
ENERGY EFFICIENCY VENDOR MEET

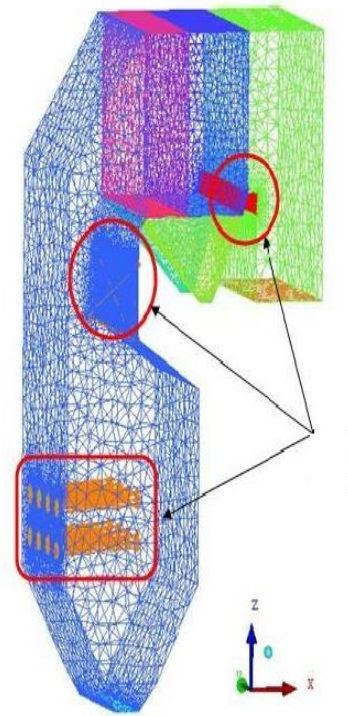
EC Projects discussed for Implementation in Vendor Meet

- Smart Air conditioning and Lighting control through Internet of Things(IOT) Applications



- IE 4 Motors for VFD Applications
- VFD in Stage 2 CEP
- CFD Analysis of Boiler Draft System





Energy Management System and SEC monitoring tools

- NTPC Sipat certified with ISO 50001:2018 certification for conformance to energy management system standards in all aspects.

CERTIFICATE

This is to Certify that the Management System of

NTPC LIMITED, SIPAT

SIPAT SUPER THERMAL POWER PROJECT, P.O. UJJWAL NAGAR - 495555, SIPAT, DIST. BILASPUR, CHHATTISGARH, INDIA

has been found to conform to the Energy Management System Standard:

ISO 50001:2018

This certificate is valid for the following scope of operations:

GENERATION OF ELECTRICITY BY COAL BASED THERMAL POWER PLANT (2 x 500 MW + 3 x 660 MW)

Certificate No.: IN54252G

Date of initial registration	Date of this Certificate	Surv. audit on or before/ Certificate expiry	Recertification Due
24 December 2021	24 December 2021	23 December 2022	23 December 2024

This Certificate remains valid subject to satisfactory surveillance audits.

Director

This Certificate is the property of Staunchly Management & System Services Limited and shall be returned immediately when demanded

STAUNCHLY MANAGEMENT AND SYSTEM SERVICES LIMITED
Labrynth Business Centre, 43 Middle Hill Gate, Stockport, Great Manchester, England-SK1 3DG
Company Registered in England with Company Number 11488683


thank you