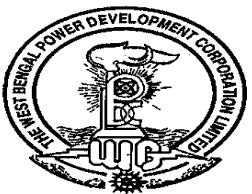


WELCOME

TO
YOU ALL
FOR

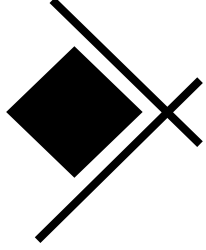
**22nd National Award for Excellence in Energy
Management, 2021**

Mr. Susnata Aich, General Manager, STPS

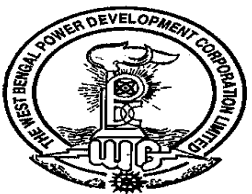
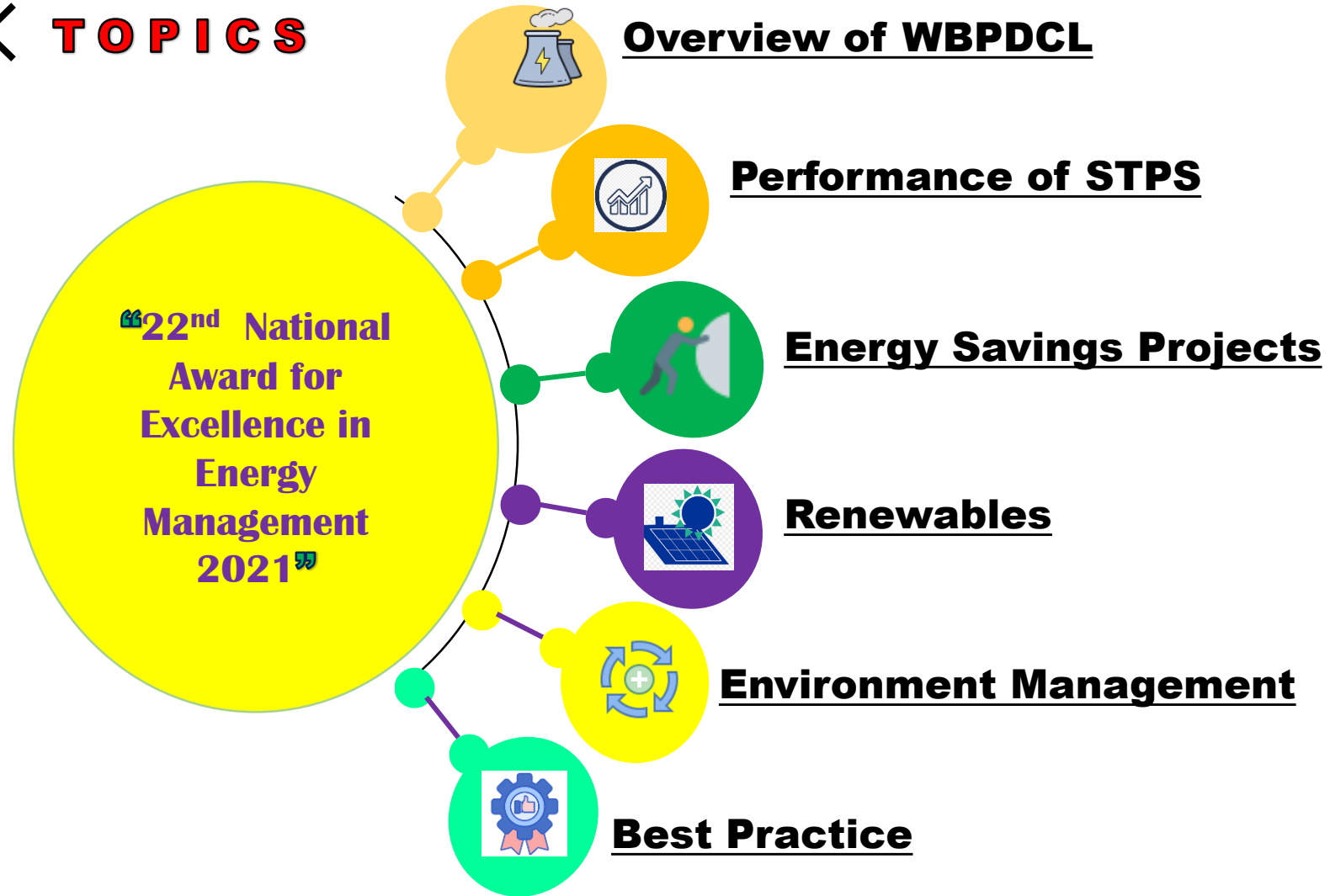


SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)



TOPICS



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the **West Bengal Power Development Corp. Ltd** (A Govt. WB Enterprise)

WBPDCL - A BRIEF OVERVIEW

WBPDCL is State Genco and having 5 Power plant with total capacity **4745MW**



SANTALDIH THERMAL POWER STATION(STPS)
TOTAL CAPACITY: **2X300MW**



SAGARDIGHI THERMAL POWER PROJECT(SgTPP)
TOTAL CAPACITY: **2X250MW, 2X500MW**



BAKRESWAR THERMAL POWER STATION(BkTPS)
TOTAL CAPACITY: **5X210MW**



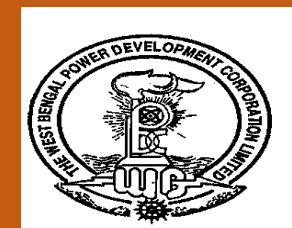
KOLAGHAT THERMAL POWER STATION(KTPS)
TOTAL CAPACITY: **6X210MW**



BANDEL THERMAL POWER STATION(BTPS)
TOTAL CAPACITY: **2X600MW, 1X215MW**

SANTALDIH THERMAL POWER STATION(STPS)


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OVERVIEW: SANTALDIH THERMAL POWER STATION(STPS)



 WBPDCCL is State Genco and having 5 Power plant with total capacity 4745MW

 Santaldih TPS (STPS) is one of the five power plants of WBPDCCL

 Santaldih TPS (STPS) is oldest power plants of Eastern India

 Total Installed Capacity is 2X250MW



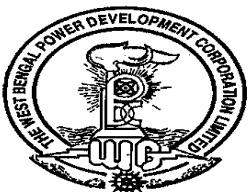
SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

STPS PLANT PERFORMANCE

FY2020-21

Parameter	FY2020-2021
Installed Capacity(MW)	2X250
Annual Generation (MU)	3443
PLF (%)	78.61
Availability Factor (%)	82.87
Gross Heat Rate (Kcal/kwhr)	2433.19
Auxiliary Power Consumption (%)	8.41
DM Water Consumption (%)	0.859
Specific Water Consumption (Lt/Kwhr)	3.34
Specific Oil Consumption (ml/Kwhr)	0.41

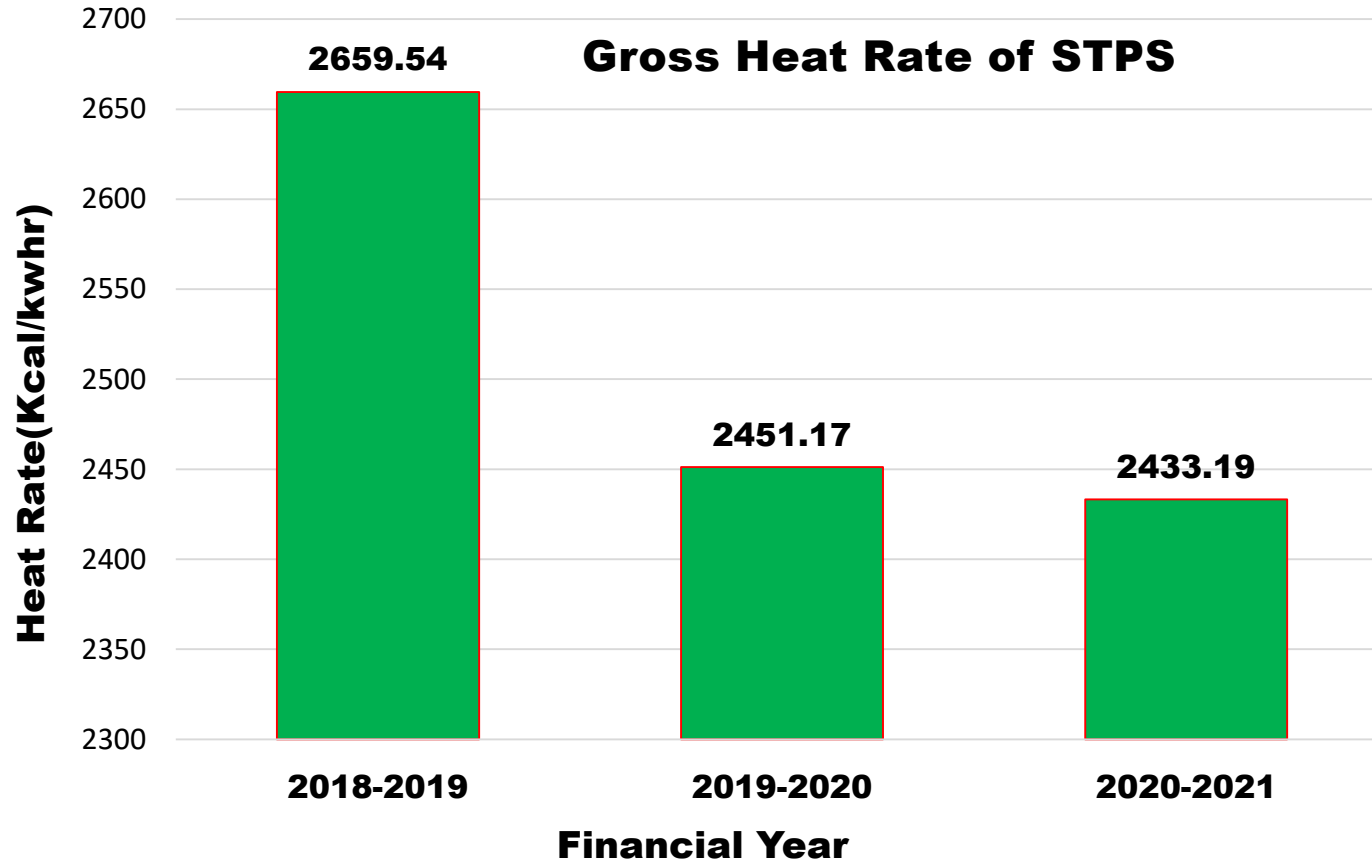


SANTALDIH THERMAL POWER STATION(STPS)

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PLANT PERFORMANCE

GROSS HEAT RATE

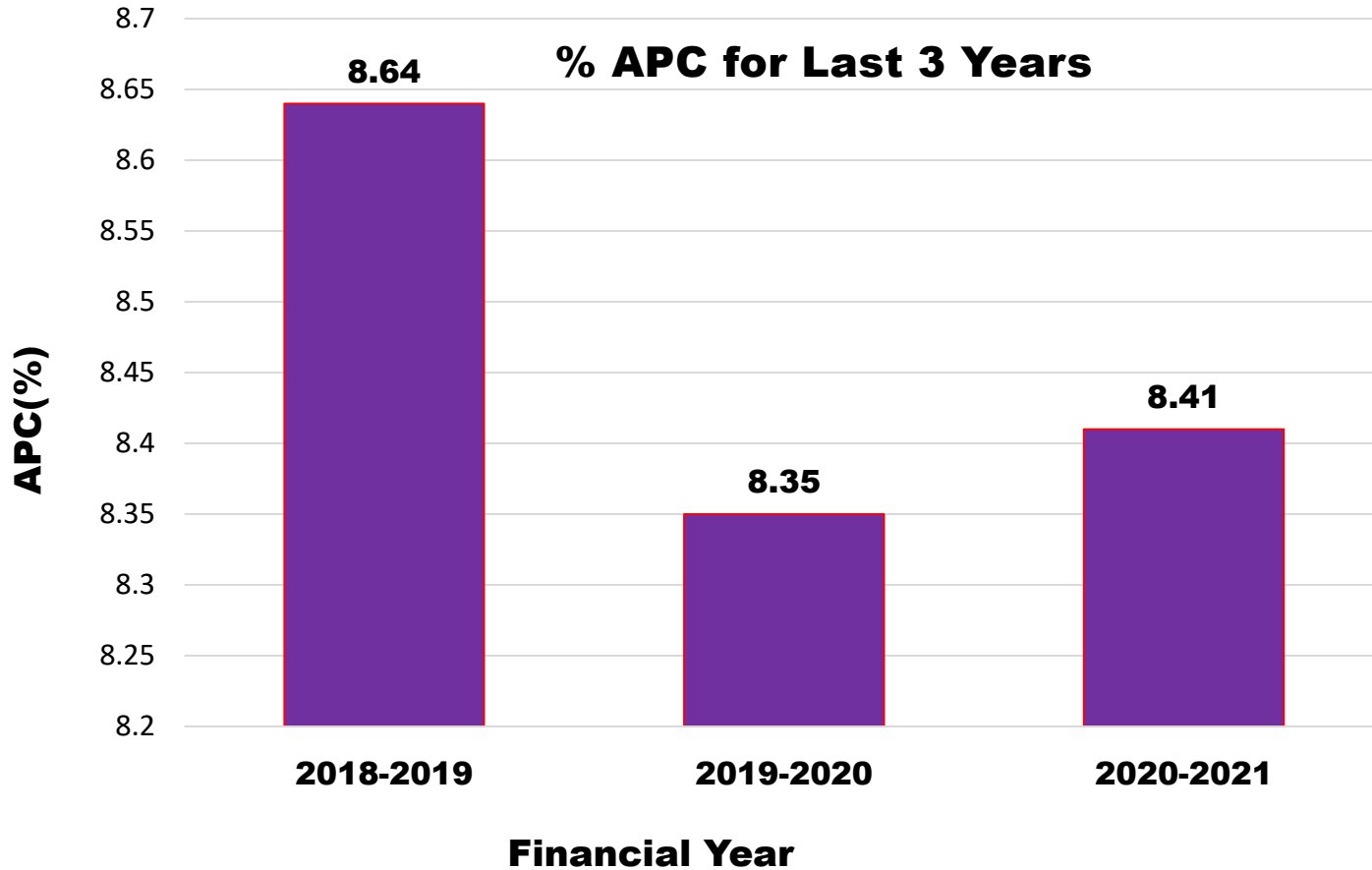


SANTALDIH THERMAL POWER STATION(STPS)

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STPS PERFORMANCE

AUXILIARY POWER CONSUMPTION



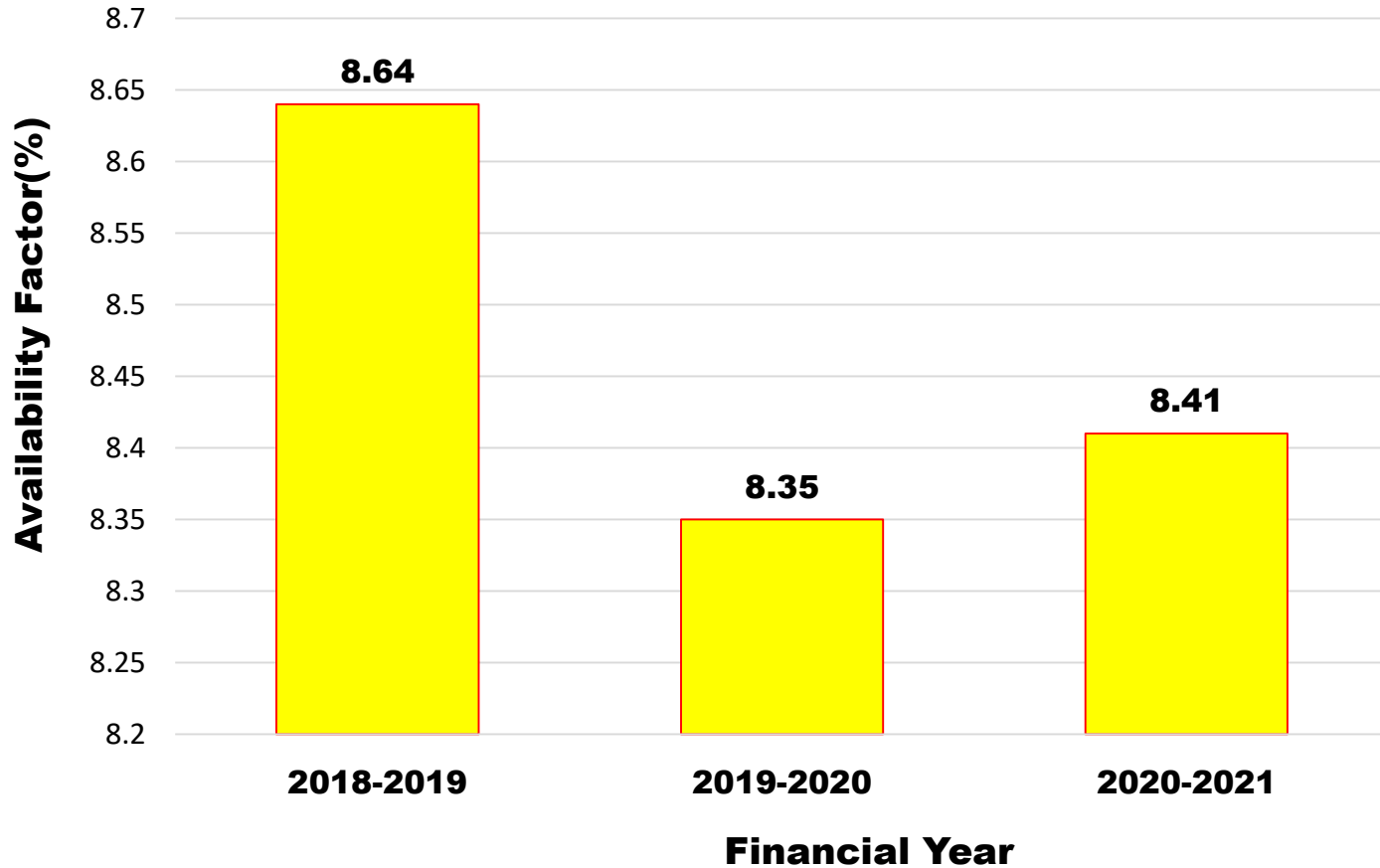
SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

PLANT PERFORMANCE

AVAILABILITY FACTOR

% Availability of STPS for last 3 Years



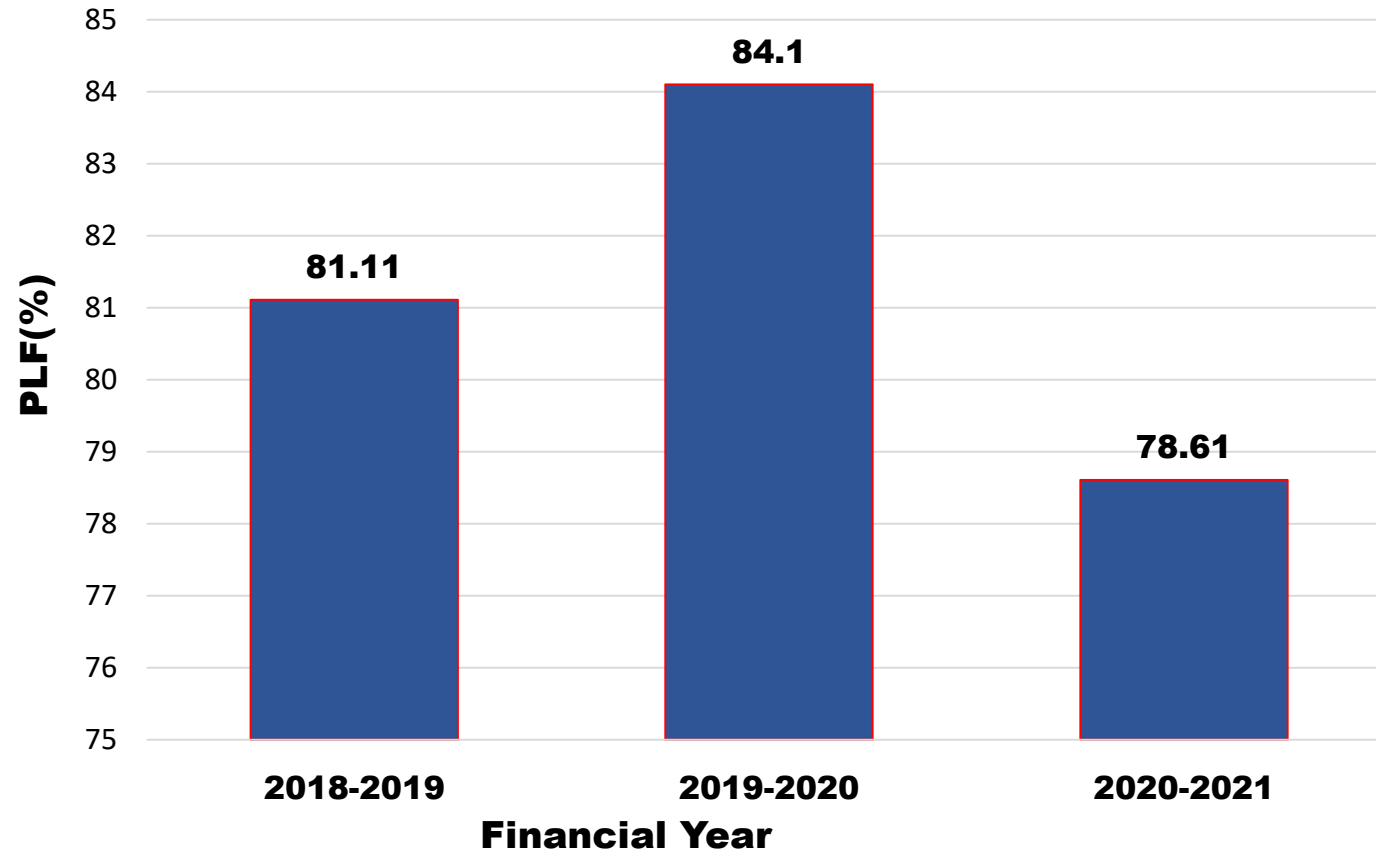
SANTALDIH THERMAL POWER STATION(STPS)

A power station of the **W**est **B**engal **P**ower **D**evelopment **C**orp. **L**td (A Govt. WB Enterprise)

PLANT PERFORMANCE

PLANT LOAD FACTOR

% Plant Load Factor of STPS for last 3 Years



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the **West Bengal Power Development Corp. Ltd** (A Govt. WB Enterprise)

BENCHMARK

NATIONAL BENCHMARKING

STATION	CAPACITY	APRIL'21-MAY'21		RANK APRIL'21- APRIL'21	APRIL'20-MAY'20	
		RANK	PLF(%)		RANK	PLF(%)
SASAN UMTTP	3960	1	98.58	17	2	96.60
KORBA STPS	2600	2	98.42	7	3	96.40
AMARKANTAK EXT TPS	210	3	97.66	2	1	99.74
BANDAKHAR TPP	300	4	97.27	6	29	75.60
MAITHON RB TPP	1050	5	97.24	4	37	68.59
VINDACHAL STPS	4760	6	96.26	16	10	88.17
SANTALDIH TPS, WBPDC	500	7	95.01	3	34	71.25
SINGARINI TPP	1200	8	93.71	8	28	75.69
BAKRESWAR TPS, WBPDC	1050	9	92.90	1	36	68.65
BUDGE BUDGE TPS	750	10	92.87	18	27	76.21
SAGARDIGHI TPP, WBPDC	1600	11	92.64	14	79	43.35



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)



STPS STACK

EMISSION PERFORMANCE

Parameter	UOM	2018-2019	2019-2020	2020-2021
Total CO2 Emissions Per kW of Generation	gm / kWhr	1068	1046	1044
Current SOx Emissions at Full Load	mg/Nm ³	401.62	608.25	662.81
Current NOx Emissions at Full Load	mg/Nm ³	161.12	256.56	233.51
Particulate Matter	mg/Nm ³	28.89	36.84	44.71



STPS STACK

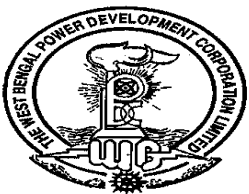


SANTALDIH THERMAL POWER STATION(STPS)

A power station of the **West Bengal Power Development Corp. Ltd** (A Govt. WB Enterprise)

ENERGY SAVING PROJECTS IMPLEMENTED IN LAST THREE YEARS

Year	No of Energy Saving Project	Investment (Million INR)	Electrical Savings (Million kwh)	Thermal Savings (Million kcal/mtoe)	Savings (Million INR)
2018-2019	1	121.21	2.2351649	13593.085	35.17
2019-2020	1	41.97	0.6086798		30.132
2020-2021	1	1.652	0.105120		0.407



SANTALDIH THERMAL POWER STATION(STPS)

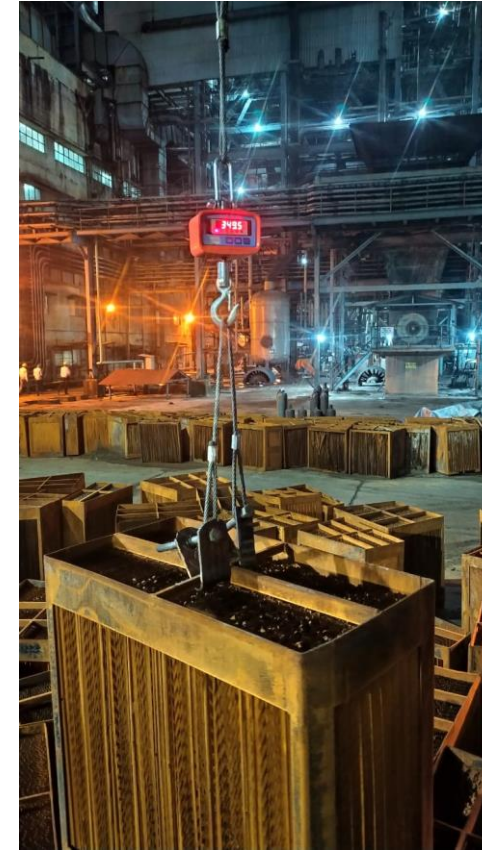
A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

ENERGY SAVING PROJECTS

AIR PRE-HEATER HOT END & COLD END BASKET CHANGED



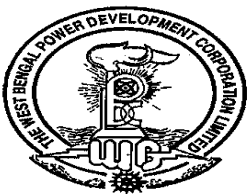
AIR PRE-HEATER OVERHAULING JOB



Total investment:
Rs.121.21 Million

Total savings: **Rs.35.17 Million**
Annual

Annual
Rs.35.17

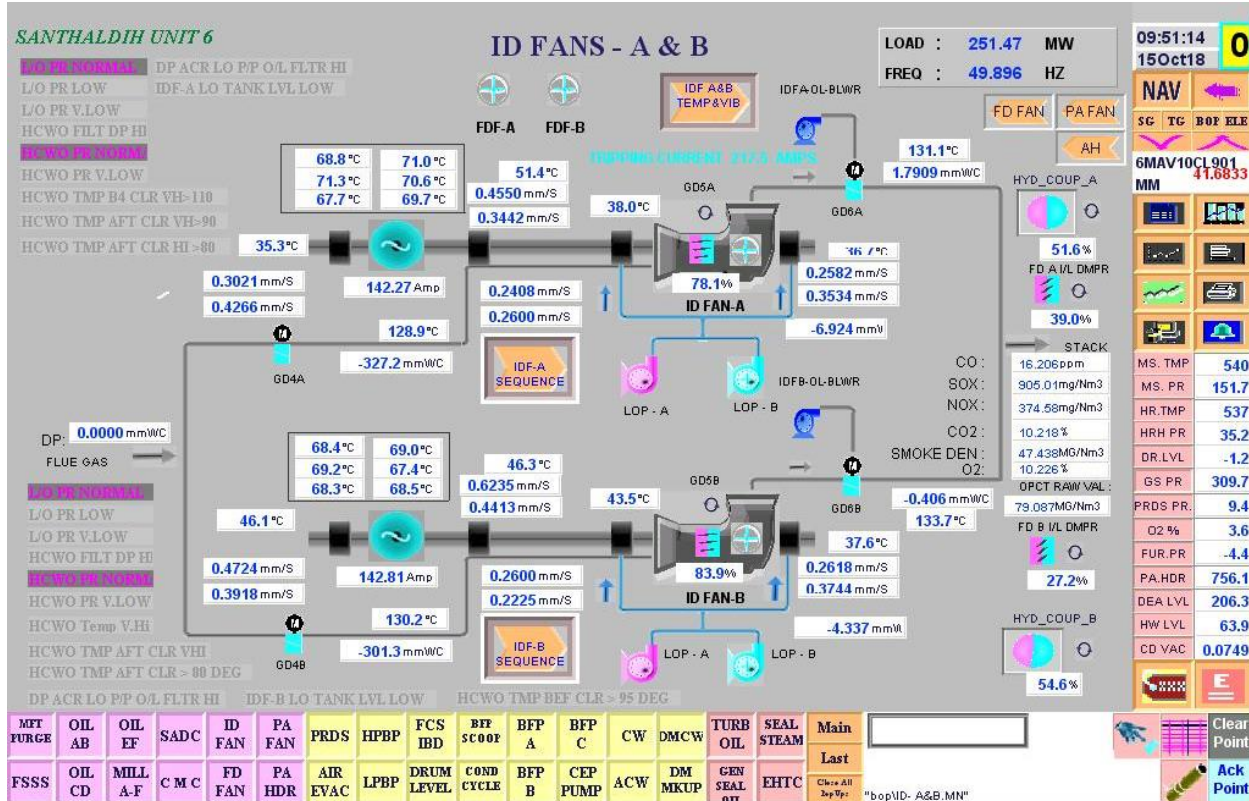
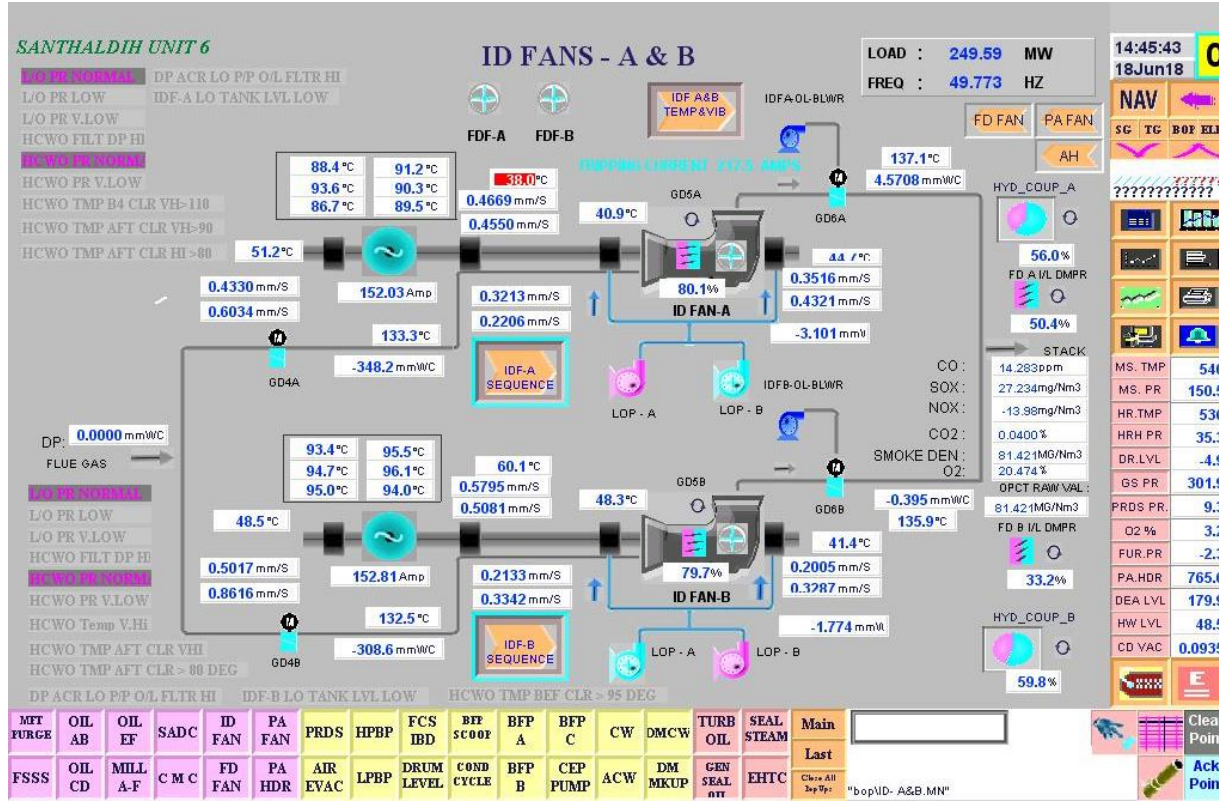


SANTALDIH THERMAL POWER STATION(STPS)

A power station of the **West Bengal Power Development Corp. Ltd** (A Govt. WB Enterprise)

ENERGY SAVING PROJECTS

AIR PRE-HEATER HOT END & COLD END BASKET CHANGED



ID FAN PARAMETER BEFORE OVERHAULING

ID FAN PARAMETER AFTER OVERHAULING

SANTALDIH THERMAL POWER STATION(STPS)

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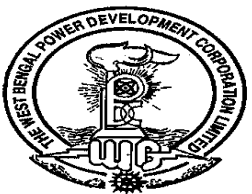


ENERGY SAVING PROJECTS

INSTALLATION OF LED LAMP IN PLACE OF HPSV LAMP AND BALLAST



- ❖ Total No of Lamp changed in Unit No.5:1479
- ❖ Total investment Rs.41.97 Million & Yearly Savings Rs.24.56 Million



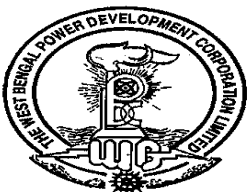
SANTALDIH THERMAL POWER STATION(STPS)

A power station of the **West Bengal Power Development Corp. Ltd** (A Govt. WB Enterprise)

RENEWABLE ENERGY SOURCES

SOLAR ENERGY

SUBJECT	2018-2019	2019-2020	2020-2021
No of Project Implemented by STPS	7		
Capacity Addition (MW) BY STPS	0.808		
Type of Installation	On Grid		
Power Generation(Million kWh) at STPS	0.11	1.21	1.41
RPO - Target	NA		
RPO - Achieved	NA		
Group total capacity(MW) OF WBPDC	25.58		
Unit total capacity(MW) at STPS	0.808		



SANTALDIH THERMAL POWER STATION(STPS)

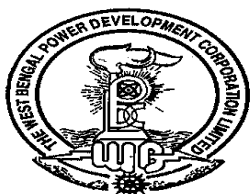
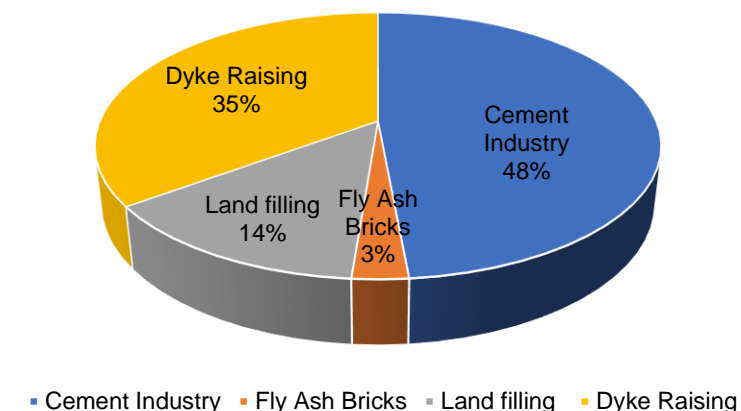
A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

ENVIRONMENT MANAGEMENT

ASH UTILIZATION

Particulars	UOM	2018-2019	2019-2020	2020-2021
Ash Stock in Plant (yard + pond)	Tons	3418544	3638961	3970268
Ash Generated	Tons	805920	1089606	1095289
Ash Utilization	%	121.344	101.251	100.312
Ash Utilized in cement/concrete industry	%	39.20	20.37	48.69
Ash Utilized in Fly Ash Bricks	%	1.97	2.41	2.71
Ash Utilized in Land filling	%	80.15	65.99	13.69
Ash Dyke Raising	%	0	0	35.21

FLY ASH UTILIZATION IN FY 2020-2021



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

INITIATIVE TAKEN TOWARDS ENVIRONMENT



Plant with Greenery



Ash Bagging System



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the **West Bengal Power Development Corp. Ltd** (A Govt. WB Enterprise)

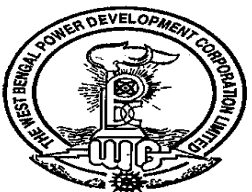
INITIATIVE TAKEN TOWARDS ENVIRONMENT



ASH PARK

STPS ASH PARK

- ❖ It is a new initiative to develop the awareness of importance of Fly Ash
- ❖ This park is with the use of Fly Ash only.
- ❖ Fly Ash made different type of material have been kept in this park.



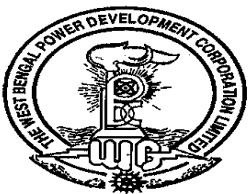
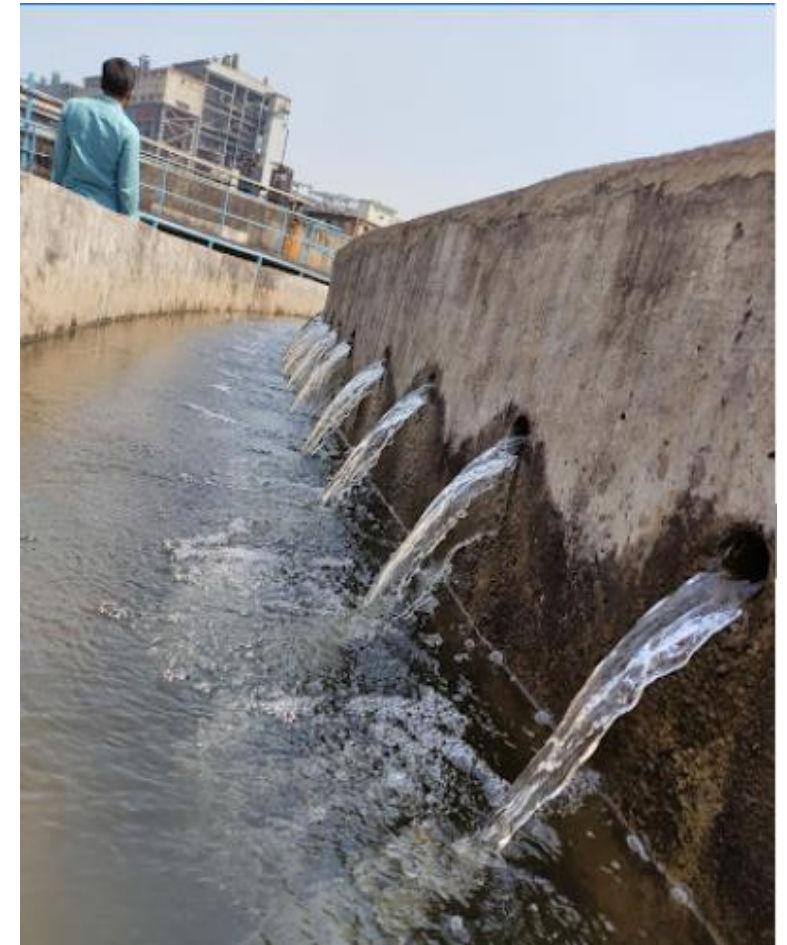
SANTALDIH THERMAL POWER STATION(STPS)

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ENVIRONMENT MANAGEMENT

WATER

Particulars	UOM	2018-19	2019-20	2020-21
DM water Consumption of Plant	%	0.746	0.847	0.943
Raw Water Consumption of Plant	m3/MW	3.49	3.38	3.32

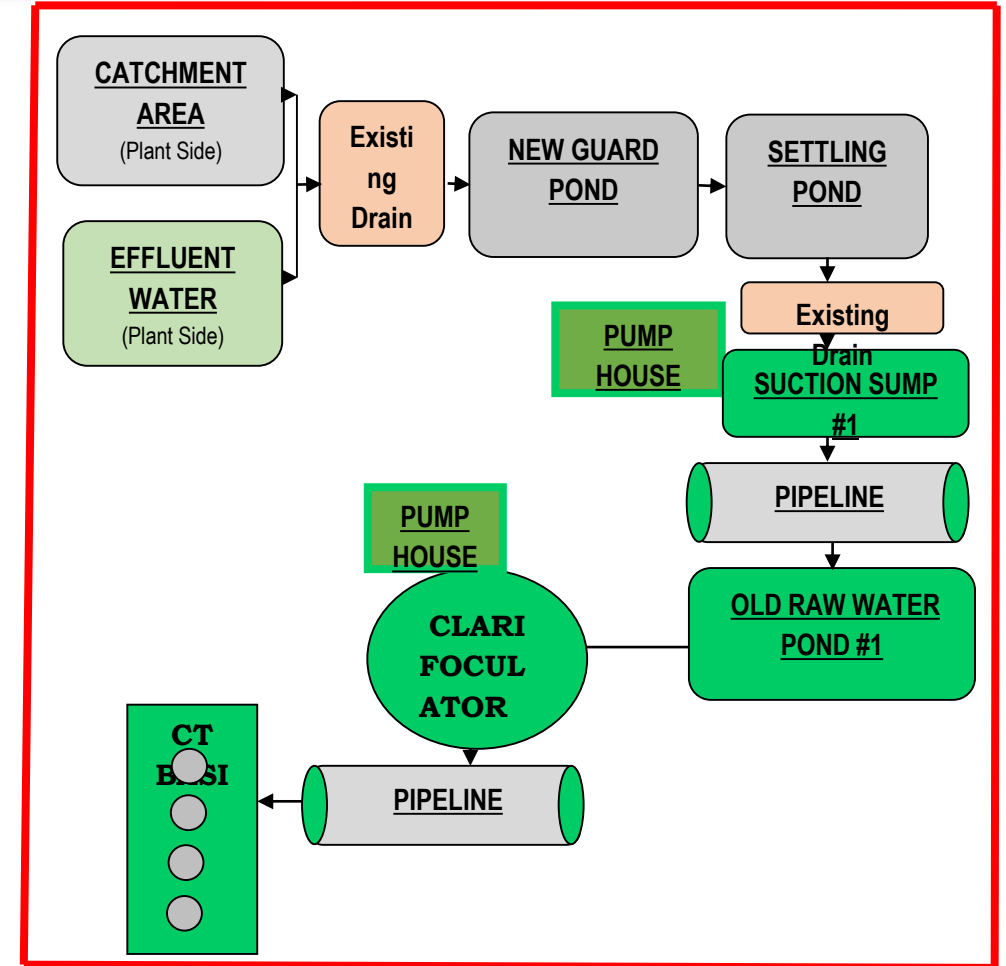
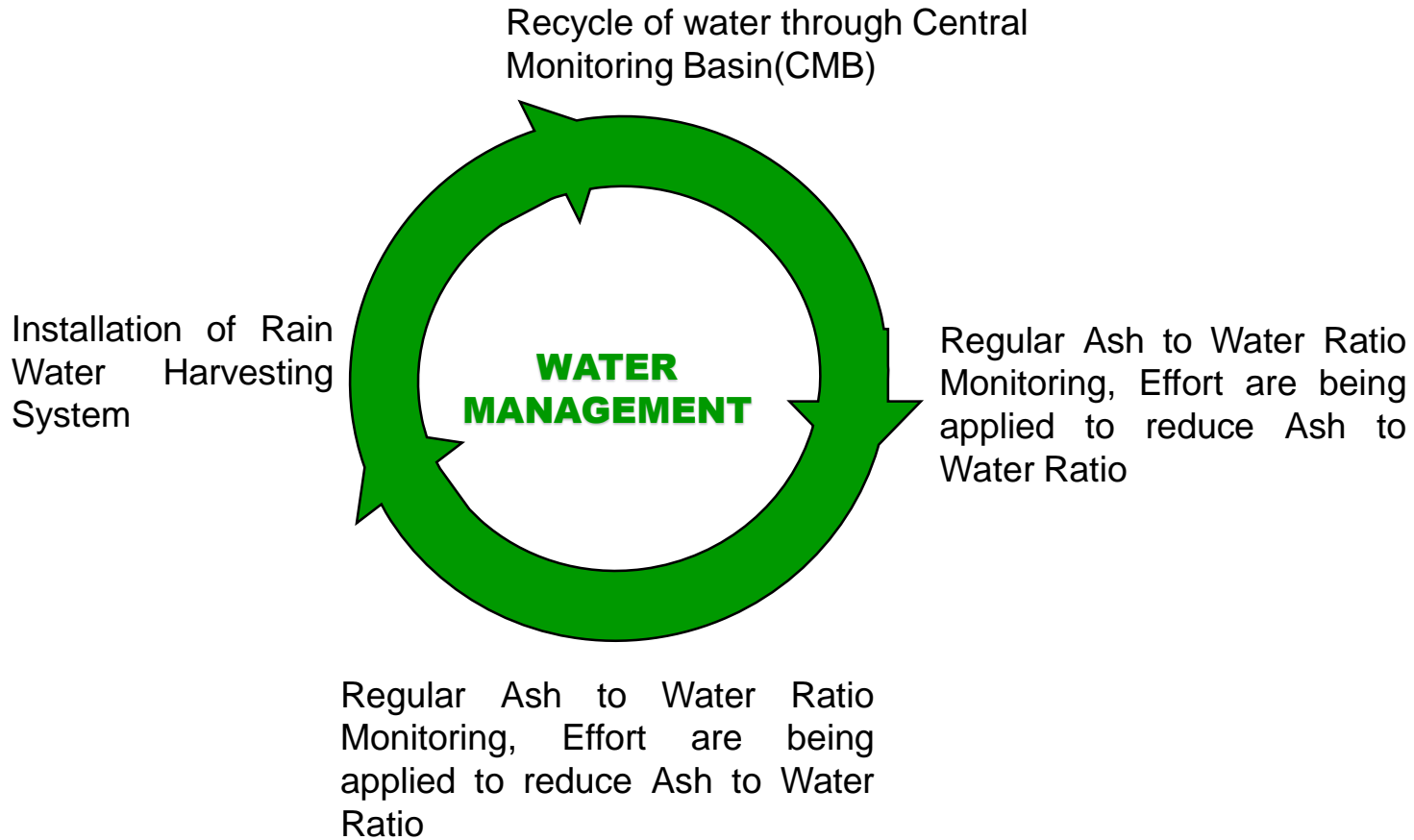


SANTALDIH THERMAL POWER STATION(STPS)

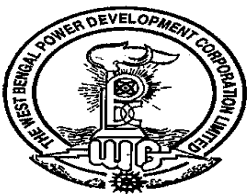
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BEST PRACTICES

WATER MANAGEMENT



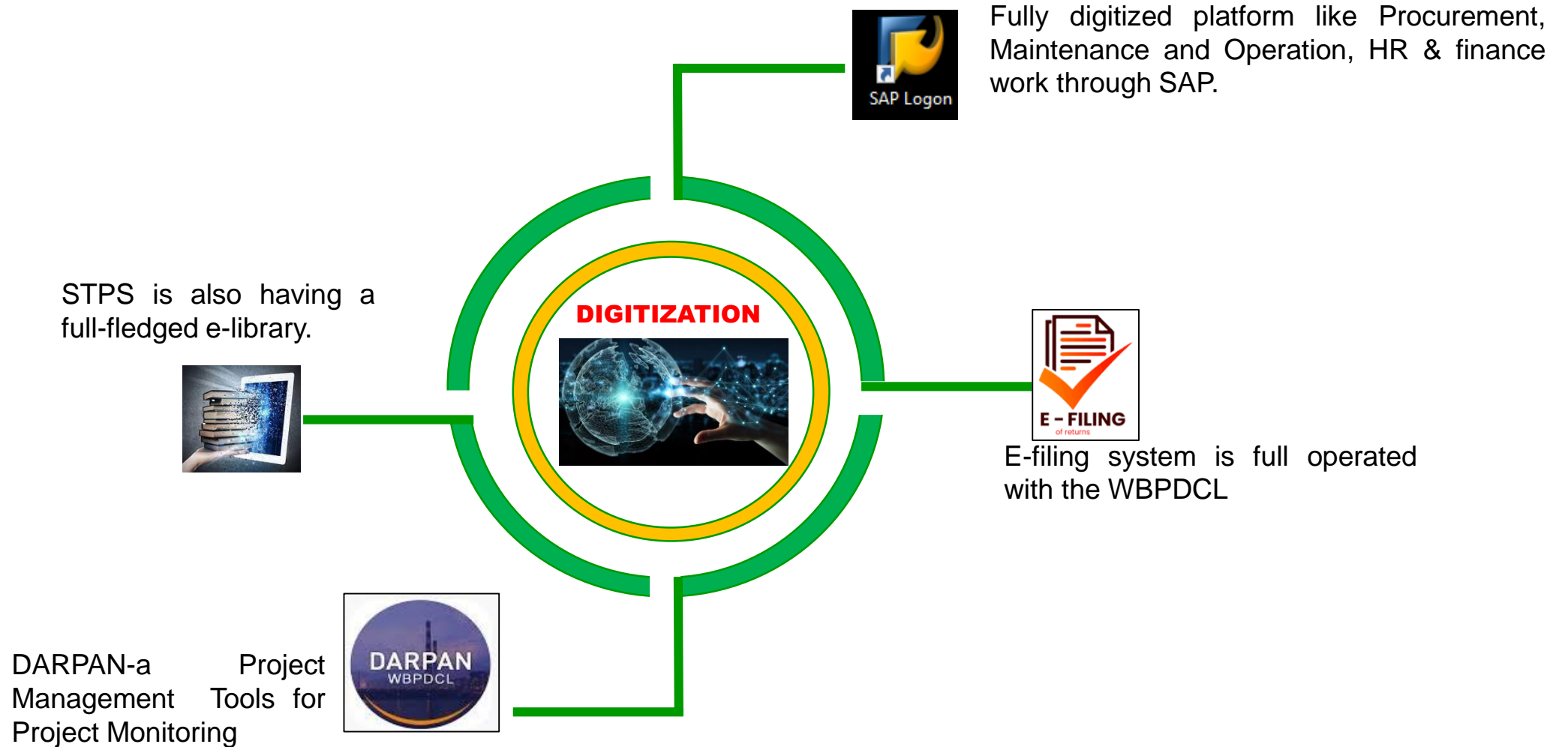
STPS Rain water Harvesting System Layout



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

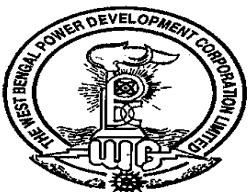
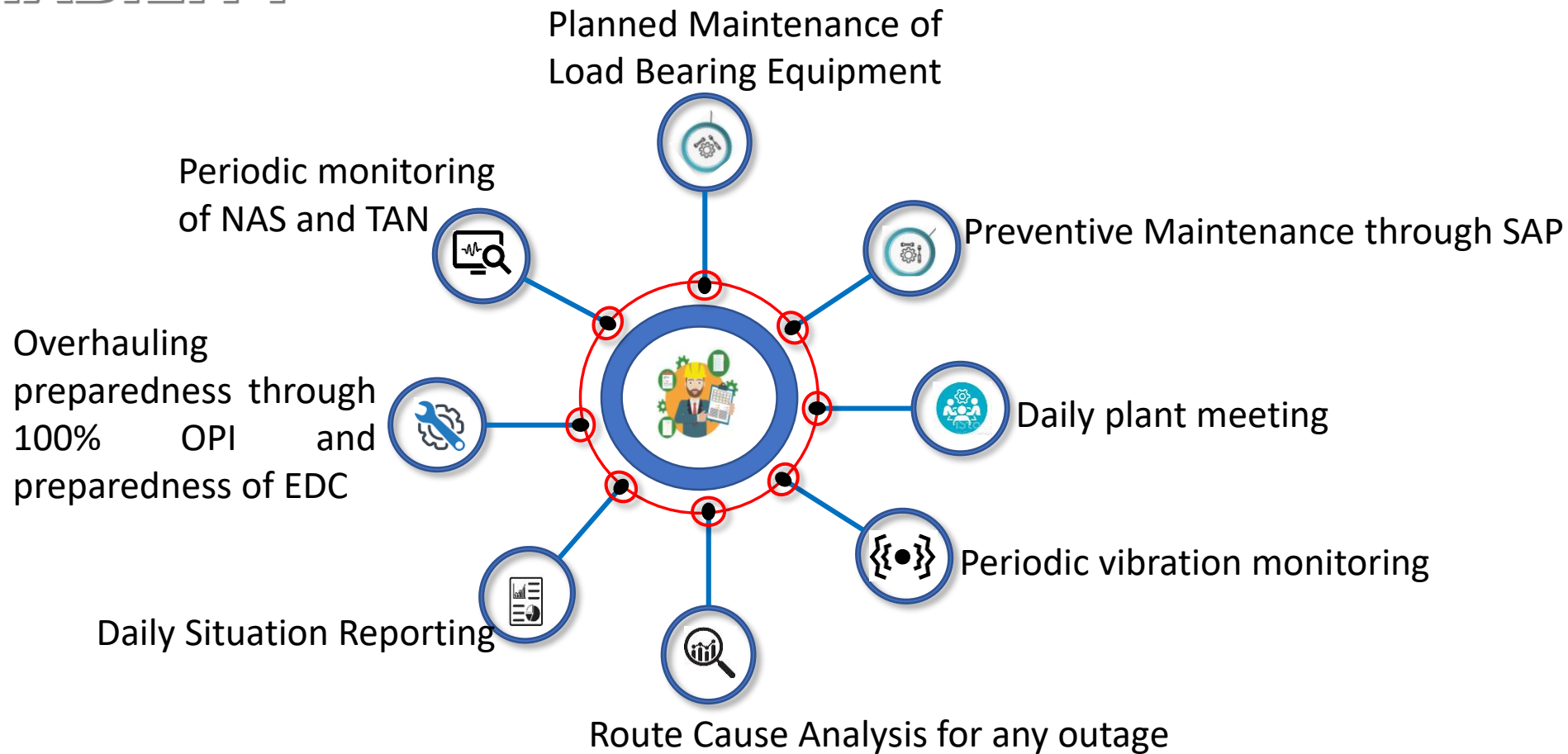
DIGITIZATION



SANTALDIH THERMAL POWER STATION(STPS)

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MAINTENANCE & RELIABILITY



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

NEW

INITIATIVES

Installation of Fly Ash brick manufacturing unit at its premises for fly ash utilization

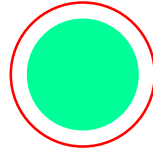


Installation of 5MW floating Solar Power plant on its raw water pond

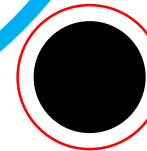


NEW
INITIATIVES

Construction of Safety Park



Installation of three number fly ash bagging machine is under process.



SANTALDIH THERMAL POWER STATION(STPS)

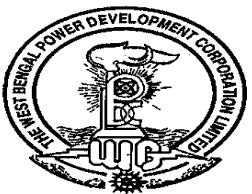
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AFFORESTATION



Saplings Plantation

This Year STPS have already planted another 17,000 saplings



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

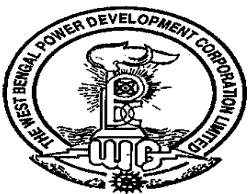
AFFORESTATION



Tree Inventory

STPS is having a tree inventory

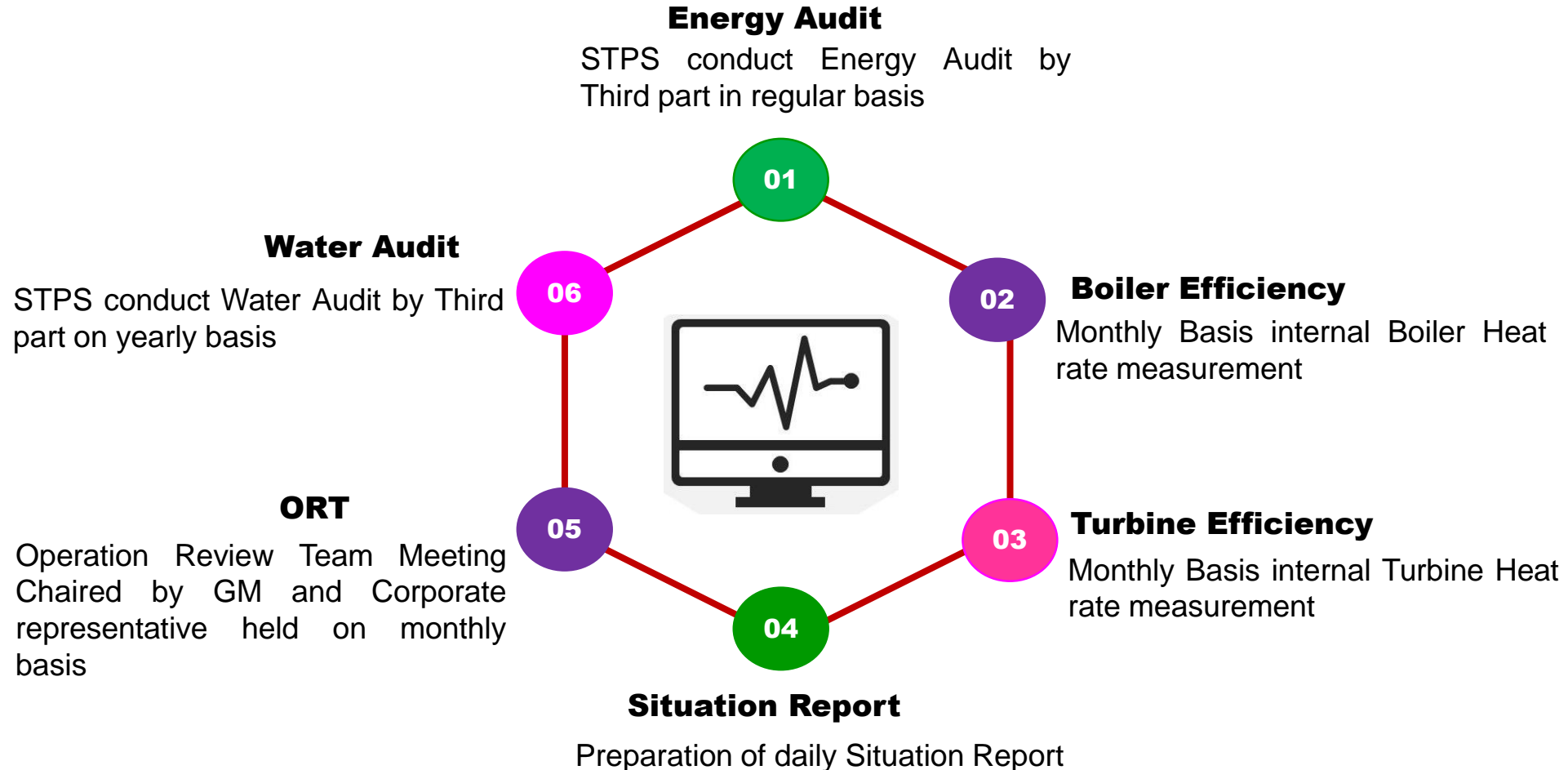
Nearly 45,000 tree have been listed in the inventory



SANTALDIH THERMAL POWER STATION(STPS)

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TEAMWORK & MONITORING



SANTALDIH THERMAL POWER STATION(STPS)

A power station of the West Bengal Power Development Corp. Ltd (A Govt. WB Enterprise)

BIODIVERSITY

- ❖ STPS is full of different trees and shrubs
- ❖ Variety of plant species like Haritaki, Karanj Aswagandha Amla, Bahera, Satmuli, and Vrigoraj etc
- ❖ Species of mammals like Cattles, Fox, Python, Hedgehog, Asiatic Jackal, Indian Fox, Jungle Cat etc are available
- ❖ STPS is also renovating a big pond for increasing the biodiversity.



SANTALDIH THERMAL POWER STATION(STPS)

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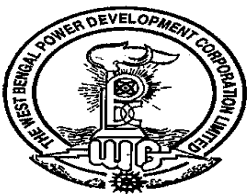
BEYOND THE FENCE BEST PRACTICES FOR COMMUNITY AND OTHERS

As a part of CSR activity, STPS spends money in the following areas on regular basis:

1. For drinking water of nearby villagers
2. Distribution of books, computers, bench for local school
3. Donation for construction of community building, School
4. Construction of local area roads.
5. OPD facility for local people at STPS medical unit



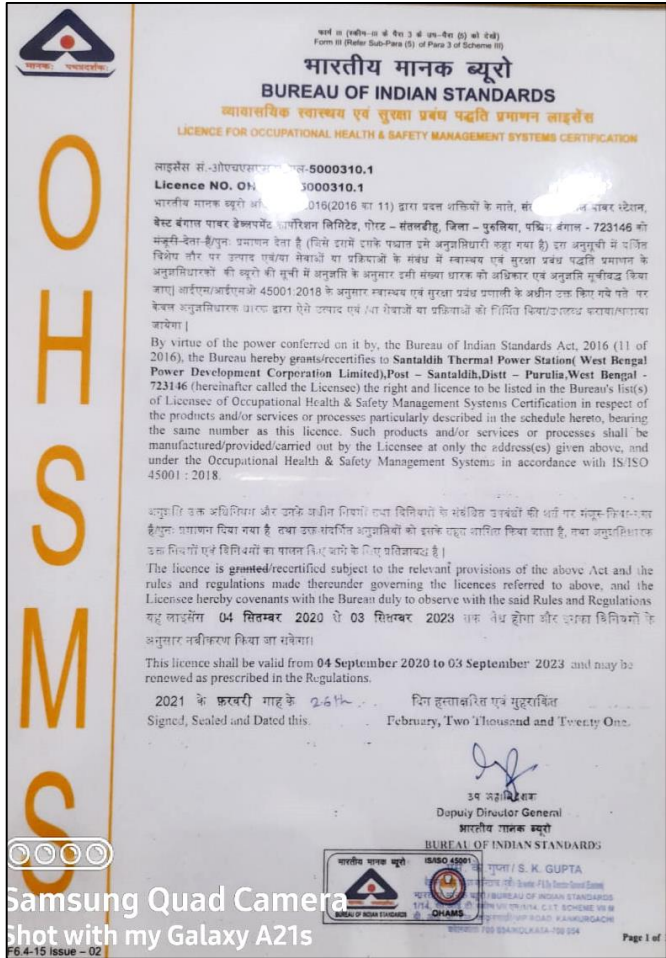
Menstrual pad and Vending M/c distribution



SANTALDIH THERMAL POWER STATION(STPS)

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AWARDS & ACKNOWLEDGEMENT



OHSMS- BIS



SKOCH AWARD FOR SAFETY



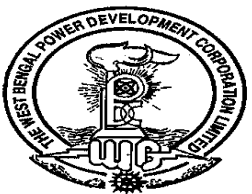
GREENTECH AWARD FOR ENVIRONMENT



SANTALDIH THERMAL POWER STATION(STPS)

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THANK YOU



SANTALDIH THERMAL POWER STATION(STPS)

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