

25th CII National Award for Excellence in Energy Management- 2024



DB Power Ltd

Presented By:

- 1. Mrs. Pratibha Pathak (AGM-O&E)**
- 2. Abhinav Trivedi (Chief GM -Operation)**
- 3. NV Siva kumar (Sr GM- MTP &OnE.)**

LEADERSHIP | Visionary Promoters Dedicating Complete Energy and Resources Towards Achieving the Power Business Vision

Power Business



Girish Agarwal
Managing Director,
DB Power

Sector: *Power*

- Committed US\$320m of equity in the power business
- Leading one of the youngest power stations.
- Outstanding Entrepreneur' at Asia Pacific Entrepreneur Awards.
- Over 31 years of experience in print media and new business development.
- E&Y Entrepreneur of 2006 in Media Category.
- Active member of Indian Newspaper Society (INS), he was the youngest chairman of INS MP.
- Under his leadership, Divya Bhaskar won the 'Best in Print' at IFRA Asia Pacific Awards

Print Media and Other Businesses



Sudhir Agarwal
Managing Director, DB Corp

Sector: *Print Media*

- Over 28 years of experience in print media
- Responsible for formulating DB Corp's long-term vision, monitoring performance and devising business strategy
- Under his leadership, DB Corp has progressed to become one of largest read newspaper of India



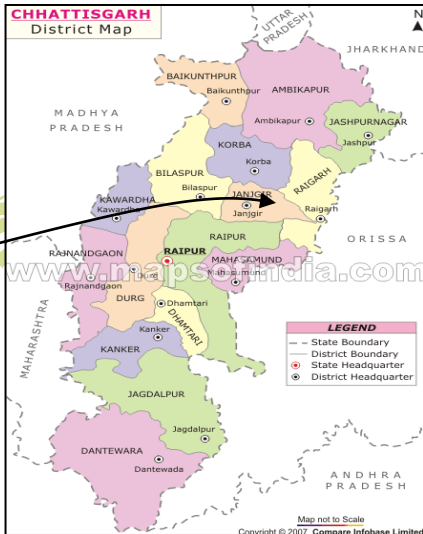
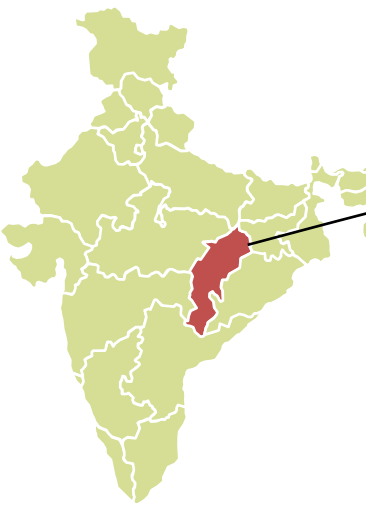
Pawan Agarwal
Managing Director, FM Radio

Sector: *Print Media / FM Radio*

- Been on the Board of DB Corp since December 2005
- Also actively leading the radio business and the DB Digital business within the group



Plant Location Overview



Location	Village- Badadarha, Tehsil – Dabhra, District – Sakti, State – Chhattisgarh.
Nearest Town	Raigarh – 24 km
Nearest Railhead	Robertson 12 km
Approach Road	All weather road
National Highway	NH 200 – 10km

Plant Capacity -1200 MW (2*600 MW)

COD U#1 :- 3rd Nov'2014
 COD U#2 :- 26th Mar'2016

Land

- 255 Ha (630 Acre)

Coal

- Requirement = 6.33 MMTPA
- Long-term FSA for 2.5428(ACQ) MMTPA from SECL
- Balance by E-Auction purchases

Water

- 23 MCM per annum - Kalma Barage at Mahanadi River, thru cross country pipe line of 28.4 Km

POWER EVACUATION

- Thru 18.5 Km Double Circuit 400 KV line to PGCIL Pooling Station Kotra, Raigarh



Key Feature

Mission

To Generate Safe, Reliable, Eco Friendly and Cost Effective Power.



TURBINE –(BHEL)

- Design Turbine Heat rate : 1944 Kcal/KWh
 - Main steam pressure 170 bar
 - Steam temperature (MS/RH) 537 / 537 deg C.
- :Rated load: 600 MW, Max load: 630.303 MW**



BOILER (BHEL)

- Pulverised Coal 2000 TPH boiler.
- Controlled Circulation, Single Drum, Balanced Draft. Tilting/Tangential Burners.
- Design Efficiency 86.32%

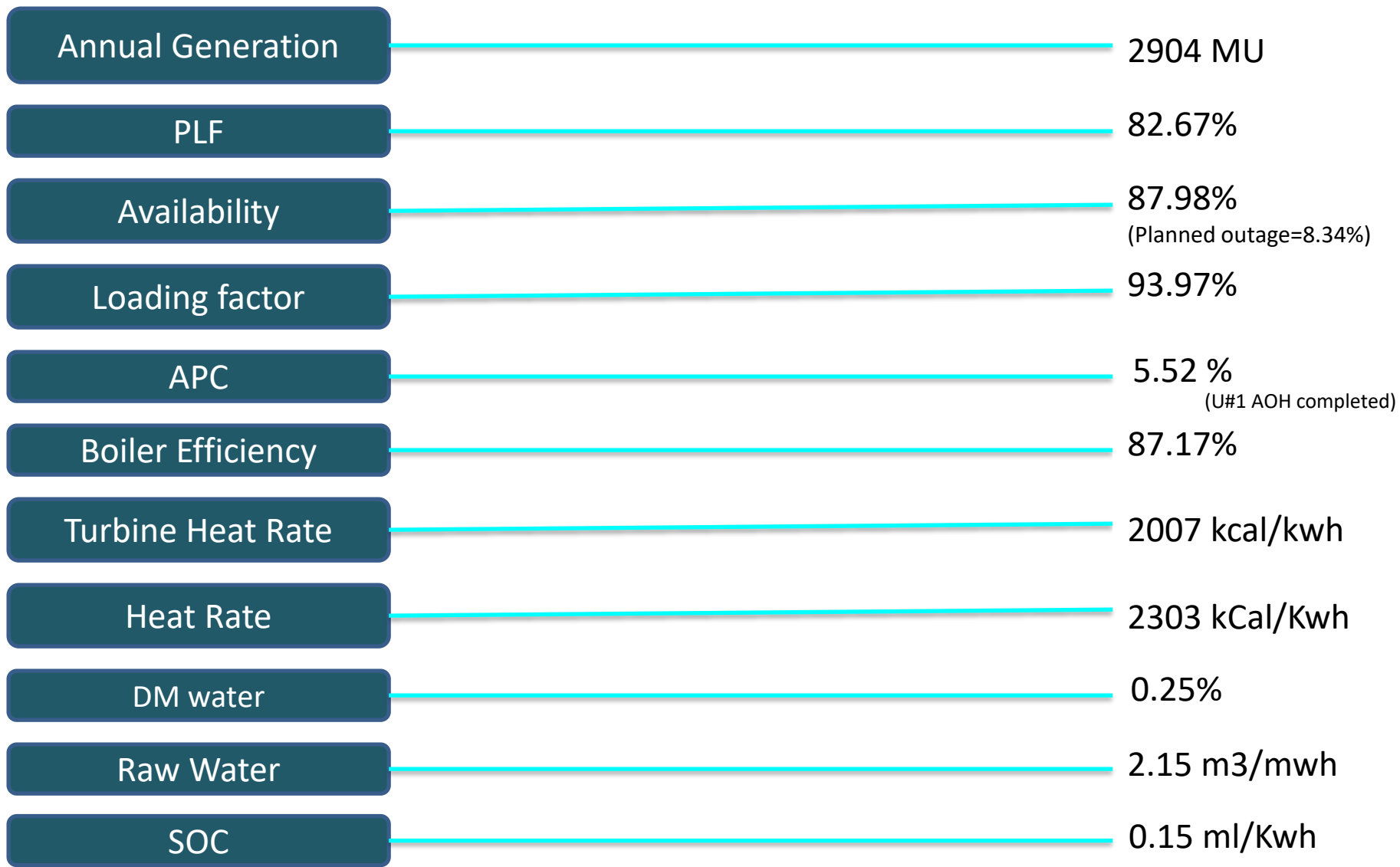


OTHERS

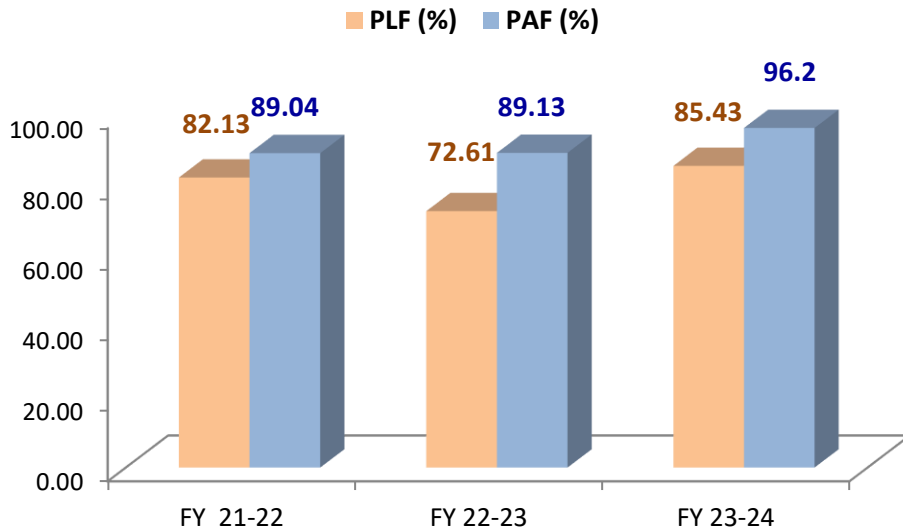
- CHP & Wagon Tippler (L&T)-2 Nos.
- Natural draft Cooling Towers
- Balance of Plant (L&T)
- FGD (Wet lime stone)-Tuna Eng.(China)



Current Year Performance –FY 24-25 Till 31st July-24



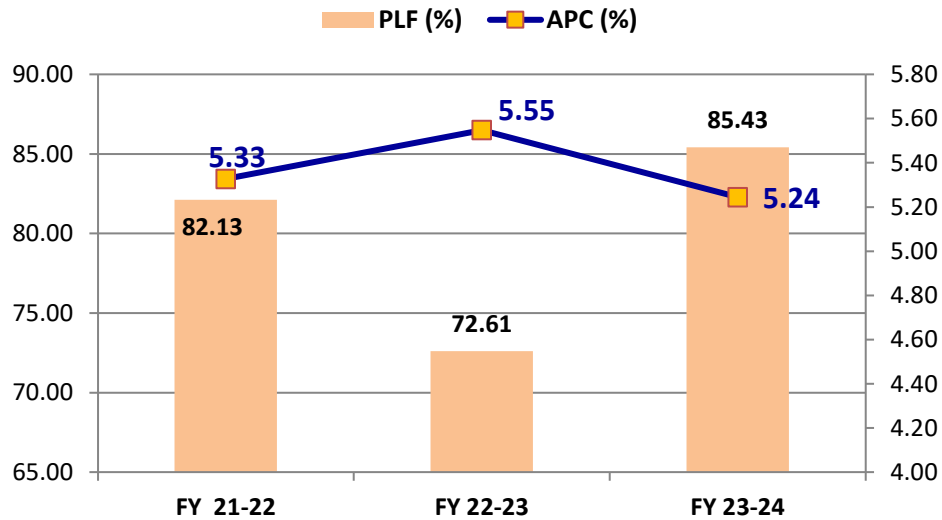
KPI'S



PLF =85.43%(23-24)

Improvement : 18.66% ↑

Remarks: No Planned outage for AOH & COH



Availability =96.17%(23-24)

Improvement : 8% ↑

Reason For variations :

- Planned outage = 0.65% (S/d for FGD Interconnection)
- Forced Outage = 3.18 %

APC =5.24%(FY 23-24) :

Improvement : 0.35% ↑

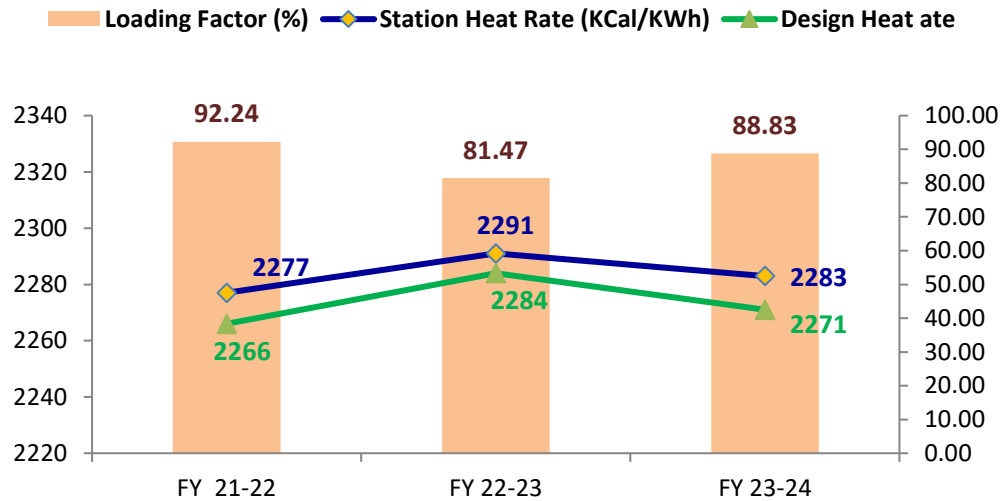
➤ Reason for Improvement :

- VFD installation
- APC optimisation by intensive monitoring
- CHP Conveyor belt loading factor utilisation
- Implementation of improvement & Encon. projects



Sp. Energy Consumption

Improvement in Heat Rate on yearly basis



HEAT RATE 2283 (FY 23-24):

Improvement : 0.35% ↑

➤ **Reason for variance :**

➤ Heat Rate operating margin slightly deteriorated due to HP heater Group bypass valve passing

Major Factors contributing for Heat Rate Improvement in FY 2023-24

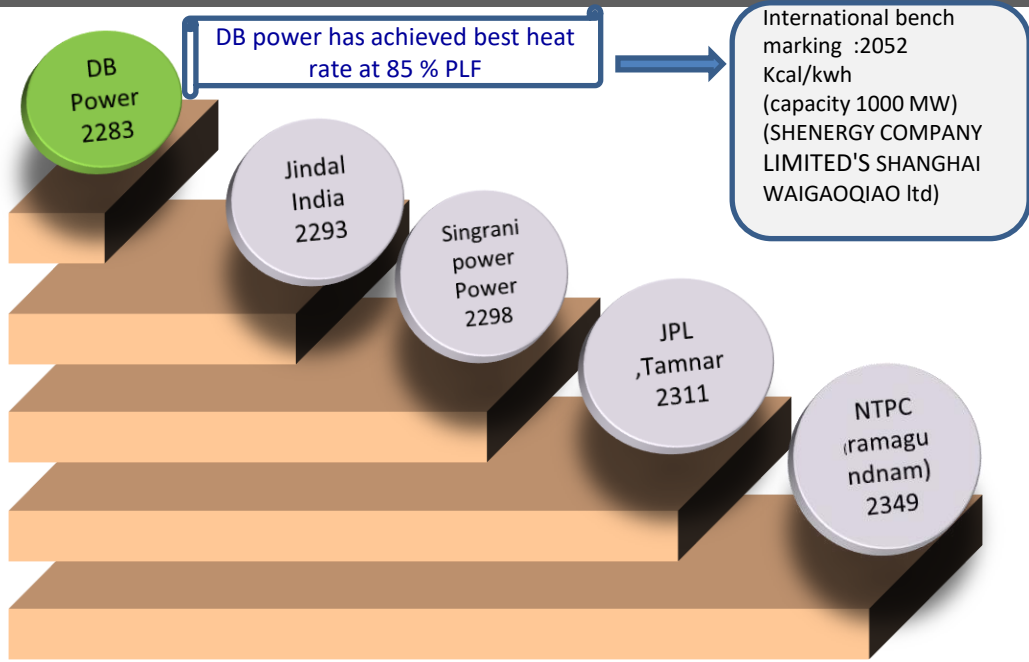
1. Combustion optimisation (SA/PA ratio, fuel air ratio, O2 Set Point, LOFA/OFA, Fuel air damper position optimisation as per unit loading)
2. DM make-up optimisation- Selected Wall blower, LRSB operation & Online leakage rectification (AMC)



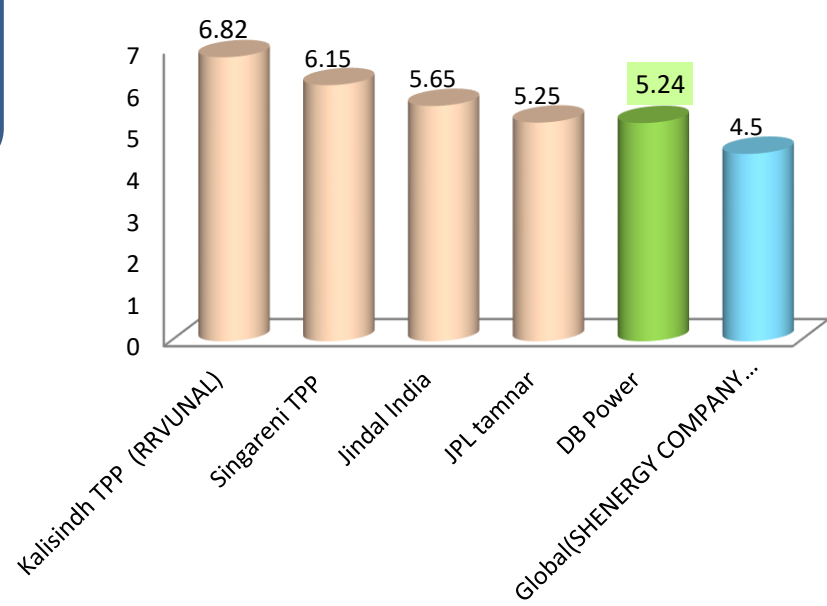
Energy Benchmarking

Data Source (PAT Notification & CII Energy award ppt)

HEAT RATE kcal/Kwh



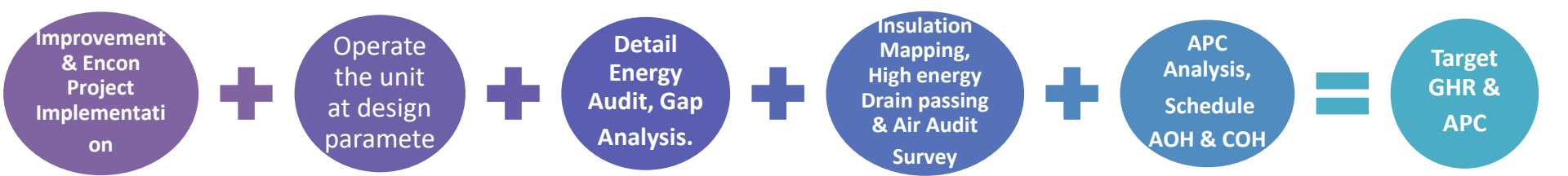
Aux Power Consumption (%)



*Here We are comparing plant performance with JPL ,Tamnar as National benchmarking .(DB Power plant is replica of JPL,Tamnar)

	GHR (kCal/kWh)	APC (%)
Targets for FY 2024-25	2280 @ 91.34% Loading Factor	5.33 (without FGD)

Road Map To Achieve Target/Benchmark



LIST OF MAJOR ENCON PROJECTS PLANNED IN FY 2024-25

Sl No.	Title of Project	Annual Electrical Saving	Annual Thermal Saving	Investment	Comment
		(Million kWh)	(Million kCal)	(Rs in Million)	
1	EMS implementation	2.628		3.5	
2	Perf monitoring System 4.0 Digital solution		28.38	3.01	
3	Installation of Feeder ejector system for ECO hopper ash evacuation system	0.3942	0	0.8	After modification the ECO Water Pump running only 06 hrs. instead of 24 hrs. per day per Unit
4	Ash water Recovery discharge line directly connected to LP Pump discharge header	0.9636	0	0.1	Completed
5	Motion Sensor light Installation	0.00473	0	0.03	8/15 nos completed
6	Astronomical time switches adjust lighting based on actual sunrise and sunset times	0.014454			
7	TDBFP cartridge replacement with energy efficient Cartridge		8.9	16	
8	Energy efficient CORRO coating in casing of ACW	0.13824	0	0.4	ACW pump 1A completed in U#1 AOH
9	U#1 AOH(APH Basket Replacement ,Condenser Cleaning ,NDCT fills replacement & LP turbine Overhauling	2.670	44.000	160	
10	Reduction in ID Fan Loading after attending flue gas duct leakage	1.728	0	0	
	Total	8.54	81.28	183.84	



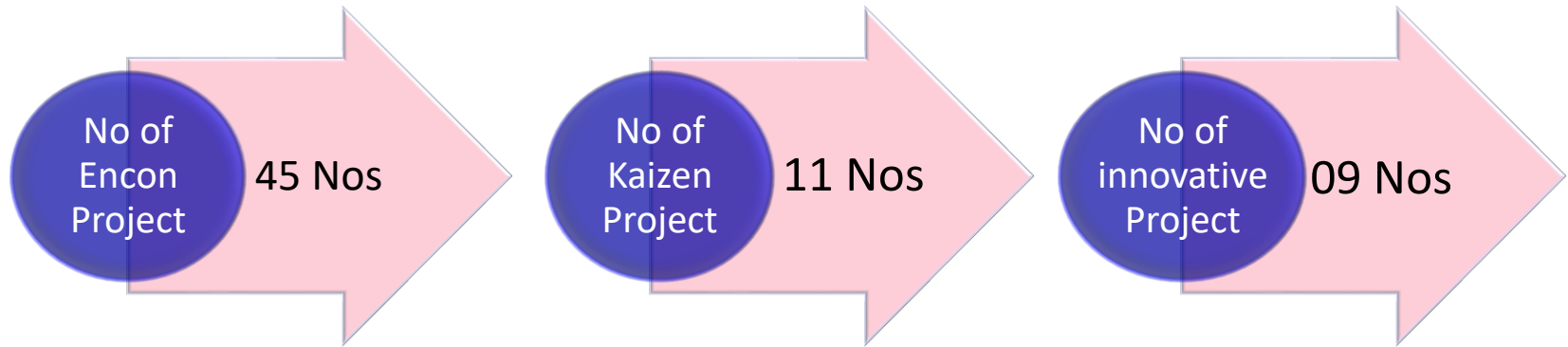
LIST OF MAJOR ENCON PROJECT COMPLETED IN FY 2023-24

Sr.No.	Title of Project	FY	Investment in millions	Annual Electrical Saving (Million kWh)	Annual Thermal saving (Million Kcal/year)	Total Saving (Million Rs)
1	Replacement of multiple Split AC with single Package AC	FY 23-24	0.7	0.150		0.525
2	Replacement of defective conventional lights by energy efficient LED lights in plant.(10 high mass light)	FY 23-24	1.08	0.263		0.920
3	ID fan power cons saving by attending the APH & duct leakage	FY 23-24		1.752		6.132
4	Installation of motion sensor	FY 23-24	0.02	0.005		0.016
5	Installation of BAOF- 110kW VFD in U#1	FY 23-24	0.02	0.238		0.832
6	Installation of BAOF- 110kW VFD in U#2	FY 23-24	0.02	0.238		0.832
7	Installation of Seal Air Fan - 132 kW VFD	FY 23-24	0.8	0.238		0.832
8	Installation LED 400 WATT high mast fitting in place of 800 watt Metal Halide lamp	FY 23-24	1.4	0.402		1.407
9	Re heater temp improved by 3 C (O2 % set point ,Mill combination & burnet tilt optimization)	FY 23-24	0	0.000	18.9	16.036
10	Condenser Back pressure improvement by condenser jet cleaning	FY 23-24	0.6	0.000	25.54	21.67
	Total		4.64	3.28	44.44	49.21

Energy Saving projects implemented in FY 2022-23

Sr.No	Title of Project	FY	Investment in millions	Annual Electrical Saving (Million kWh)	Annual Thermal saving (Million Kcal/year)	Total Saving (Million Rs)
1	Installation of VFD in Seal Air Fan - 132 KW	FY 22-23	0.8	0.244	0	0.854
2	Installation of VFD in LDO Forwarding Pump - 90 KW	FY 22-23	0.6	0.2		0.700
3	Installation of VFD in LP Water Pump - 110 KW	FY 22-23	0.8	0.25	0	0.875
4	Installation of vacuum transmitter in boiler 8.5 meter	FY 22-23	0.75	0.06	1.46	1.449
5	Ten numbers of High mast conventional illumination changes to LED high efficient light, long life .	FY 22-23	4.4	1.05	0	3.675
6	22 kcal/kWh heat rate improved after unit-2 COH by improvement in performance of cooling tower, condenser, air pre heater, insulation, heaters and Turbine cylinder efficiency etc.	FY 22-23	140	14.02	0	49.070
7	Reduction in Auxiliary power consumption (by 5 %) of CHP by increasing the utilization factor of conveying System	FY 22-23	0	1.01	0	3.535
8	Ash Water Recovery Pump - line rerouting for power saving	FY 22-23	0.65	0.18	0	0.630
9	DCS DPU reliability improved after OEM study & implementation of recommendations.	FY 22-23	0.5	0.05	0.63	0.710
10	Inspection of Missing fins joint of S-Panel tube by water spray on it and inspection through Zero chamber/ Cat house (AOH Activity)	FY 22-23	0	0.09	1.26	1.384
11	Quarterly internal Air Leakage Audit by using Fluke Acoustic Camera	FY 22-23	0.4	0.14	0	0.490
12	ID fan power consumption reduced by attending the duct leakage after O2 mapping.	FY 22-23	0	5.7	0	19.950
13	PA fan power consumption reduced by reducing the PA Header pressure set point from 800 to 780 mmwc	FY 22-23	0	2.8	0	9.800
14	Horizontal Extension of APH Hopper Discharge Evacuation Line by 8 Meters from Segregation Valve	FY 22-23	0.15	0.63	0	2.205
	Total		149.05	26.424	3.35	95.33

Energy Saving projects implemented in last three years



Year	No of Energy saving Projects	Investment (INR Millions)	Electrical Saving (Millions Kwh)	Thermal Saving (Millions Kcal)	Saving (Rs. Million)
2021-22	21	163 (COH)	18.7	128	164
2022-23	14	145 (COH)	26.46	106	175
2023-24	10	4.64	3.28	44.43	45.56
Total	45	312	48	278	385

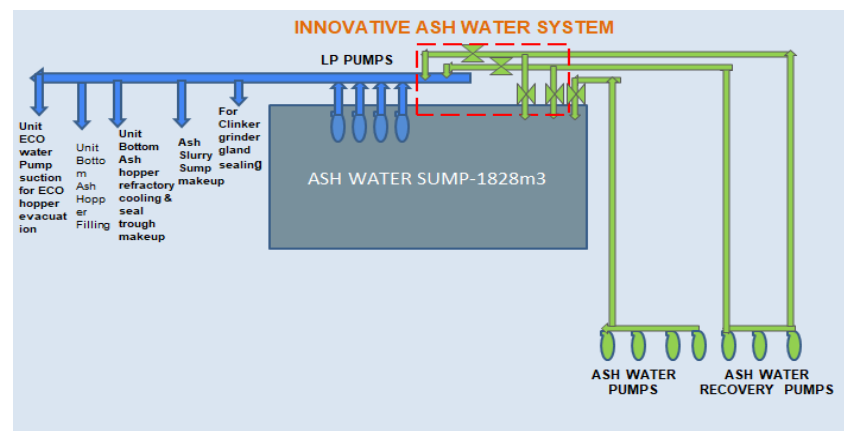
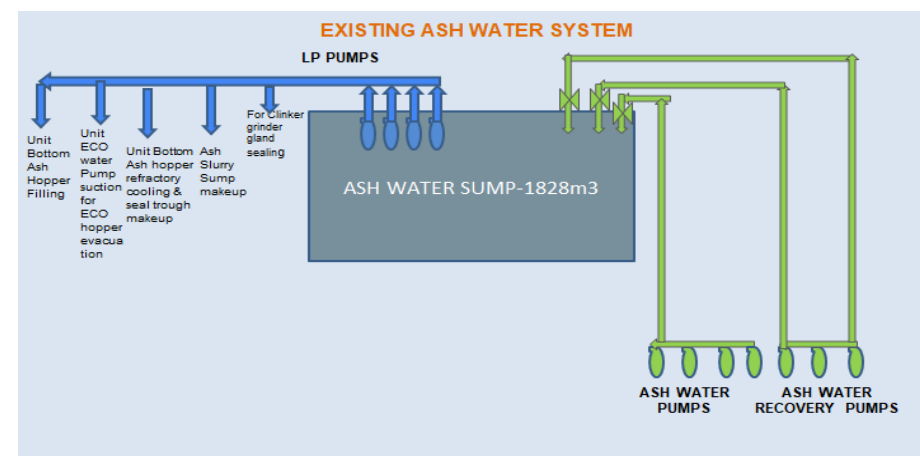


LP Pump header directly connect with Ash water recovery Pump header

Replica- Yes

- **Existing System:** LP Water pump arrange over the ash water sump which is makeup by Ash water Recovery pumps.
- LP pump-1 running continuously for 24 hrs./ day and LP pump-2 running during both Unit BA hopper deashing for 08 hrs./ day. The total running of LP pump is **32 hrs.** Per day.

Modification: Ash water recovery pump-2 & Pump- 3 discharge header directly connect to LP Pump discharge header.



Benefits

After modification, the LP pump will run during BA hopper filling. Only one LP pump will operate for 8 hours per day.

Running hrs of 2nd LP pump for 24 hrs saved and there by APC saving = 819060 Kw/year

Cost Saving in Rs /Year =28.50 Lacs /year + Maintenance cost (2 Lacs)

Enhancement of crusher throughput by modification in hammer weight.

Replica- Yes

Existing System : -Original hammer weight was 39.5 kg each (50 Nos. in 01 rotor/each crusher). As per OEM ,crusher design throughput is 5.0 Lac MT Coal but In actual we get 4.00 to 4.5 lac MT throughput

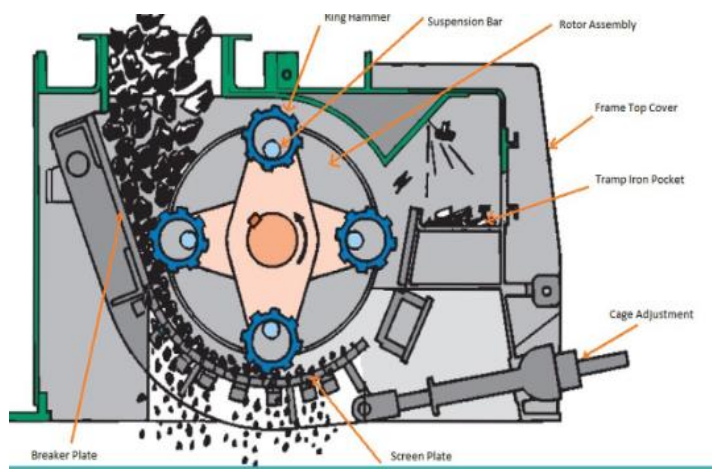
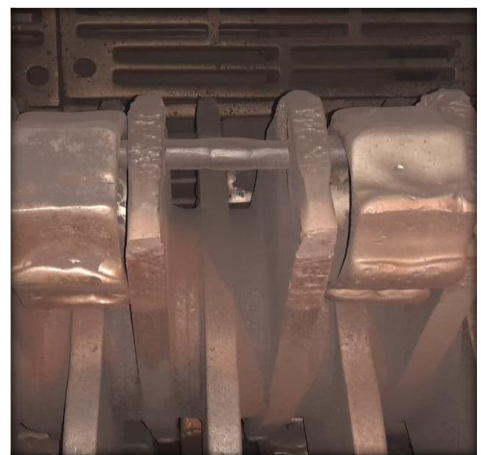
CHALLENGES:-Due to this lower throughput, we need to perform maintenance 8 to 9 times a year to replace hammers and other crusher components. Crusher Availability was 80% due to breakdown

Modification: we developed a new hammer design by increasing the weight by approximately 5.5 kg per hammer. We started using 45 kg hammers instead of the original 39.5 kg hammers (a 13% weight increase). This resulted in improved crusher throughput.

Crusher Rotor



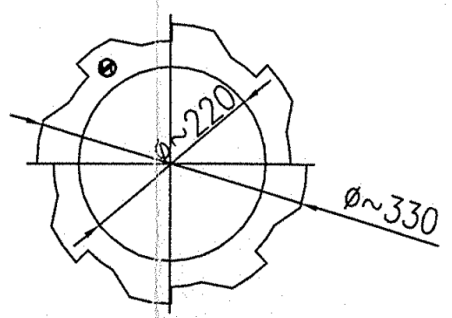
Hammer Design



Enhancement of crusher throughput by modification in hammer weight.

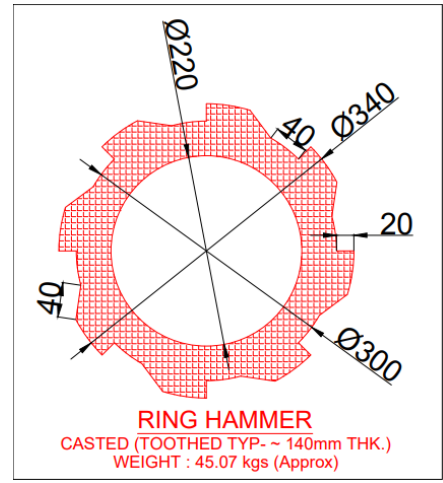
Conti..

Existing Hammer

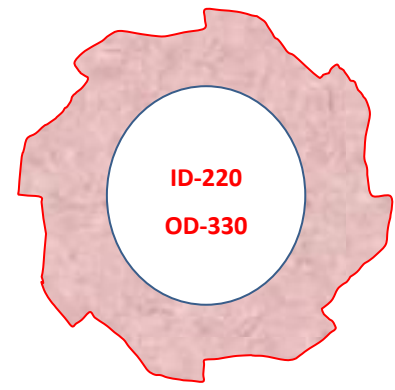


RING HAMMER
 CASTED (TOOTHED TYPE - ~140mm THK)
 Weight : 39.5 Kgs (Approx.)

New Hammer



RING HAMMER
 CASTED (TOOTHED TYP - ~140mm THK.)
 WEIGHT : 45.07 Kgs (Approx)



New OD-340

Sr.	Description	39.5 Kg Hammer	45 Kg Hammer	Remarks	Cost Saving
1	Coal Throughput	4.5 Lac MT	6.5 Lac MT	44% Life enhanced	8.00 lacs saving /year (Including maintenance cost 5 lacs)
2	Motor Amp.	37.01 Amp	37.2 Amp	Negligible Change in Amp.	
3	Yearly Consumption	500 Pc	400 Pc	Reduction in Consumption	
4	Hammer Break down	10-12 Case / Year	1-2 Case / Year	Reduction in Break down	
5	Crusher Availability	80%	95%	Equipment Availability Enhanced	



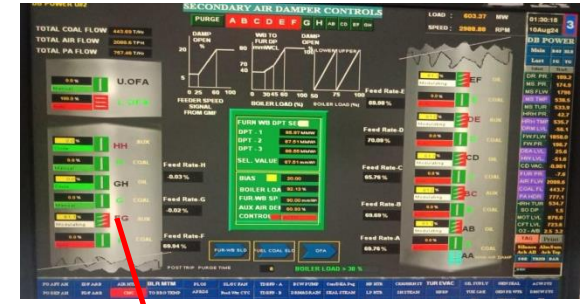
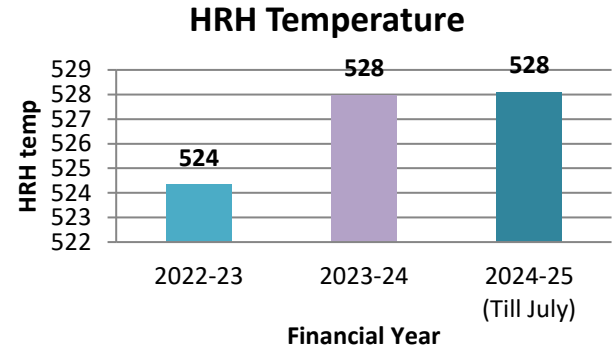
Project - Re heater temp improvement by 3 Deg C

Challenges :-

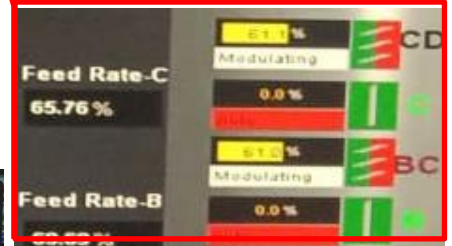
Due to high metal temperature maintaining at RH outlet coils, steam temperature could not be achieved > 524 C against design of 537 Degree C. Burner tilt was lock +/- 15 degree to control the metal temperature.

Improvement : To address this issues the following operational corrections have been carried out .(Combustion tuning done by Ex-BHEL expert)

- I. O2 Set point Changed from 2.8% to 3.0% at full load.
- II. Fuel air damper was reduced from 20% to 0% to increase the Aux Air Damper opening to avoid delayed combustion (VM in coal is 20-22 % ,so without fuel air damper opening flame length is being maintained)
- III. Wind box DP was increased from 70 mmwc (design) to 90mmwc
- IV. Burner Tilt position kept in auto to operate with in +/- 24 Degree
- V. After above operation corrections ,RH metal temperature maintain less parox 30-40 degree C, so it gives further operating margin to operate the burner tilt in higher position to get RH temp



Benefits Reheat Temperature was increased to 528 from 524 deg, resulting 2.4 Kcal/kWh improvement in heat rate and Coal saving of 6,671 tone of Coal ~ Rs1.67 Cr annually



Substitution of Conventional Energy With Renewable Energy

➤ 06 Nos. Projects Implemented. Installed Capacity each – 1 KW

Financial Year	Technology (electrical)	Type of Energy	Onsite/ Offsite	Installed Capacity(MW)	Generation (million kWh)	% of overall Electrical Energy
FY 2021-22	5 Nos .street light	Solar	Onsite		0.0063	
FY 2022-23	10 Nos. street light	Solar	Onsite		0.008	
FY 2023-24	06 Nos. street light	Solar	Onsite		0.006	

Financial Year	Technology (electrical)	Type of Energy	Onsite/ Offsite	Installed Capacity(MW)	Generation (million kWh)	% of overall Electrical Energy
FY 2021-22	Electrical (Battery) vehicle inside plant premises	Battery	Onsite		0.008295	
FY 2022-23	Kitchen food waste biogas plant	Biogas	Onsite			
FY 2023-24	Electrical (Battery) vehicle inside plant premises	Battery	Onsite		0.008295	

OFFSITE : - *Installation of Solar pump for drinking water in village.

OFFSITE: Solar Pump



PV Solar Street Light Inside Plant



Kitchen food waste biogas



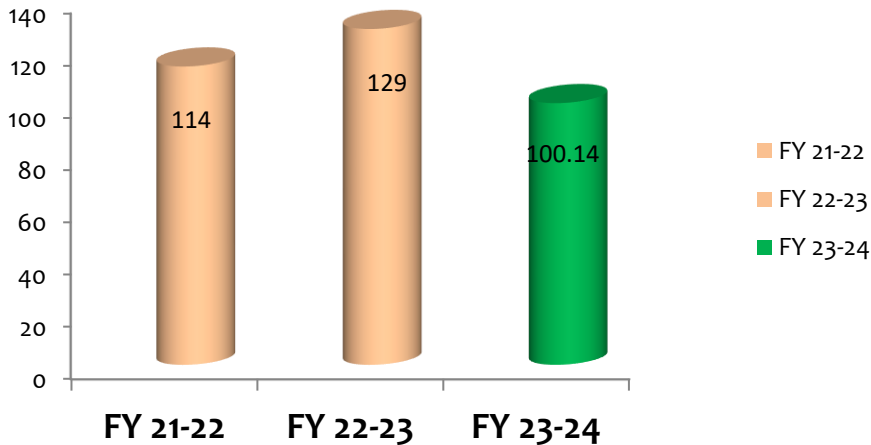
FY 24-25 ,2 KW Grid Roof solar -4 no system installed at LC gates



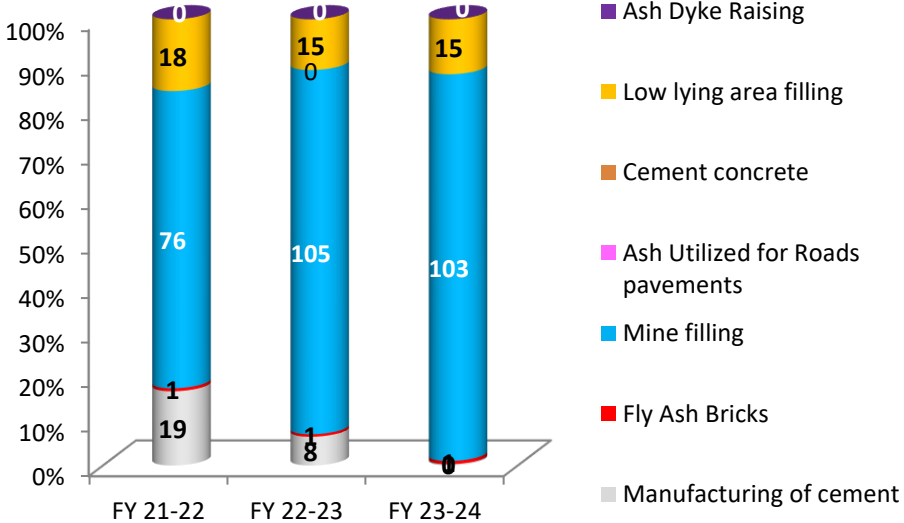
Environment Management – Ash Utilization

Ash Utilization (%)

Ash Utilization %



Ash Utilization –Break up (%)



Best Practices:

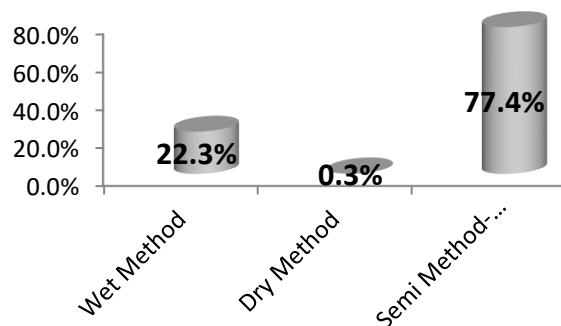
- GPS is used to ensure proper disposal of ash at designated location only.
- Ash transportation to cement plant by Railway wagons **First time started in C.G,**
- I Magic software implemented for unmanned weighbridge for Coal & Fly Ash Truck weighing.



Environnement Management- Ash Utilisation

Particulars	UOM	FY 21-22	FY 22-23	FY 23-24
Ash Stock in Plant (yard + pond)	Tons	1906353	1138995	1134929
Ash Generated	Tons	2985053	2369850	2805402
Ash Utilization	%	114	129	100
Ash Utilized in manufacturing of cement/concrete – other similar products	%	19	8	0
Ash Utilized in Fly Ash Bricks	%	1	1	1
Ash Utilized in Mine filling	%	76	105	103
Ash Utilized for Roads pavements	%	0	0	0
Ash Utilization in Other Areas – Please mention below	%			
Part replacement of cement in concrete	%	0	0	0
In reclamation of low lying area	%	18	15	15
In ash Dyke Raising	%	0	0	0
Expenditure on Ash Utilization (annual)	INR (Lakhs)	9513	10425	8192

Ash Handling Pattern



Environment Management-Emission

Particulars	UOM	FY 2021-22	FY 2022-23	FY 2023-24
Absolute Emission CO2	Lac MT	74.51	67.10	77.26
Total CO2 Emissions Per kW of Generation	Ton/kW	0.860	0.879	0.858
Current SOx Emissions at Full Load	mg/Nm ³	1240	1228	1210
Current NOx Emissions at Full Load	mg/Nm ³	321	289	278
Particulate Matter	mg/Nm ³	39	41	39
Mercury	0.01	0.004	0.004	0.004

Best Practices Adopted for emission Control and Monitoring

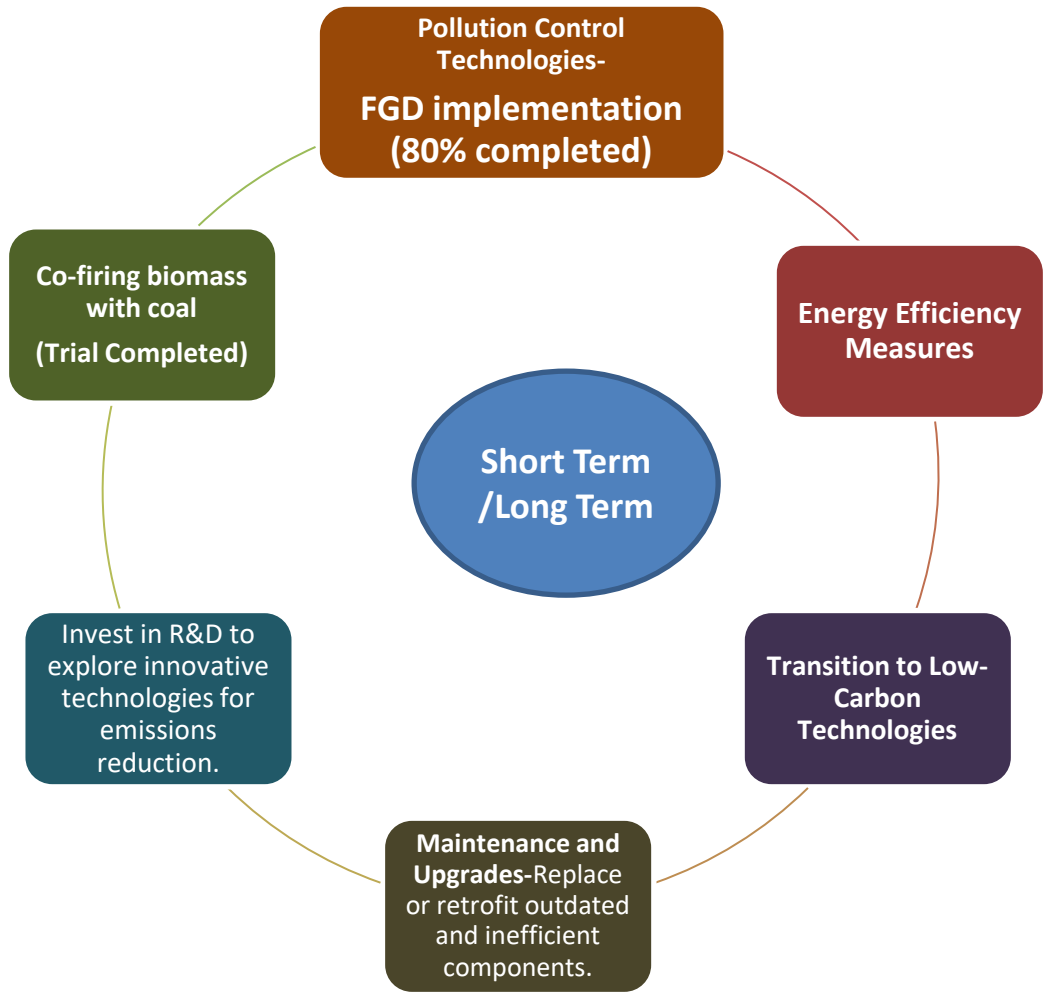
- ❖ Green belt development inside the plant.
- ❖ Ash Utilization >100% for FY 23-24
- ❖ Continuous monitoring of emission parameter
- ❖ Continuous Ambient Air Quality Monitoring System in service.
- ❖ Dust extraction system (DE) and Dust suppression system (DS) at CHP
- ❖ Specially designed acoustic insulated enclosures for Turbine.
- ❖ Ash utilization started through rake where all wagons are completely covered with Tarpaulin sheet .
- ❖ Plant boundary wall is being constructed by fly ash bricks
- ❖ Transportation of ash through jumbo bags by train mode
- ❖ GPS/Pazo is used vigilance for proper disposal of ash at designated location.
- ❖ Hazardous waste, e- waste, battery waste, biomedical waste send to authorized recycler.

Approx 10000 nos. of sapling planted Inside plant CHP,H2 plant , Ash dyke hill ,railway building boundary area & near by plant Villages.& FY 24-25 =25000 nos of planation done



Environment Management – Emissions Monitoring

GHG emission reduction-Action Plan



Projects under Pipeline :

- 1)EMS implementation (90% completed)
- 2) 4.0 digital solution for performance monitoring
- 3)Soot blowing started for U#2 as per (PLUSE-AI based) fleet monitoring software recommendation
- 4)Encon project implementation
- 5)Combustion Optimization-Ex BHEL
- 6)Innovative project competition to motivate the employees
- 7) Action to reduce no of BTL (60% of previous BTL)– PO placement is under pipeline to Exact space

ROAD MAP FOR NET ZERO COMMITMENT



Transition to electric vehicles



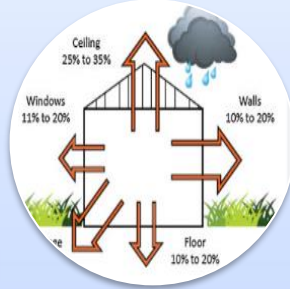
Green Procurement-Opt for environmentally friendly materials and equipment



Transition to Renewable Energy Sources



Emission Reduction Incentive Programs- Launch employee incentive programs that reward energy-saving behaviors and innovative ideas for emissions reduction



Building Retrofits- Implement energy-efficient retrofits for all buildings in the plant premises, including efficient lighting, insulation, and smart HVAC systems, to minimize energy consumption.



ROAD MAP FOR NET ZERO



Action Plan To Meet The Latest Emission Norms

Among the private sector DB Power is in advanced stage for FGD Implementation

➤ SO₂ Norms – Status of FGD Implementation- (Overall 81 % completed)

❖ LOI for FGD issued on 13 June 2019 and Contract awarded on 26th September 2019. EPC Vendor-Zhejiang TUNA Environmental Science & Technology Co., Ltd.

❖ Drawing/Design Consultant-Black & Veatch

Present status :-

- FGD Unit-1 & 2 Trial Operation for 72 hrs completed in Jan-24 & Mar'24.
- Preparation for PG Test Under progress.

As per initial design, existing chimney is to be utilized with glass flake lining .For lining of the chimney (275 mtr.) unit shutdown required for **approx. 3 months**. To avoid long s/d of the unit it has been decided to go with absorber top chimney after several round of discussion with EPC contractor & design consultant. **For integration of the FGD with existing unit, only 2 days shutdown required.**
***Booster fan power cons will be reduced by 452 kWh(14.5%)**

Design data	
Parameters	Design Values
Absorber Inlet SO ₂	2000 mg/Nm ³ ,6% O ₂ Dry Basis
FGD Outlet SO ₂	≤150 mg/Nm ³ ,6% O ₂ Dry Basis
Desulphurization Efficiency	≥92.5 %
Flue Gas Inlet Temperature	134 °C
Operating Condition	40%-100%



SITE PHOTOS

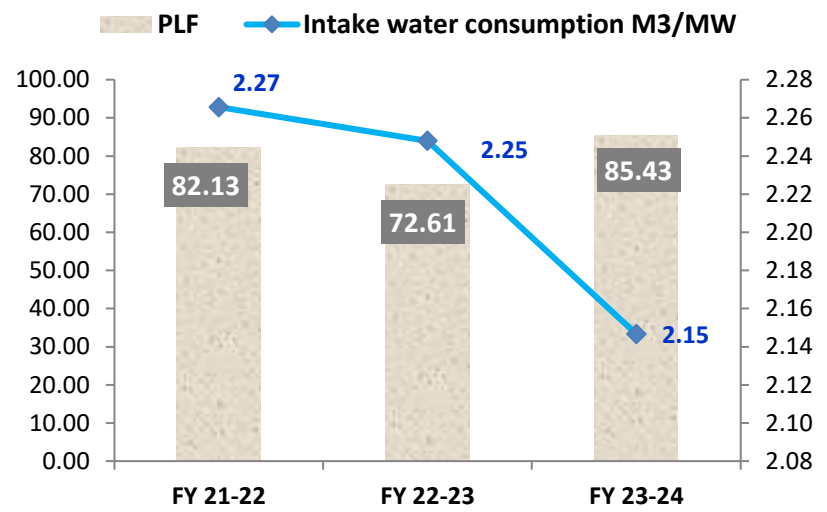
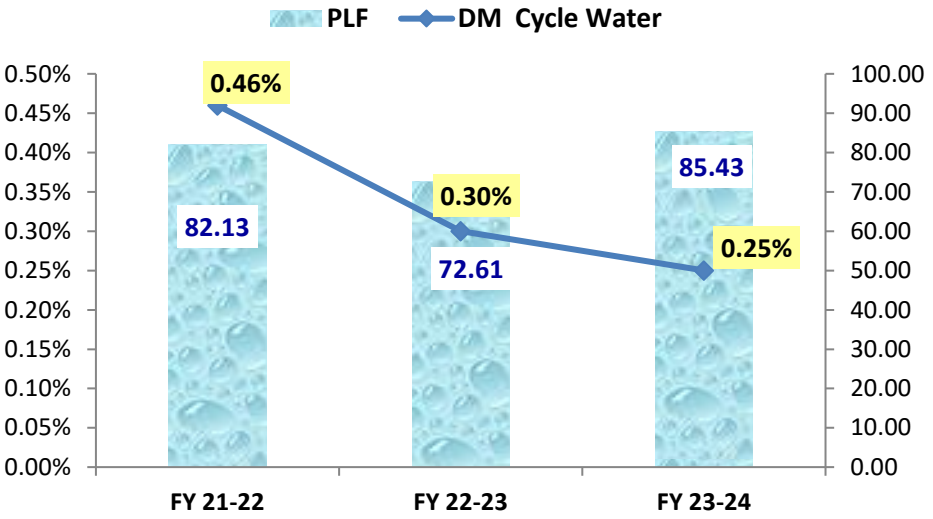


➤ NO_x- Norms (Based on 450 mg/Nm₃)

❖ At present NO_x in both Units are within the limit (below 400 mg/Nm₃).

Best Practices in Water Management

The plant is designed for zero liquid discharge (ZLD).



BEST PRACTICES :

Approach taken to reduced DM MAKE UP :

- 1) Selected LRSB & wall blower operation
- 2) Intensive monitoring of DM make up
- 3) Tracking of LRSB & soot blowing steam consumption & control measures immediately if higher

Other Best practices for SWC reduction :

AMC for online leakage rectification to arrest at the earliest.

- Adopting suitable treatment (AVT –R to AVT –O)
- COC of circulating cooling water increased from 5.0 to 7.0
- Ash Water Recovery System :Ash Dyke overflow is treated and re-circulated to ash water sump for reuse.
- CPU output between regeneration increased from 135000 M³ to 190000 M³
- No ground water extraction for any industrial & domestic purpose.
- Treated water of ETP is reused for green belt irrigation and in ash handling plant.
- Constructed guard pond for reuse and to avoid discharge outside the plant

BEST Practices in the Plant :

Flexible Operation	Maintenance and Reliability	Digitisation	Asset Management
<ul style="list-style-type: none"> ➤ Presently Load Ramp up & Down 1.0% is being done (90 MW /Block /unit) and 55% technical minimum load with existing control system . ➤ For achieving the technical minimum load from current level of 55% to 40% - Offer received from BHEL,GE & Siemens for further study of flexible operation. ➤ To get HRH temp ➤ Bio massing firing being done by mixing up to 10% in one mill. ➤ Addition RH coil modification study is being done by GE to get design HRH temperature. 	<ul style="list-style-type: none"> ➤ Adoption of Best practices shared by NTPC,CII & other power plants. ➤ Occurrence Analysis (RCA) in for categories - <ol style="list-style-type: none"> 1)Unit Tripping 2)Equipment Outage 3)BTL 4)Near miss. ➤ Predictive Maintenance – Condition monitoring of equipments i.e. <ul style="list-style-type: none"> ▪ Vibration, ▪ MCSA, ▪ DGA, ▪ Lube Oil analysis, ▪ Thermograph, ▪ Ultrasonic leak detection, ▪ Noise level ➤ Pooling of spares - Sharing of High value spares with nearby station ➤ Technical Audit by domain expert. 	<ul style="list-style-type: none"> ▪ Udyoge software is used for complete coal analysis of fired coal & received coal (No manual intervention in results.) ▪ I magic system is used for Coal & Fly ash truck weighing, unman-weighbridge developed. ▪ PAZO software is used vigilance for proper disposal of ash at designated location. (Tracking by GPS) ▪ Bar coding & Decoding system for Coal sampling & analysis ▪ HONO HR app for HR process ▪ Fully Automation of coal logistics and coal Lab (Udyog ERP system) ▪ 4.0 Digital solution under implementation 	<ul style="list-style-type: none"> ➤ Monitoring and Tracking the health of plant Assets ➤ Prevent asset downtime by continuous monitoring <ul style="list-style-type: none"> ▪ Raw material acquisition Planning ▪ Spare Management ▪ Internal and Third party audit for Asset healthiness ▪ External Audit done by domain experts - C&I, Operation & Efficiency, Chemistry CHP,BOP and AHP departments. <p style="text-align: right;">Conti..</p>

BEST Practices in the Plant :

Biodiversity

- Kurupath hill situated near plant is having flora & fauna. Additional tree planted in coordination with local forest team at Kurupath hill and restricted tree falling to conserve biodiversity of this area.
- Inside plant project area, plantation of local species, fruit species for improvement of eco system.

Kurupath hill is situated near plant – having flora & fauna



Afforestation

- Survived tree plantation upto March 2024 is 2,30,000 (covering 1/3rd of total area of 630 acres with survival rate of 86%).
- Low lying areas in the project area is being developed for further greenbelt development.



Research

- Auto detection system for bulge wagon for early identification resulted in significant reduction in unloading delays time of rakes (approx.14 lakh saved in year)
- Real time temperature monitoring provided for eco hopper discharge line for early detection of chocking
- Real time online performance monitoring in DCS like - Air ingress in APH by inlet & outlet O2 measurement, APH X-ratio, passing of BFP recirculation valve with the help of individual BFP flow & total feed flow. Heater approach etc.

New Initiatives:

- **Inspection of NDCT by Drone** - inspection, Safe and quick access of healthiness of NDCT
- **APH HE Basket Reversal**- Reversed the HE Baskets after 4 years and by doing this the Basket life is extended beyond 6 years.
- **Use of Plastic Refractory instead of Castable in Boiler 1st & 2nd pass & Burner tube**- Plastic refractory offers extended life compared to Castable Refractory.
- **CHP- BC-1A/B Scoop coupling** installed in place of normal traction type fluid couplings

Best Practices In Other Areas of Plant – Digitization

➤ All Reports & MIS on cloud – Can be seen and update anywhere

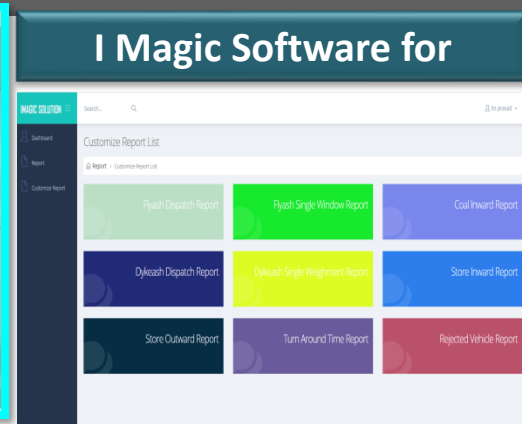
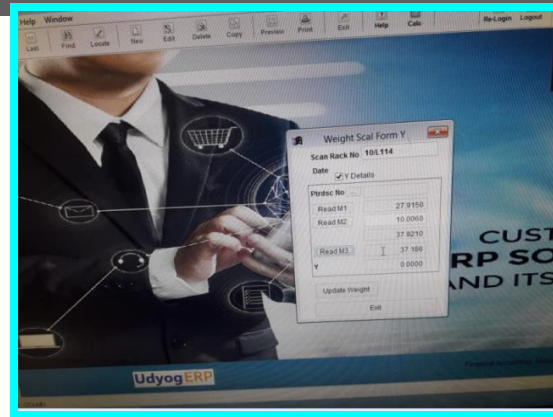
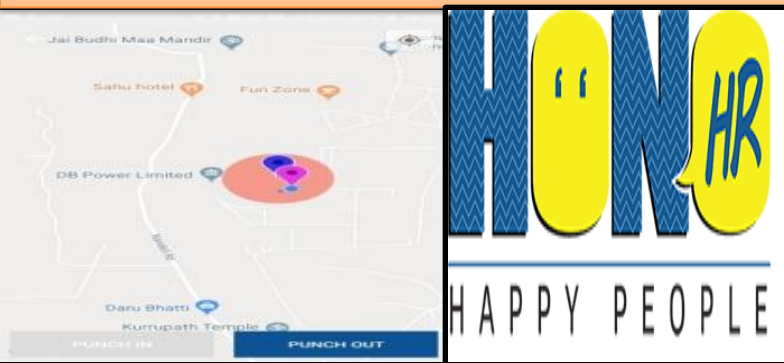
➤ ABT System -4.0 digital solution

➤ SAP –PP,PM and DMS Implemented (HANA up gradation under progress).

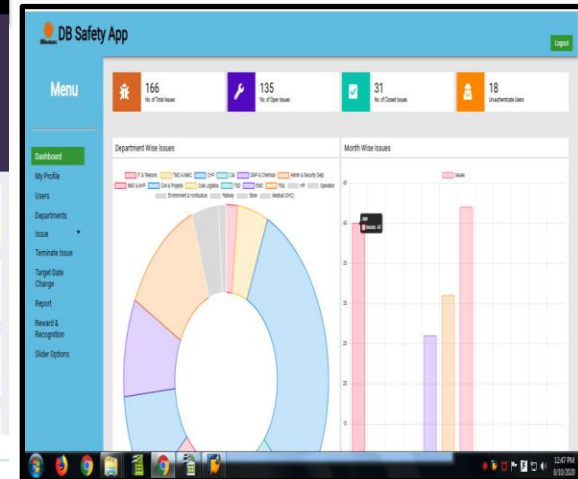
➤ Coal sampling & analysis through bar coding

➤ Implementation of Unmanned Weigh bridge- completed

Employee Attendance- HONO HR APP



Safety APP –Reporting & Monitoring



E-Learning APP



Learning from CII Energy Award & IMS CERTIFICATION

Sr. No.	Learning from CII award/ Summit/Other	Plant Name	Status of Implementation	Remarks
1	VFD installation in LDO supply pump	Nabha Power/ GMR Energy	Implemented (FY 22-23)	
2	VFD installation in seal air fan for both units	GMR Energy	Completed in both units (FY 23-24)	
3	Water SCADA implementation	GMR Energy	FY 24-25	Additional Flow mete for water balance
4	RCA analysis through SAP	Raipur, Adani	FY 24-25 (U/P)	Under development in SAP
5	Renewable energy projects	Plants	FY 24-25	Medical & Railway office solar roof project
06	Embracing the Best Approaches for Environmental Considerations		FY 24-25	

IMPLEMENTATION OF IMS :-

Bureau Veritas Certification



DB POWER LIMITED

BADADARHA THERMAL POWER PLANT, VILLAGE - BADADARHA, POST KANWALI , TEHSIL - DABHRA - 495 695, DISTRICT SAKTI, INDIA.

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above Organisation has been audited and found to be in accordance with the requirements of the Management System Standards detailed below.

Standards

ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018

Scope of certification

GENERATION OF COAL BASED THERMAL POWER (2X600 MW)

Original cycle start date: **28 August 2023**
 Expiry date of previous cycle: **Not Applicable**
 Certification Audit date: **30 June 2023**
 Certification cycle start date: **28 August 2023**

Subject to the continued satisfactory operation of the Organisation's Management System, this certificate is valid until: **27 August 2025**

Certificate No. **IND.23.7250/IM/U** Version: 1 Issue date: **28 August 2023**

Signed on behalf of BVCH SAS UK Branch

Jagdishesh N. MANSANI

Director - CERTIFICATION, South Asia

Commodities, Industry & Facilities Division

ISO 9001	IN044216
ISO 14001	IN044218
ISO 45001	IN044217

For certificate authenticity, click here

<https://certcheck.ukas.com/>



Certification body address: 8th Floor, 88 Princess Street, London, E1 8AG, United Kingdom

Local office: Bureau Veritas (India) Private Limited (Certification Business), 72 Business Park, 10th Industrial Area, MIDC, Cross Road 'C', Andheri (East), Mumbai - 400 063 India.

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by contacting the organisation.

To check this certificate validity please call + 91 22 6274 2800.

Certification /Award

Ministry of Power -2nd Position- Meritorious for Early Construction of 600 MW Unit #1 Award



Mission Energy Award for :Power Plant performer” in western region



“ENVIRONMENT EXCELLENCE AWARDS-2022” By “Mission Energy Foundation”



“ Green Feather (Energy Conservation Awards-2023)” By Green Maple Foundation



CII award



"Fly ash utilization award (runner Up) By Mission Energy award (FY 21-22)



"Excellence in water management award in eastern Region By Council of Enviro Excellence (FY 21-22)



DB Power Receives Prestigious Award: Celebrating Excellence and Innovation-FY 23-24



CII award – National Excellence Energy award & National Energy leader award



“Diamond “ Winner of GMF Spotlight Safety Award-2023



Green Feather award - Platinum in the “Energy Conservation category”.



Fly Ash Utilization Award –Mission Energy foundation



वक्त है नॉलेज के
रंग में रंगने का

Thank You

Email Id: abhinavprakash.trivedi@dbpower.in

Mob no-7898905060



DB Power Ltd

Energy Saving projects implemented in FY 2021-2022

Sr.No	Title of Project	FY	Investment in millions	Annual Electrical Saving (Million kWh)	Annual Thermal saving (Million Kcal/year)	Total Saving (Million Rs)
1	LP turbine Diaphragm Modification for revival time reduction of ruptured diaphragm	FY 21-22	0.125	0.048	0.00	0.168
2	Boiler Surface Heat Loss reduction by applying proper Insulation.	FY 21-22	0.35	0.000	6.91	6.284
3	LPBP spray valve opening position optimisation	FY 21-22	0	2.560	0.00	8.960
4	20 kcal/kWh heat rate improved after unit-1 COH by improvement in performance of cooling tower, condenser, air pre heater, insulation, heaters and Turbine cylinder efficiency etc.	FY 21-22	160	14.920	89.88	157
5	Installation of 90KW VFD (with bypass panel) in LDO Forward pump	FY 21-22	0.45	0.151	0.00	0.528
6	Installation of 110KW VFD on 110 KW LP water pump-2 motor to optimize the energy to match with variable flow requirement.(min 600 m3/hrs to max 1000 m3/hrs)	FY 21-22	0.5	0.300	0.00	1.050
7	Monitoring of BFP R/c valve downstream temp and do r/c valve maintenance	FY 21-22	0.15	0.000	15.55	13.196
8	Replacement of 150W HPSV lamp by 50W LED lamp (350 Lmps in FY 2021-22)	FY 21-22	0.21	0.179	0.00	0.626
9	Replacement of 40 W tube light by 16W LED tube light (500 Lmps in FY 2021-22)	FY 21-22	0.15	0.061	0.00	0.215
10	Replacement of 250W HPSV high bay lamp by 120 W LED lamp (50 Lmps in FY 2021-22)	FY 21-22	0.27	0.033	0.00	0.116
11	Replacement of 800 W HPSV flood lamp by 400 W LED lamp-yellow in High Mast (5 High Mast in FY 2021-22)	FY 21-22	0.1	0.010	0.00	0.036
12	Replacement of 250W HPSV LED lamp by 120 W LED street lamp(100 street lights in FY 2021-22)	FY 21-22	0.6	0.066	0.00	0.233
13	Replacement of 125 W HPSV lamp by 30 W LED lamp(100 lights in FY 2021-22)	FY 21-22	0.05	0.054	0.00	0.188
14	Replacement of 70 W HPSV lamp by 30 W LED lamp-Yellow color(200 lights in FY 2021-22)	FY 21-22	0.08	0.041	0.00	0.143
15	Installation of vacuum transmitter in boiler 8.5 meter	FY 21-22	0	0.056	1.46	1.541
16	Providing drain line in Service Air Line Header near Unit # 2 boiler lift	FY 21-22	0	0.000	0.21	0.191
17	Develop a page on DCS indicating impact of parameter deviation on Heart rate-Continuous basis	FY 21-22	0	0.000	1.30	1.178
18	Intensive Monitoring OF Aux power consumption of equipment tracking-Vaccum Pump C & ACW Pump 2A,& ID fan current reduced	FY 21-22	0	0.212	0.00	0.741
	Total		163.0	18.7	115.3	192.5