24th National Award for Excellence in Energy Management -2023

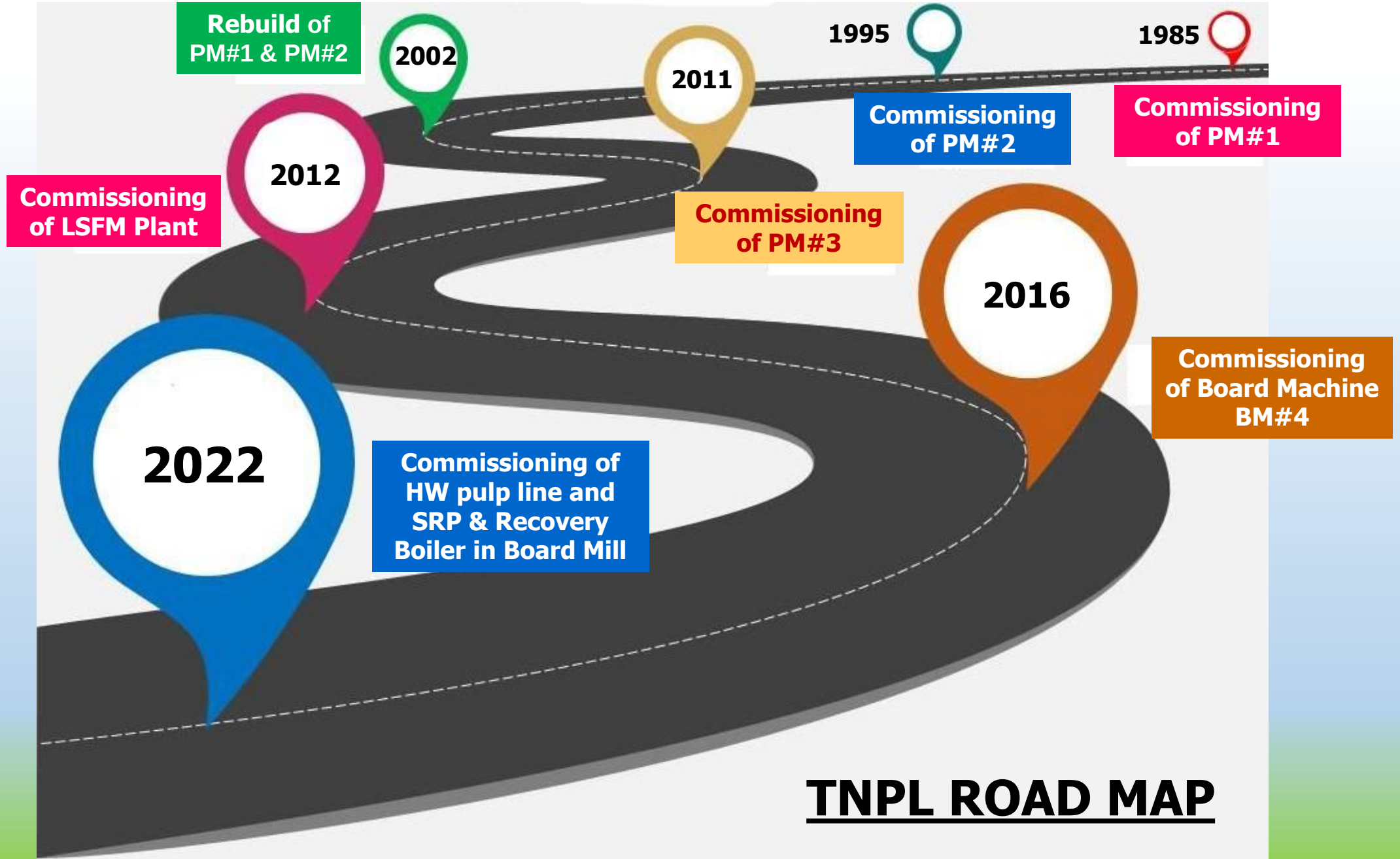
Presented by

K. RAJANBABU - DGM (Paper Machine)

R. SURESH KUMAR - DM (Mechanical)

P. VIVEK - DM (Electrical)

Company Profile



TNPL ROAD MAP

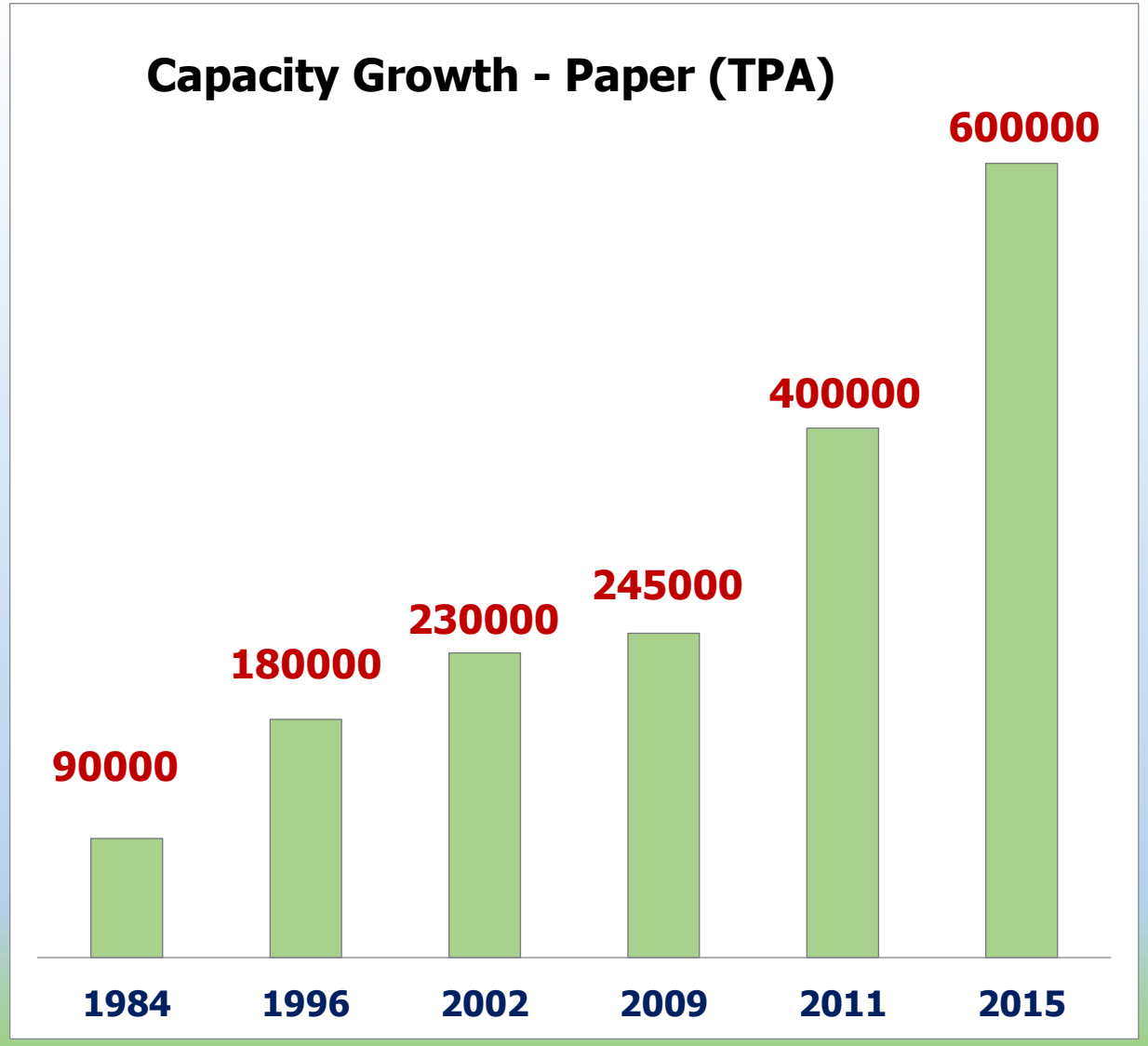
TNPL Profile

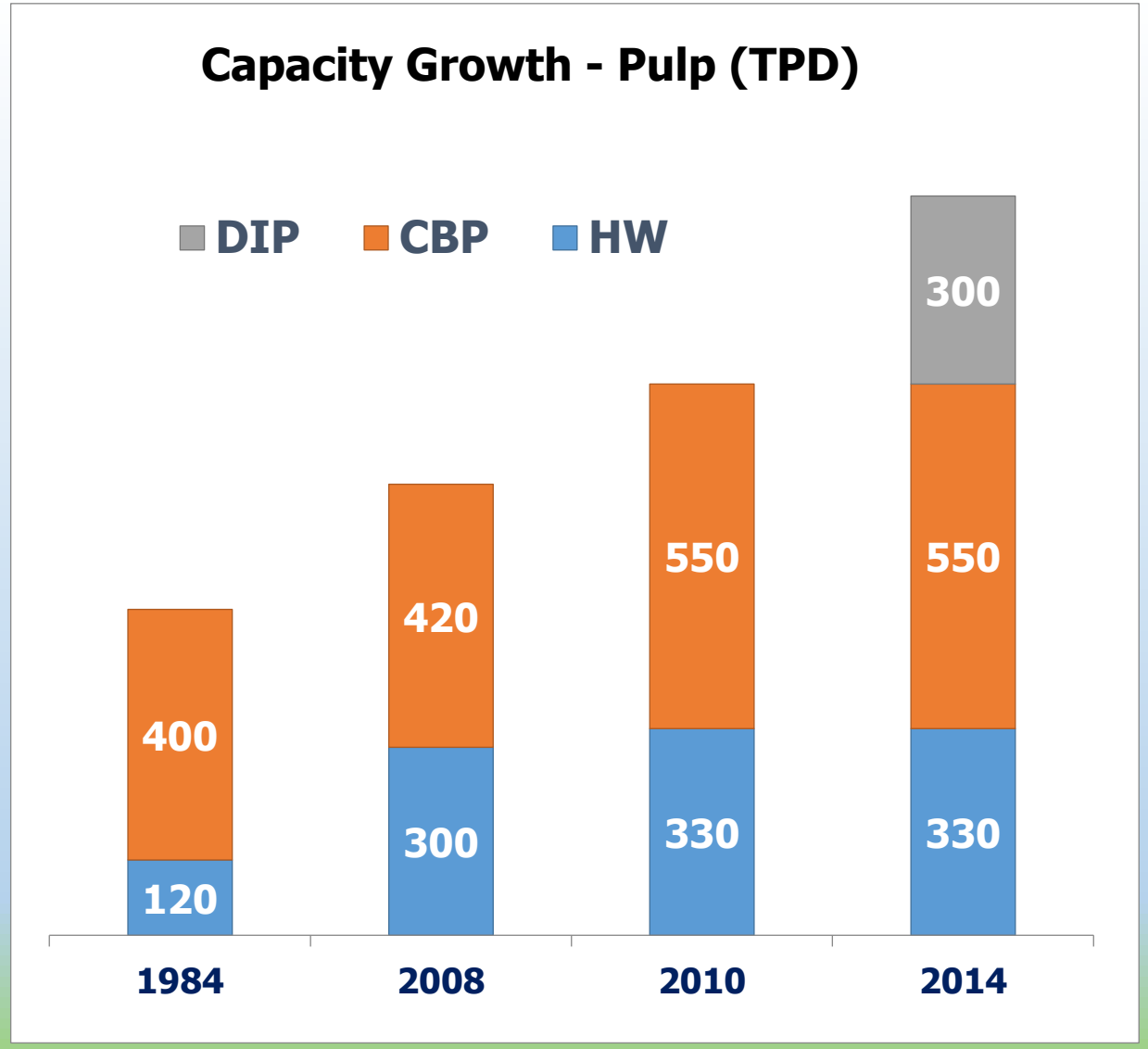
- World's largest bagasse based paper plant Promoted by Government of Tamil Nadu.
- 103.62 MW of power generated from captive power plant is derived through a fair mix of agro fuel as support to fossil fuels.
- Production capacity enhanced from 4,00,000 MT/annum to 4,50,000 MT/annum of Writing & Printing Paper.
- Largest exporter of PWP(Unit 1) and 2,00,000 MT of Multi layer board (Unit 2).
- ISO 9001: 2015,14001:2015, ISO 50001 :2018 ,ISO 27001:2013. FSC FM/COC & CW/COC Certified .
- Installed Wind Power Capacity of 35.5 MW & Solar Power Capacity of 6 KW reducing 45,000 tCO_2e GHG Emission.
- 100% self sufficient in power.

TNPL Profile

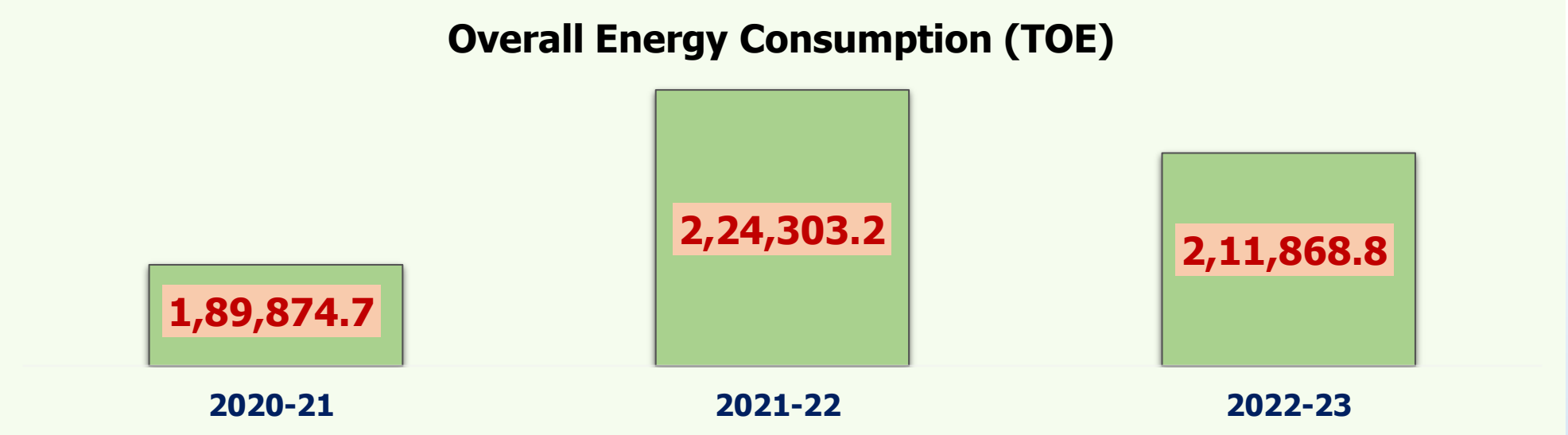
- Recycling lime sludge and fly ash to produce " TNPL CEMENT " first of its kind in pulp and paper industry.
- 6000 MT of flue gas from cement process is reused for the Production of Precipitated Calcium Carbonate
- Treated wastewater is used to irrigate 1665 acres benefiting 466 farmers at Unit 1 & 575 acres company's own land in Unit 2
- 25,000 m3/day biogas generated from bagasse wash water and used in Lime kiln resulting of 15 KL of F.Oil saving.
- Utilizing the 1.8 Lakh MT of internally generated Bagasse Pith in Power Boiler reducing 1 Lakh tCO2e GHG Emission.
- 2,33,775 acres of Pulp wood plantation since 2004 involving 45,738 farmers. Sequestered about 55.31 Lakh t CO2 Emission.

Capacity Growth





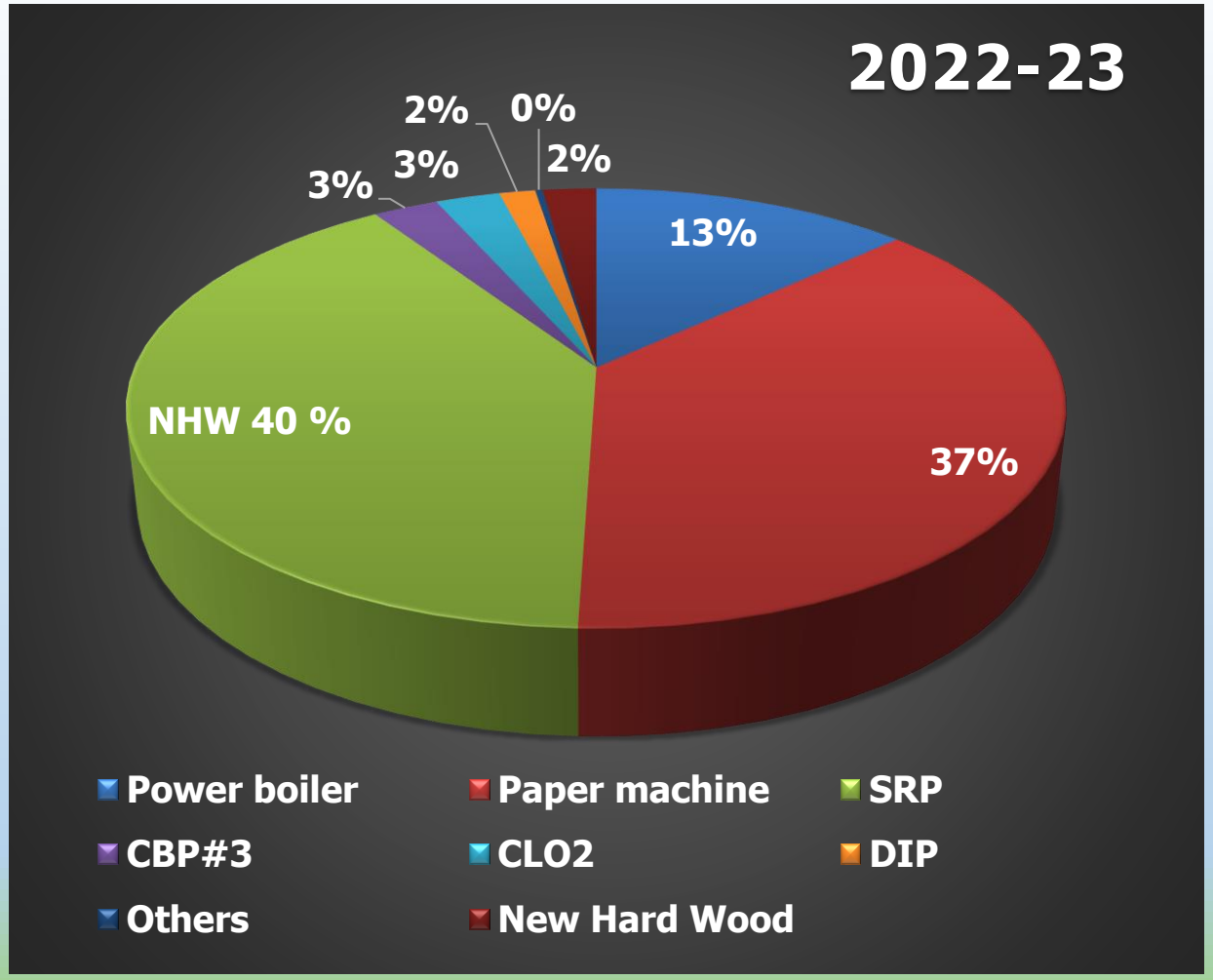
Energy Consumption



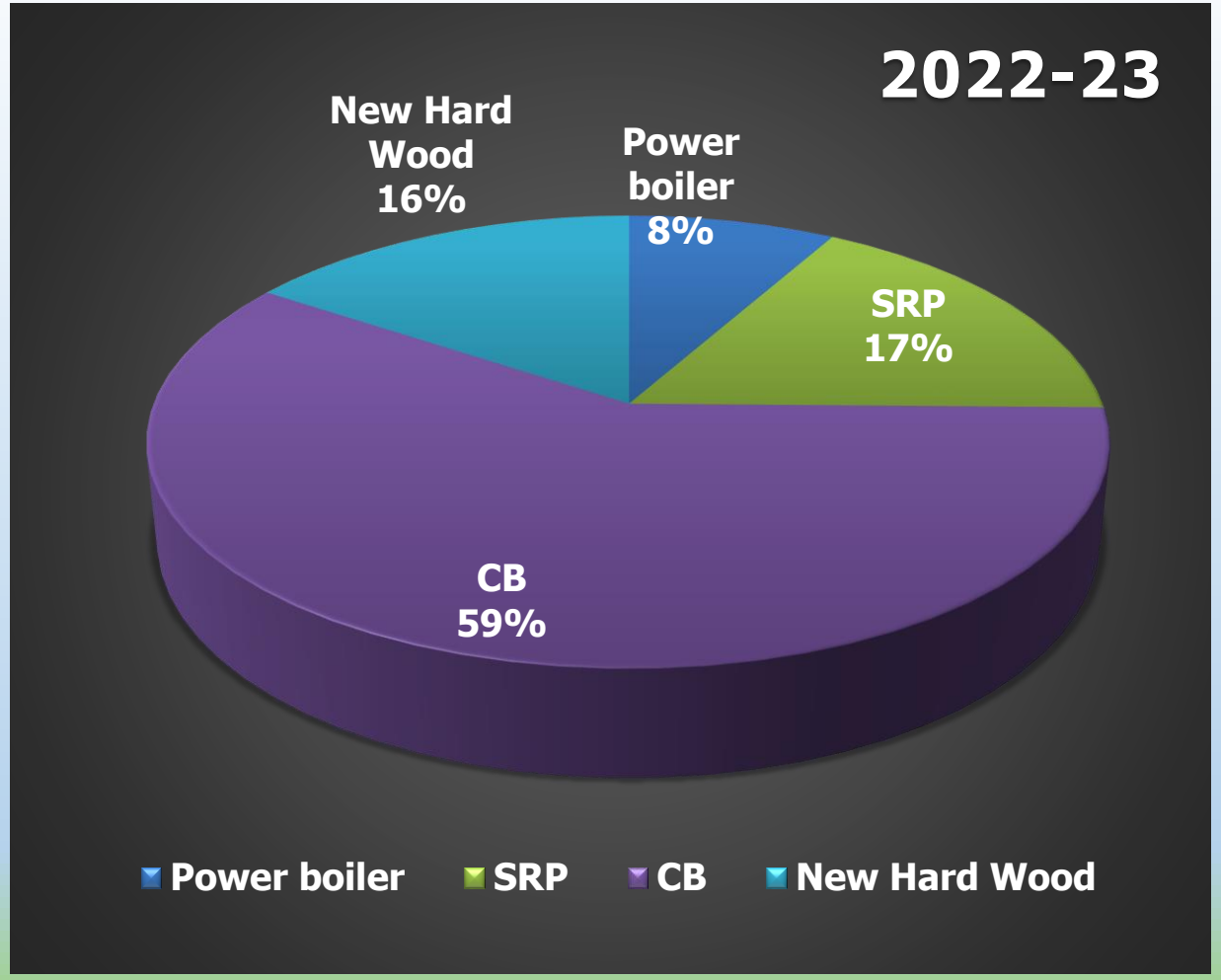
	UOM	2020-21	2021-22	2022-23
Total Thermal Energy consumption	Million Kcal	2107199.75	2339215.08	2050308.94
Total Electrical Energy Consumption	Million KWH	450.19	544.02	570.35
Paper production	MT	323587	388880	420793
Overall Energy Consumption	**TOE**	**189874.7**	**224303.2**	**211868.8**

Thermal Energy Consumption (2022-23)

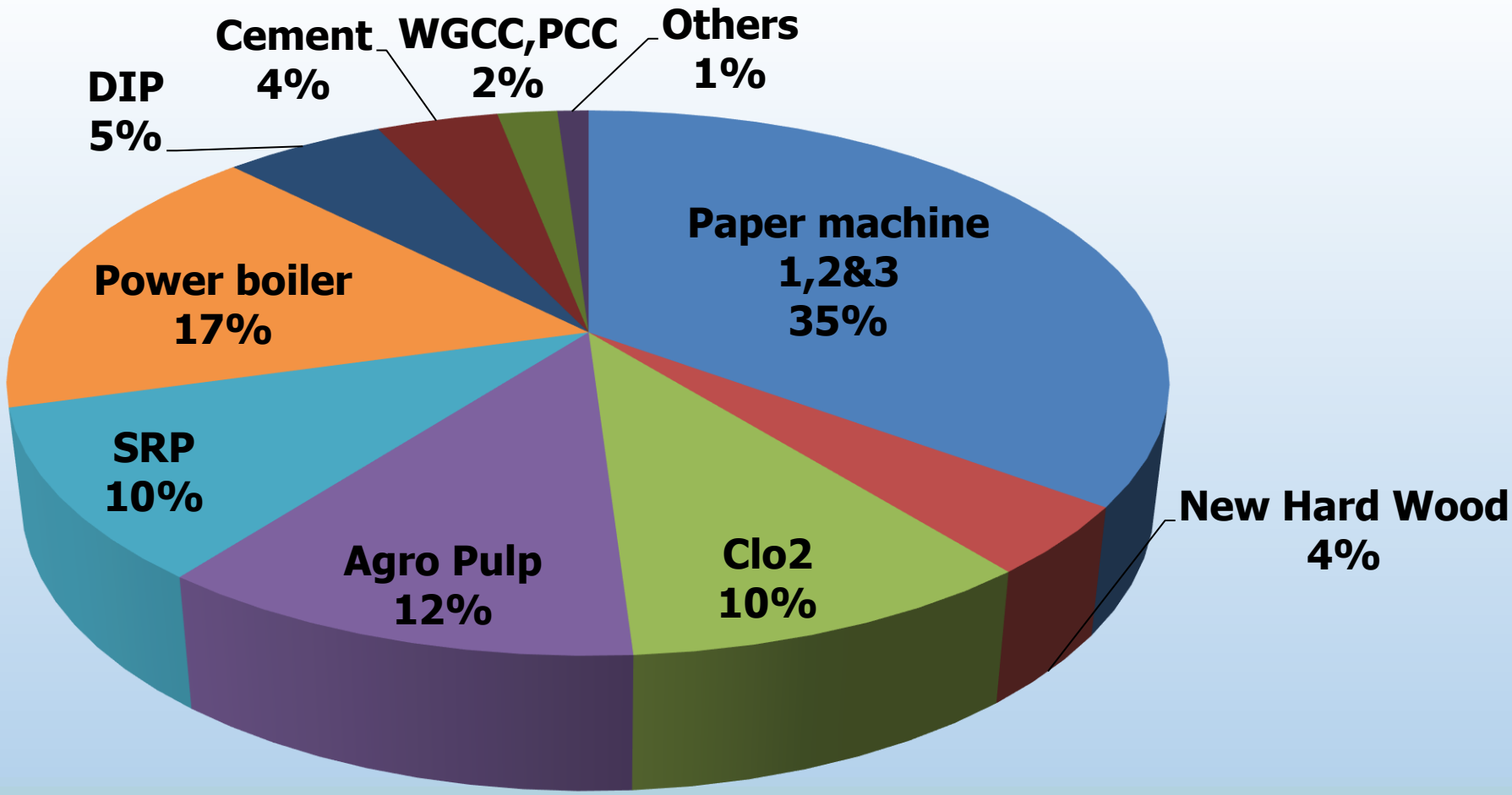
LP STEAM DISTRIBUTION



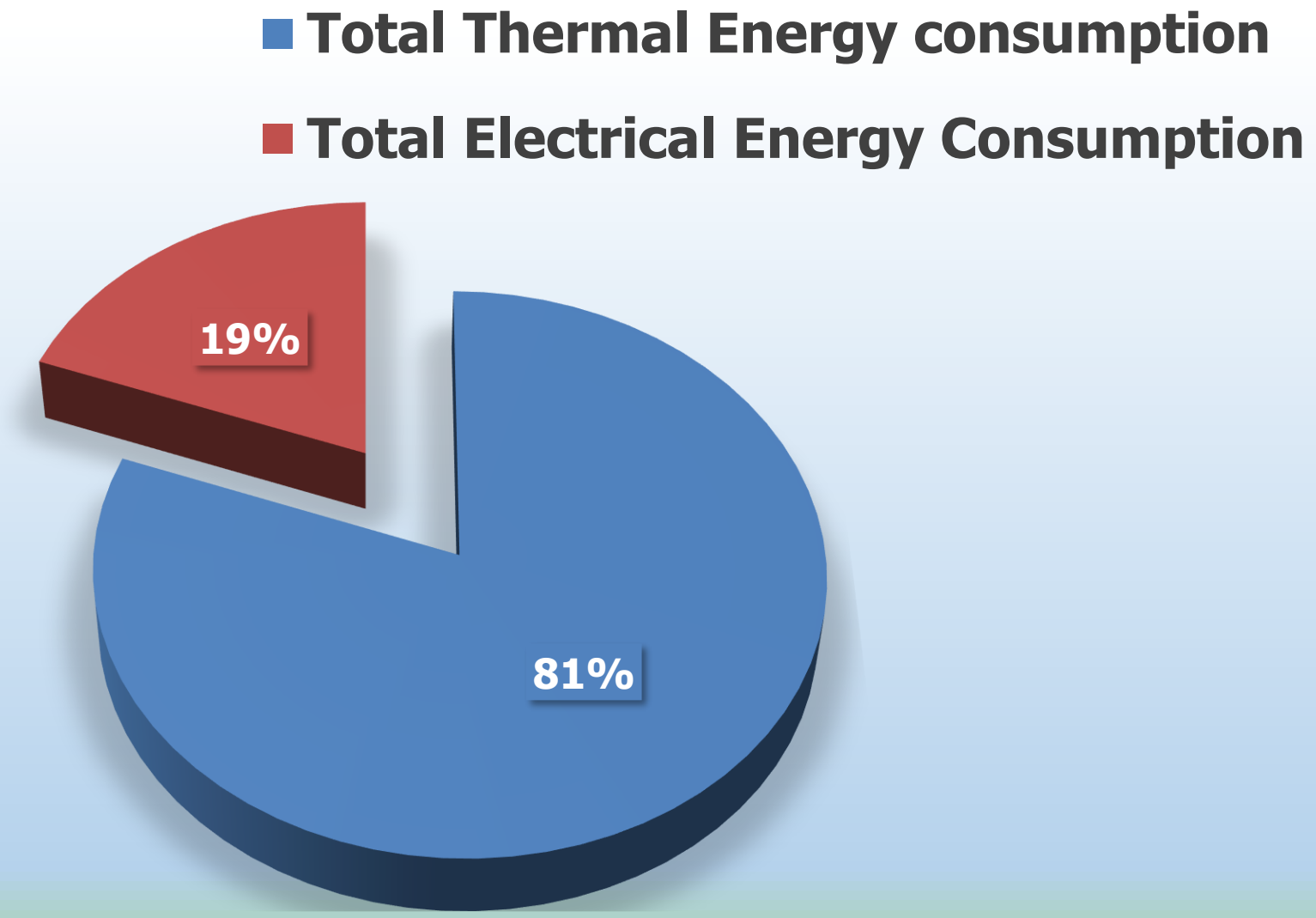
MP STEAM DISTRIBUTION



Electrical Energy Consumption (2022-23)

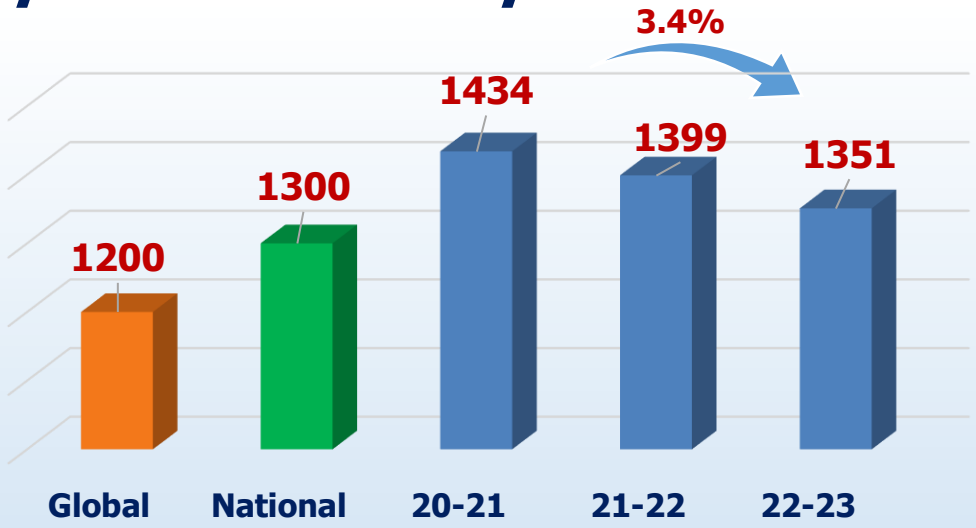


Overall Energy Consumption (2022-23)

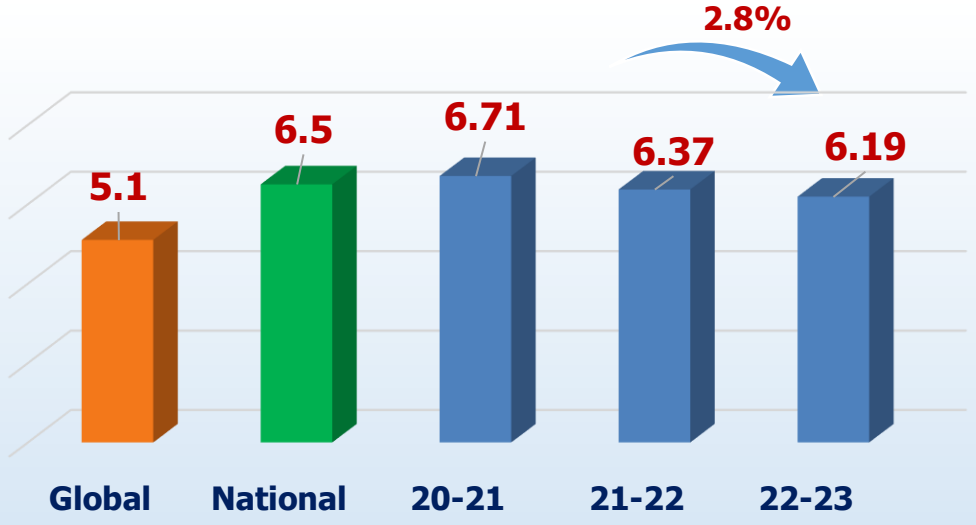


How Close to Global best in SEC

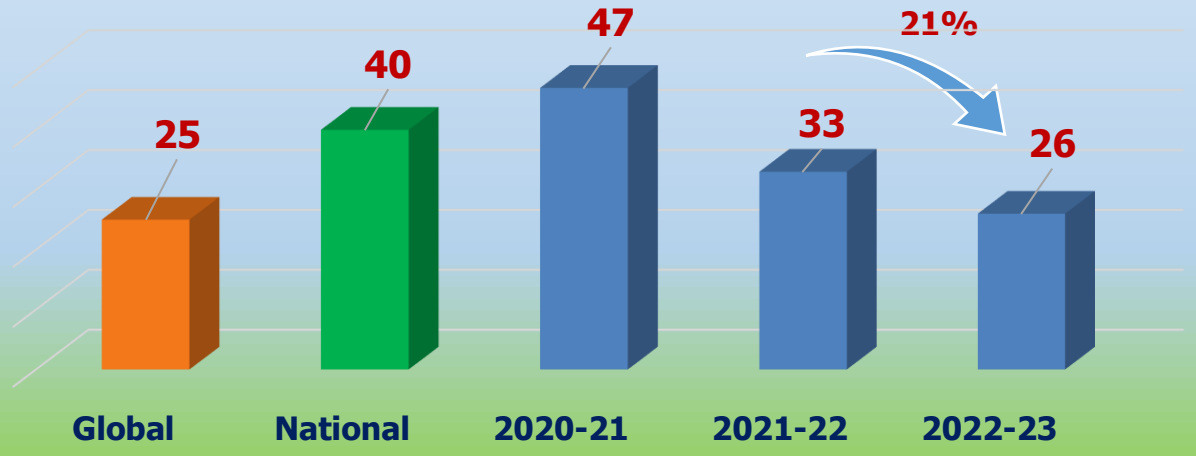
Specific Consumption of Power



Specific Consumption of Steam



Specific Consumption of Water



Targets

- SEC Reduction planned for **Short term** (2023-24) : 2%
- SEC Reduction planned for **Medium term** (2024-25) : 4%
- SEC Reduction planned for **Long term** (2025-26) : 6%

- Based on the future expansion we have planned for 6% reduction in SEC for long term

Short Term Projects (2023-24)

ELECTRICAL ENERGY SAVINGS	**1.742 Million KWH**
THERMAL ENERGY SAVINGS	**15502 Million Kcal**
TOTAL COST SAVING	**Rs. 135.88 Lakhs**

S.NO	PROJECT NAME	ENERGY SAVING / Year	COST SAVING (Rs. in Lakhs)
1	Stopping of Power Boiler # 6 & 7 Deaerator supply pump (75KW -1 No) by suitable modification in TG#6 condensate Extraction Pump delivery line	**4.16 lakhs Kwh**	**21.85**
2	Introduction of Bio gas firing system in Power Boiler # 7	**1200 MT of Imported coal**	**87.59**
3	Providing new slaker in Recaustisizer plant of SRP	**2.76 lakhs Kwh**	**14.50**
4	Introducing VFD for CB supply Pump(10P303) in PM#2	**1.0 lakh Kwh**	**6.98**
5	Provision of VFD for WL Supply Pump 1&2 (216 &217) in Caustisizer Plant	**0.95 lakh Kwh**	**4.96**

Medium Term Projects (2024-25)

ELECTRICAL ENERGY SAVINGS	**1.186 Million KWH**
THERMAL ENERGY SAVINGS	**11875 Million Kcal**
TOTAL COST SAVING	**Rs. 310.61 Lakhs**

S.NO	PROJECT NAME	ENERGY SAVING / Year	COST SAVING (Rs. in Lakhs)
1	Providing VFD for one feed pump in boiler#6 & 7	**8.64 lakhs Kwh**	**45.36**
2	Furnace Oil Savings by Reduction of Lime Sludge Moisture in Lime Kiln of SRP	**157 MT of Furnace oil**	**66.77**
3	Introducing VFD for Water pump to Warm water (00P423) in PM#2	**1.22 lakhs Kwh**	**8.52**
4	Introducing VFD for PV Fan#1&2(100F007A&7B) in PM#1	**2.0 lakhs Kwh**	**13.96**
5	Elimination of LP steam usage in CBP # 3 Hot water tank	**2449 MT of Imported coal**	**176**

Long Term Projects (2025-26)

ELECTRICAL ENERGY SAVINGS	**2.976 Million KWH**
THERMAL ENERGY SAVINGS	**49626 Million Kcal**
TOTAL COST SAVING	**Rs. 1373.27 Lakhs**

S.NO	PROJECT NAME	ENERGY SAVING / Year	COST SAVING (Rs. in Lakhs)
1	Installation of new high pressure boilers replacing the old low pressure boilers	**9285 MT of Imported coal**	**677.71**
2	Installation of new high capacity Steam Turbine replacing the old low capacity steam turbines	**19.47 lakhs Kwh**	**102.25**
3	Replacing of Liquid ring vacuum pump into turbo air blower in Paper machine # 1	**10.29 lakhs Kwh**	**540.22**
4	Usage of ClO2 plant vent Hydrogen as fuel in Lime kiln	**124.83 MT of Furnace oil**	**53.09**

Energy Saving Projects in last three years

Year	Total Encon Projects	Annual Electrical Energy savings Achieved		Annual Thermal Energy Savings			Total Annual savings	Investment made
	Nos.	Lakh Units	Rs. Lakhs	Imp.Coal in MT	Furnace Oil in KL	Rs. Lakhs	Rs. Lakhs	Rs. Lakhs
2020-21	27	27.59	105.12	3900	3864	1295.32	1400.44	43.37
2021-22	27	40.45	212.36	306	5073	1979.49	2191.85	82.13
2022-23	25	26.05	181.80	3030	5089	2423.96	2605.77	67.89

Energy Saving Projects with Zero cost investment

Year	Total Encon Projects	Total No. of Zero Investment projects	Total savings from zero investment projects in Rs. Lakhs
2020-21	27	18	1349.63
2021-22	27	16	2100.70
2022-23	25	20	2347.57

Encon Projects for FY 2022-23

(Electrical energy savings)

S.No	Description	Electrical savings		Total Savings	Investment
		Lakh kwh	Rs. Lakhs	Rs. Lakhs	Rs. Lakhs
1	Replacement of 46 Nos. of 400 W HPMV light fitting with 250 W LED light fittings, 30 Nos. of 400 W HPMV light fitting with 150 W LED light fittings, 33 Nos. of 150 W HPMV light fittings with 90 W LED light fittings, 100 Nos. of 150 W HPMV light fittings with 45 W LED light fittings, 150 Nos. of 150 W HPMV light fittings with 40 W LED light fittings and 395 Nos. of 36 W tube light fittings with 18 W LED lamps in Energy Department resulted in annual power savings of **2,04,400 Units** and cost savings of **Rs.14.27 Lakhs.**	**2.04**	**14.27**	**14.27**	**7.50**
2	Replacement of 17 Nos. of 400 W MH high bay light fittings with 150 W LED high bay light fittings, 22 Nos. of 150 W MH well glass light fittings with 90 W LED light fittings, 10 Nos. of 150 W MH Lamps with 75 W LED lamps and 50 Nos. of 150 W MH Lamps with 40 W LED lamps in Pulp Mill Department resulted in annual power savings of **55,444 Units** and cost savings of **Rs.3.87 Lakhs.**	**0.55**	**3.87**	**3.87**	**2.39**
3	Replacement of 100 Nos. of 150 W MH Lamps with 40 W LED lamps in Soda Recovery Plant resulted in annual power savings of **47,520 Units** and cost savings of **Rs.3.32 Lakhs.**	**0.48**	**3.32**	**3.32**	**0.6**

Encon Projects for FY 2022-23

(Electrical energy savings)

S.No	Description	Electrical savings		Total Savings	Investment
		Lakh kwh	Rs. Lakhs	Rs. Lakhs	Rs. Lakhs
4	Providing VFD for CLO2 transfer pump in CLO2 plant resulted in annual power savings of **54,000 Units** and cost savings of **Rs.3.77 Lakhs.**	**0.54**	**3.77**	**3.77**	**0.40**
5	Optimizing the operation of Reel Pulper agitator during broke feeding in Paper Machine#3 resulted in annual power savings of **2,37,600 Units** and cost savings of **Rs.16.58 Lakhs.**	**2.38**	**16.58**	**16.58**	**0.00**
6	Optimizing the operation of PDS Pulper agitator during broke feeding in Paper Machine#3 resulted in annual power savings of **2,37,600 Units** and cost savings of **Rs.16.58 Lakhs.**	**2.38**	**16.58**	**16.58**	**0.00**
7	Downsizing of Turbo Air compressor cooling water pump from 90 KW to 55 KW resulted in annual power savings of **63,706 Units** and cost savings of **Rs.4.45 Lakhs.**	**0.64**	**4.45**	**4.45**	**0.00**
8	Downsizing of Soft water transfer pump from 55 KW to 30 KW resulted in annual power savings of **1,75,200 Units** and cost savings of **Rs.12.23 Lakhs.**	**1.75**	**12.23**	**12.23**	**0.00**
9	Downsizing of Evaporator#1 SCBL tank agitator in SRP from 15 KW to 7.5 KW resulted in annual power savings of **48,697 Units** and cost savings of **Rs.3.40 Lakhs.**	**0.49**	**3.40**	**3.40**	**0.00**

Encon Projects for FY 2022-23

(Electrical energy savings)

S.No	Description	Electrical savings		Total Savings	Investment
		Lakh kwh	Rs. Lakhs	Rs. Lakhs	Rs. Lakhs
10	Stopping of one Air Drier based on demand pattern of Instrument air resulted in annual power savings of **93,183 Units** and the cost savings of **Rs.6.50 Lakhs.**	**0.93**	**6.50**	**6.50**	**0.00**
11	Optimization of Co-Gen Cooling Tower fan operation by utilizing seasonal effects resulted in annual power savings of **87,780 Units** and cost savings of **Rs.6.13 Lakhs.**	**0.88**	**6.13**	**6.13**	**0.00**
12	Optimization of Paltech Cooling Tower fan operation by utilizing seasonal effects resulted in annual power savings of **68,418 Units** and cost savings of **Rs.4.78 Lakhs.**	**0.68**	**4.78**	**4.78**	**0.00**
13	Downsizing of PM#2 filter water pump from 110 KW to 37 KW in WTP resulted in annual power savings of **1,66,320 Units** and cost savings of **Rs.11.61 Lakhs.**	**1.66**	**11.61**	**11.61**	**0.00**
14	By isolating one number of first stage causticizing unit in SRP resulted in annual power savings of **1,57,608 units** and cost savings of **Rs.11.00 Lakhs.**	**1.58**	**11.00**	**11.00**	**0.00**
15	Stopping the operation of one agitator and one pump by suitable modification of Broke preparation system in PM#2 resulted in annual power savings of **2,77,200 Units** and cost savings of **Rs.19.35 Lakhs.**	**2.77**	**19.35**	**19.35**	**0.00**

Encon Projects for FY 2022-23

(Electrical energy savings)

S.No	Description	Electrical savings		Total Savings	Investment
		Lakh kwh	Rs. Lakhs	Rs. Lakhs	Rs. Lakhs
16	Replacing high capacity vacuum pump by low capacity vacuum pump in New Evaporator#2 resulted in annual power savings of **2,11,680 Units** and cost savings of **Rs.14.78 Lakhs.**	**2.12**	**14.78**	**14.78**	**0.00**
17	Installation of VFD for sweetener stock pump in PM#2 resulted in annual power savings of **1,10,880 Units** and cost savings of **Rs.7.74 Lakhs.**	**1.11**	**7.74**	**7.74**	**0.00**
18	Elimination of Bagasse collection conveyor in CBP#3 wet washing area by providing a chute resulted in annual power savings of **40,986 Units** and cost savings of **Rs.2.86 Lakhs.**	**0.41**	**2.86**	**2.86**	**0.00**
19	Stopping of broke dilution pump in PM#3 by modification of pipe line resulted in annual power savings of **47,520 Units** and cost savings of **Rs.3.33 Lakhs.**	**0.48**	**3.32**	**3.32**	**0.00**
20	Downsizing the LMCD feed pump in Soda Recovery Plant resulted in annual power savings of **2,05,920 Units** and cost savings of **Rs.14.37 Lakhs.**	**2.06**	**14.37**	**14.37**	**0.00**
21	Installation of 10 KW Solar Power Plant at the terrace of Staff Club in Colony resulted in annual power savings of **12,938 Units** and cost savings of **Rs.0.90 Lakhs.**	**0.13**	**0.90**	**0.90**	**0.00**

Encon Projects for FY 2022-23

(Thermal energy savings)

S.No	Description	Thermal savings		Total Savings	Investment
		MT of IMP.coal	KL of Furnace oil	Rs. Lakhs	Rs. Lakhs
1	Installation of additional De-super heating in Boiler#6 PSH 1C inlet resulted in annual imported coal saving of **2387 MT** and cost saving is **2.33 crores**	**2387**	**--**	**232.97**	**57.00**
2	**420MT** of Wood Dust consumption in Power Boilers resulted in savings of **211 MT** of Imported Coal and the net cost savings of **Rs.20.59 Lakhs.**	**211**	**--**	**20.59**	**0.00**
3	**2,43,967 M3** of Bio Gas consumption in Power Boilers resulted in savings of **432 MT** of Imported Coal and the net cost savings of **Rs.32.55 Lakhs.**	**432**	**--**	**32.55**	**0.00**
4	**84,81,501 M3** of Bio Gas consumption in Lime Kiln resulted in annual savings of **5,088.90 KL** of Furnace oil and the net cost savings of **Rs.2,137.85 Lakhs.**	**--**	**5088.9**	**2137.85**	**0.00**

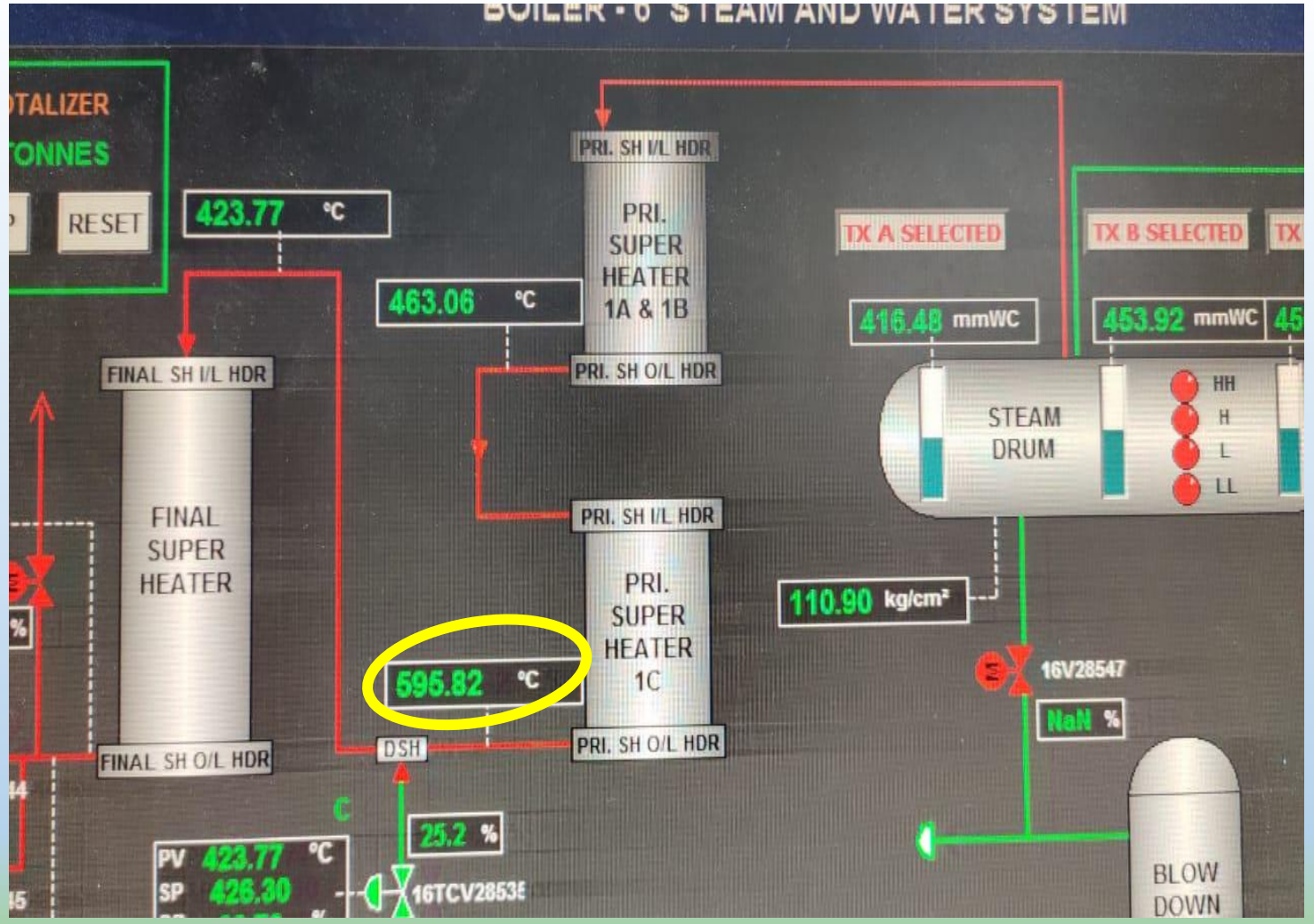
Innovative Project

INSTALLATION OF ADDITIONAL DE-SUPER HEATING IN PSH – 1C INLET

As is:	**Existing process :** **Boiler#6 primary super heater 1C outlet temperature found high and it reaches upto 595°C while firing agro fuel along with coal against the maximum metal working temperature of 480°C.** **Limitation of existing process:** **a) It is critical when it is being operated above max metal temperature and to have a control over it agro fuel consumption was minimised.** **b) To maximise the agro fuel consumption, to reduce the fossil fuel consumption and CO2 emission, it was decided to provide an additional de-superheating at Primary Super Heater 1A & 1B Outlet (1C inlet).**

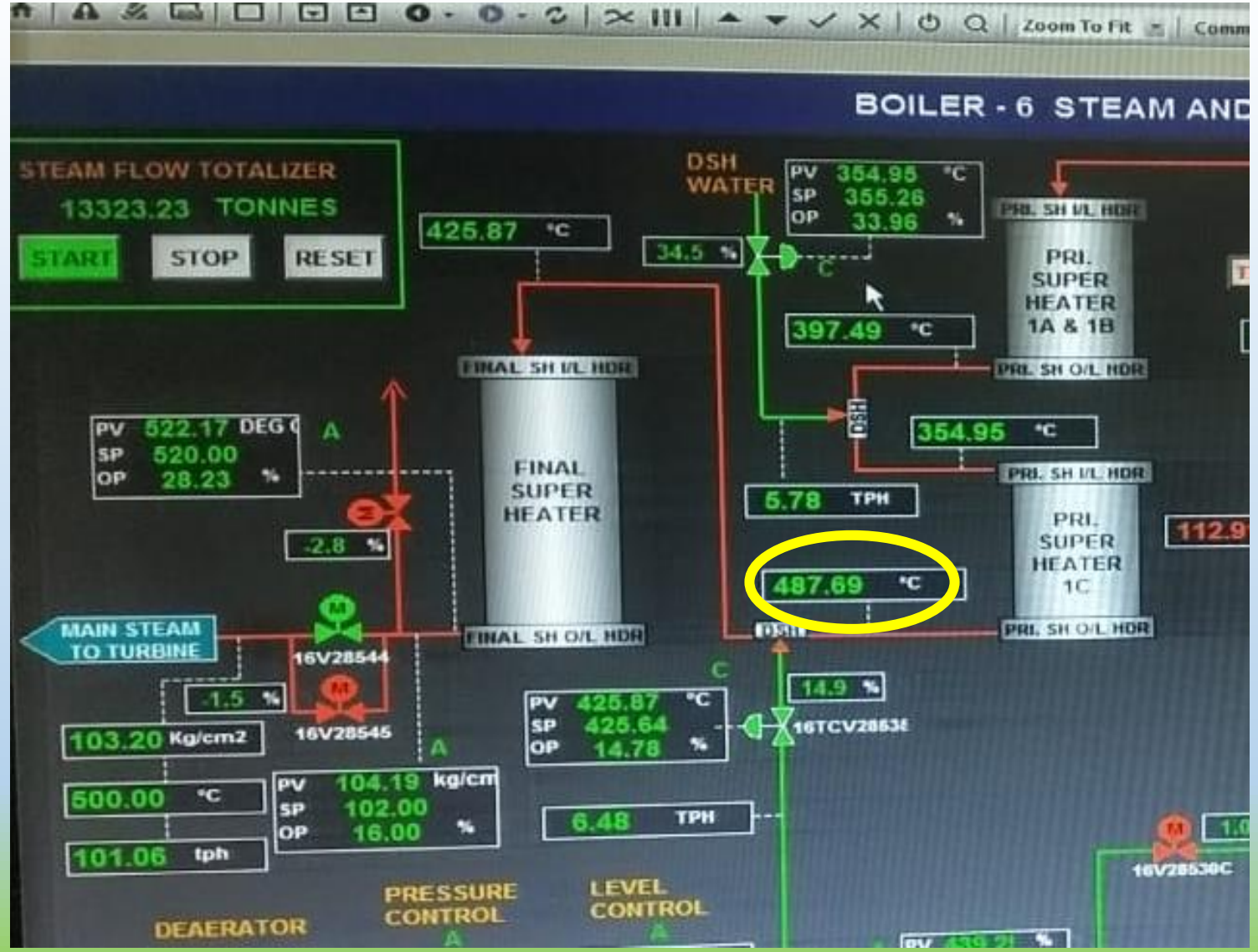
Innovative Project...

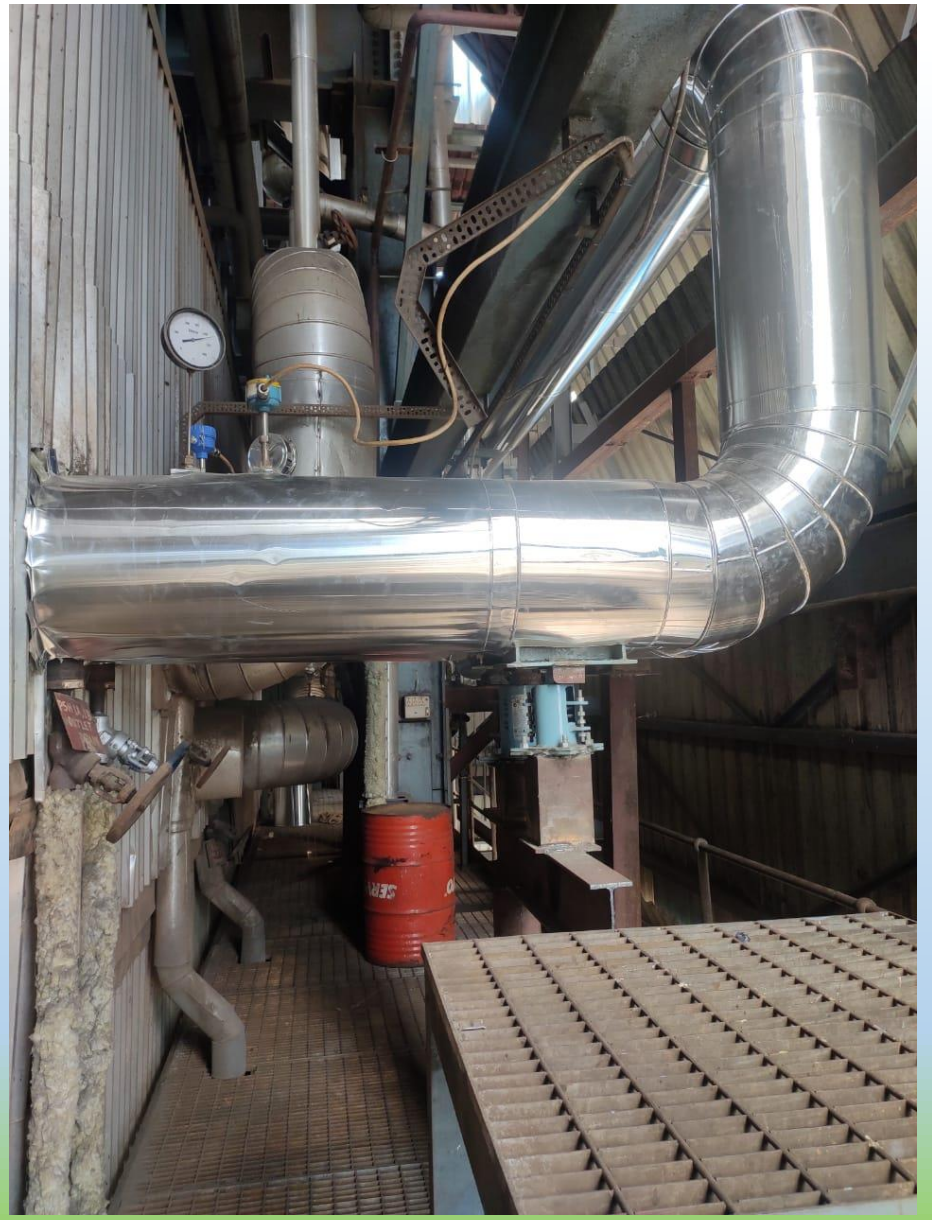
Boiler#6 PSH – 1C temp High (Before)



Innovative Project…

Boiler#6 PSH – 1C temp High (After)





Innovative Project...

	Summary of project
	Installation of project started on 05.07.22 Project completed on 16.07.22 Project was commissioned on 06.08.22 Qty. water used for de-super heating at PSH 1C outlet (before installation)-- 5.23 TPH Qty. water used for de-super heating at PSH 1C inlet (after installation) -- 7.56 TPH Net increase in qty. of water -- 2.33 TPH Steam equivalent per day -- 45 TPD Steam equivalent per annum -- 14850 MT Equivalent imported coal savings per annum -- 2875 MT Equivalent imported coal savings for 2022-23(274 days)(45x274x620)/(4003x0.8)-- 2387 MT

Innovative Project...

	Summary of project cont...	
	Enthalpy of steam @480deg.celcius & 102Ksc	-- 620 kcal
	Boiler Efficiency	-- 80 %
	GCV of fuel	-- 4003 Kcal/kg
	Fuel cost per MT (For the year 22-23 cost)	-- Rs. 9790
	Total cost saving per annum	-- Rs. 2.81 crores

Utilisation of Renewable Energy Sources

	2020-21		2021-22		2022-23	
Types of RE Sources	Energy Generated (Lakh kwh)	Annual savings Rs. Million	Energy Generated (Lakh kwh)	Annual savings Rs. Million	Energy Generated (Lakh kwh)	Annual savings Rs. Million
Wind	**361.18**	**137.61**	**407.31**	**213.84**	**394.51**	**270.63**
Solar	**0.0697**	**0.0266**	**0.0594**	**0.0311**	**0.0364**	**0.0249**
BL Solids	**1344**	**512.06**	**1422.85**	**746.99**	**1436.08**	**985.15**

Note :- 1. It is proposed to install 1MW roof top solar panel in UNIT-1 during this FY 2023-24

2. Feasibility study is in progress to install floating solar panel in water reservoirs.

Utilisation of Renewable Energy Sources

Type of material used	Renewable fuel as a percentage of total energy (%)		
	2020-21	2021-22	2022-23
Black liquor solids	**33.9**	**31.9**	**34.4**

Utilisation of Waste material as fuel

Type of waste material used	Quantity of waste material used (MT)			Equivalent qty. of conventional energy of fuel used (tons or KL of fuel)		
	2020-21	2021-22	2022-23	2020-21	2021-22	2022-23
Bio mass	**100147**	**169267**	**169663**	**40215 MT**	**69045 MT**	**87238 MT**
Bio gas-'000m3	**6885**	**8638**	**8725**	**4131 KL**	**5183 KL**	**5235 KL**

Utilisation of Waste material as fuel…

Type of waste material used	Annual savings Rs. (Million)			Waste fuel as a percentage of total energy		
	2020-21	2021-22	2022-23	2020-21	2021-22	2022-23
Bio mass	**205.9**	**505.1**	**851.4**	**4.2**	**6.3**	**8.0**
Bio gas-'000m3	**118.4**	**220.4**	**264.6**	**1.2**	**1.4**	**1.5**
TOTAL	**324.3**	**725.5**	**1116**	**5.4**	**7.7**	**9.5**

Waste Utilization and Management

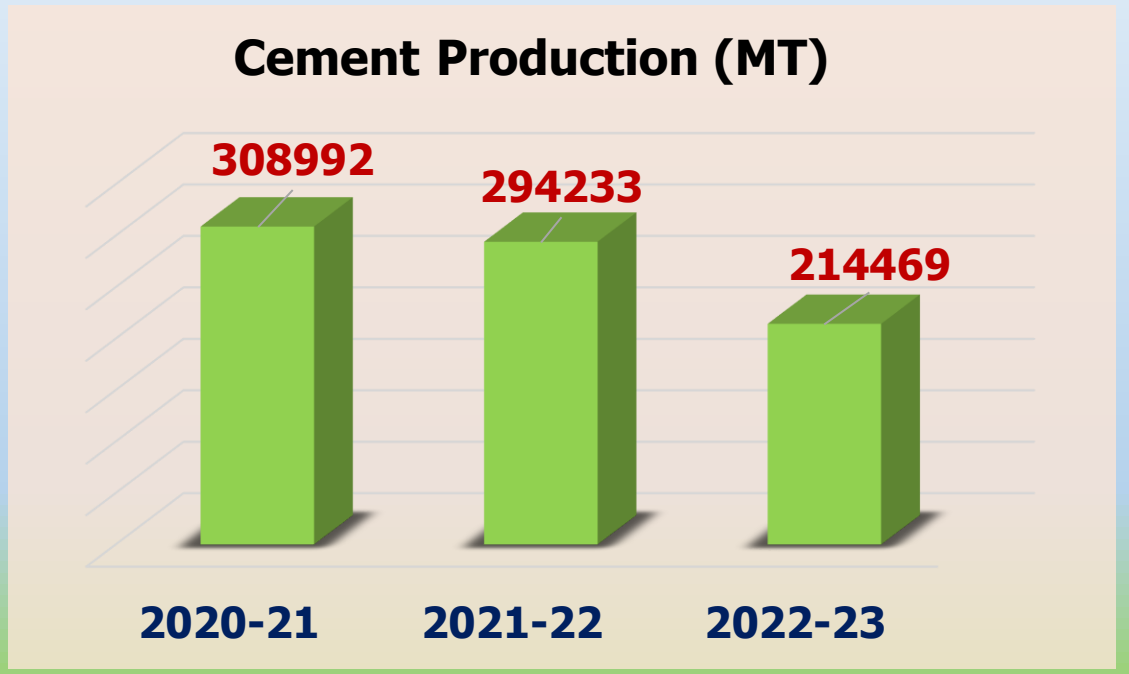
Fly ash utilisation

- **TNPL is the first in paper industry to install cement plant as a circular economy.**
- **The lime sludge from SRP and fly ash generated from power boilers are entirely used in our cement plant.**

YEAR	2020-21	2021-22	2022-23
QTY.OF FLY ASH DESPATCHED TO TNPL CEMENT	24536	32326	33765

Waste Utilization and Management…

Solid waste (MT)	2020-21	2021-22	2022-23
Lime sludge	56322	53225	59892
Fly ash	24536	32326	33765
De inking plant sludge	14735	5944	768
Lime grits & sludge from Paper Machine Coating	7505	7754	3741



GHG Inventorisation

Sources of GHG Emission in TNPL

Scope 1	Sources
Stationary Fuel Combustion using fossil fuels	Seven Power Boilers, two Lime Kilns and two recovery boilers
Emission from Makeup Carbonates	Lime Kiln Process
Automobile Fuel Combustion	Automobiles owned by TNPL in factory
Emission from Waste water Treatment	Anaerobic Lagoon

Scope 2	Sources
Purchased energy	Electricity imported

Sources of GHG Emission in TNPL…

Scope 3	Sources
Fossil fuel usage	Employees Travel
Emission from Raw Material Transport	Wood, Bagasse , Coal and Waste Paper
Emission from product Transport	Product transport

Carbon Neutral	Sources
Stationary Fuel Combustion using biomass fuels	Seven Power Boilers, two Lime Kilns and two recovery boilers

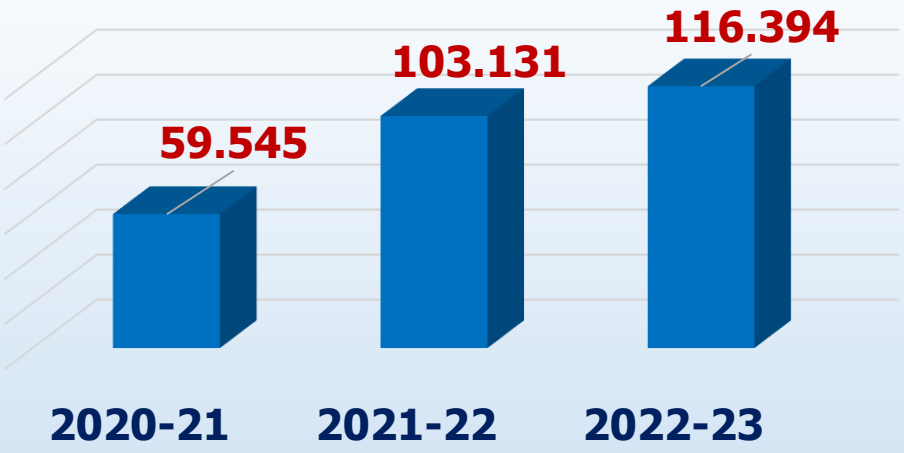
Carbon Sequestration	Sources
Carbon offset due to Plantation Activities	Plantation Activities

GHG Emission Intensity Reduction

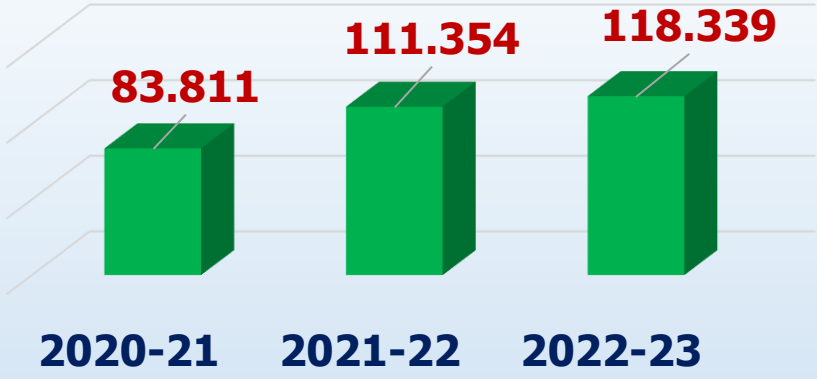
Sl.No	Description	2020-21	2021-22	2022-23
1	Carbon Sequestration by TNPL Plantation (tCO2e)	526200	523080	559285
2	Avoided Emission due to exported electricity in Wind Farms (tCO2e)	35362	36776	36737
3	Total Emission under Scope 1 and Scope 2	1080713	1116134	1047293
4	CO2 Offset by Plantation & Windfarms (1) + (2)	561562	559856	596022
5	Net Emission (3) - (4)	519151	556277	451271
6	Paper production in MT	323588	388942	421133
7	Net Emission per MT of paper production (tCO2e)	1.60	1.43	1.07

GHG Emission reduction

Use of Agro fuels in Steam Generation
(Tonnes of CO2 emission per Annum)



Bio-Methanation of Bagasse Waste Water
(Tonnes of CO2 emission per Annum)



Net Emission per MT of paper production (tCO2e)

Developing action plan for achieving the CO_2 Emission targets

- Energy Efficiency improvement in all the possible areas of mill
- Increase Renewable energy fuel sources
- Decrease distance of transportation for raw materials, products, byproducts and in-process wastes like sludge, wood dust, etc.
- Installation of solar electricity panel
- Installation of solar lights in colony streets
- Increase carbon sequestration through pulp wood plantations by TNPL captive plantation and farm forestry schemes.
- With all the above efforts, TNPL will progress towards carbon neutrality

Green Supply Chain Management

Green Supply Chain Policy

- The Company is manufacturing paper from eco-friendly raw material bagasse
- Stimulate rational usage of Water, Energy and other natural resources through technological improvements and behavioural aspects
- Minimise waste and Maximise reuse / recycling (Deinking Pulp)
- Adopting Manufacturing Excellence Model
- Ensuring Environmental regulatory compliance
- Ensuring that the drivers carrying TREM (Transport Emergency) card with all relevant details
- Ensuring the transportation of Hazardous chemicals as per Motor vehicle act 1988 & Moto vehicles rules 1989.

GREEN SUPPLY CHAIN MANAGEMENT

Projects Implemented:

Procurement of Poly Aluminium Chloride used in Paper making in liquid form in tankers instead of Powder form.

Investment Made – NIL

Benefits Achieved

1. **Environment issues and Health & safety related issues are eliminated,**
2. **Eye irritation, suffocation and throat irritation in handling powder/granular form are completely eliminated.**
3. **Using of packing materials in procurement of PAC is completely eliminated.**

GREEN SUPPLY CHAIN MANAGEMENT

Description:

Poly Aluminium Chloride (PAC) was initially procured in Powder/Granular form in bags and later in liquid form in tankers . Now it is being procured in Liquid form through tankers and stored in IBC (Intermediate Bulk Container). This resulted in 100% elimination of packaging in procurement of PAC.

Action Plan

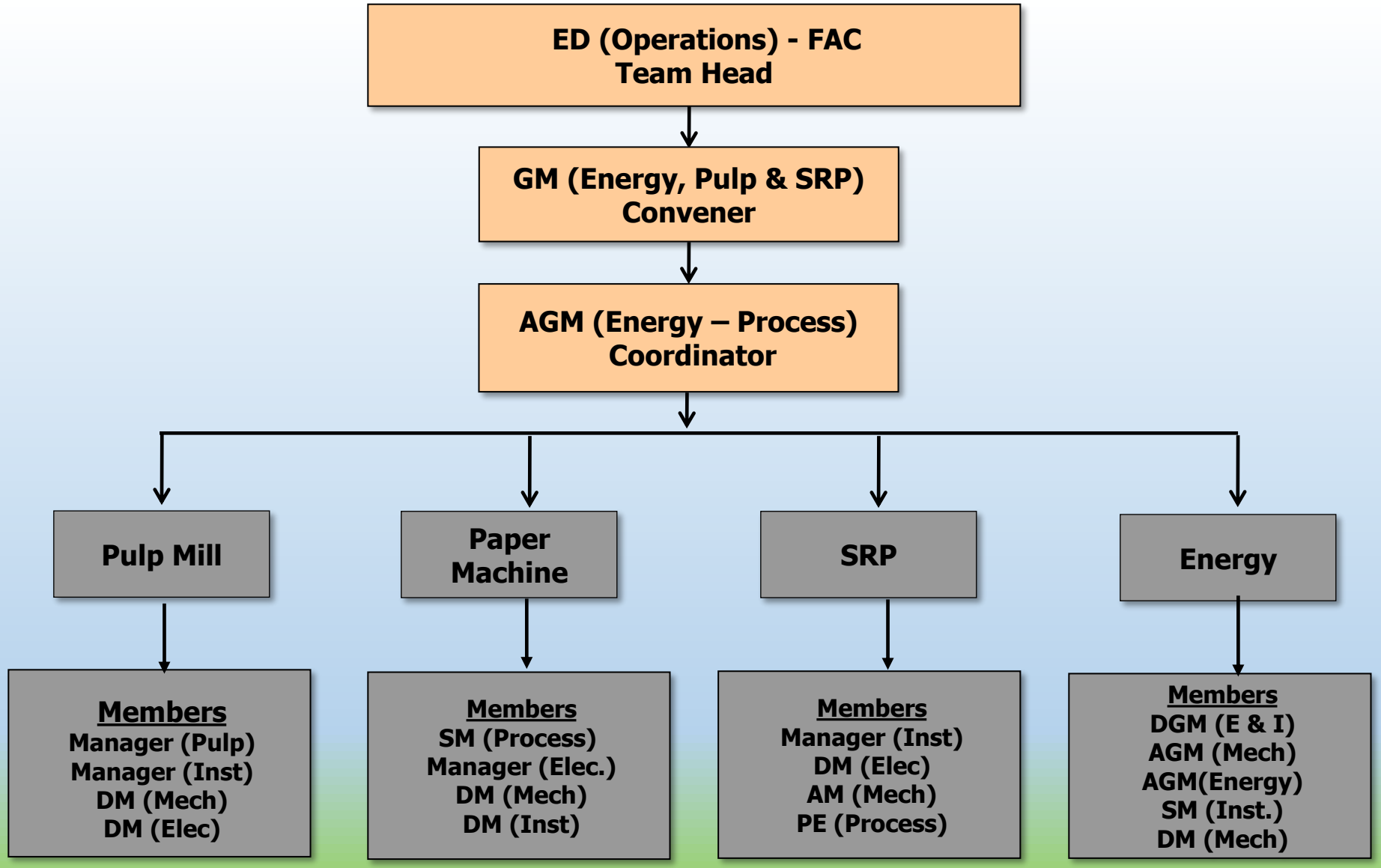
TNPL plans to increase the quantity of procurement of indigenous waste paper to 1,10,000MT per year especially post consumer grade of waste paper. In the last financial year TNPL procured 77293 MT of Indigenous waste paper , which is about 90% of the total waste paper consumption of 86,406 MT for DIP pulp production.

Currently, we are procuring at an average quantity of 9000 MT/month (around 1.08 Lakh MT/annum) of waste paper from waste paper dealers in Tamil Nadu, Maharashtra, Kerala, Karnataka and Educational institutions & Government departments.

GSC : Logistics

- Precipitated Calcium Carbonate (PCC) and Wet Ground Calcium Carbonate (WGCC) are used as fillers.
- Initially, it was procured in powder form in 50 kg bags and later in jumbo bags.
- TNPL entered into an agreement with M/s OMYA to set up PCC & WGCC plant on BOO basis at a site near to TNPL LSFM Plant.
- OMYA is supplying PCC & WGCC in liquid form since 2014. This has resulted in reduction of Transportation.
- In Future, TNPL is planning to expand the procurement of "Green certified products" especially for high spend materials. Through this, procurement can be emphasized on low-impact materials through the low-impact manufacturing process by environmentally conscious suppliers.

ENERGY CONSERVATION TEAM



Encon Minutes of Meeting

MINUTES OF ENCON MEETING

Date: 24/03/2023
Time: 15:30 Hrs

Members present:

GM (Energy)	SM (Energy) - Mr. SR	DM(Energy) – Mr. NJ
DGM(Paper) – Mr.KR	SM (Energy) - Mr. CS	DM(Mech-paper) – Mr.TR
AGM (Energy)- Mr.GS	SM (Mech) – Mr. VM	DM (Inst- SRP) – Mr.MS
AGM (Mech) – Mr.KCK	SM (Inst.) - Mr. VS	DM(Elec.- SRP) –Mr.BS
AGM (Elec) - Mr. KV	SM(Paper) – Mr.SK	DM(Pulp) – Mr.MPNB
AGM(Mech-Paper) –Mr.PP	M(Elec.PMC) –Mr.AM	DM(Inst-pulp) – Mr.MM
		DM(DIP) – Mr.SM
		AM(Inst.PMC) – Mr.GV
		AM(Mech.Pulp) – Mr.SB
		AM(Mech. SRP) – Mr.CS
		AM(ETP) – Mr.MS
		PE (SRP) – Mr.RB

Details

- Objectives of Encon meeting and PAT VII was briefed as below
  1. To reduce specific Energy Consumption by 1.1% per annum and 3.17% for PAT cycle VII (2022-25)
  2. Action plan and road map to achieve the target
  3. To identify and implement the Encon projects
  4. To utilise the fund allocated for Encon budget
  5. To collect data for Energy award questionnaire and Form-1 submission.
- GM(Energy) insisted to mark the ENCON meeting No. in the first slide.
- Compressed air leak test mill wide to be conducted as a part of Energy conservation
- All team members of respective dept. were asked to utilize the Energy conservation budget available for Energy conservation projects for the year 2023-24.
- Mill wide Energy Saving potentials for both thermal and Electrical explained.
- Section wise specific steam and power consumption from 2018-19 to 2022-23 were presented.
- DGM(Paper) insisted to include the paper production in the specific Steam consumption slide.
- GM(Energy) insisted to include the units in all bar chart slides for sp. steam, power , water, steam cost and power cost and also to include the machine wise GSM in Sp. Steam & power consumption slide.
- If possible steam consumption and power consumption data may be presented in single slide viz. top and bottom.
- Month wise and year wise data must be presented as bar chart in single slide.
- AGM(Electrical) informed that 2200 Escerts of PAT cycle I were sold @ Rs.1840 per Escert.
- AGM(Energy) requested all user depts. to look into the steam leak through traps, vents, valves , steam lines etc. and the leaky steam trap photos shall be sent to Energy for rectification.
- DGM(paper) insisted to carry out the thermal insulation in steam line of paper machine area.
- GM(Energy) insisted to install Energy meters for the major Electrical Energy intensive equipment above 200KW motors in all departments.
- GM(Energy) also insisted to prepare a list of major Electrical Energy intensive equipment.
- Month wise Specific Power Consumption and Specific Steam Consumption section wise , Steam cost, power cost and specific water consumption for FY 2022-23 were presented.
- Overall Energy consumption (19% Electrical and 81% Thermal) presented and the team members were asked to focus more on thermal saving.
- GM(Energy) informed that a variation report dept. wise between previous year and current year to be prepared and sent to all depts. on or before 15th of every month. Reply from all depts.. to be sent to Energy dept. on or before 20th of every month.
- He also added that Enron meeting will be conducted on 20th of every month.
- GM (Energy) insisted to send the completed Encon projects for the FY 2022-23 with detailed calculation to Energy dept. on or before 28.03.23.
- Pulp mill presented the completed Encon projects details and proposed projects.

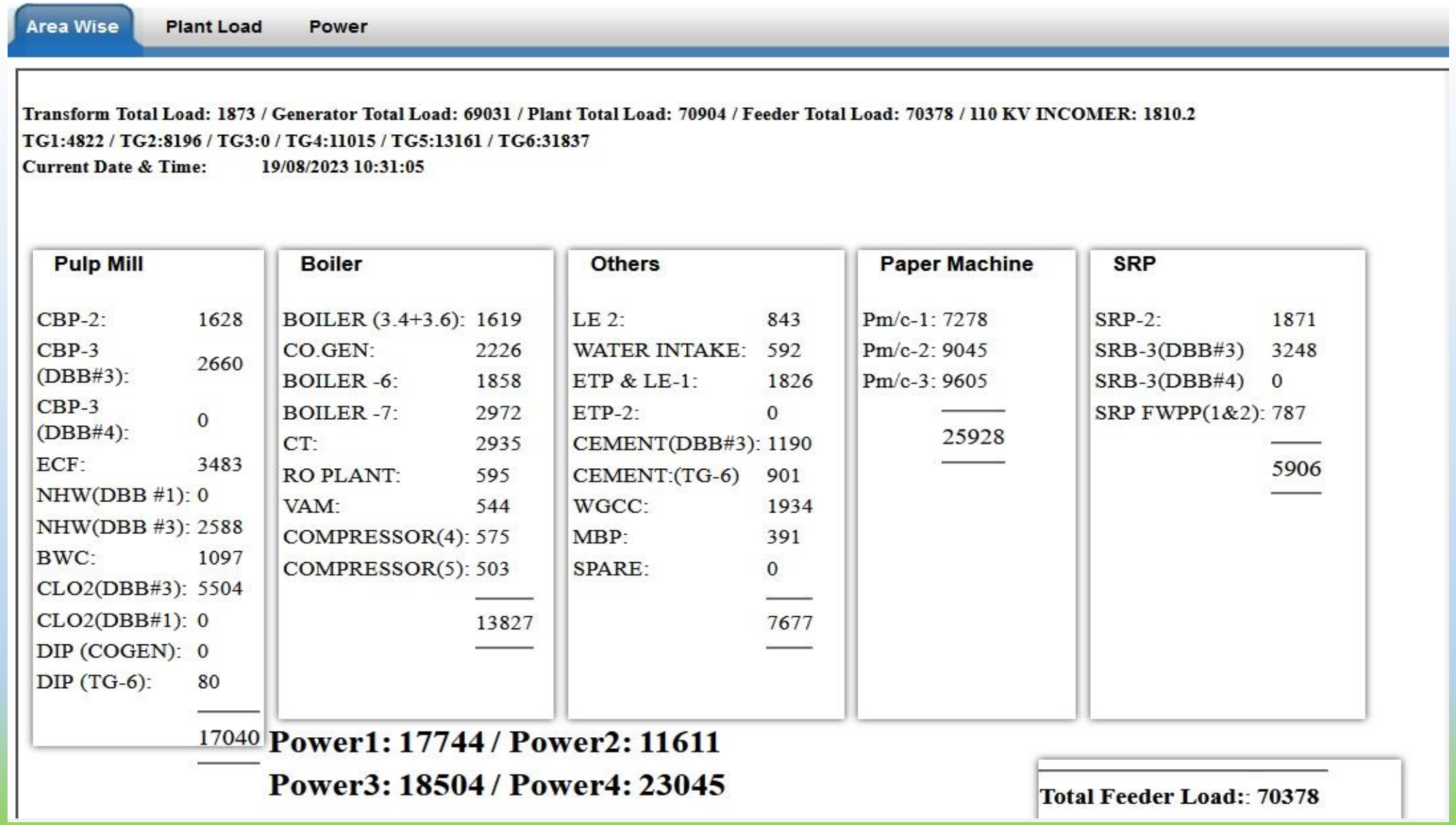
SM(Energy)

Teamwork, Employee Involvement & Monitoring

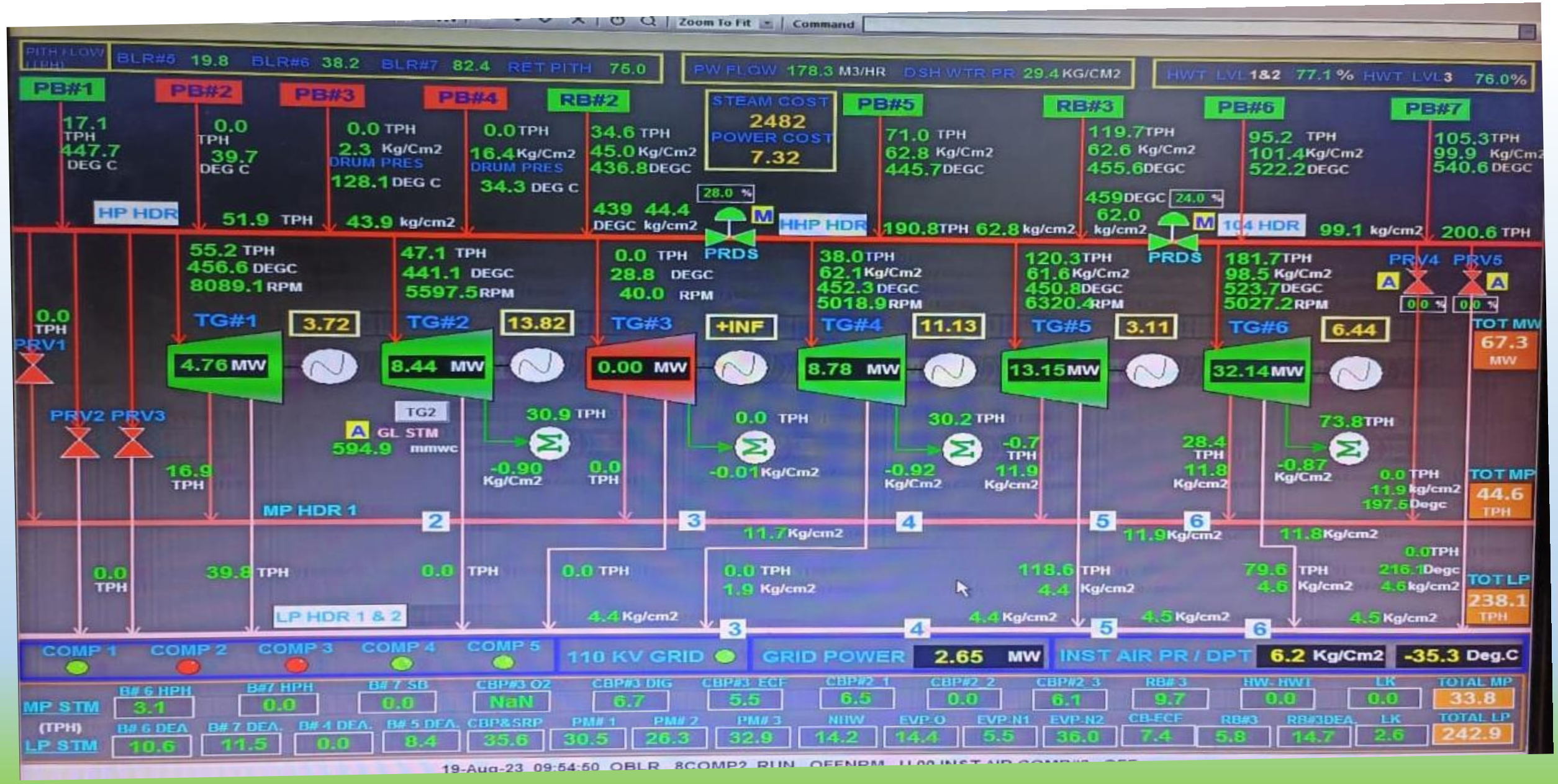
- Daily monitoring system is available for Electrical &Thermal Energy.
- Daily Production and Energy Review meeting is chaired by ED (O)-FAC.
- Separate budget of 100 Lakhs/annum is allotted for Implementing Energy Conservation measures.
- Energy efficiency/awareness training program is conducted for Executives & Workers level.
- Projects implemented through Manufacturing Excellence (ME) (Workers and Supervisor level) are awarded

Online Electrical energy monitoring system

Transform Total Load: 1873 / Generator Total Load: 69031 / Plant Total Load: 70904 / Feeder Total Load: 70378 / 110 KV INCOMER: 1810.2



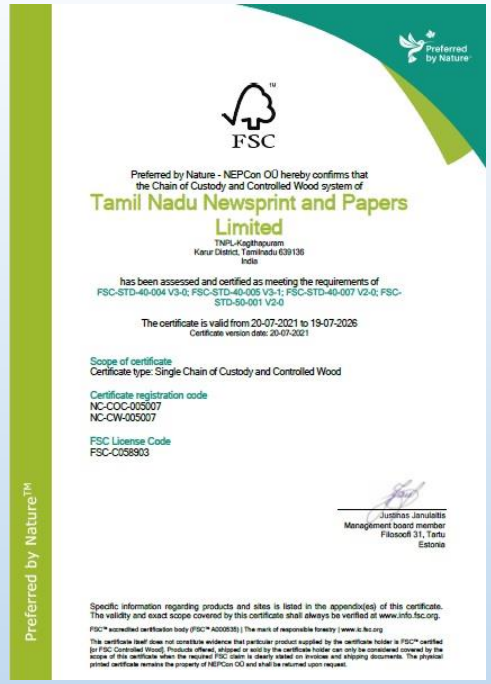
On-line Thermal Energy monitoring system



Energy efficiency/awareness training program

Merit Award 2022-23

ISO CERTIFICATES



[ISO 9001](#) [ISO 14001](#) [ISO 50000](#) [ISO 22000](#) [FSC-COC](#)

Learning for CII & other award programs

- *Imparts opportunity to shine and to be known nationally & internationally for our products & services.*
- *Gaining technical knowledge to set ourselves apart from the competitors.*
- *Benchmarking the organization among the other innovative companies.*
- *Learning about innovation best practices of various companies.*

Awards & Accolades

S.No.	Description of Awards	Year	Given by
1	Energy Efficient Unit Award	2022	CII
2	1st Sustainable Industrial Practice Award	2023	FICCI
3	Water Stewardship Award	2023	ICC
4	IPMA Award 2020 for Environment	2022	IPMA
5	Most Innovative Environment Project	2022	CII
6	22nd Annual Greentech Environment Award	2022	GF

Energy Efficient Unit Award

CII

Confederation of Indian Industry

23rd National Award for
Excellence in Energy Management 2022

This is to certify that

Tamilnadu Newsprint and Papers Limited, Karur

has been recognized as

"Energy Efficient Unit"

This acknowledgement is based on the evaluation by the panel of judges at the "National Award for Excellence in Energy Management" held during 23 - 25 August 2022

K S Venkatagiri
Executive Director
CII - Godrej GBC

Ravichandran Purushothaman
Chairman, Energy Efficiency Council
CII - Godrej GBC

Awards & Accolades

1ST SUSTAINABLE INDUSTRIAL PRACTICE AWARD 2023 BY FICCI & WATER STEWARDSHIP AWARD 2023 BY ICC

IPMA Award for Environment

MOST INNOVATIVE ENVIRONMENT PROJECT

"22nd Annual Greentech Environment Award 2022" for adopting **"Circular Economy Model in TNPL"** .

17th National Award for Excellence in Cost Management

THANK YOU