TUESDAY
SEPTEMBER 10, 2024

ENERGY MANAGEMENT EDITION

26 Pages

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Specific Energy Consumption
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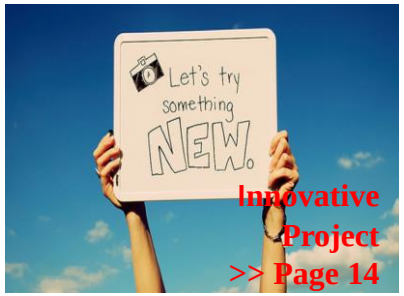

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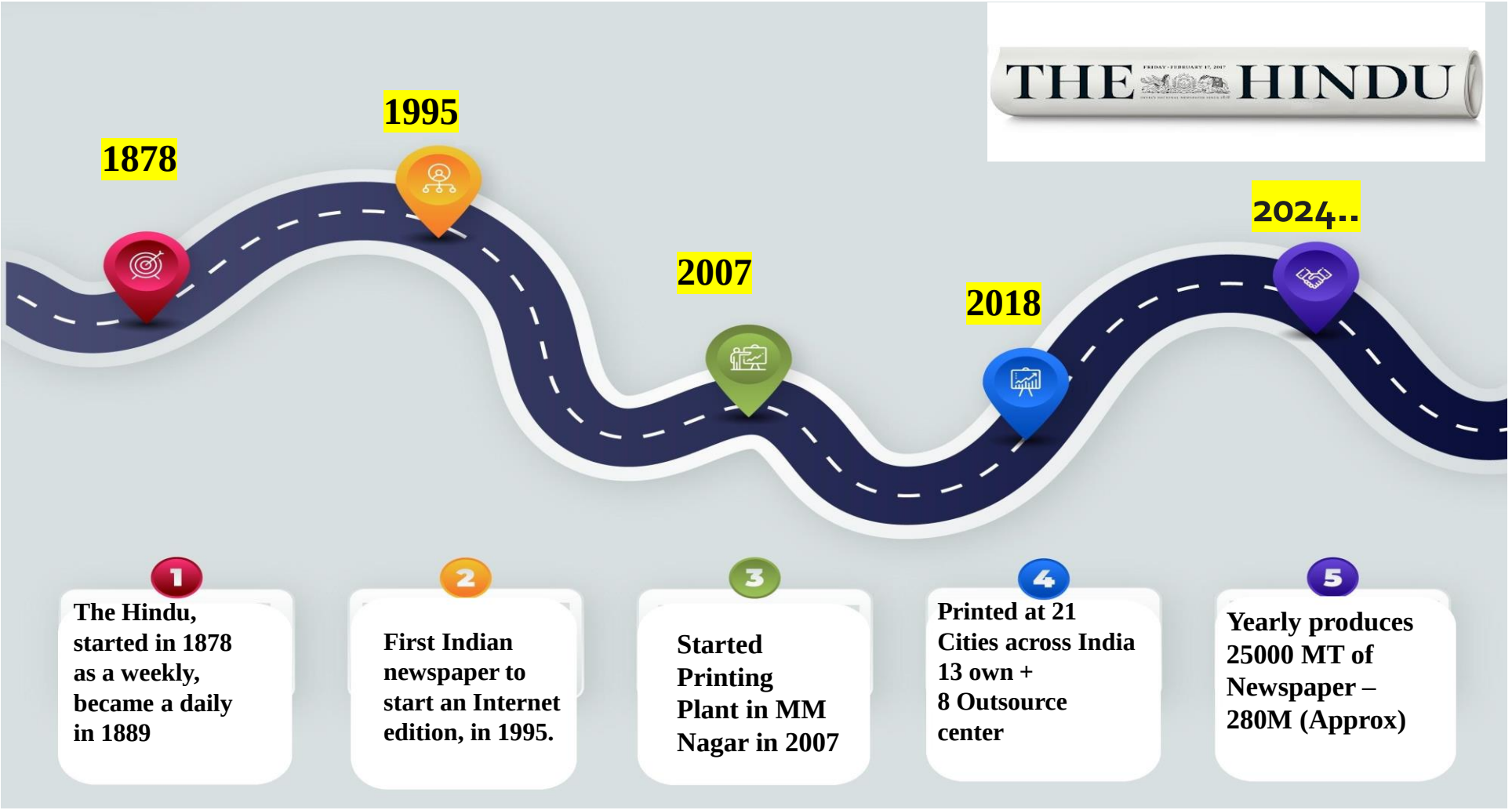
Confederation of Indian Industry

25th National Award for Excellence in Energy Management 2024

THE HINDU GROUP PUBLISHING PRIVATE LTD MM NAGAR PLANT

Presented by
Subramani S – Mechanical Engg
Bharath R – Electrical Engg

COMPANY OVERVIEW



Our Products

Daily

- The Hindu Daily
- Businessline
- The Hindu in School

Weekly

- Young World
- School Edition (Tabloid)

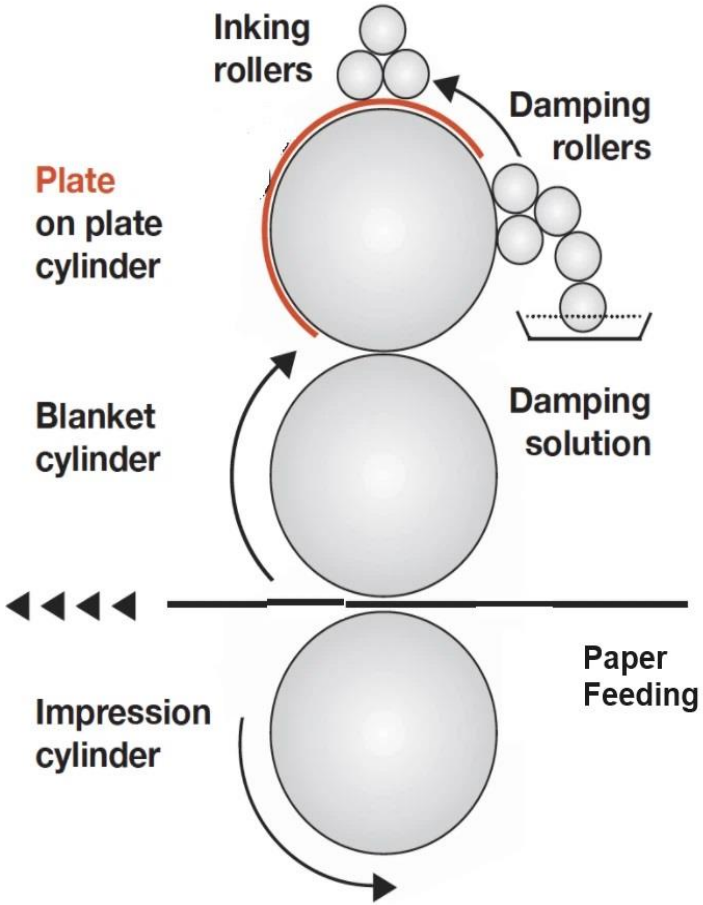
Fortnightly

- Frontline
- Sportstar

"The greatest asset of The Hindu , founded in September 1878, is trust."

PRINTING PROCESS OVEVIEW

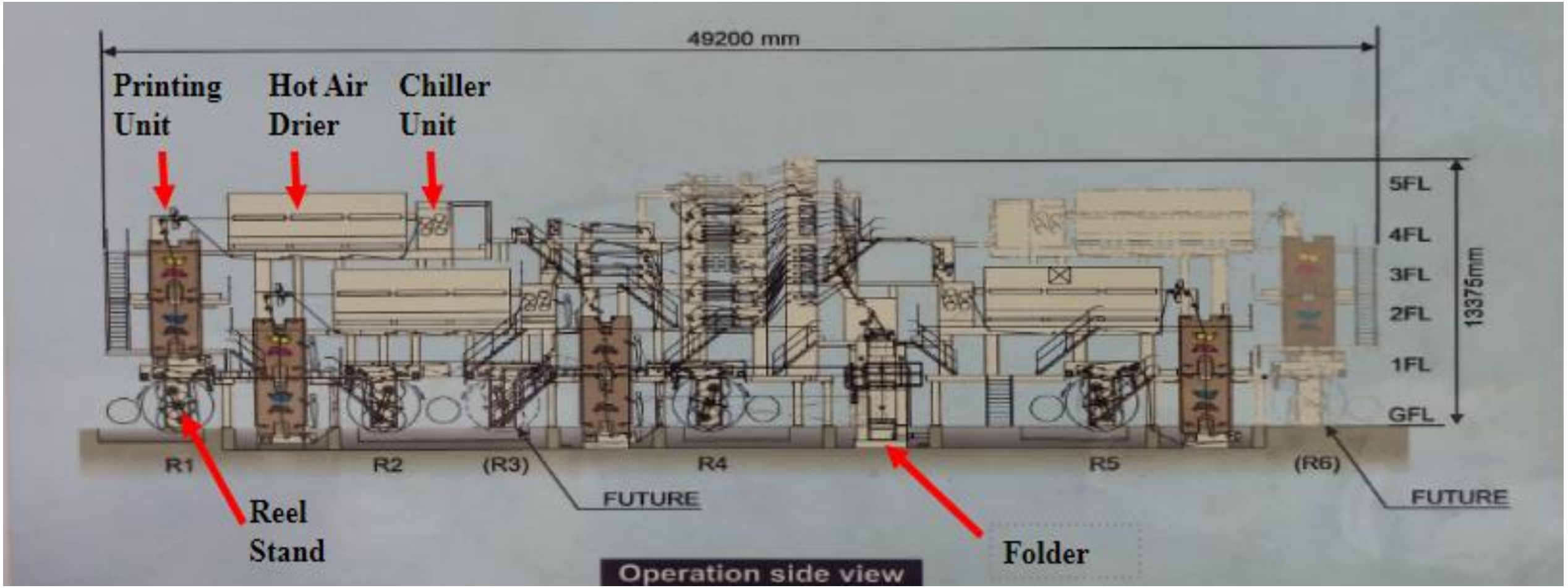
- Press
  - Raw Material
  - Plate making
  - Printing
  - Drying
    - Coldset
    - Heat set
    - UV Set
  - Mailroom
    - Counting
    - Stacking
    - Packing



PRINTING PROCESS OVEVIEW

HEATSET PROCESS LAYOUT

Hot Air Temp – 100 to 150 °C
Chiller Unit Temp – 8 to 12 °C

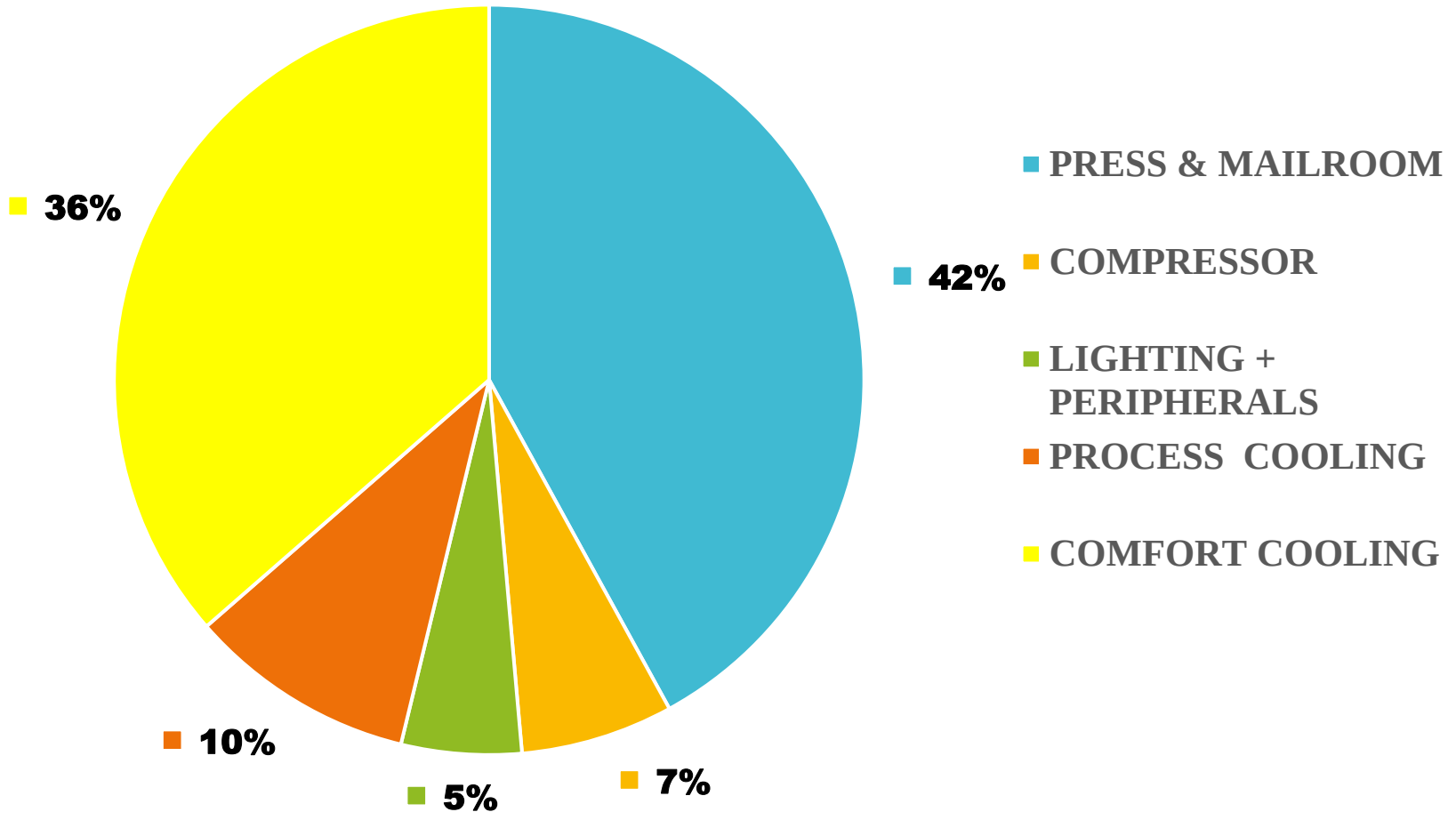


SPECIFIC ENERGY CONSUMPTION

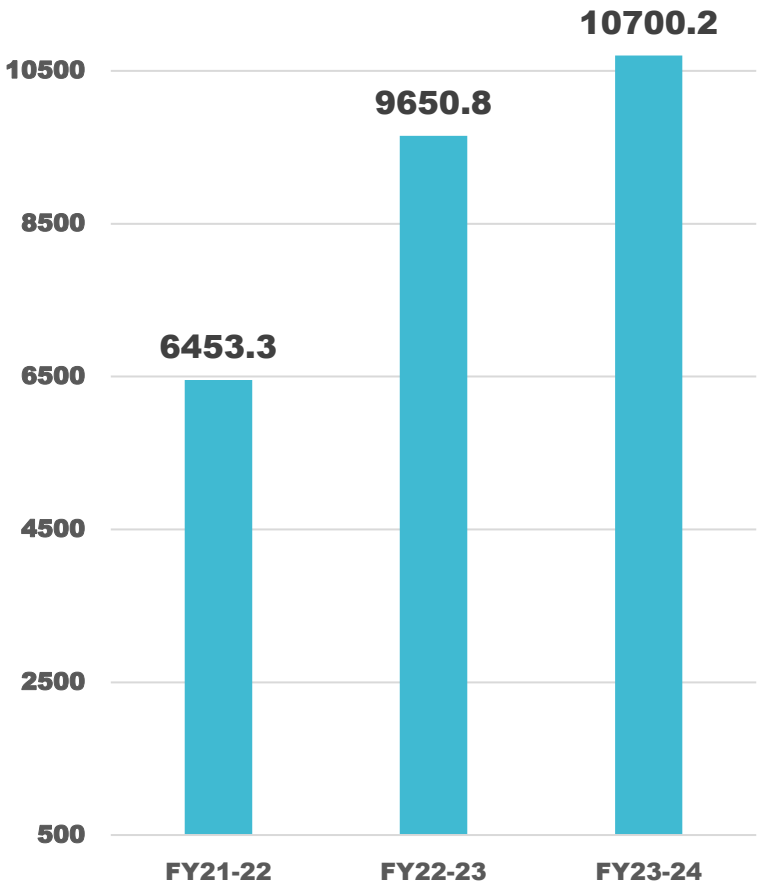
Parameters	Units of Mes.	FY 2021-22	FY 2022-23	FY 2023-24
Annual Electrical Energy Consumption	million kWh	5.21	6.62	7.47
Annual Thermal Energy Consumption	million kcal	1349.7	1868.1	2420.4
Production Data	Metric tonnes	6453.3	9650.8	10700.2
Specific Electrical Energy Consumption	kWh/Ton of production	807.3	686.0	698.1
Specific Thermal Energy Consumption	Kcal/Ton of production	209148.8	193569.5	226201.4

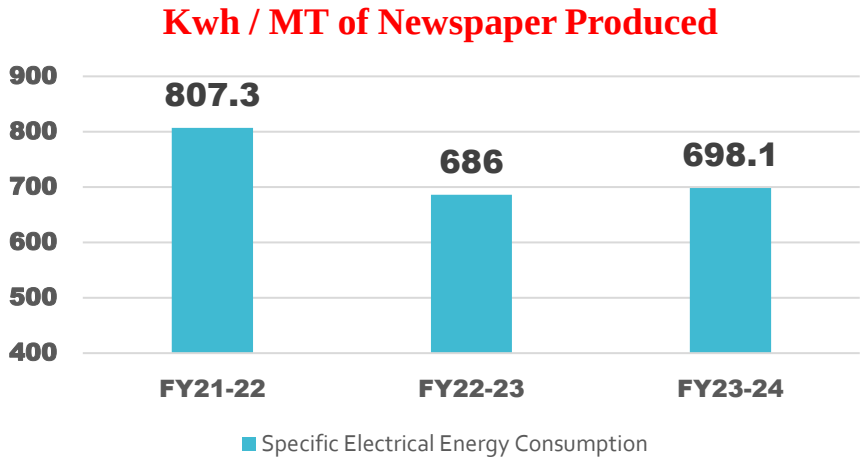
SPECIFIC ENERGY CONSUMPTION

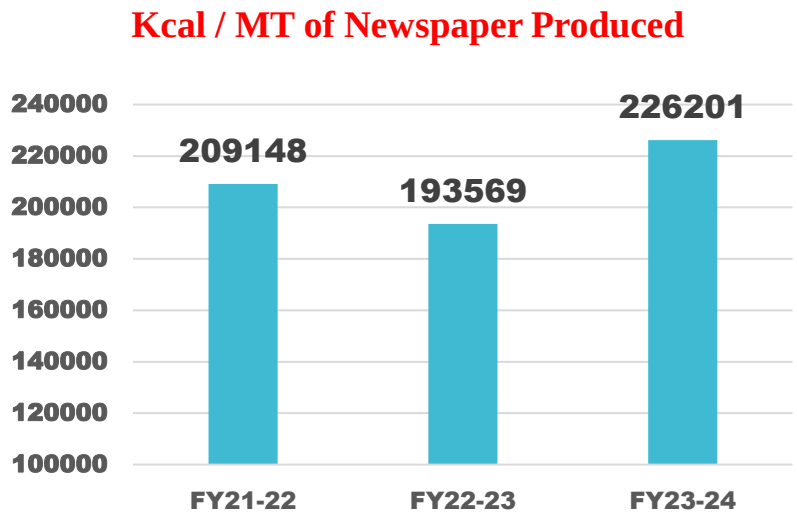
POWER CONSUMPTION PATTERN



SPECIFIC ENERGY CONSUMPTION







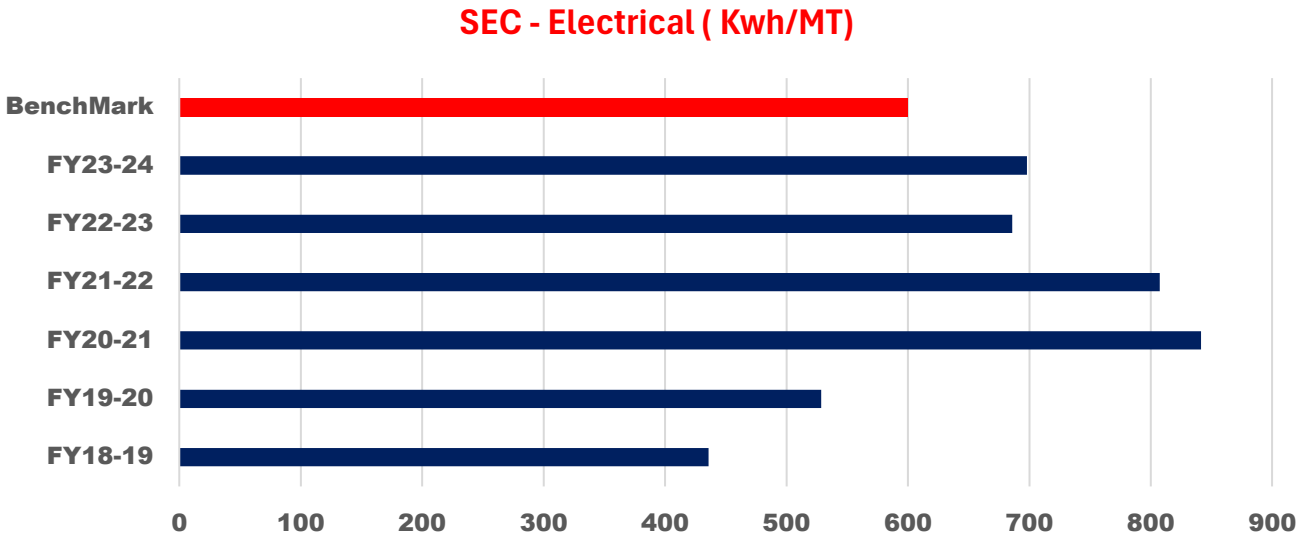
Major Initiative for SEC Improvement:

- Hotwell/Coldwell system
- LED light Conversion
- Air Compressor line leak check

Reason for variation:

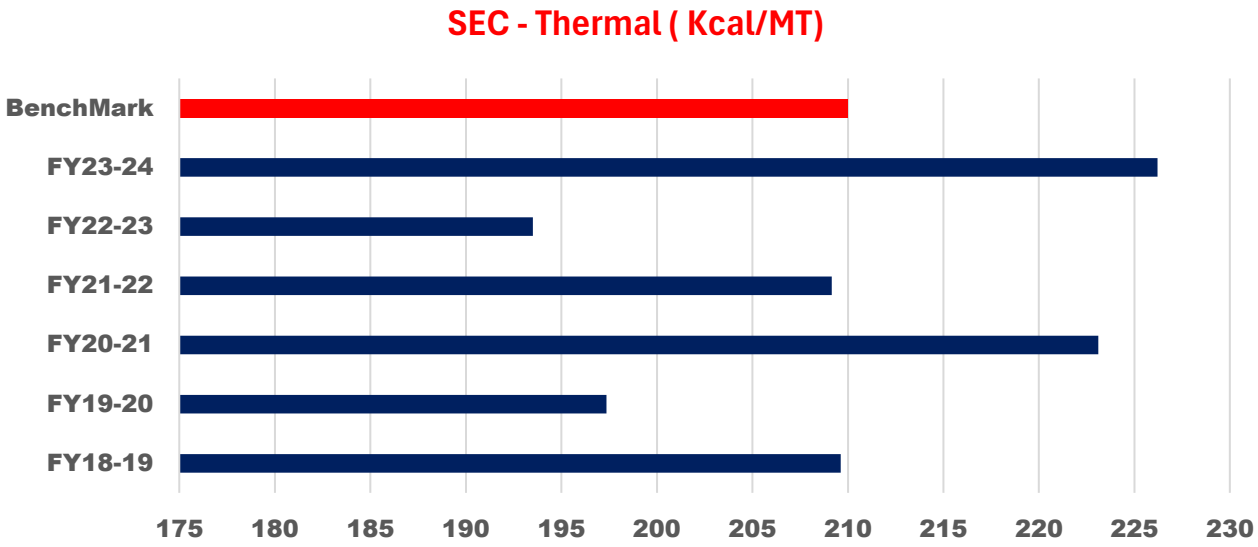
- Advertisement Ink Coverage
- Paper & Ink Property

ENERGY BENCHMARKING- ROAD MAP



Action plan for Reaching Benchmark

- Reduce Fixed Energy Consumption
- Comfort cooling Reduction from 36 % to 25%
- Lighting – 5% to 2.5 %



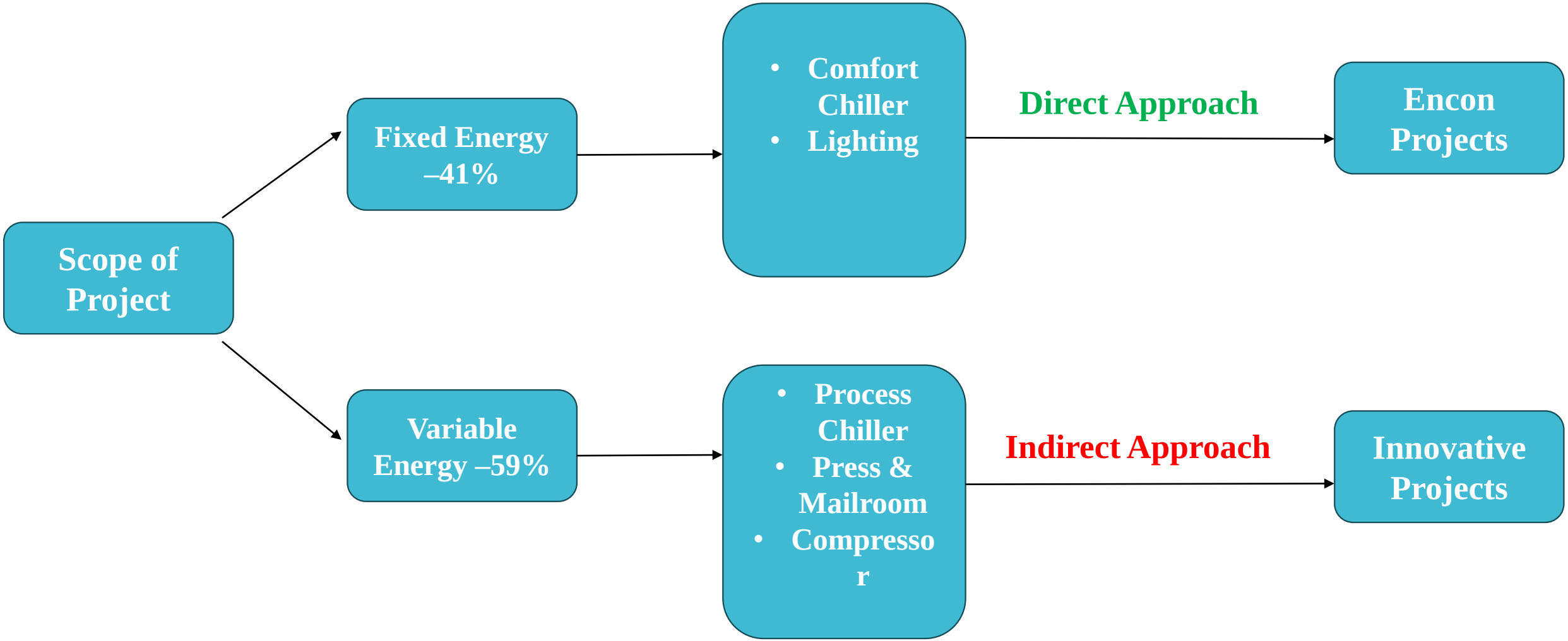
Action Plan for Reaching Benchmark

- Modification on Drier Structure to increase Thermal Efficiency.
- Retrofitting coldset setup in existing machine

MAJOR ENCON PROJECTS - FY2425

PROJECTS (FY24-25)	Annual Energy Saving (KWH)	Investment Cost	Annual Cost saving	Area of Focus
Process Chillers Conversation from Recep to Screw type	42000	66 L	3.6 L	Reduce Fixed Energy Consumption
Solar power for Fork lift - 10 KW	10000	6 L	0.9 L	Increase Renewable energy resource
Solar Panel installation for Lighting - 100 KW	220000	60 L	19 L	Increase Renewable energy resource

ENERGY SAVING PROJECTS- SCOPE



ENERGY SAVING PROJECTS

YEAR	NUMBER OF PROJECTS	INVESTMENT (INR Million)	ELECTRICAL SAVING (Mil. kWh)	THERMAL SAVING (Mil. Kcal)	TOTAL SAVING (INR Million)	PAYBACK PERIOD (in Months)
FY21-22	3	4.77	0.43	0	3.74	15
FY22-23	2	1.01	0.1	0	0.78	16
FY23-24	2	0.775	0.028	0	0.25	37

ENERGY SAVING PROJECTS – Last 3 Year

YEAR	NAME OF PROJECT	INVESTMENT (INR Million)	ELECTRICAL SAVING (Mil. kWh)	THERMAL SAVING (Mil. Kcal)	TOTAL SAVING (INR Million)	PAYBACK PERIOD (in Months)	SCOPE OF THE PROJECT
FY21-22	Hotwell / Coldwell system for Comfort and Process Cooling system	2.6	0.37	0	3.2	10.4	Reduce Fixed Energy
FY21-22	Street light upgradation to LED	0.17	0.03	0	0.28	7.3	Reduce Fixed Energy
FY21-22	Voltage regulator installation for lighting and room AC	2	0.03	0	0.26	90	Reduce Fixed Energy
FY22-23	Auto anti-fanout control for printing press	0.19	0.01	0	0.09	24	Reduce Variable Energy
FY22-23	Press Hall light upgradation to LED	0.82	0.09	0	0.69	14.3	Reduce Fixed Energy
FY23-24	Inspection camera for 2 in 1 Production	0.6	0.002	0	0.02	360	Reduce Variable Energy
FY23-24	Mailroom and Reel Godown light upgradation to LED	0.175	0.026	0	0.23	9	Reduce Fixed Energy

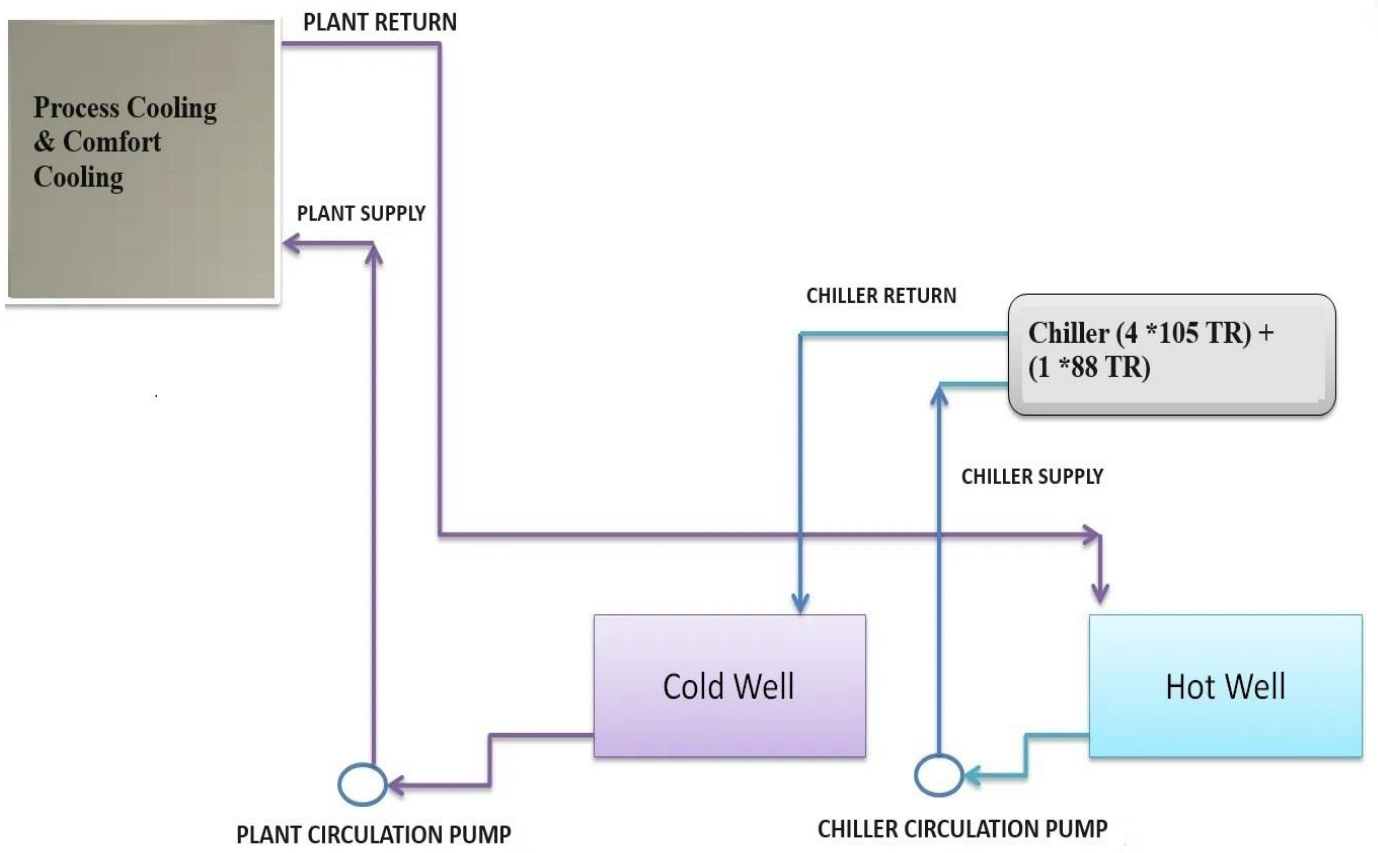
ENERGY SAVING PROJECT- KEY CONTRIBUTION

Hotwell / Coldwell system for Comfort and Process Cooling system

Description of Project:
4 Comfort Chillers and 1 Process chiller interlinked with new Hotwell and Coldwell system.

Scope of the Project :
Directly eliminates the usage of 1 comfort chiller **(105 TR).** Required temperature can be achieved with 4 chiller itself.

Energy Saving Contribution:
In Last 3 years , **65%** of total energy savings are from this project.

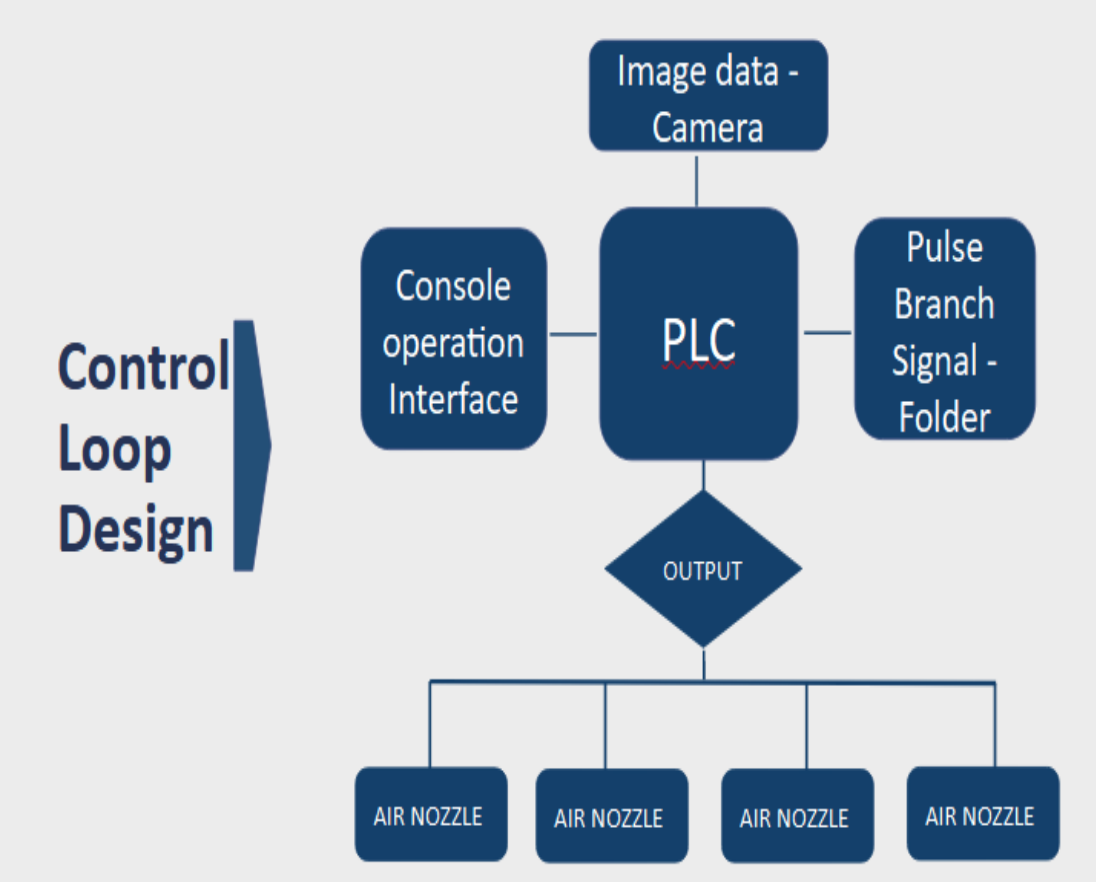


INNOVATIVE PROJECT

Project 1: Automatic Anti-fan out Control System

Description of Project:

Printing involves dampening the paper with water-based inks. This causes the paper to expand, The assembly includes an air nozzle which blows the compressed air on the paper by getting the feedback values from closed loop camera system for aligning the paper.



Why it is Innovative?

First Print center to have **closed loop system for Anti-fanout control**

INNOVATIVE PROJECTS

Project 1: Automatic Anti-fan out Control System

Impact on Energy Saving:

Helps to **Reduce Fixed Energy Consumption** by reducing the wastage due to anti fanout problem. Thus reduces the overall machine running duration per edition.

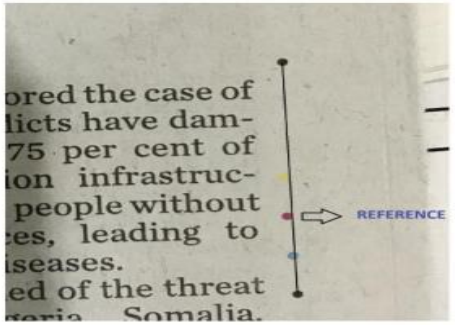


Fig 2 . Register Reference line

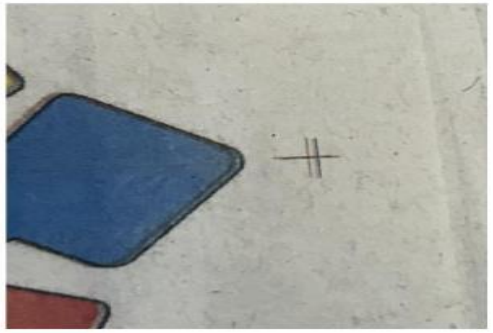


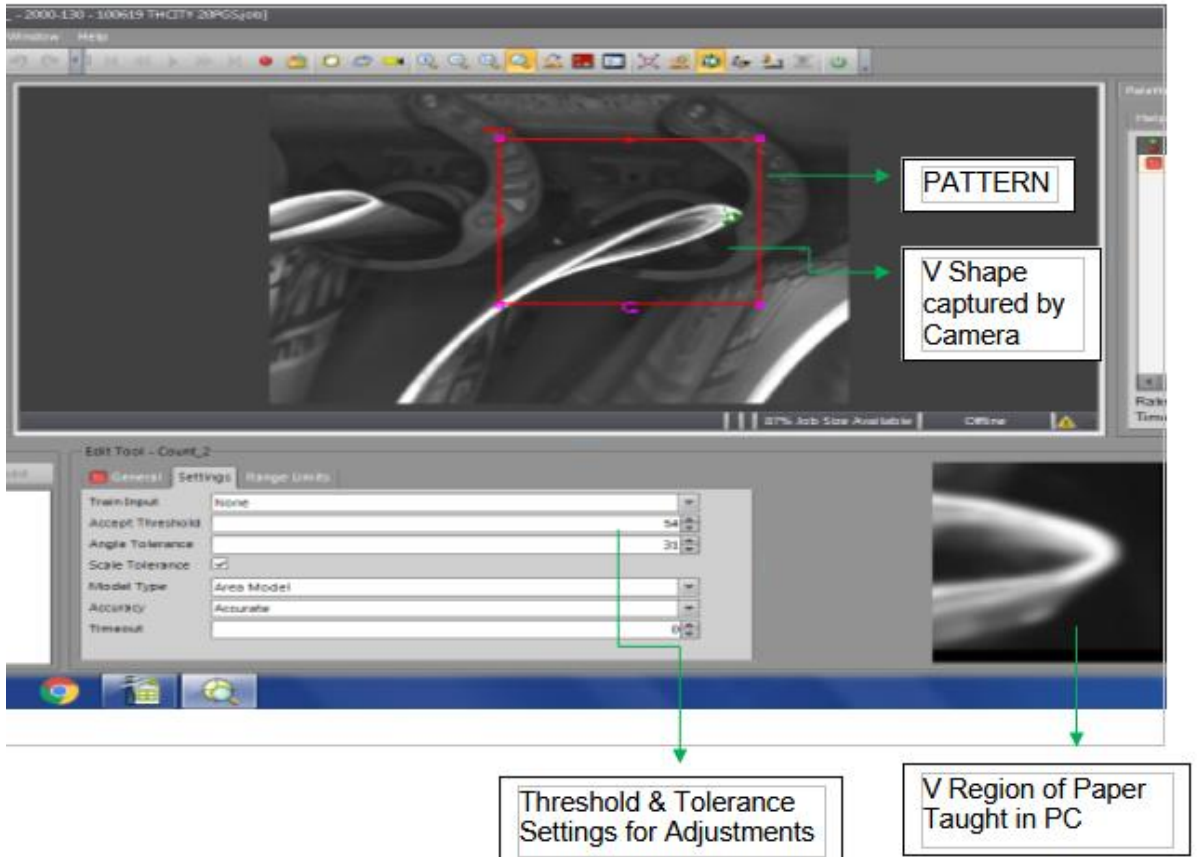
Fig 3. Register Deviation

INNOVATIVE PROJECTS

Project 2: Inspection system of 2 in 1 Production.

Description of Project:

Single and Three copies per Gripper during 2 in 1 production, Will result in Shortage / Excess in Bundles. The closed loop system with inspection camera continuously monitoring the copy per gripper and give feedback to delivery section.



Why it is Innovative?

First Print center to have **online inspection system for folded copy.**

INNOVATIVE PROJECTS

Project 2: Inspection system of 2 in 1 Production.

Impact on Energy Saving:

In 2 in 1 Production Gripper chain motors will be running in half speed which reduces energy consumption by 35 %

Single Copy per Gripper Image

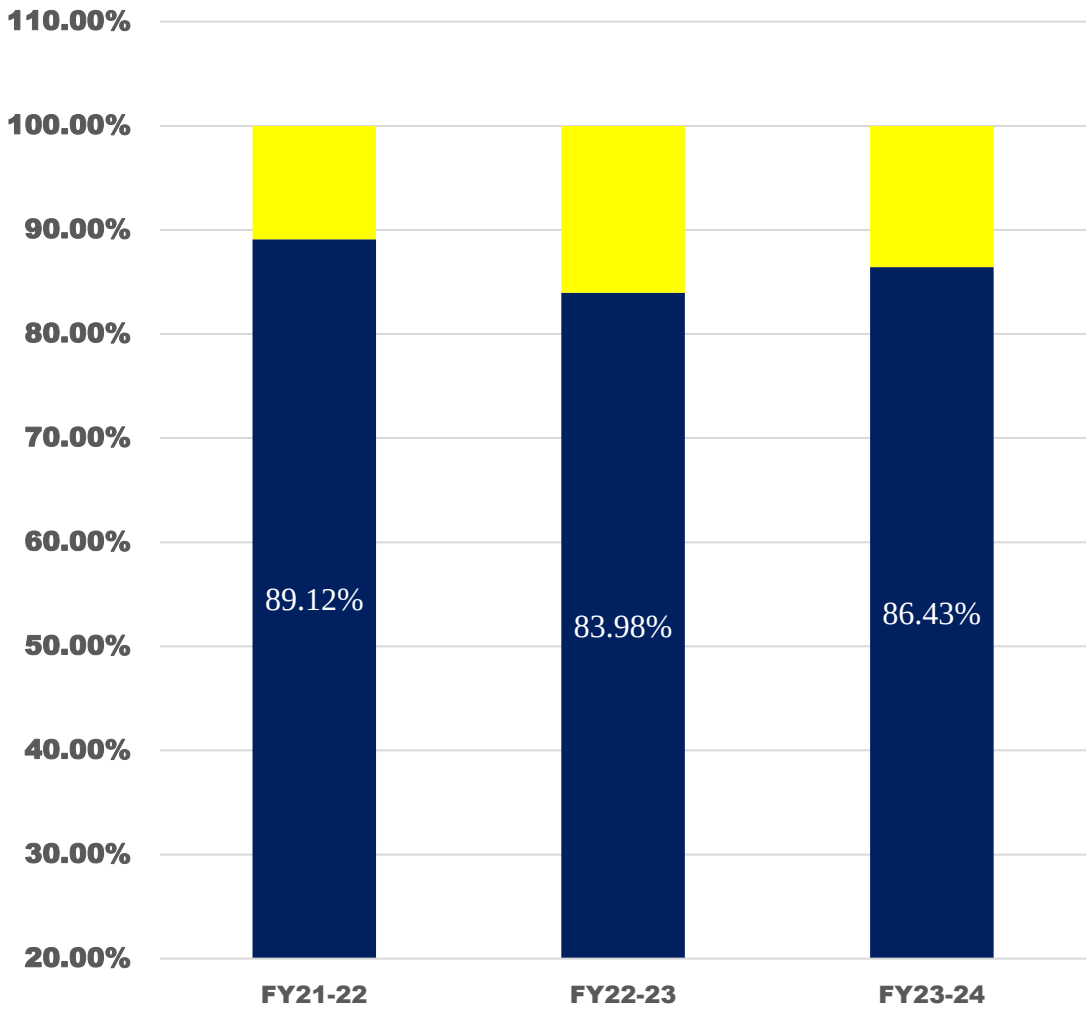
Three Copies per Gripper Image

Utilisation of Renewable Energy Sources (Offsite)

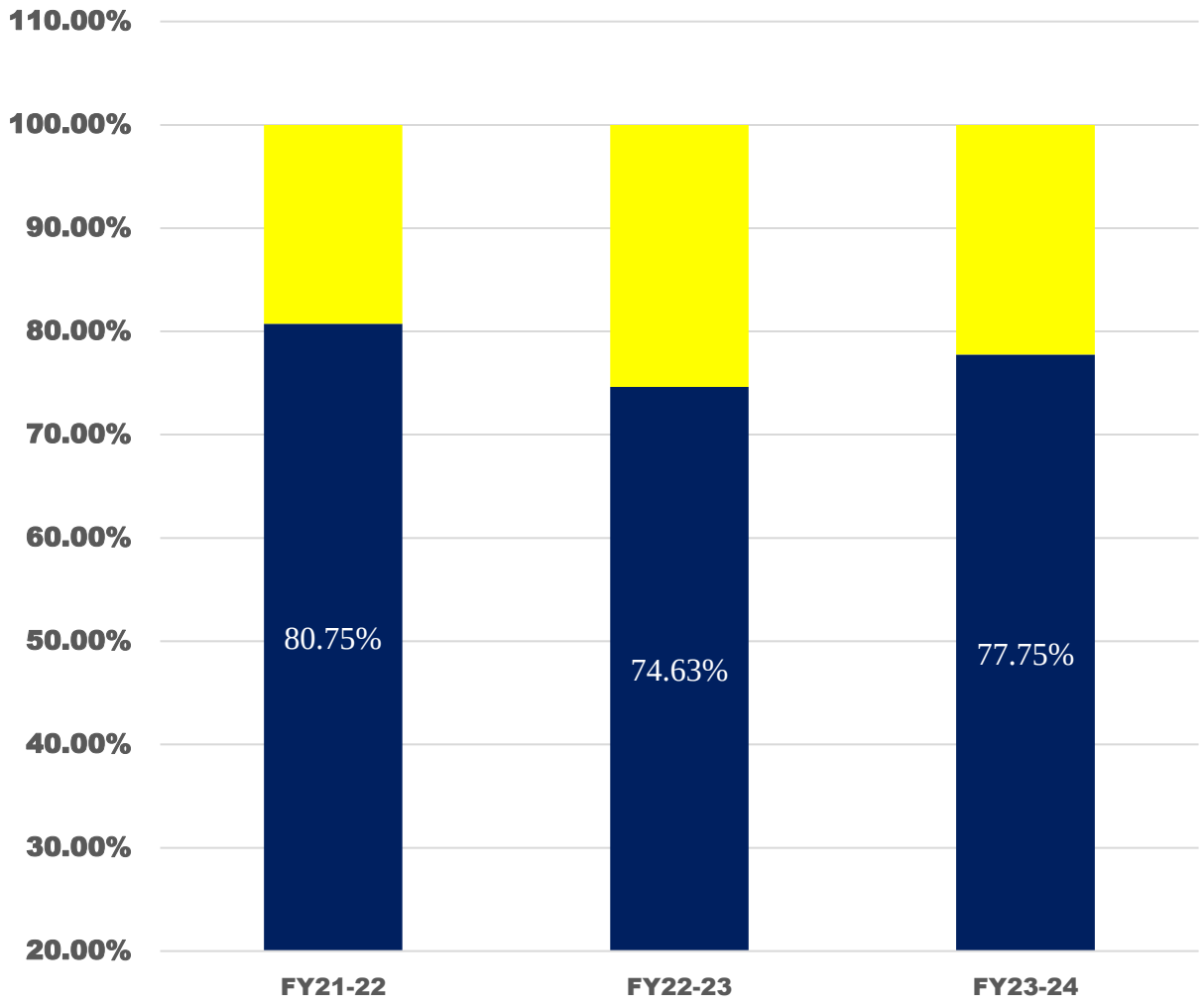
WIND ENERGY (Offsite)					
YEAR	Source	Total offsite Installed capacity (MW)	Capacity addition (MW)	Total Generation (million kWh)	Share % w.r.t to overall energy consumption **(MM Nagar)**
FY21-22	Wind	6.75	NIl	10.14	80.75%
FY22-23	Wind	6.75	NIl	10.19	74.63%
FY23-24	Wind	6.75	NIl	10.55	77.75%

Utilisation of Renewable Energy Sources (Offsite)

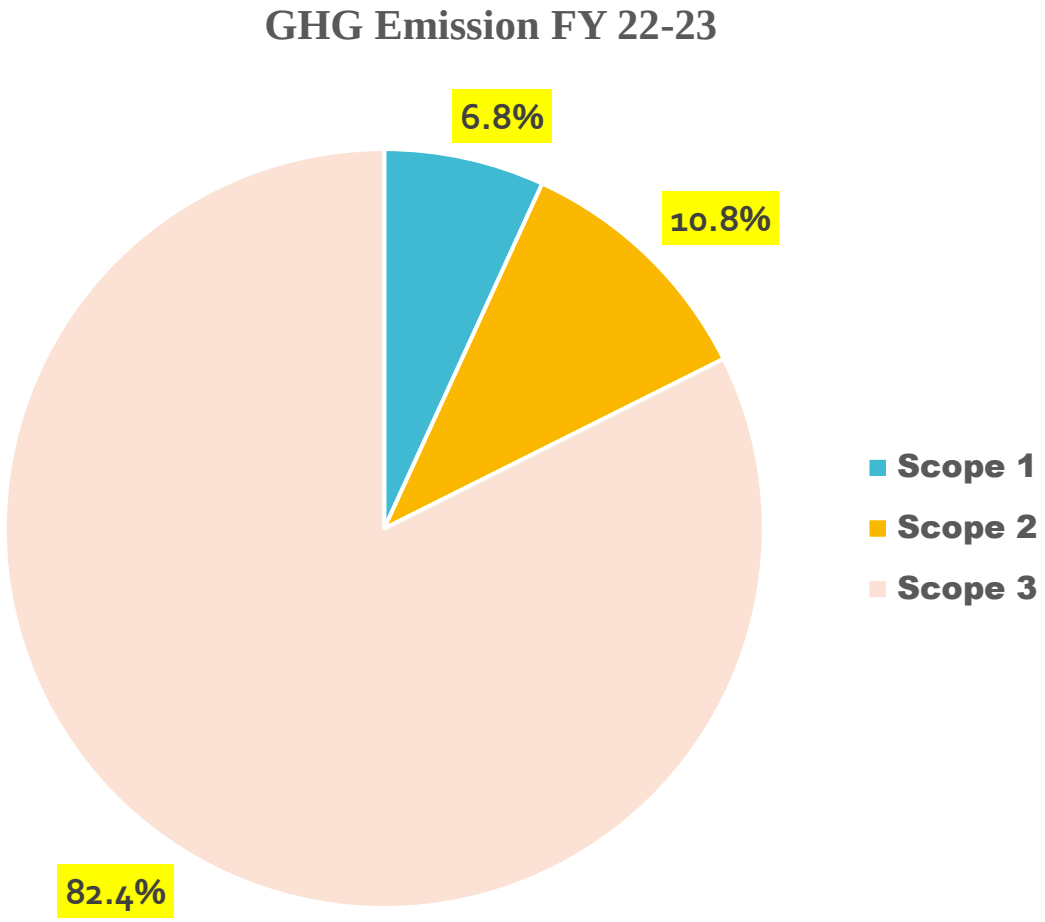
RE Share - Overall TN

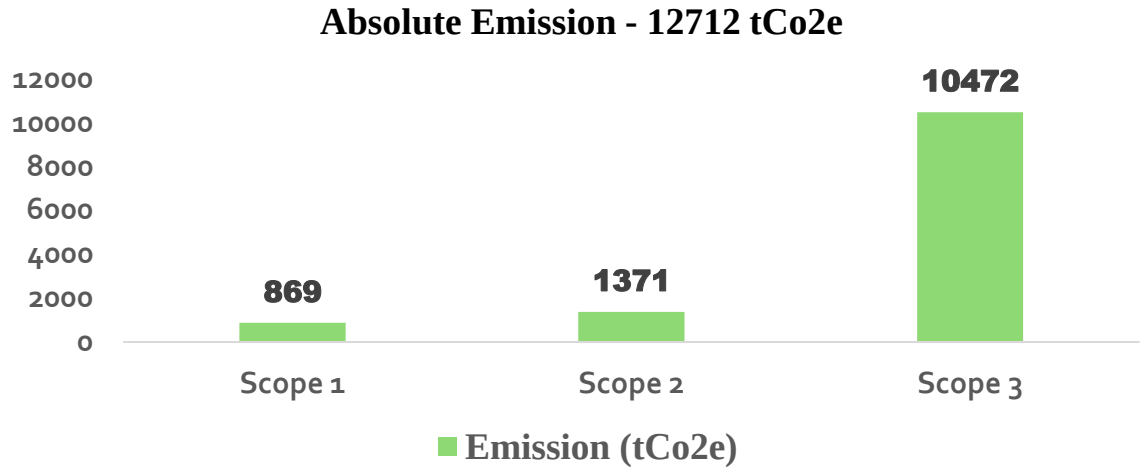


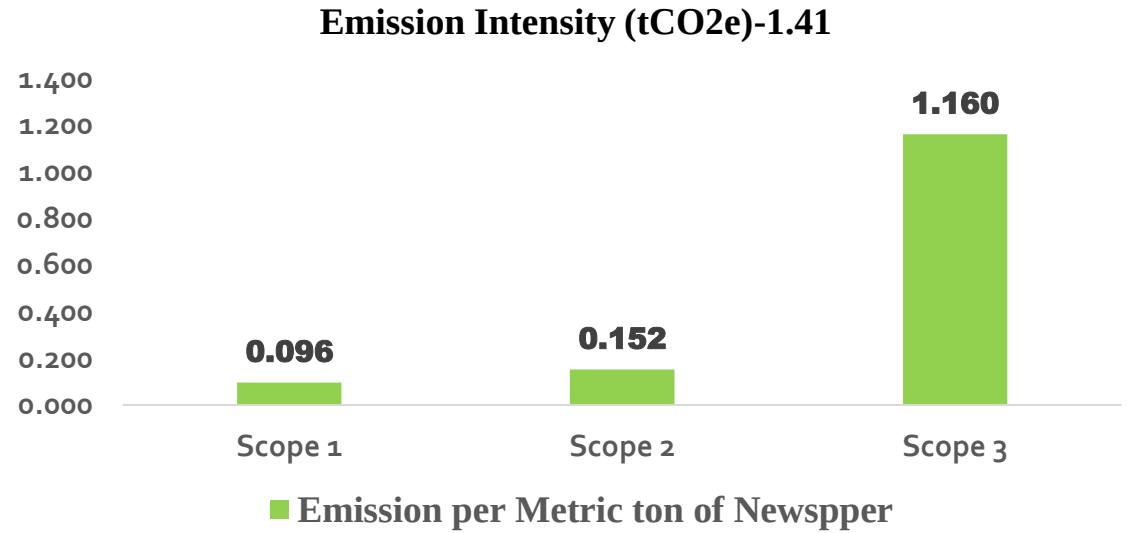
RE Share - MM Nagar Plant



GHG INVENTORISATION - MM Nagar







GHG INVENTORISATION

Scope 3	Emission (tCO2e)	Percentage %
Purchased Goods	7984	76.2%
Waste Generated	7.4	0.1%
Upstream Transport	2028	19.4%
Business Travel	40	0.4%
Employe Commute	152	1.5%
Downstream Transport	261	2.5%
	10472.4	

Action Plan :

- Newsprint with GHG intensity **< 1 tCO2e / MT of Paper**
- Reduce Sea Transport by increases Indigenous Newsprint Purchase
- Onsite Solar panel Installation – 5000 SQM (Terrace Area)
- EV for Inhouse Material Handling

Green Supply Chain Management

Initiatives already taken (organization level) :

- 80 % of upstream emission due to sea transport
- 30 % of indigenous Newspaper
- Fluid bag ink container instead of metal container

Future Plans (Macrolevel):

- Aluminium Plate Recycling – Common Hub
- EV for daily copy distribution (Hawker)

Energy Management System

Energy Meter	Runhrs	Units
HT-TR3-5	0	0
HT - TR2	184.34	66853.87
HT - TR1	631.29	72461.8
HT INC - 1	45	39890.25
HT INC - 2	586.6	529685.52
LT TR - 1	397.93	62101.26
AT2-DRYER	122.33	1037.09

Energy Meter	07/25	07/26	07/27	07/28
HT-TR3-5	0	0	0	0
HT - TR2	8826.88	7149.57	9598.97	7069.69
HT - TR1	2497.28	2076.67	2851.2	2838.01
HT INC - 1	0	0	0	0
HT INC - 2	20785.66	17041.92	24560.64	18233.86
LT TR - 1	2192.39	1787.14	2479.36	2525.19

Energy Management System – Carbon Monitoring

Welcome administrator! | Set

Measure
- Dashboard
- Energy
- Water
- Carbon

Monitor
- Alerts
- Reports

Manage
- Locations
- Assessments

THE HINDU-MMN | DIRECT EMISSIONS SUMMARY

The greenhouse emissions of a business is comprised of direct and in-direct emissions. Direct emissions are a result of what is controlled by a company, such as, vehicles, services provided, gas-fired boilers etc. In-direct emissions are due to activities that are part of the business but controlled by other companies, such as, electricity, heat, etc.

SNo	Power type	Units consumed	kg CO2	variation (from previous billing cycle)
1	DG	17302.48	9291.43	-2601.05%
2	Feeders	344774.32	185143.81	-3.34%
3	Lighting	27962.31	15015.76	-1.22%
4	Main	590588.06	317145.79	-5.52%
5	Others	0.00	0	0
6	Transformer	315018.23	169164.79	-5.07%

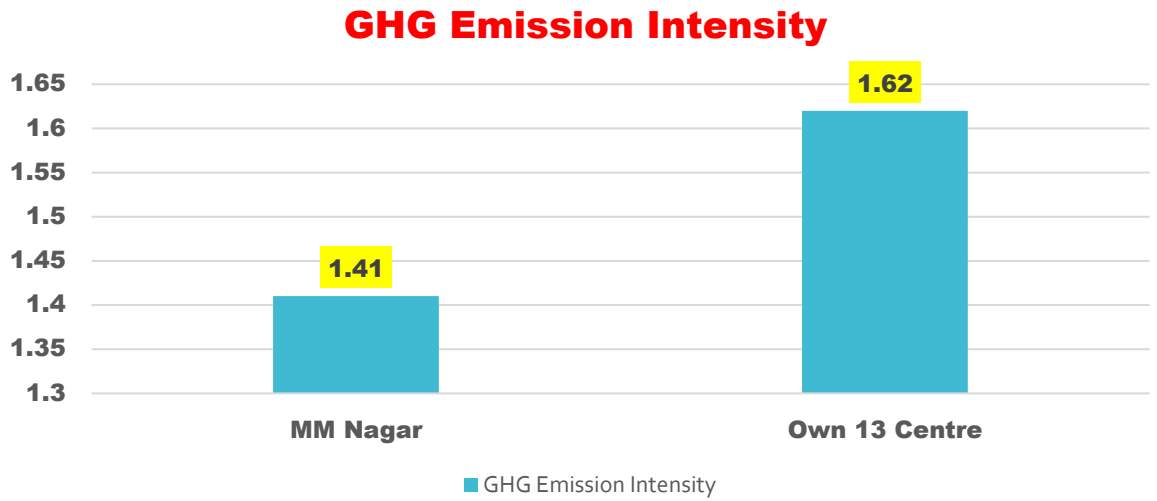
Note: The data for the conversions have been sourced from: Defra (www.defra.gov.uk) & BERR (www.berr.gov.uk)

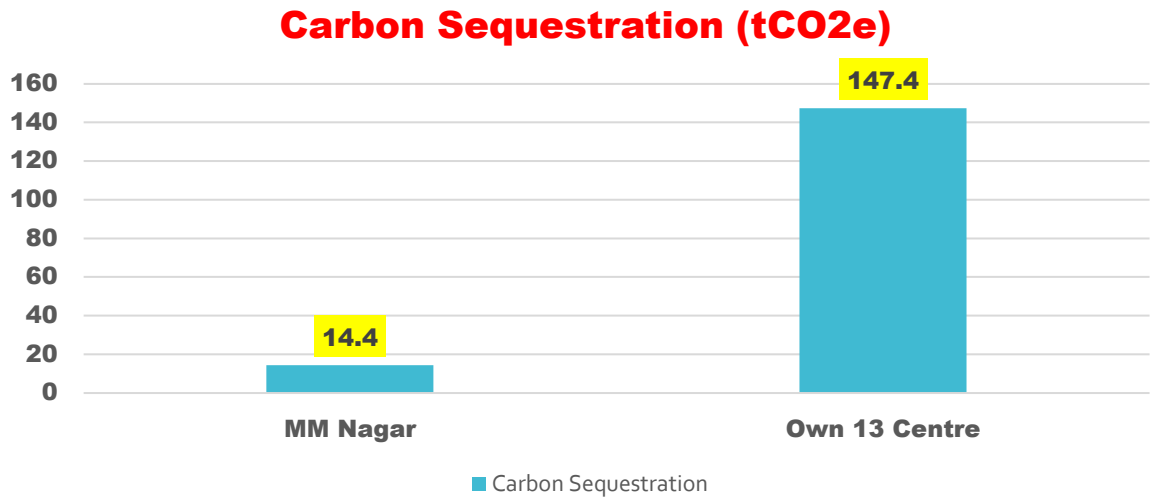
NET ZERO COMMITMENT

A Long way to Go...

Our next Stops...

- ✓ **Investment in Solar**
- ✓ **Green copy distribution**
- ✓ **Increase Tree Plantation**





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