HINDUSTAN UNILEVER LIMITED
HOSUR BEVERAGES FACTORY

TEAM:

1. LOVLIN SWAIN, FACTORY MANAGER
2. SAI SREE, FACTORY ENGINEER

Unilever

HOSUR SITE PASSPORT

GENERAL

- Unit setup by **Brooke Bond** in **1983** for Instant Coffee.
- Situated **40KM** from Bangalore
- **Population-**300,000 (Males constitute 53%, Females constitute 47%) .
- Average literacy rate of **75%.**
- Official Language – Tamil (Alternate - Telugu and Kannada)
- Total Site Area **– 67217 Sqm** (Constructed Area–15665 Sqm)
- Site GBV: 162 Cr , TO: 400 Cr

MANPOWER

- **5** Managers, **19** Executives and **160** Shopfloor employees.
- Average Age -44 years (shopfloor)
- Direct + Indirect Employment -322

MANUFACTURING

- **14K Tons** Annual Volume (IC ~ 8000 Tons ; CC ~ 6000 Tons)
- Highly process intensive IC production (Roaster, Extraction, Evaporation , Spray Drier)
- **5** packing lines (IC – 3 ; CC- 2)
- **Zero** Liquid Discharge plant

PRESENTERS

LOVLIN SWAIN
FACTORY MANAGER

SAI SREE R
FACTORY ENGINEERING MANAGER

ORGANIZATION CHART

Sanjib Dey
GMO, Nutrition, South Asia

Lovlin Swain
Factory Manager

Monika Bhima
anufacturing Manager

Suresh Kumar
General Shift Officer

Chandrasegar K
Shift Officer

Selvam T
Shift Officer

Suriya Raj
Shift Officer

Sivaselvan
Shift Officer

Deepika
Shift officer

Sheetal
ManEx Executive

Aastha
Quality Executive

Saisree R
Factory Engineer

Kumaaravel
Engg Executive

Am. Sundararajan
Sr.Electrical

Ranjith Kumar
Utility Executive

Bhuvanesh U
Supply Chain Manager

Sridhar Babu
RM/PM/Engg store

Chinnathambi T
Dispatch Officer

Akshay Mammen
UHRM

Sujitha L
HR Executive

Dinesh Kumar
HR Officer

Nelson Isac SHE Manager

Muraleedharan
Safety Officer

5 Managers, 19 WL1+ leading the operations

HOSUR SITE PASSPORT

14 K Tons of Installed Capacity
(IC~8000 Tons ; CC~6000 Tons)

8.1K Tons Annual Volume in 2023
(IC ~ 5533 Tons ;
CC ~ 2620 Tons)

275 Crore Turn Over
162 Cr GBV

Highly Process Intensive IC manufacturing
Roaster, Extractor, Evaporator, Spray Drier

Zero Liquid Discharge Plant

11 SKUs
Only Sourcing unit for SS, HTS , BGL KE & BGL Nice

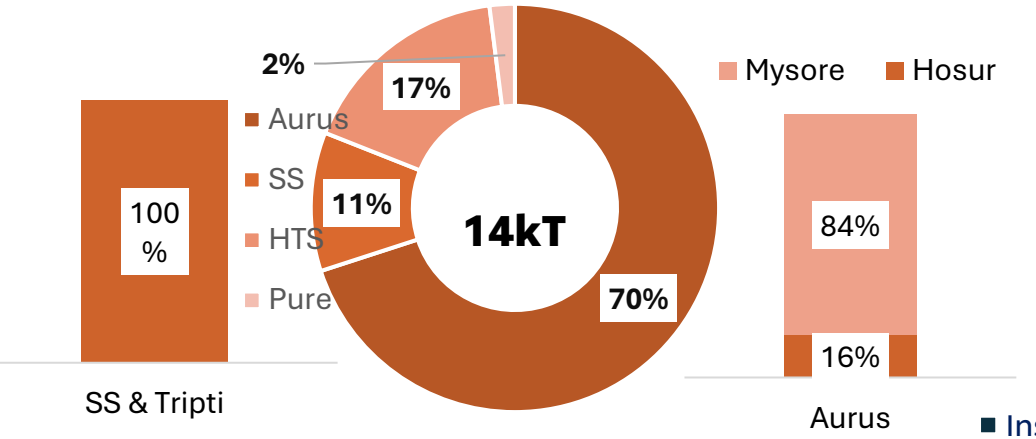
Total Site Area – 67217 Sqm (16.6 Acres)
Constructed Area–15665 Sqm (3.87 Acres)

5 Packing Lines
(3-IC & 2-CC)

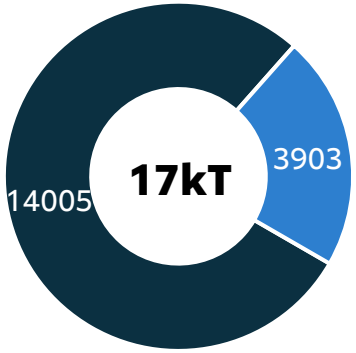
5 Managers
19 Executives
160 Shopfloor Employees
322 Contractual Employees

COFFEE & HOSUR OVERVIEW

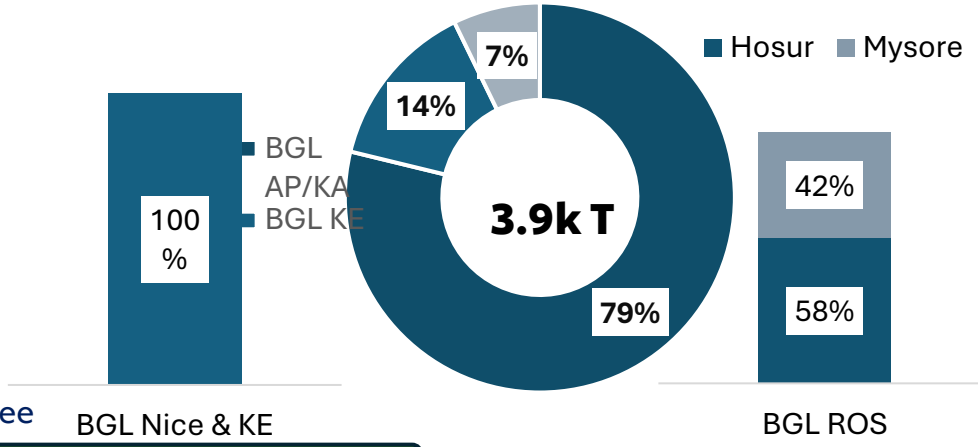
Instant Coffee (Tons)



Coffee Volume (Tons)



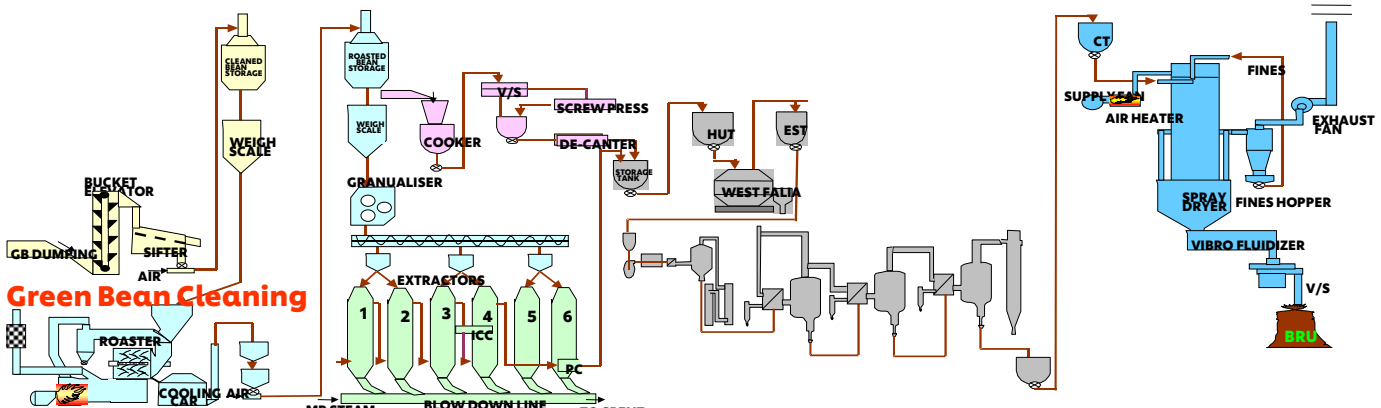
Conventional Coffee(Tons)



Instant Coffee Conventional Coffee

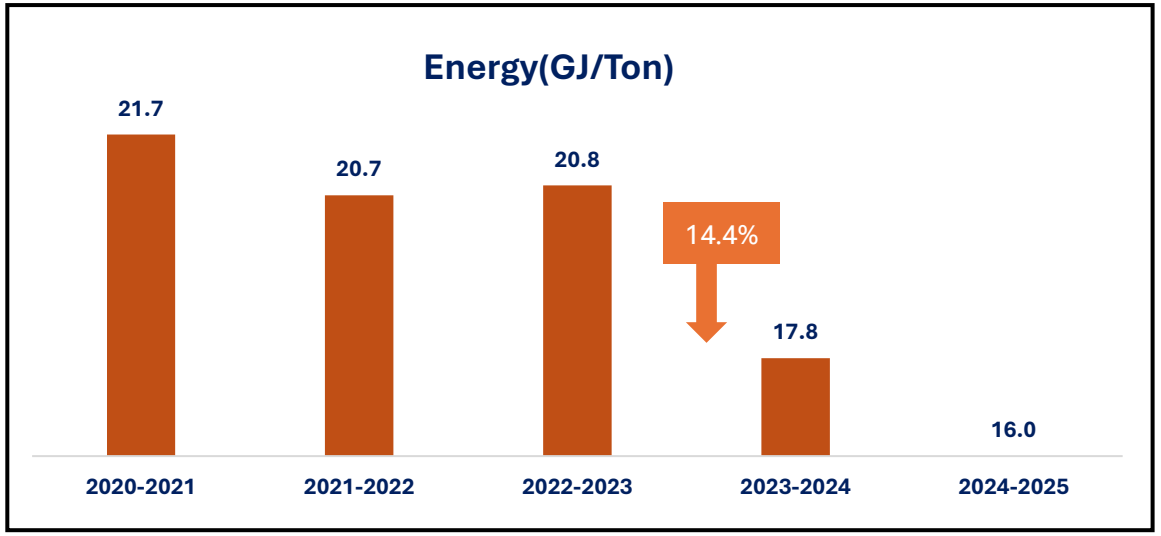
Understanding the Coffee Manufacturing process

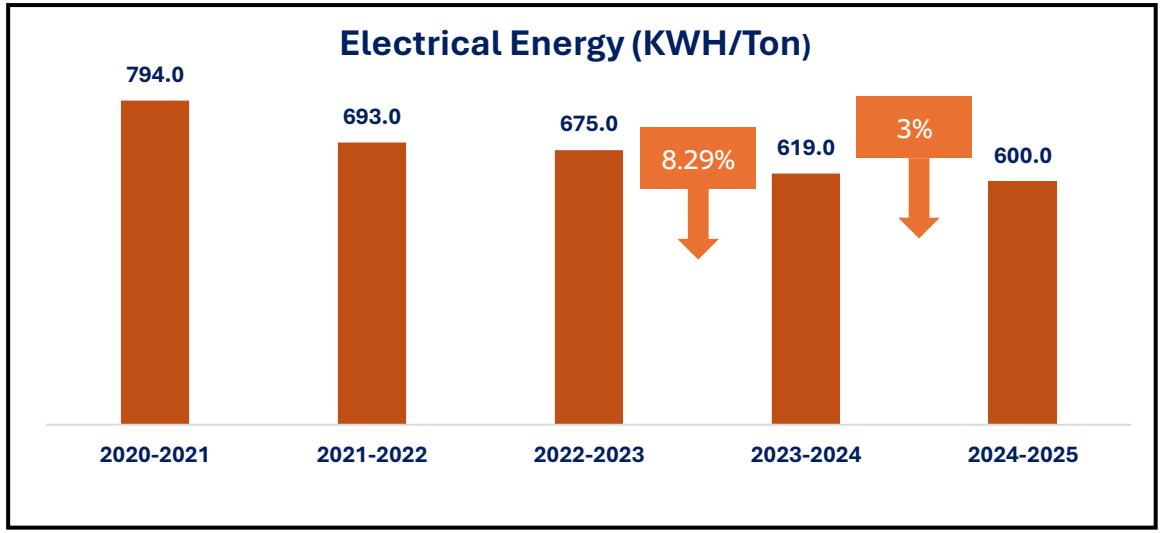
Energy Intensive

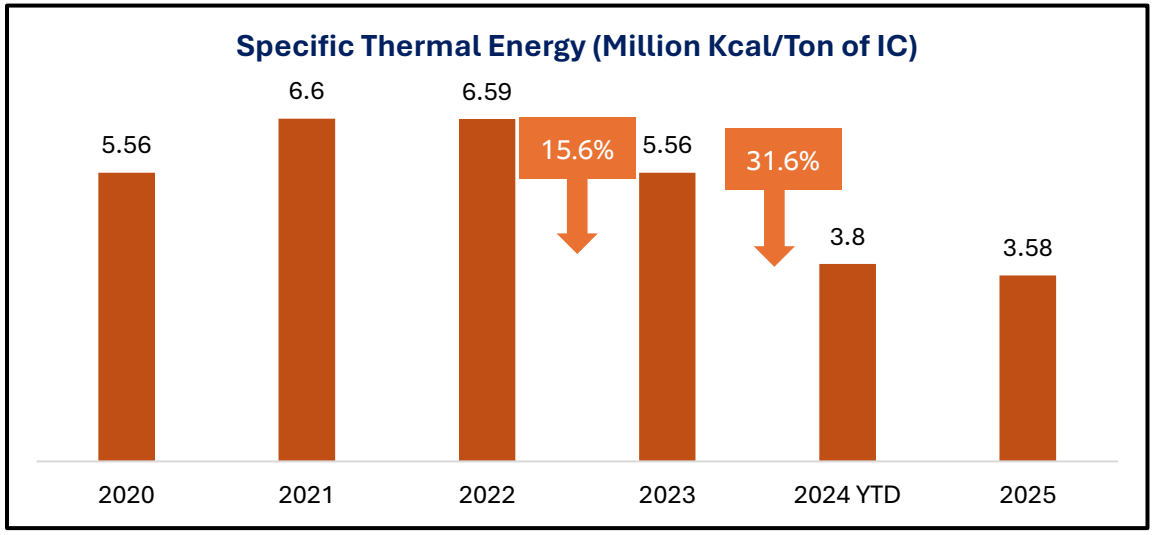


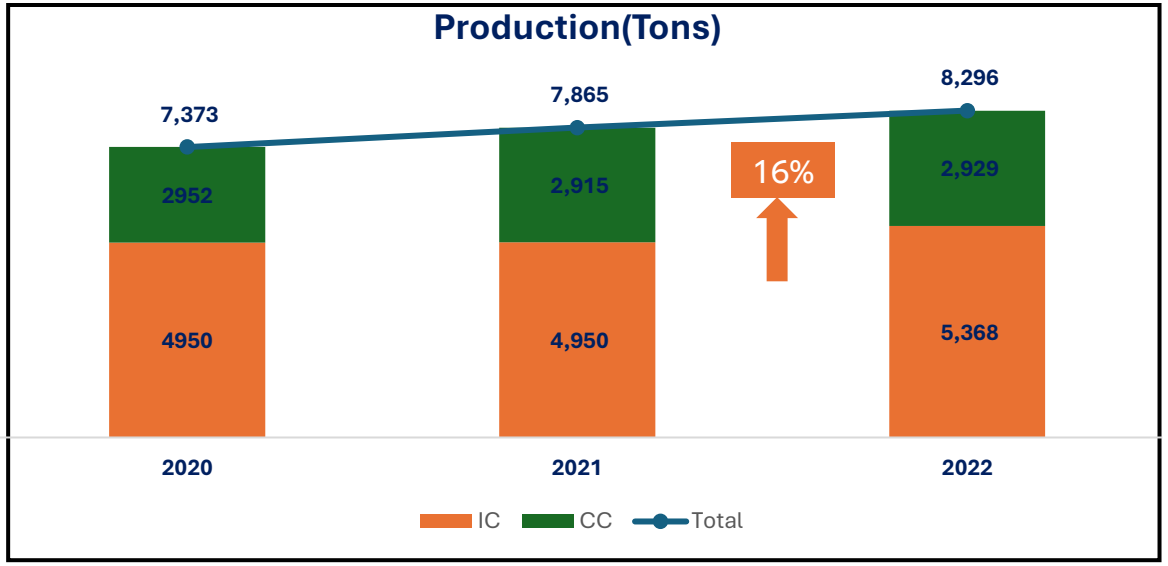
Process Intensive

SPECIFIC ENERGY CONSUMPTION



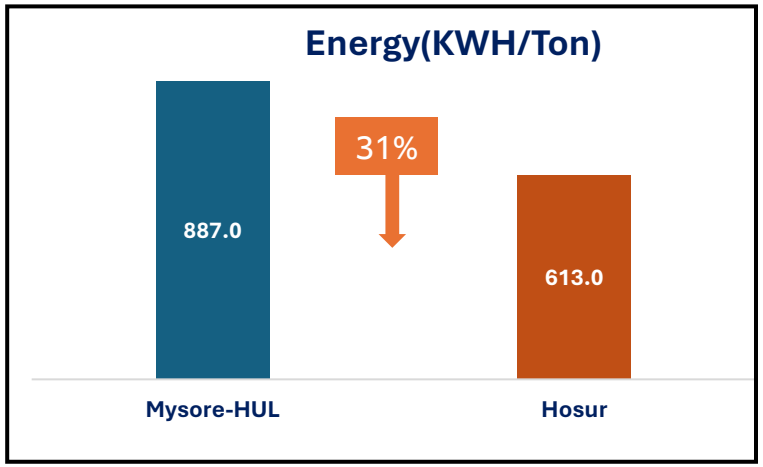




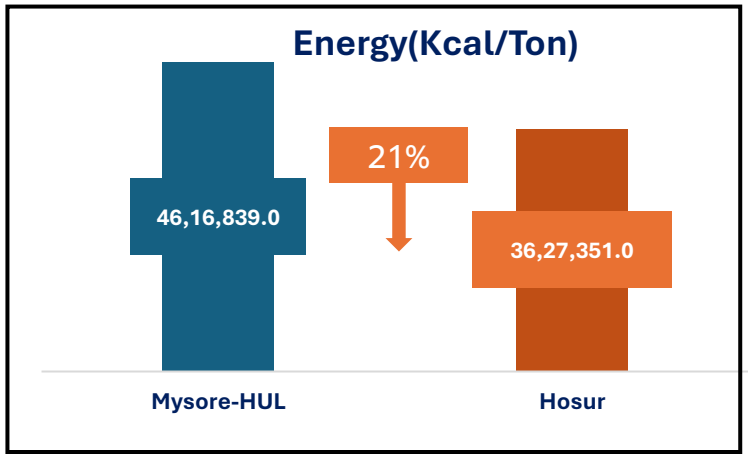


ENERGY BENCHMARKING

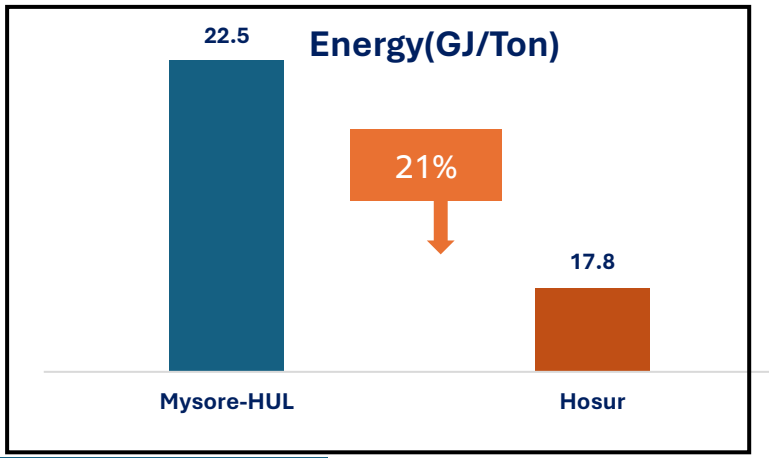
Electrical Energy Benchmarking



Thermal Energy Benchmarking



Energy Benchmarking



Major Encon Projects in 2024-2025

Project	Target Completion Date	Investment
Thermic Fluid Heater	Jan-24	13 Cr
Heat Recovery System for TFH	Mar-24	4 Cr
Steam Audit Points Projects	Oct-24	0.75 Cr
Single Extraction Operation for Aurus	Aug-24	0.45 Cr

HOSUR ENERGY MAPPING-AS IS- WHERE WE ARE !

Source	Usage Type	Transmission	Location
Grid 	Electrical Energy 9%	Electrical Energy – 68%	Instant Coffee
		LPG – 84%	
		Steam – 87.2%	
Onsite Solar 	Solar 2%	LPG – 15%	Conventional Coffee
		Electrical Energy – 14%	
Offsite Windmill 	Wind 1%		
Briquette 	Steam 64%	Electrical Energy – 4%	Boiler
LPG Cylinders 	LPG 22%	Electrical Energy – 0.1%	DGs
		HSD– 100%	
		Steam –12.5%	Zero Liquid Discharge Plant
		Electrical Energy – 5%	
HSD Tanker 	HSD 2%	Electrical Energy –8%	Other Utilities
		LPG – 1%	Admin & Canteen
		Electrical Energy – 0.9%	

Annual Energy Consumption ~172800 GJ

HOSUR ENERGY MAPPING-TO BE-OUR VISION !

Source	Usage Type	Transmission	Location
Grid 	Electrical Energy 7%	Electrical Energy – 68% Biofuel – 72.11% Steam – 87.2% Thermic Fluid – 11.5%	Instant Coffee
Onsite Solar 	Solar 4%		
Offsite Windmill 	Wind 1%	Biofuel – 13.7% Electrical Energy – 14%	Conventional Coffee
Briquette 	Steam 64%	Electrical Energy – 4%	Boiler
	Thermic Fluid 11%	Electrical Energy – 0.1% Biofuel– 14.19%	DGs
LPG Cylinders 	LPG 0%	Steam –12.5% Electrical Energy – 5%	Zero Liquid Discharge Plant
Biofuel 	Biofuel 12%	Electrical Energy –8%	Other Utilities
Methane from Digestor 	Biogas 1%	Biogas– 1% Electrical Energy – 0.9%	Admin & Canteen
HSD Tanker 	HSD 0%		

Annual Energy Consumption ~147600 GJ

HISTORY OF ENERGY SAVING PROJECTS IN LAST 3 YEARS

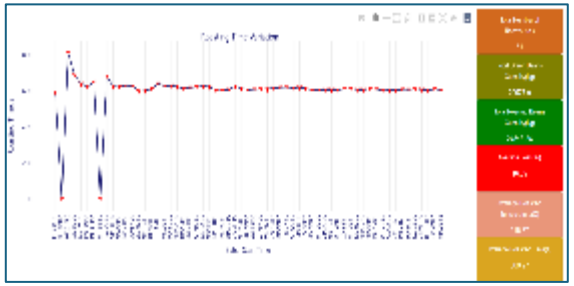
Year	No. of Energy Saving Projects	Investment (INR Million)	Thermal Energy Saving (Million Kcal)	Electrical Energy Savings (KWH)	Total Savings (INR Million)	Payback Period (in Months)	Impact on SEC (% Reduction)
2021-2022	2	7.1	2191	-	5.1	16	4.6%
2022-2023	5	101.66	6792	1588500	69.16	17	15%
2023-2024 & 2024-2025 YTD	5	48.94	3211.7	309672	23.1	25	14%

15.7 Cr
Invested

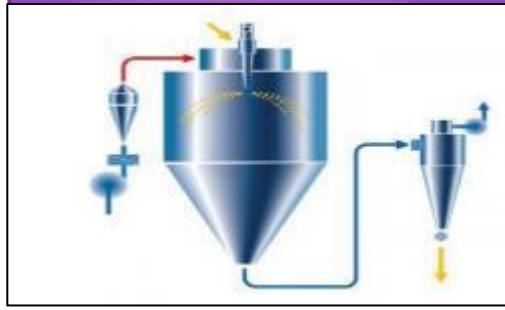
9.7 Cr
Savings

HISTORY OF ENERGY SAVING PROJECTS

Pre-Heating of Air in Coffee Beans Roaster & Reduction in SFC through digitalization



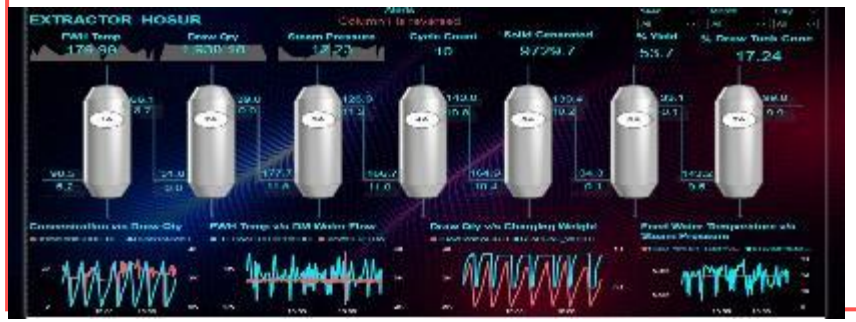
Pre-Heating of Air to Spray Drier



Low-Cost Alternate Fuel Usage

Energy Efficient Pumps & Motors, VFDs

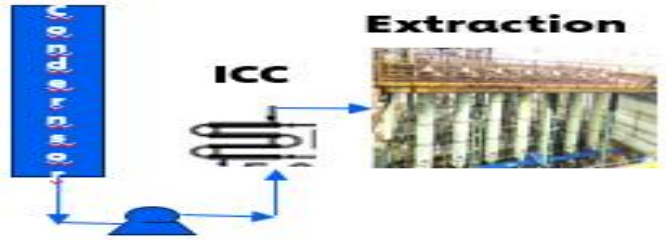
Single Extraction Operation-BCT Reduction & DOF Increase



Evaporator Upgradation

AHFs Installation

Evaporator condenser water recovery & Reuse



Boiler SFR Improvement

THEME SELECTION

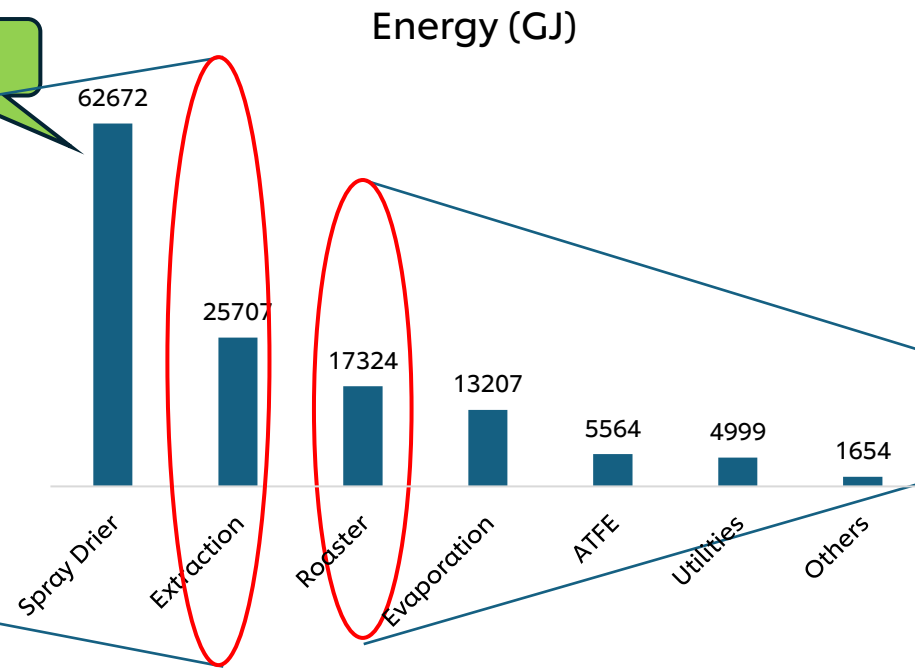
TFH

K1

1. SINGLE EXTRACTION OPERATION

2. HEAT RECOVERY SYSTEM FOR FEED WATER HEATING

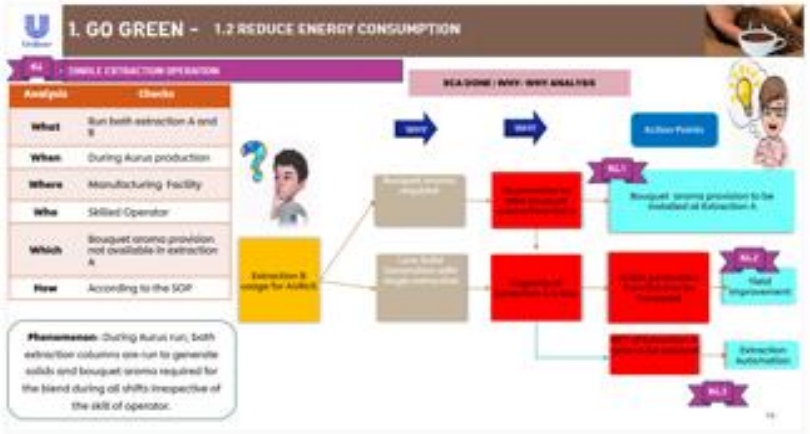
K2



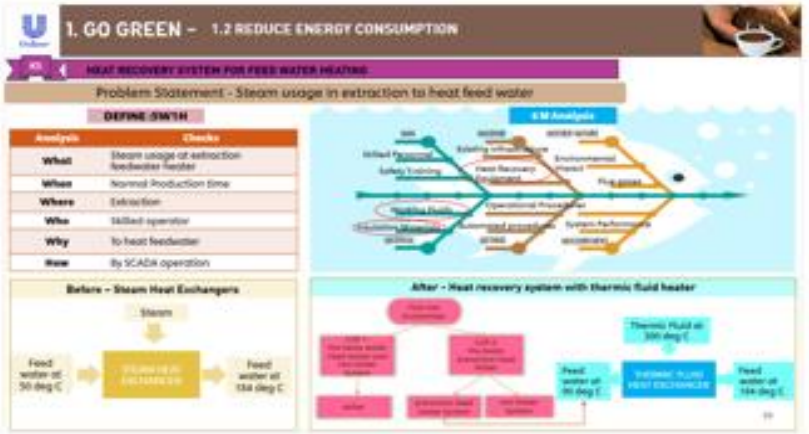
K3

3. ROASTER SPECIFIC FUEL CONSUMPTION REDUCTION

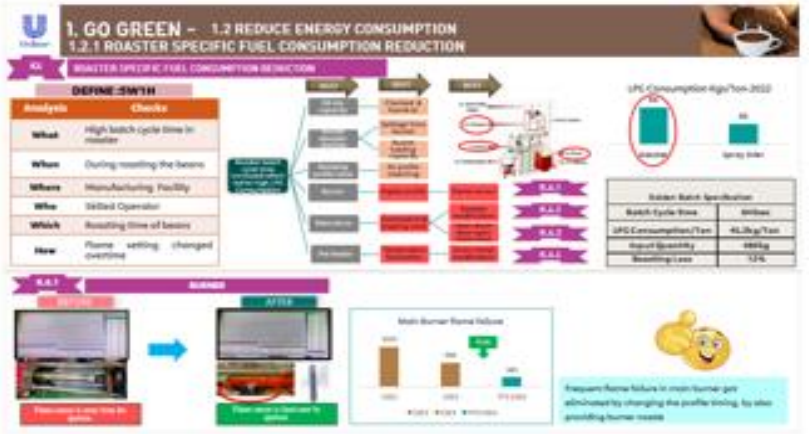
1. SINGLE EXTRACTION OPERATION



2. HEAT RECOVERY SYSTEM FOR FEED WATER HEATING



3. ROASTER SPECIFIC FUEL CONSUMPTION REDUCTION



1. SINGLE EXTRACTION OPERATION

1 SINGLE EXTRACTION OPERATION

Analysis	Checks
What	Run both extraction A and B
When	During Aurus production
Where	Manufacturing Facility
Who	Skilled Operator
Which	Bouquet aroma provision not available in extraction A
How	According to the SOP

Phenomenon : During Aurus run, both extraction columns are run to generate solids and bouquet aroma required for the blend during all shifts irrespective of the skill of operator.

RCA DONE : WHY- WHY ANALYSIS

Extraction B usage for AURUS

WHY

WHY

Action Points

Bouquet aroma required

No provision to take bouquet aroma from Ext A

K4.1

Bouquet aroma provision to be installed at Extraction A

Less Solid Generation with single extraction

Capacity of Extraction A is less

Solids generation from Ext A to be increased

K4.2

Yield Improvement

BCT of Extraction A cycle to be reduced

Extraction Automation

K4.3

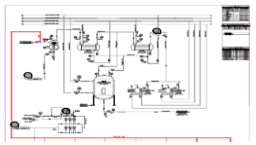
1.2 & 1.3- BOQUET AROMA PROVISION & YIELD IMPROVEMENT

1 SINGLE EXTRACTION OPERATION

1.1 Bouquet aroma provision to be installed at Extraction A

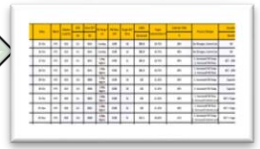
Designing the solution

Detailed Engineering
- Concept finalization
- P&IDs
- MOC & BOQs

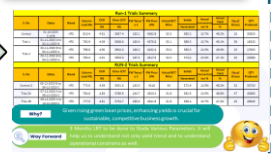


Installation
- Bouquet Aroma Piping modification
- Auto valves addition
- Automation of Aroma Collection

Trial Plan
- Plan A with same stripping rate as Extraction B
- Plan B with same stripping quantity of 90Kg per draw as in Extraction B

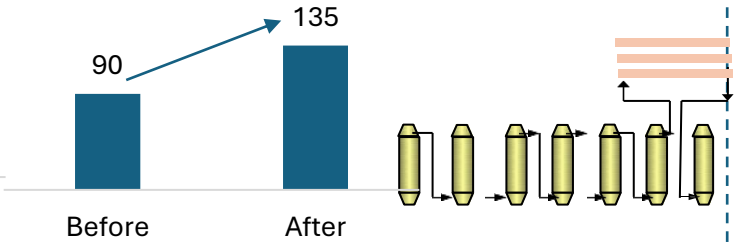


Execution
- Tracking of parameters at each stage of process
- Sensory evaluation at plant
- Sensory evaluation at R&D



No. of bouquet aroma cycles

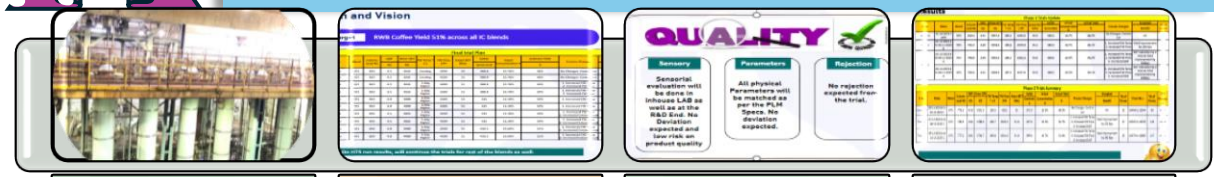
Bouquet aroma qty (Kg)



70 lacs utility savings

Plan A successful

1.2 Yield Improvement



Pre- Assessment
- Safety Assessment – Design pressure & Temperature of Columns
- PAUT & DPT testing
- The parameters were checked and were found within the design limits
- SAM was conducted to understand the challenges

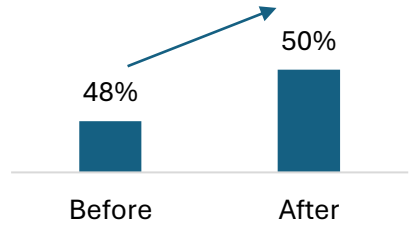
Trial Plan
- Feed water flow rate increased from 4200 LPH to 4500 LPH
- 3300 LPH to 3500 LPH
- Increase Feed water Temp from 184 ^o C to 186 ^o C
- Increase Prewetting water qty from 18% to 30%
- Increase Prewetting stages from 1 to 3
- Increase of DOF from 4.5 to 4.8

Parameters
- At all stages all the parameters were tracked using digital dashboard
- Extraction level the concentration was checked 4 stages to ensure the solid generation as per plan
- Liquor tracking at all stages to ensure the right cut off
- Powder was tracked the sensory evaluation was done inhouse and RND

Results
- The trial was successful
- 4.8 draw factor stabilized at extraction
- Achieved the yield of 50.45 %
- 2.5 % increase in solid generation with existing beans loading quantity
- 20 kg solids increased per draw

Parameter	Before	After
Feed Water Temp (Deg.C)	184	186
Column Pressure (bar)	12	13.5
Feed Water Flow (LPH)	4200	4500
DOF	4.5	4.8
Prewetting Qty (%)	18%	30%

Yield (%)



Material savings 2.62 cr

LPG savings 14 lacs

1.3- EXTRACTION AUTOMATION

1 SINGLE EXTRACTION OPERATION

1.3 Extraction Automation

BEFORE

Manual valves → Auto valves

Monitoring on screen → Control & monitoring through HMI Operation

Manual Operation → Remote Operation

AFTER

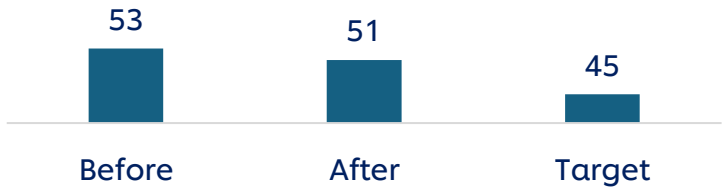
- Extraction A automation with 90 percent of auto valves installed and integrated into the SCADA system
- **RECIPE BASED** Automation in Phase-III

BENEFITS

Highly Motivated Shopfloor

Safe Operation of Extraction

Extraction BCT(Mins)



2. HEAT RECOVERY SYSTEM

2

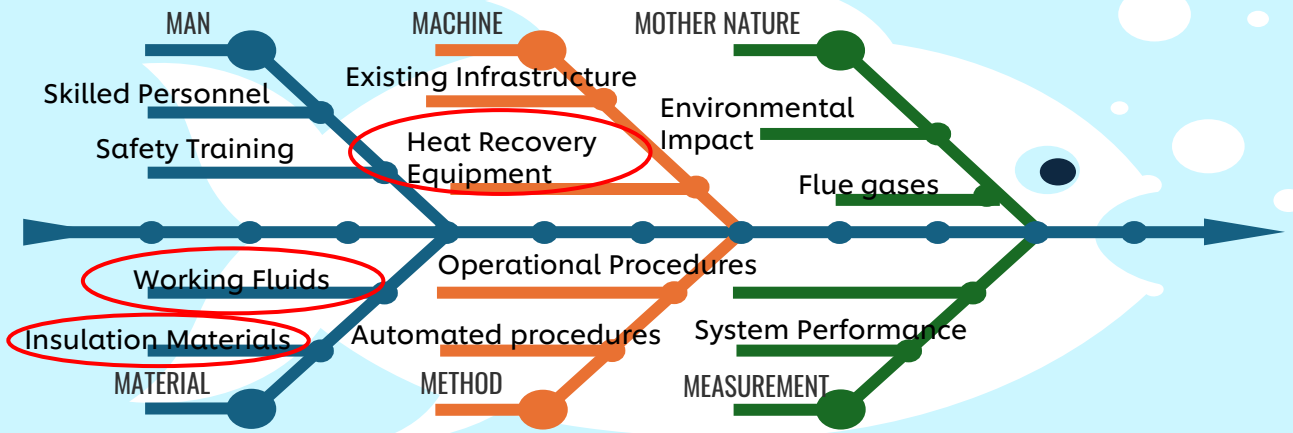
HEAT RECOVERY SYSTEM FOR FEED WATER HEATING

Problem Statement - Steam usage in extraction to heat feed water

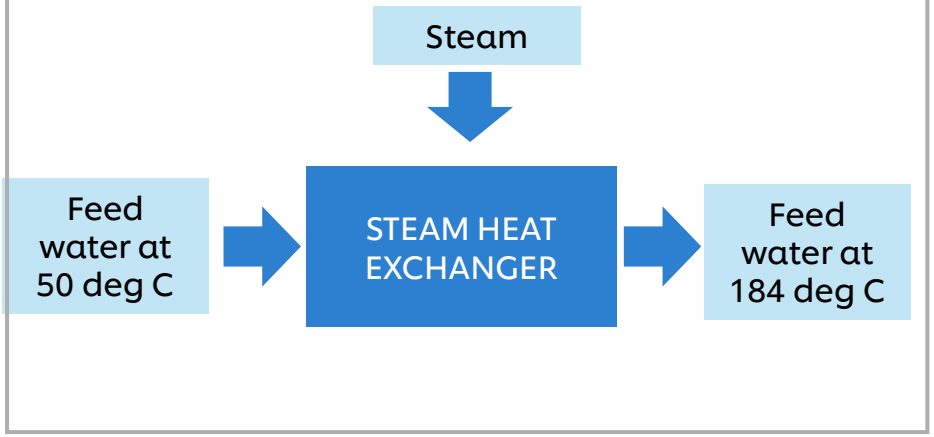
DEFINE :5W1H

Analysis	Checks
What	Steam usage at extraction feedwater heater
When	Normal Production time
Where	Extraction
Who	Skilled operator
Why	To heat feedwater
How	By SCADA operation

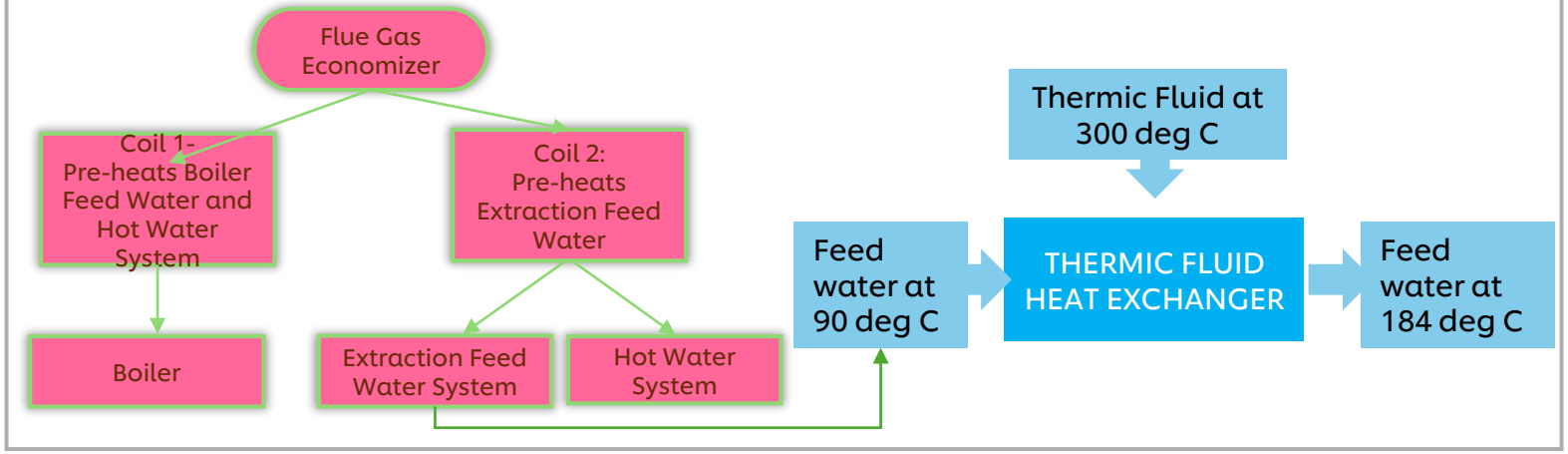
6 M Analysis



Before – Steam Heat Exchangers

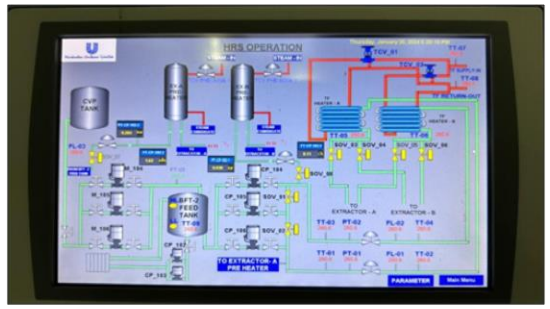


After - Heat recovery system with thermic fluid heater



2. HEAT RECOVERY SYSTEM

2 HEAT RECOVERY SYSTEM FOR FEED WATER HEATING & BOILER MAKEUP WATER HEATING



Impacts:

•Boiler flue energy required is reduced

•Steam energy required is reduced

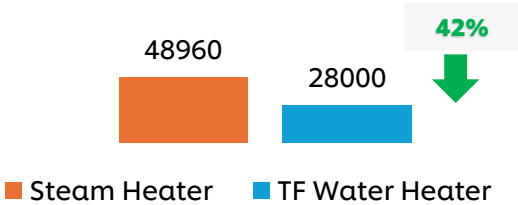
Savings:

•3120 kcal per hour reduction in energy consumption

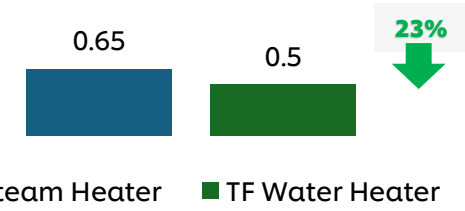
•₹3.6 million per year cost savings

BENEFITS

Cost Benefits (Rs/Day)

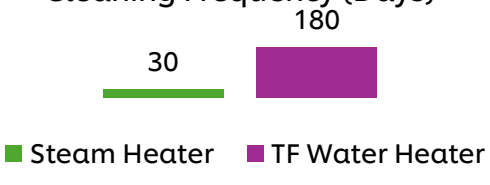


Thermal Energy (L kcal/hr)



Annual Savings: 1.7 Cr
30 TPD reduction in steam

Cleaning Frequency (Days)



K6 WASTE HEAT RECOVERY FROM THERMAL OIL FOR TOWER WASHING

BEFORE

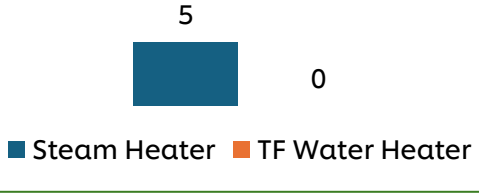
1. Spray Dryer Tower Washing is Carried Out Using Steam Feed Water Heaters
2. 55KW TFH Circulation pump has to run 36hrs to drop the temperature from 300 deg C to 70 deg C after shutdown

AFTER

1. Spray Dryer Tower Washing is Carried Out Using TF Water Heater utilizing the waste heat in the Thermic fluid after shutdown (Zero Fuel)
2. 55KW TFH Circulation pump running hours has been reduced from 36 h to 24 h as temperature brought down within 24hrs

BENEFITS

Energy Benefits



Impacts:

•Steam consumption reduction

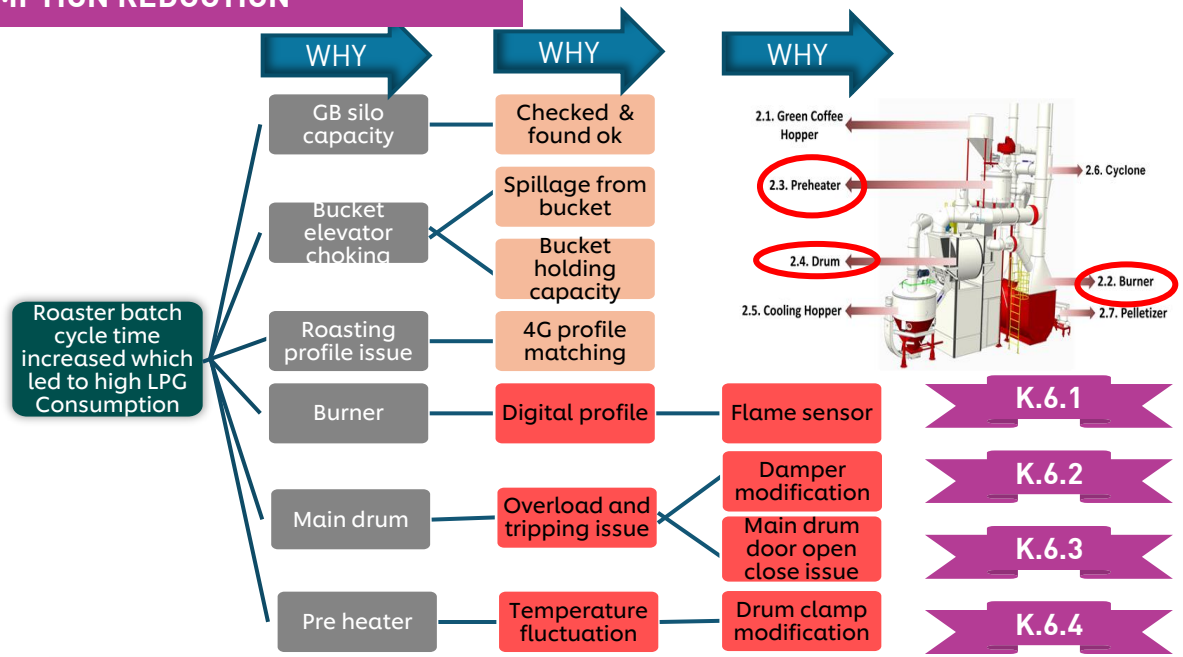
•Zero fuel consumption for washing, resulting in cost savings.

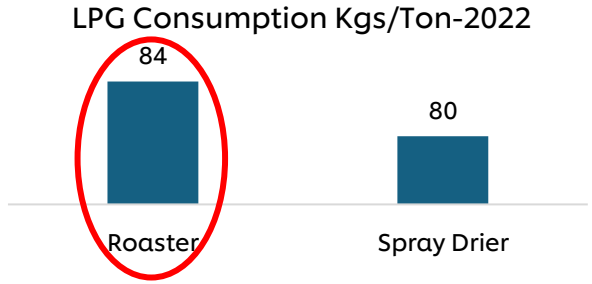
3. ROASTER SPECIFIC FUEL CONSUMPTION

3 ROASTER SPECIFIC FUEL CONSUMPTION REDUCTION

DEFINE :5W1H

Analysis	Checks
What	High batch cycle time in roaster
When	During roasting the beans
Where	Manufacturing Facility
Who	Skilled Operator
Which	Roasting time of beans
How	Flame setting changed overtime





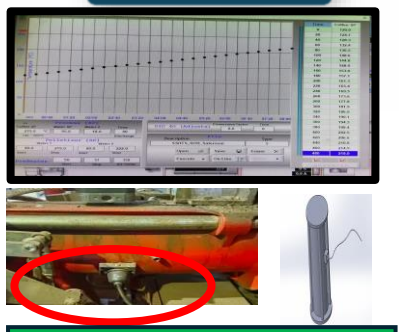
Golden Batch Specification	
Batch Cycle time	840sec
LPG Consumption/Ton	45.2kg/Ton
Input Quantity	480kg
Roasting Loss	12%

3.1 BURNER

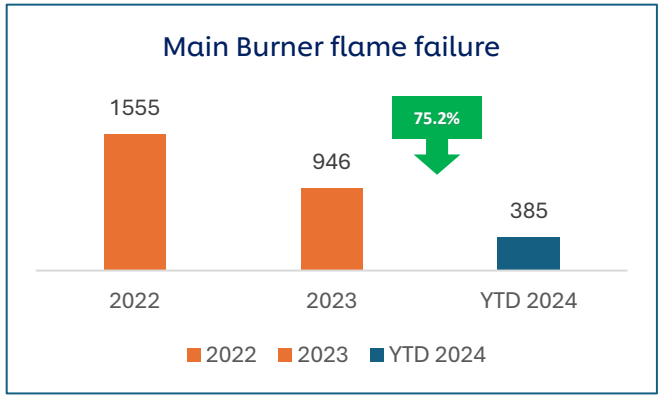
BEFORE

Flame sensor is away from the ignition.

AFTER



Flame sensor is fixed near by ignition.

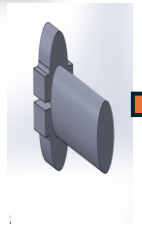


Frequent flame failure in main burner got eliminated by changing the profile timing, by also providing burner nozzle

3. ROASTER SPECIFIC FUEL CONSUMPTION

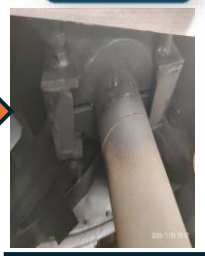
3.2 Main Drum

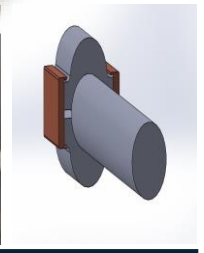
BEFORE



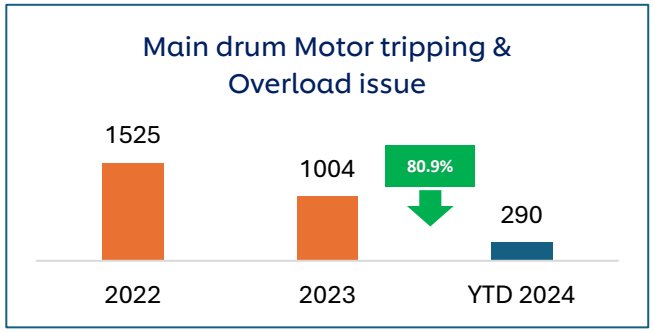
Drum overload and tripping issue by misalignment

AFTER





Alignment got corrected by the extra clamping provided

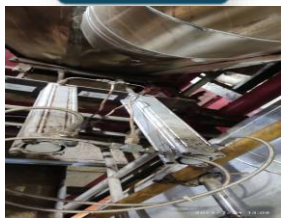


3.3

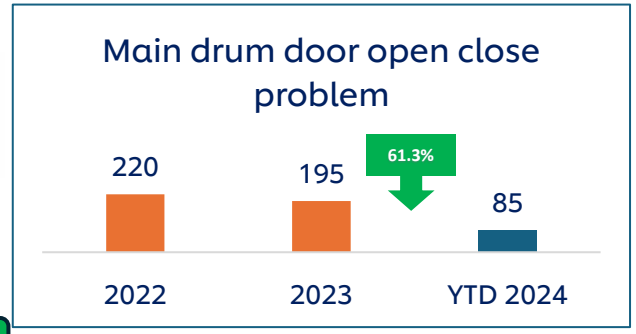
BEFORE

Open & Close issue with single actuation cylinder in a damper

AFTER



Double actuation cylinder provided

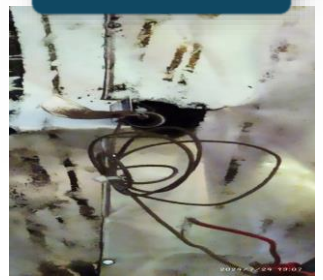


3.4 Pre Heater

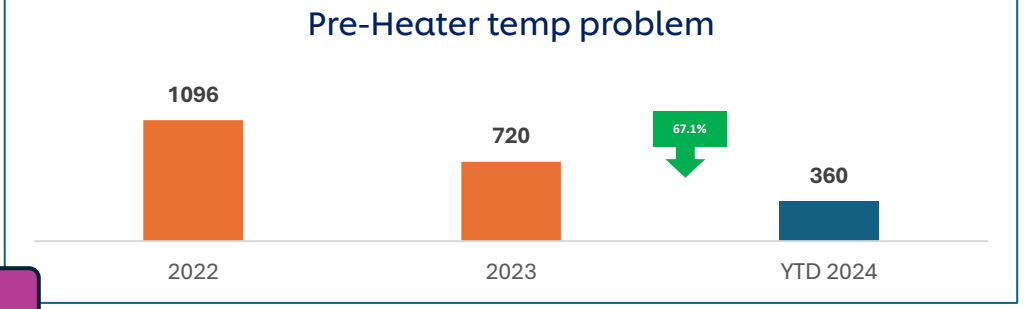
BEFORE

Preheater thermocouple contact with bean is not in a proper way

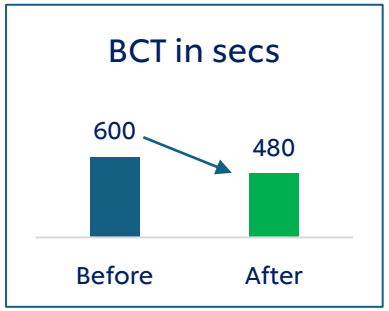
AFTER

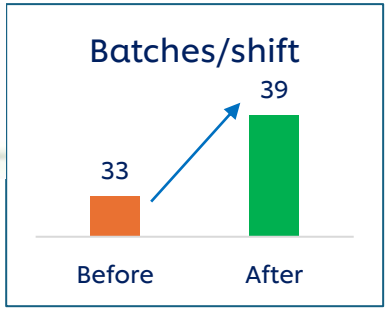


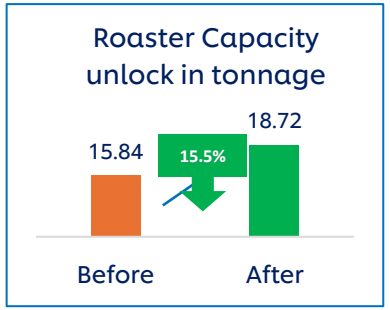
Thermocouple position got corrected and preheater activation done

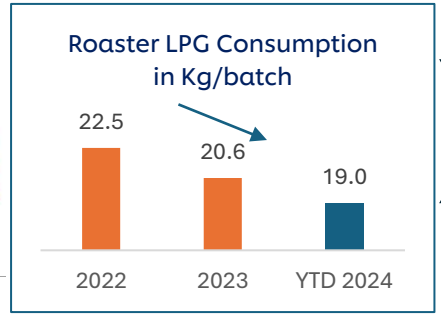


Results



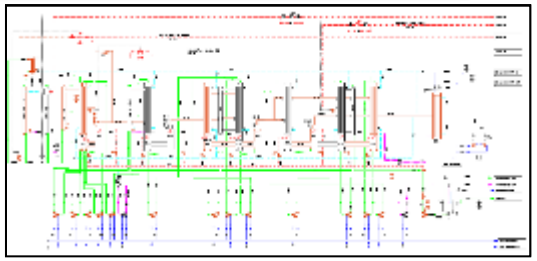
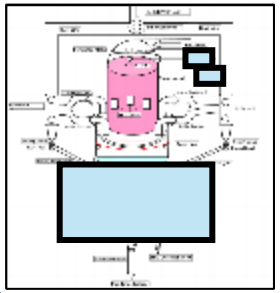
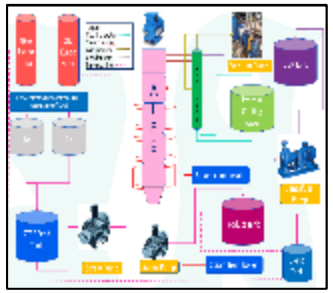
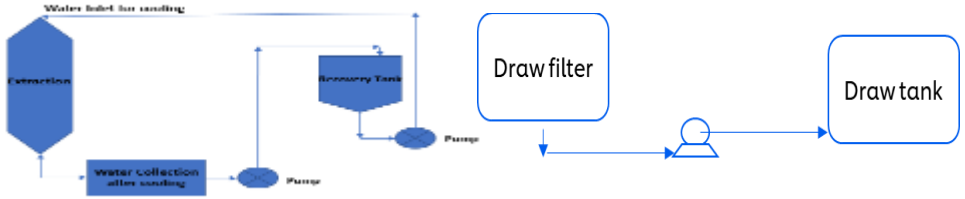




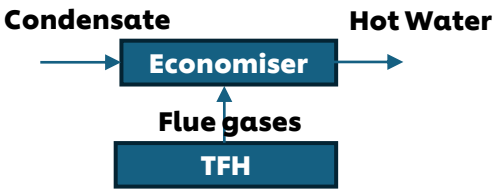
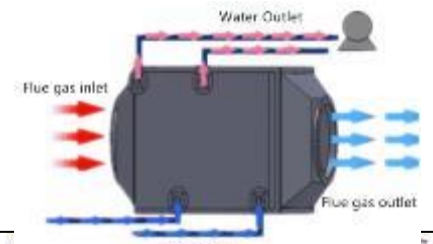
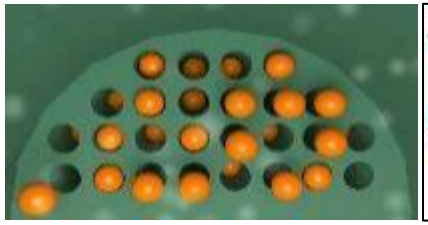
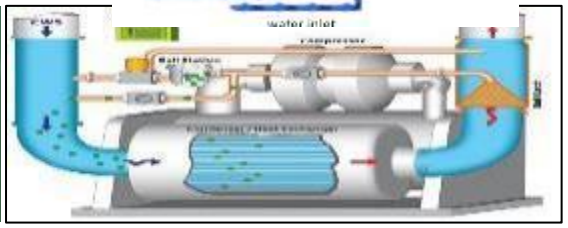
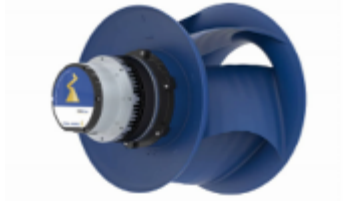


16.73 L Annual Savings

MAJOR ENERGY CONSERVATION PROJECTS IN LAST ONE YEAR

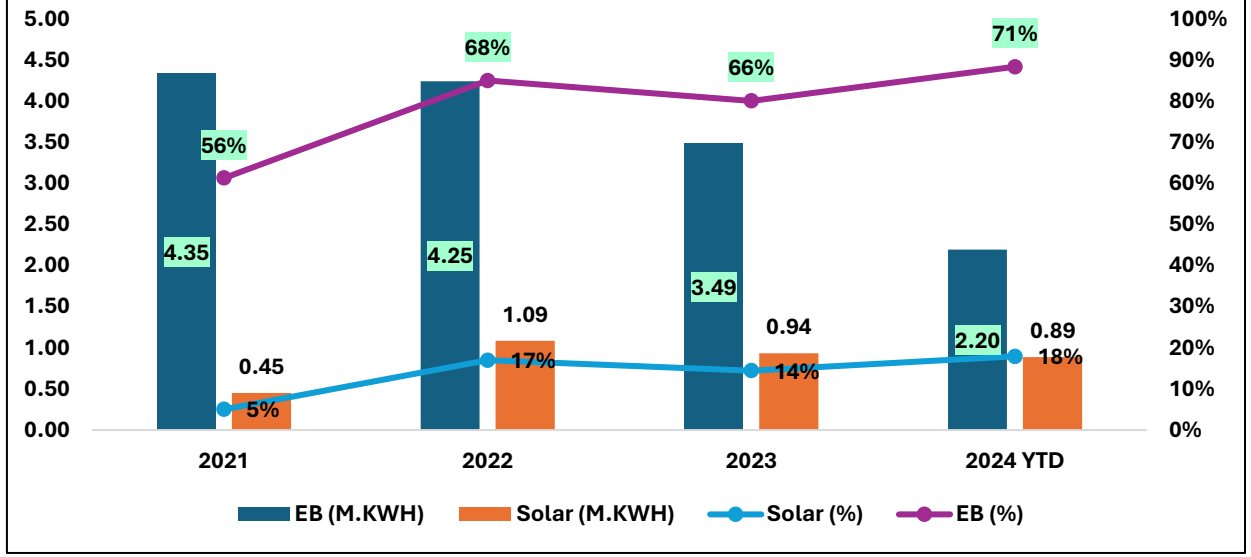
DESCRIPTION	PROJECT	SAVINGS	UNIQUENESS	REPLICATION POTENTIAL
Single Extractor Operation Optimization of Extraction Feed Water Temperature & Increase in Draw off factor		**3.43 Cr**	Capacity Unlock & Energy Savings by **sweating assets**	Replicated in HUL Mysore Factory & replicable in any coffee factory
Evaporator Upgradation Increase in water evaporation capacity by upgrading existing evaporator	 	**1.1 Cr**	Capex avoidance of 4.6 Cr through **Value Engineering**	Easily replicable in any evaporator
High Concentration Spray Increase in spray concentration to decrease LPG & Steam consumption	  	**0.8 Cr**	**Capex Avoidance** for Spray Drier by optimization of operating parameters	Replicated in Mysore Factory. Replicable in other spray driers
Draw filter liquor & Quench Water recovery & Reuse Reuse in Extraction operation and reduction in load on ZLDP		**20 Lakhs**	Conversion of Crisis into Opportunity. **Nothing goes waste!**	Easily replicable. Replicated in Mysore HUL

MAJOR ENERGY CONSERVATION PROJECTS IN 2023

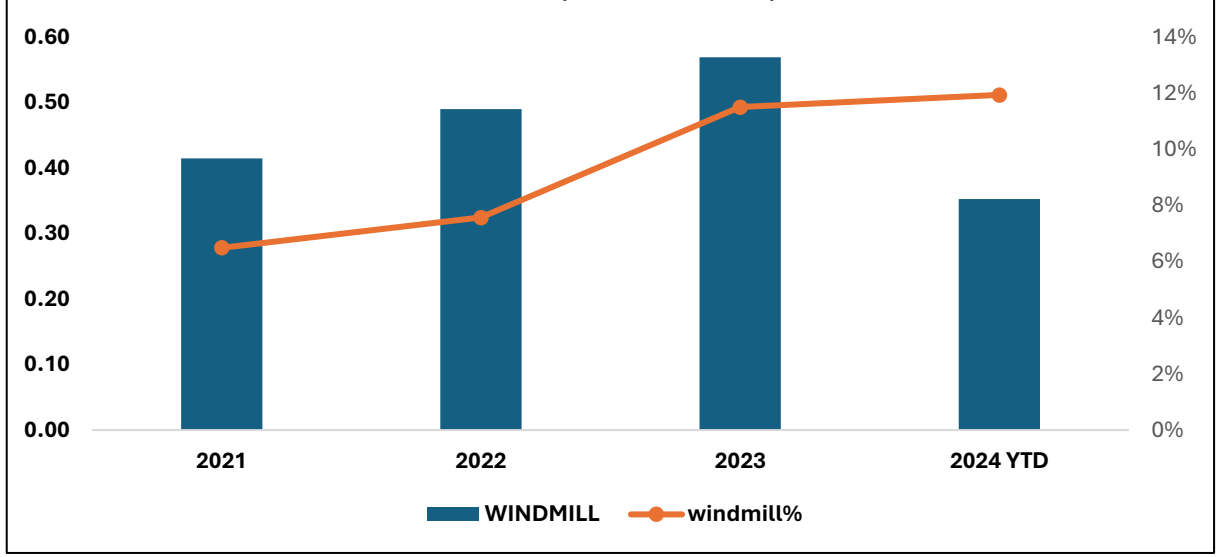
DESCRIPTION	PROJECT	SAVINGS	UNIQUENESS	REPLICATION POTENTIAL
Heat Recovery System-TFH Usage of flue gas from TFH to pre-heat the extraction feed water	 	1.5 Cr	Flue gas heat recovery and elimination of steam usage for heating	Replicable for Boilers and TFH with hot water requirement
ATCS Usage of automatic tube cleaning system for chillers and heat exchangers	 	11 Lakhs	Simple & Energy Efficient. Eliminates chemical cleaning	Easily replicable in Chillers & Shell & Tube Heat Exchangers
FRP Fans for Cooling Towers Usage of FRP fans instead of conventional aluminium fans	 	4 Lakhs	Cost Effective, Simple & Energy Efficient	Easily Replicable for any cooling towers
EC Blowers Usage of EC Blowers in DHUs	 	10 Lakhs	Energy Efficient & Easy to use	Easily replicable
Eco Clean Dosage in Cooling Towers Dosage of Eco Clean Liquid to reduce the blow down frequency and load on ETP	 	7 Lakhs	Low-cost solution to eliminate blowdown	Easily replicable

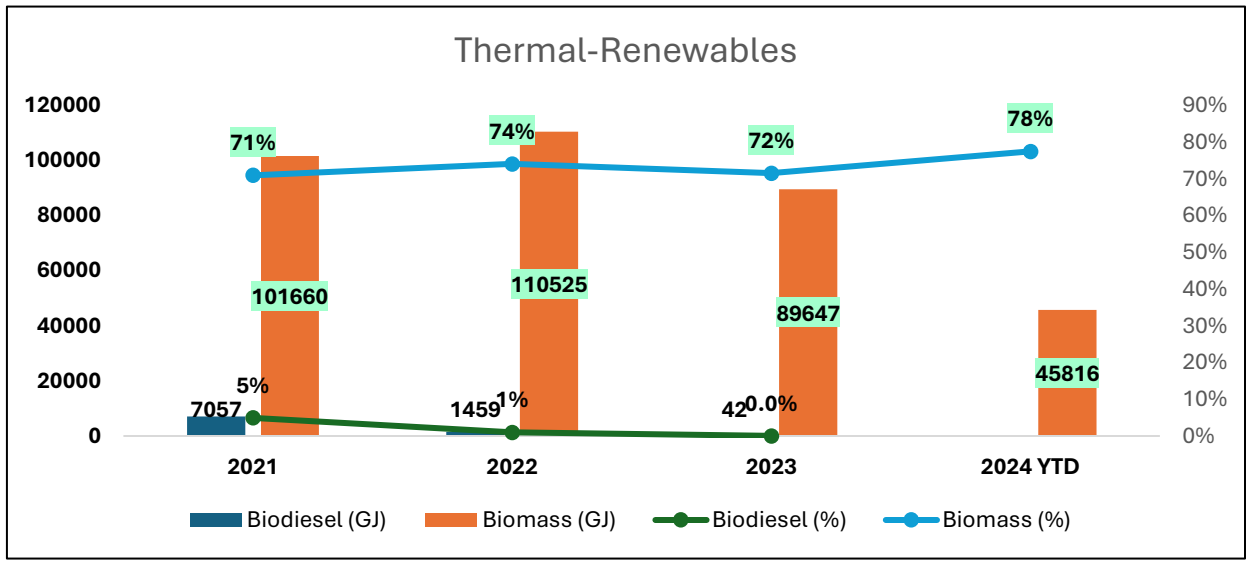
UTILIZATION OF RENEWABLE ENERGY SOURCES

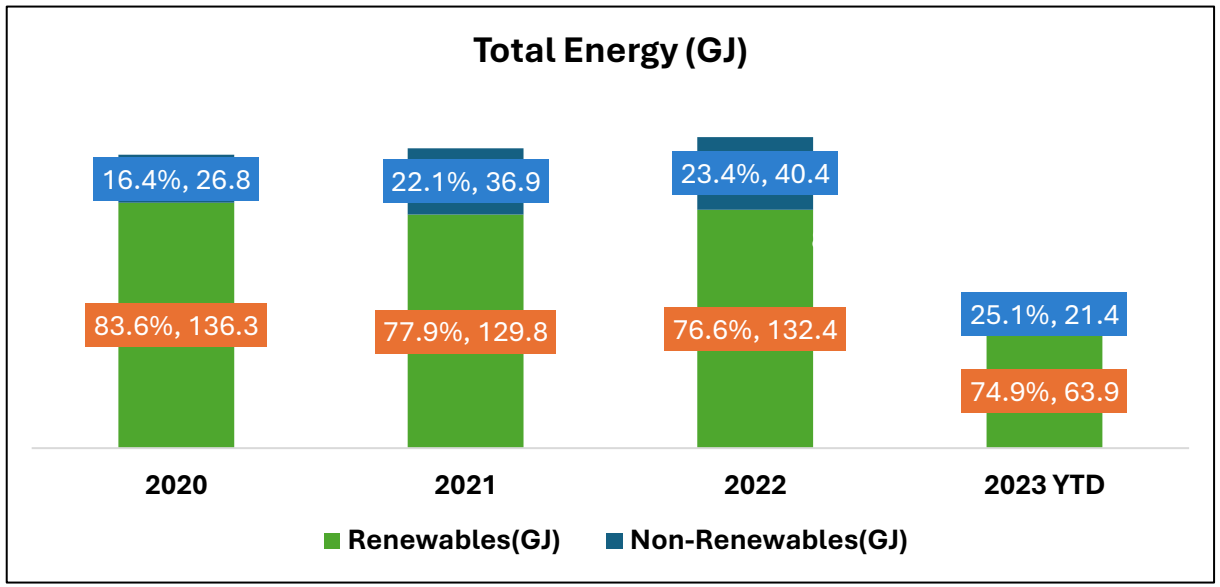
1 MW Onsite Solar Plant



2 Offsite Windmills (225 KW each)

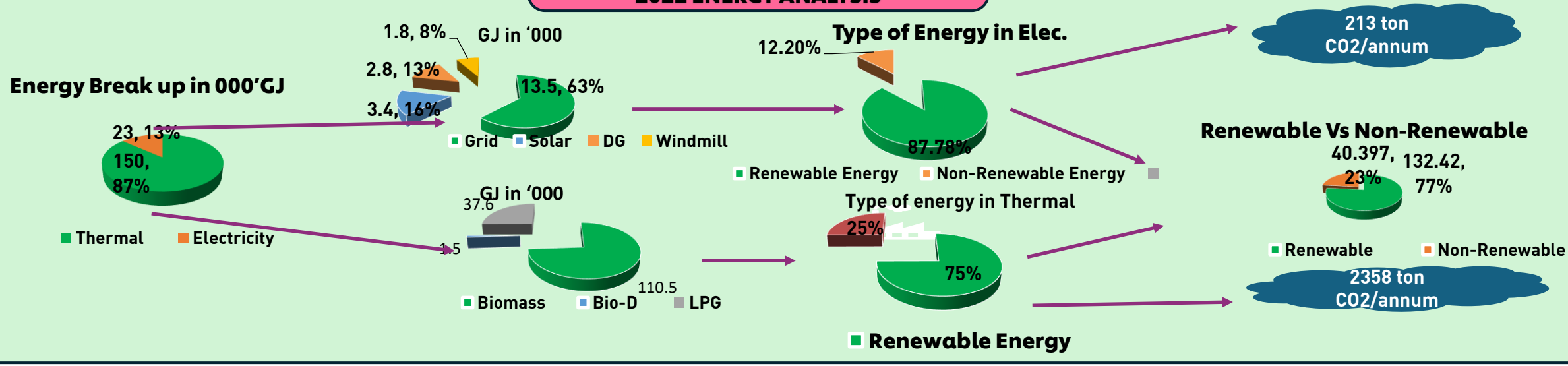






GHG INVENTORISATION

2022 ENERGY ANALYSIS



Non-Renewable Energy

23%

LPG

HSD

K1 Roaster

LPG → Biodiesel

K2 HAG

LPG → Biomass based HAG

Zero Breakdowns in Biomass Boiler

HSD in Boiler

Diesel → Biomass Boiler

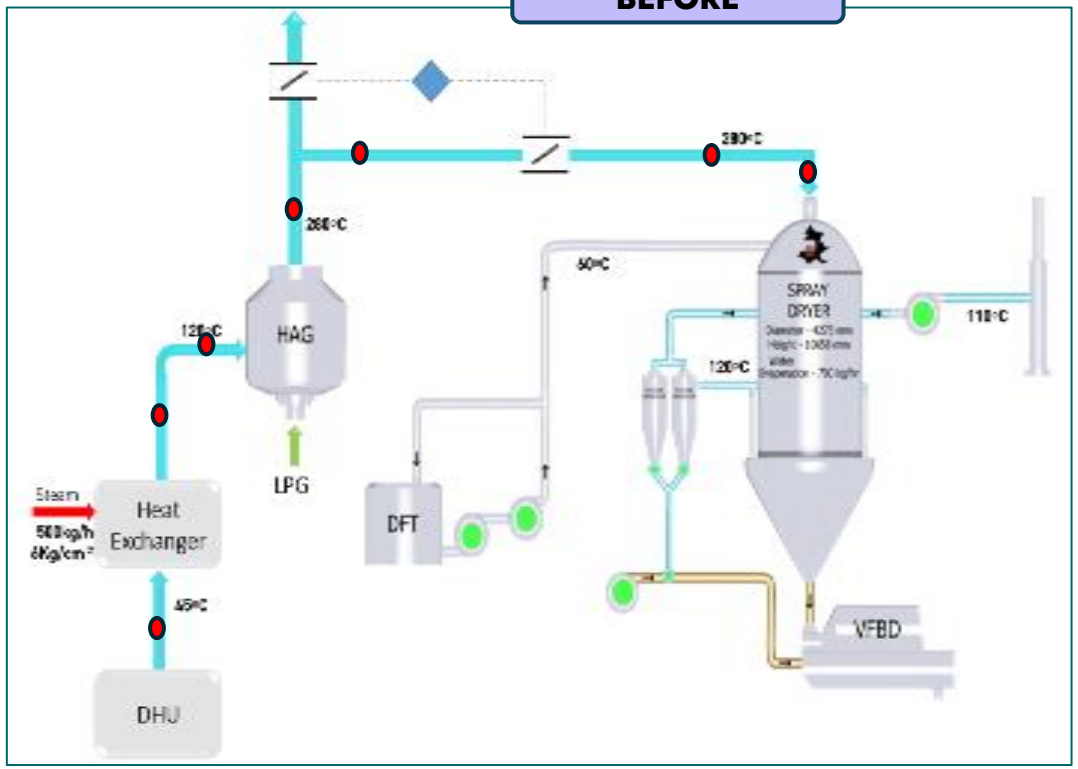
K3 HSD in DG

HSD → Biodiesel

THERMIC FLUID HEATER-BIOMASS BASED HAG

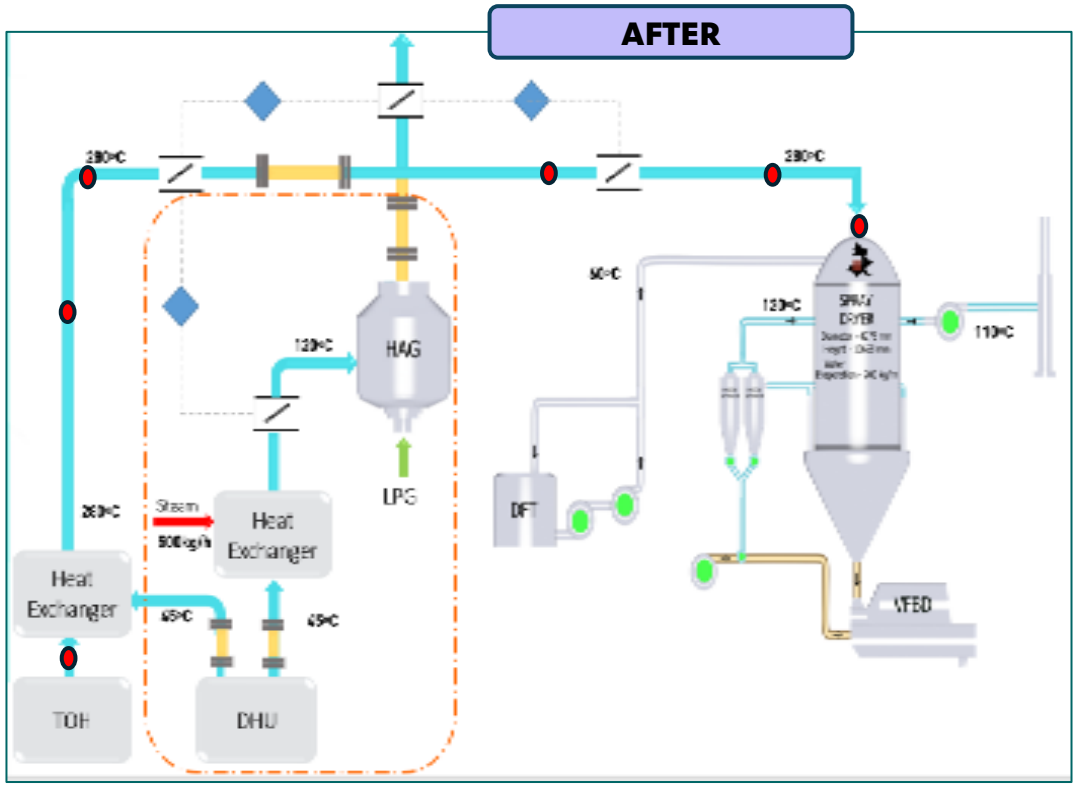
1 Conversion of LPG fired HAG into Biomass fired HAG (THERMIC FLUID HEATER)

BEFORE

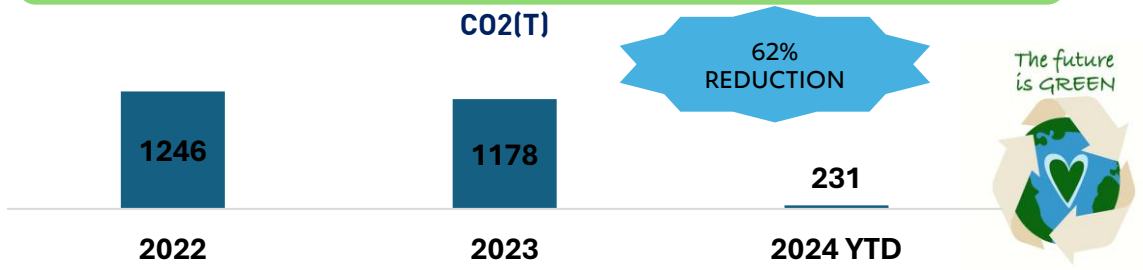


Direct fired with lpg as fuel
Has multifuel option for biodiesel/ hsd and lpg

AFTER

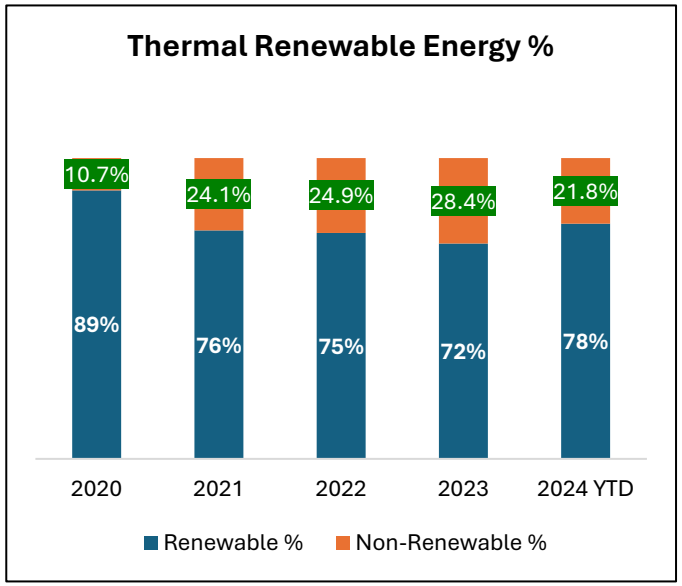


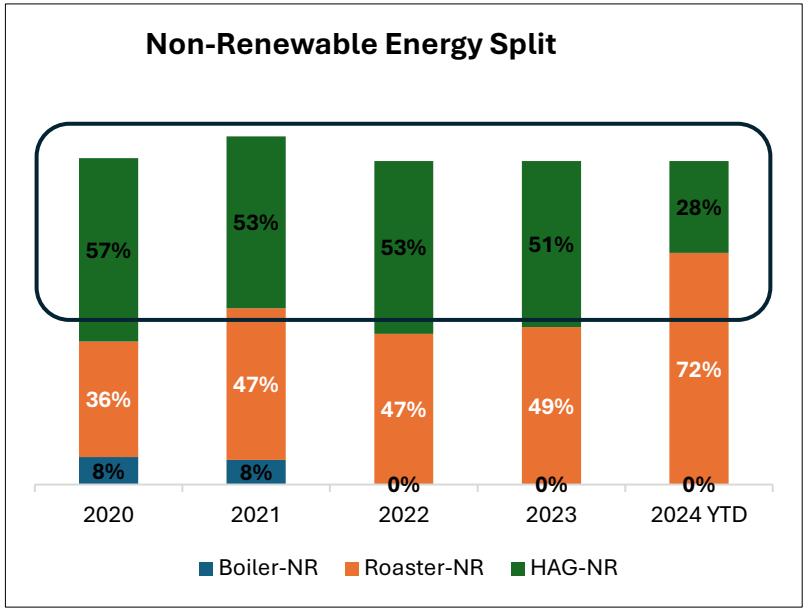
Biomass thermic fluid heater with liquid to air heat exchange
Moving from direct fired to indirect fired
Existing hag used as back up



Reduction in CO2 by 1180 Tons/Year || Annual Savings 1.1 Cr

RENEWABLE ENERGY MAXIMISATION TO REDUCE GHG EMISSIONS





Dual Burner in Roaster for Biodiesel

Capability established but LPG is economical

1 MW Onsite Solar Plant

3 Offsite Windmills

Biofuel usage in DGs-WIP

GREEN SUPPLY CHAIN MANAGEMENT- ORGANISATION'S BRANDING

Unilever | NUTRITION

Win with our brands, powered by superior products, innovation and purpose

Improve the health of the planet

Climate action	Protect and regenerate nature	Waste-free world
Net zero emissions from all our products from sourcing to point of sale by 2039	Deforestation-free supply chain in palm oil, paper & board, tea, soy and cocoa by 2023	50% virgin plastic reduction by 2025, including an absolute reduction of 100,000 tonnes
Halve greenhouse gas impact of our products across the lifecycle by 2030	Help protect and regenerate 1.5 million hectares of land, forests and oceans by 2030	25% recycled plastic by 2025
Zero emissions in our operations by 2030	100% sustainable sourcing of our key agricultural crops	Collect and process more plastic than we sell by 2025
Replace fossil-fuel derived carbon with renewable or recycled carbon in all our cleaning and laundry product formulations by 2030	Empower farmers and smallholders to protect and regenerate farm environments	100% reusable, recyclable or compostable plastic packaging by 2025
Share the footprint of every product carbon we sell	Implement water stewardship programmes in 100 locations in water-stressed areas by 2030	Halve food waste in our operations by 2025
	100% of our ingredients will be biodegradable by 2030	Maintain zero waste to landfill in our factories

Supported by: **€1 billion Climate & Nature Fund**

GREEN SUPPLY CHAIN MANAGEMENT: BUDGET & POLICY

Budget Allocation

- Unilever Clean Tech Fund: Projects aligned with long term strategic vision for the site on Sustainability

Unilever Clean Tech Fund

Annual Carbon Footprint of UL Manufacturing

X **€70 / Tonne Carbon price**

=

Unilever CleanTech Fund

Financing carbon reduction projects

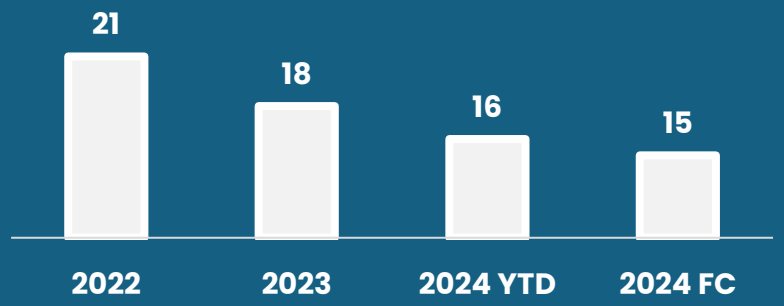
Our Policy

- Policy displayed in local language at various locations
- Policy approved by central committee
- Regular communication of the policy to ensure good level of awareness among employees

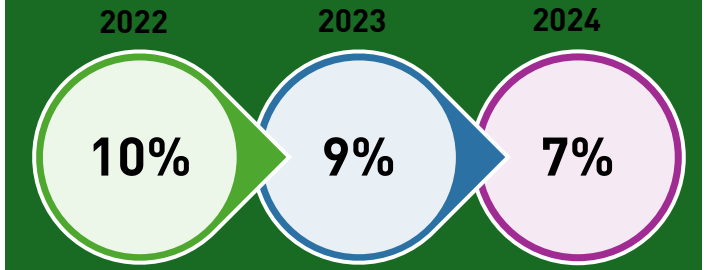
EMS – Environment Management System Pyramid

OVERALL RESULTS

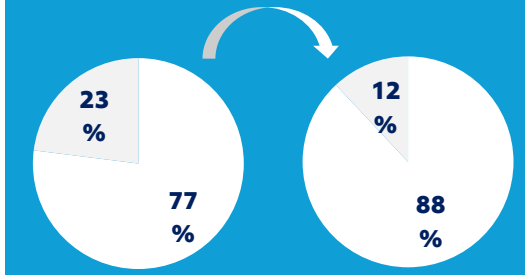
ENERGY (GJ/T)



ENERGY (% of Nutrition)



RENEWABLE ENERGY

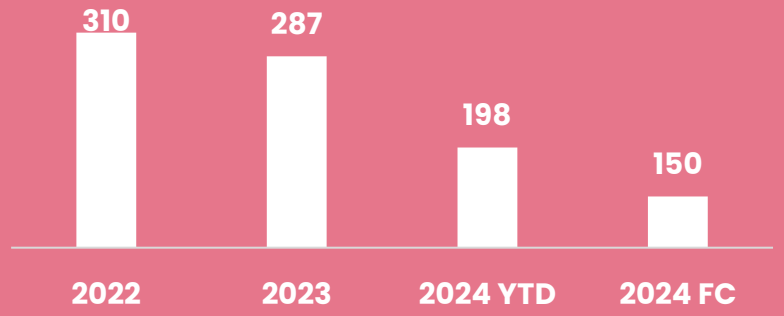


77% → 88%

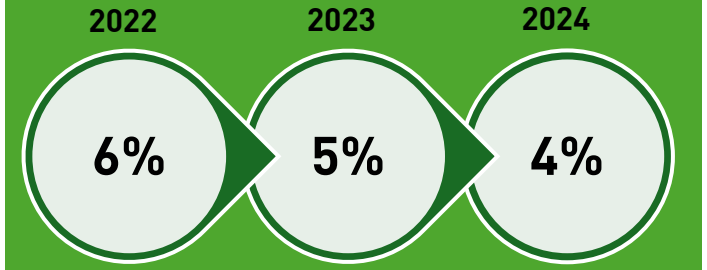
QUALITY

100% SFG FTR
Golden Batches

CO2 (Kg/T)



RECYLCED WASTE (% of Nutrition)



COST SAVINGS

5 Cr Make Savings
10 Cr Material Savings

MORALE

98%
Uni Voice Score

ENABLED BY BRILLIANT BASICS OF SAFETY, QUALITY AND CONTROLS

GHG INVENTORISATION & ACTION PLAN-CARE FOR PLANET

Alternate Fuel usage

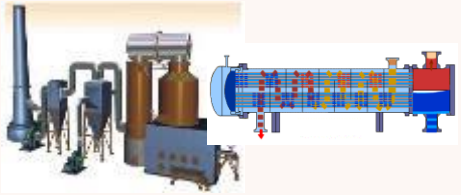
820 Kg/ton CO2 reduction

HSD → LPG in HAG & Roaster ✓

869 Kg/ton CO2 reduction

HSD → Biodiesel in Boiler ✓

1880 Tons/Year of CO2 Reduction



Biomass based TFH for HAG ✓

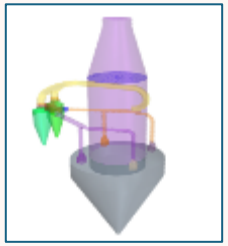
Thermic Fluid Based FWH & HRS ✓

Reduce Energy Consumption

Boiler Digitization

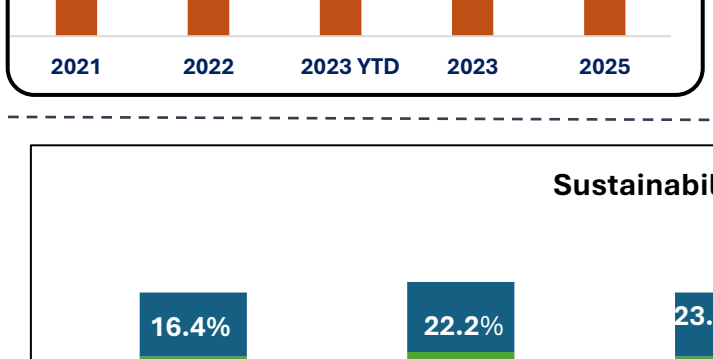
Steam Fuel ratio improved from 4.4 → 4.8 ✓

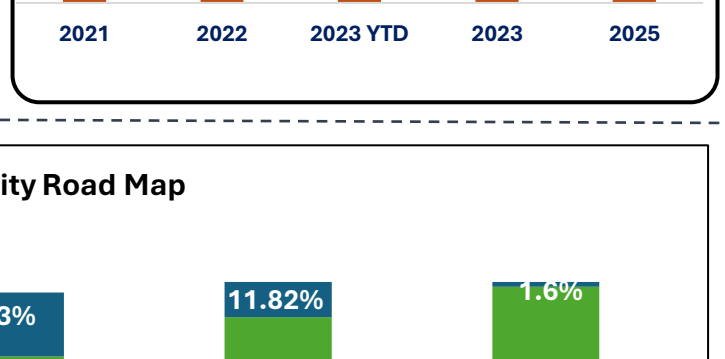
Air Preheater in Roaster ✓

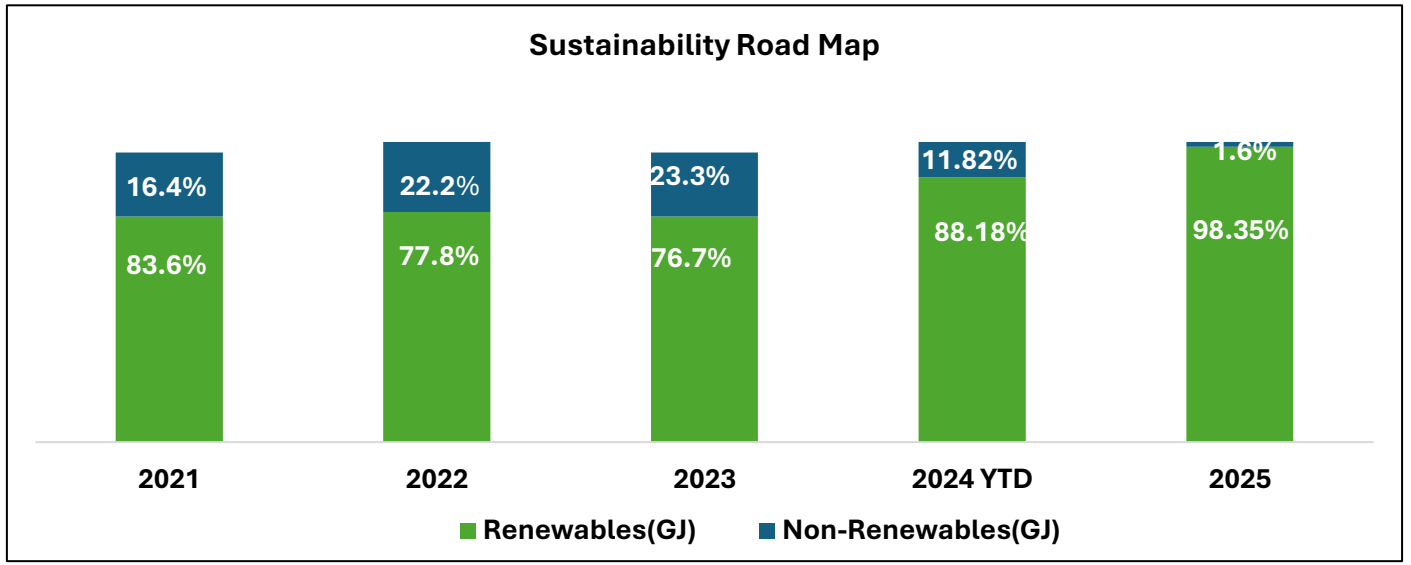


Increase in Spray concentration ✓

- EC Motors for DHUs
- ATCS for Chillers
- FRP Fans in Cooling Towers







Ambition is 58% reduction in CO_2 & 98% of energy sourced to be GREEN ENERGY by 2025

EMS SYSTEM

Need

- ✓ **Risk of misreporting energy consumption due to manual intervention.**
- ✓ **Limited coverage of feeders.**

System Description

- ✓ **Wireless system for monitoring energy via energy meters**
- ✓ **Live status of machines on web portal – current, power factor, load**

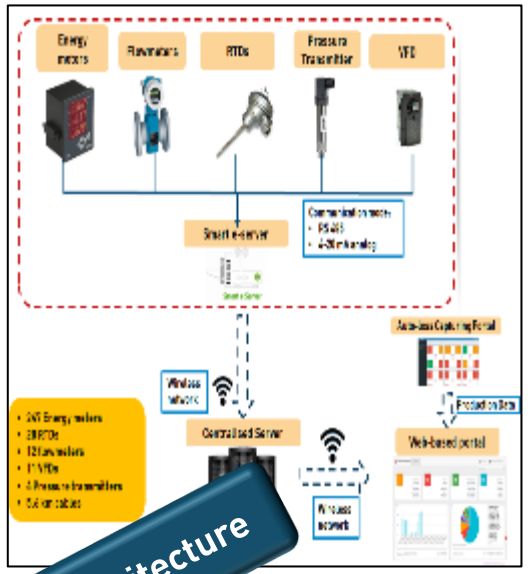
Benefits

- ✓ **Live energy consumption monitoring**
- ✓ **Minimal inaccuracy**
- ✓ **Timely action possible with dynamic data availability and monitoring**

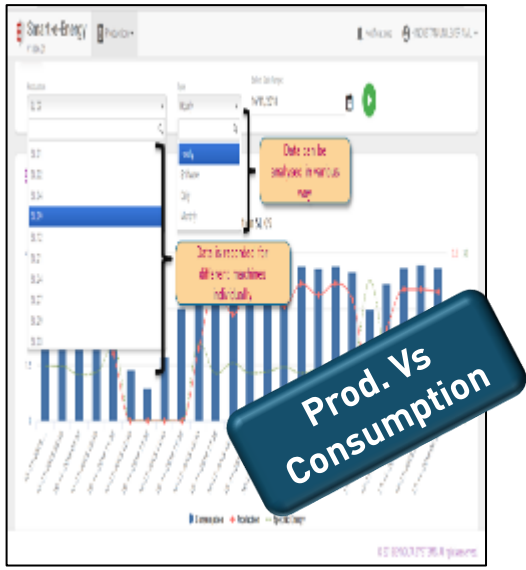
2022	2023	2024 JQ
▪ 30 Energy Meters Installed.	Setting up the architecture and covering all feeders & installation of 30 Energy Meters.	Cover Full Factory under EMS

- Real time monitoring of energy in key areas and analysis by comparing against golden batch specifications.
- 100% Feeders will be covered by 2024 JQ and full factory will be under EMS.

1. Daily monitoring of DG & Air Compressors performance
2. Daily monitoring of factory maximum demand
3. Daily monitoring of high energy consumption loads
4. Real time monitoring of SFR & steam consumption in critical areas with alerts.



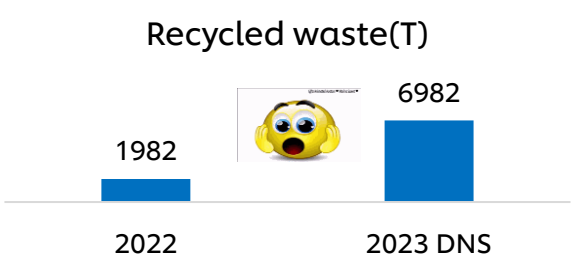
Production Vs Consumption Trend

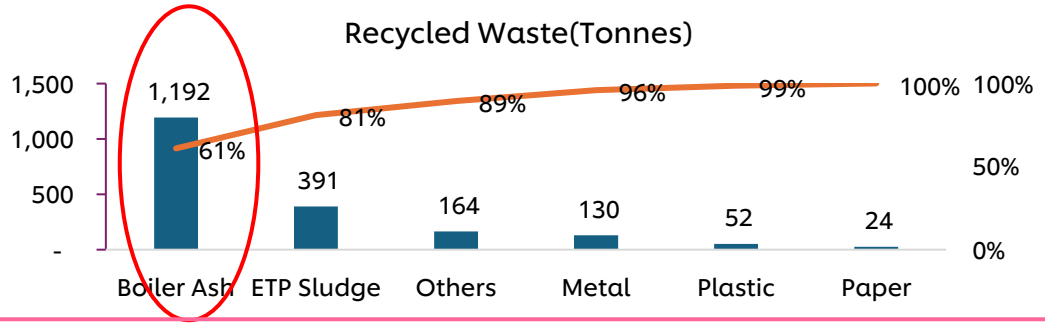


3. NGTW

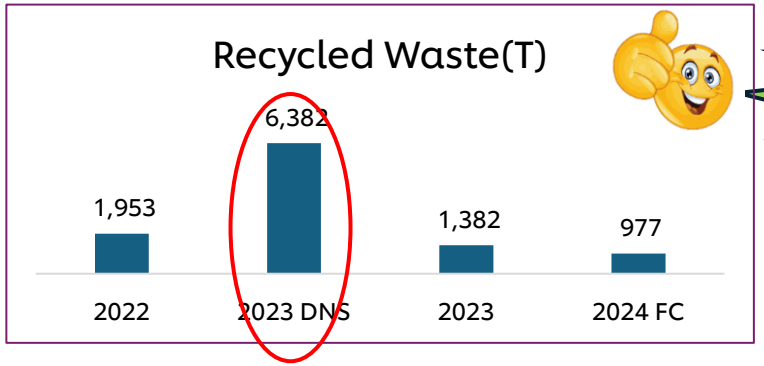
Elimination of Environment Hazard of Lagoon

Anaerobic Lagoon





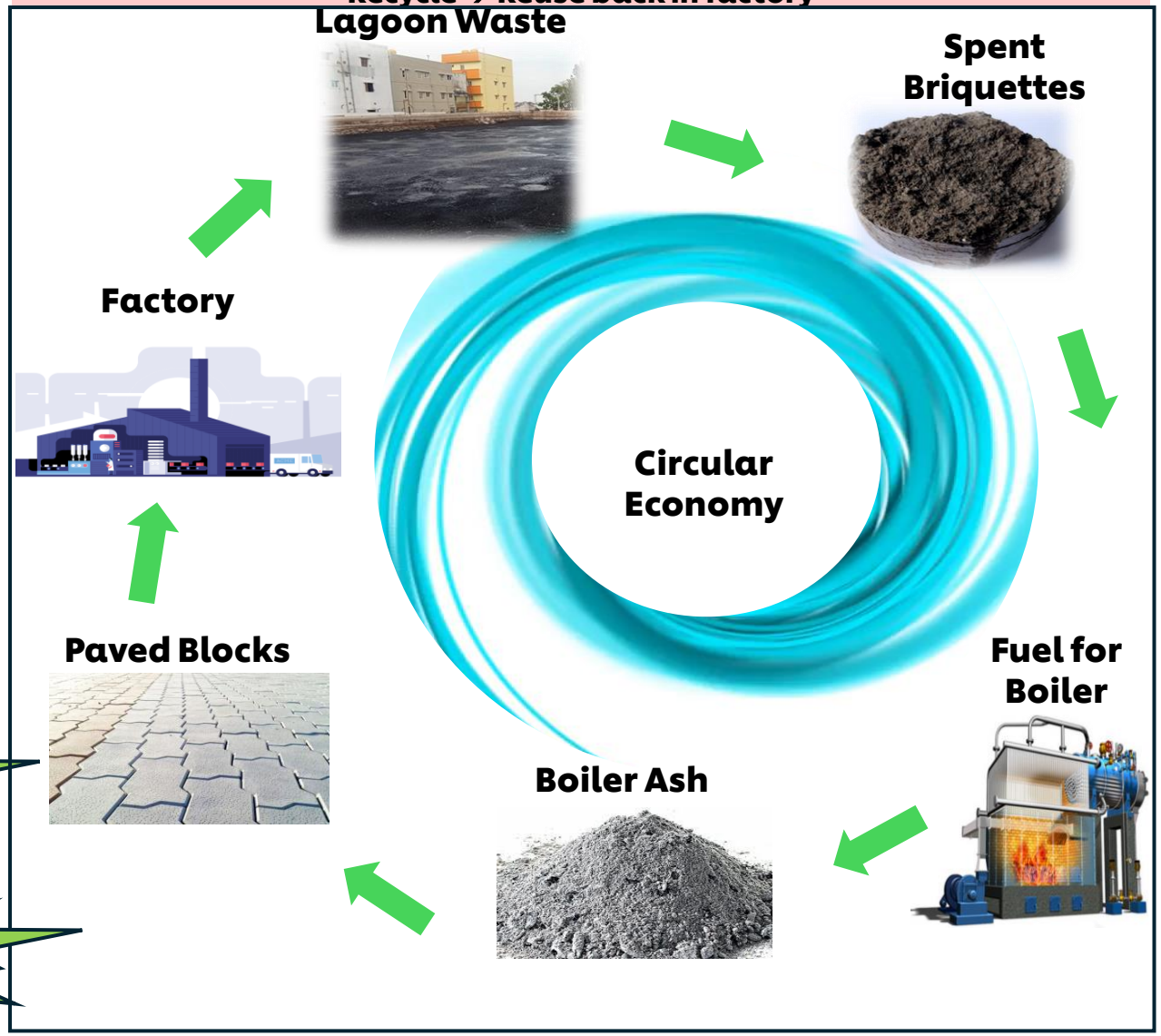
RESULTS



Halved Recycled waste

5000T of Lagoon waste collected

Converting crisis into opportunity
Recycle → Reuse back in factory



LEARNINGS FROM INDUSTRIAL BEST PRACTICES

Three Phase induction motor with blower

HP Consumption : 157 HP
Power consumption per day=1611KWH

Electronically Commutated motor with blower

HP Consumption : 55 HP
Power Consumption per day=814KWH

Idea of replacing conventional motors in our DHUs with **Electronically commutated motors** was adopted from one of the best practices presented in CII Energy Awards

AWARDS & RECOGNITIONS-WAY TO NET ZERO

2019

Achievements
1. Co2 Reduction – 680 Kg/ ton
2. Water Reduction- 1.8 Kl/ton
3. Energy Reduction – 0.7 GJ/ton
4. Waste Reduction - 6.7 tons

2020

Achievements
1. Co2 Reduction – 187 Kg/ton
2. Water Reduction – 0.6 Kl/ton
3. Energy Reduction – 0.1 GJ/ton
4. Waste Reduction – 4.5 tons

2021

Achievements
1. Co2 Reduction – 25 kg/ ton
2. Water Reduction – 0.8 Kl/ton
3. Energy Reduction – 1.0 GJ/ton
4. Waste Reduction – 22.4 tons

2022

Achievements
1. Co2 Reduction – 133 Kg/ton
2. Water Reduction – 0.1 Kl/ton
3. Energy Reduction – 0.2 GJ/ton
4. Waste Reduction – 2.7 tons

2025

Forecast
1. Co2 Reduction – 99%
2. Water Reduction – 50%
3. Energy Reduction – 19%
4. Waste Reduction – 65%

AMBITION TO BE PLASTIC AND WATER NEUTRAL WITH 98% GREEN ENERGY BY 2025

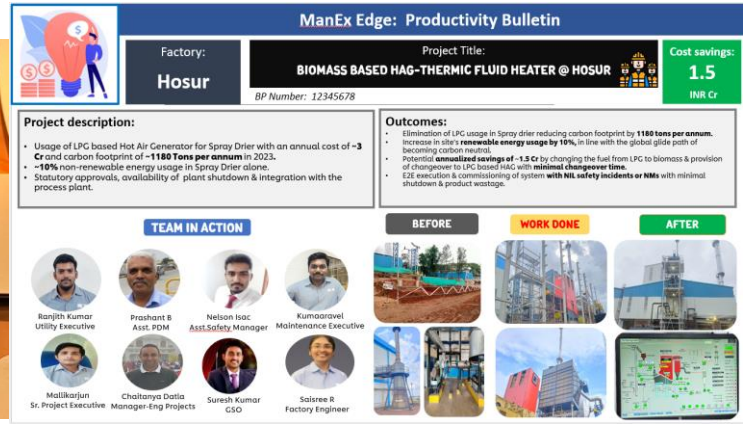
REWARDS & RECOGNITIONS - HOSUR

SKOCH ESG AWARDS - WATER MANAGEMENT INITIATIVES & ENERGY EFFICIENCY PROJECTS

"EXCELLENT ENERGY EFFICIENT UNIT" AT CII NATIONAL AWARDS FOR EXCELLENCE IN ENERGY MANAGEMENT

PRABHAT CSR RUNNER UP-2023

BIO MASS BASED HAG



"CERTIFICATE OF APPRECIATION" FOR GOOD PRACTICES IN DIGITAL SYSTES UNDER "OVERALL DIGITAL TRANSFORMATION" AT FICCI INDUSTRY 4.0 AWARDS

Thank you

THANK YOU

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