



# Multi Category Northeast Sourcing Unit

CII

SEPTEMBER 16, 2024



# HUL – DOOM DOOMA

PRIDE OF ASSAM – TEA | RHINO | BIHU | BRAHMAPUTRA



Housing picnic on bank of Brahmaputra



Traditional Singpho team lunch



Tea plucking outside factory wall



Bihu dance in RD guest house lawn

Factory amidst scenic tea garden !





# ROLE OF DDF IN B&W NETWORK

DELIVERING DELIGHT THROUGH OUR PRODUCTS

Tinsukia, Assam  
Population: 1.6m



Tea Capital of India

DDF

20.6%

13.7%

49.6%

16.1%

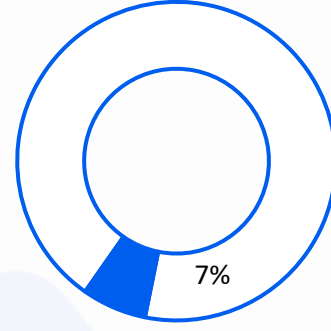
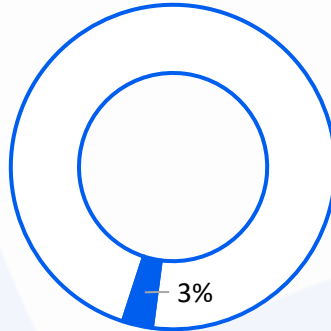


FY 2023

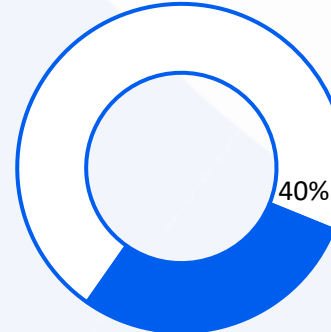
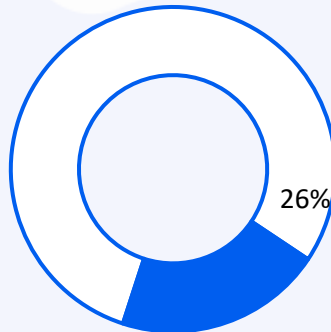
TO Contribution

Profit Contribution

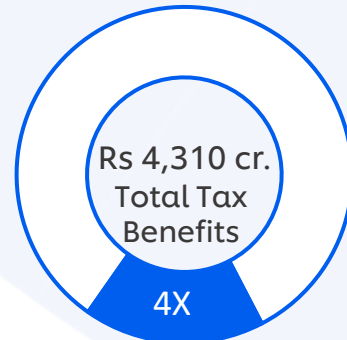
Unilever  
B&W



HUL  
B&W



Tax Benefits



Rs 4,310 cr.  
Total Tax  
Benefits

Rs 1,149 cr.  
Investment

SMALL C Turnover -2023

Beauty &  
Wellbeing  
26%



Hair Care  
20%

Skin Care  
36%



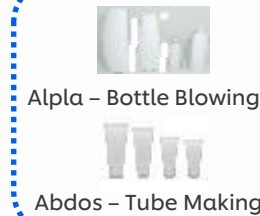
Personal  
Care  
3%

Oral  
23%



2001 | 2024 - 1

Vendor Park



Alfa - Bottle Blowing

Abdos - Tube Making

2003 - 2



2003 | 2013 - 3



2017 - 4



# HISTORY OF DDF

## 22 YEARS OF ESTABLISHMENT

# 22 years

Of glorious service in Tea town of Tinsukia.



## 2001

Setting up of **Unit 1 plant** with Shampoo bottles, Shampoo sachet and Cream tubes.



**Business Operations**



## 2003

Setting up of **Unit 2 plant** with Oral tubes manufacturing.

Setting up of **Unit 3** with Talc manufacturing.

## 2004

1<sup>st</sup> LTS signed amongst high internal and external disturbances.

Unit 1 extended with VPJ and Lotion setup.



## 2008

2<sup>nd</sup> LTS signed with new union post lockout.

TPM way of working kicked-off.

**Saral warehouse** constructed.

## 2009

Unit 3 setup for Talc closed and unit converted to Tea pilot plant.

RWH setup constructed in Unit 2 and admin facilities.



## 2013

**Unit 3 restructured** to run Cream Tubes.

Unit 1 product portfolio limited to Shampoo Sachet and bottles.

Bus facility started for employees.

## 2017

**Unit 4 Rhino plant** setup with state of art machines producing Cream pouches, Tubes and Shampoo/ Lotion bottle lines.



## 2018

**Site digital infrastructure** was built and OPC server establishment.

Vendor park started with Alpla for bottle blowing.

## 2019

Factory awarded with CM award for best compliance factory in Assam.



## 2020-2023

**2020** Unit 1 COVID capability to manufacture handwash.

**Vendor park expanded** with Abdos for Tube manufacturing.

**2021** **2MW solar plant** commissioned. IMeXi Gold award.

**2022** **Future ready FGI bottle line** commissioned.

New Vendor park with increased capacity.

**2023** **Suprabhat ITI** started.

**AMR** introduced at site.

UMS launched.

**RWH Pond** with 11000kL.

**DTC** and **digiDMC** started.

**Factory Control Tower**.

**2024** **Dark Cascade** commissioned.

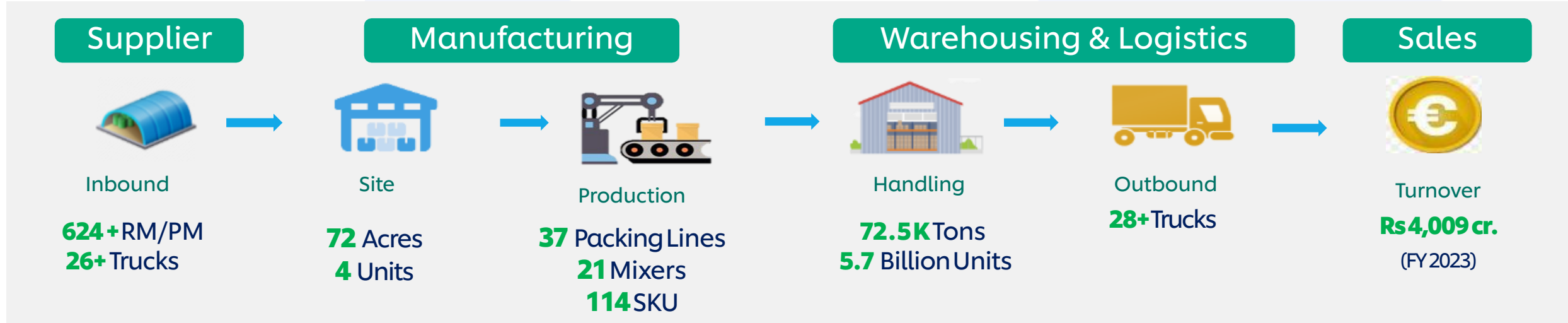
**DEOC** and **DVOC** started.

**AI application** in Utility



# FACTORY PASSPORT

## SITE IN NUMBERS



ELEMENT	U4	U2	U1-3	TOTAL
Asset Base (GBV) – (Rs Cr.)	836	80	233	<b>1,149</b>
Asset Base (NBV) – (Rs Cr.)	553	37	104	<b>694</b>
Turnover- (Rs Cr.)	2,664	425	920	<b>4,009</b>
Manpower FTE	285	150	193	<b>628</b>
Volume 2023 (KT)	<b>32</b>	<b>10</b>	<b>30</b>	<b>72</b>

## EMPLOYEE DEMOGRAPHIC DETAILS

### EMPLOYEE COUNT

49

White Collar

628

Blue Collar

### AVERAGE AGE

36

White Collar

43

Blue Collar

### GENDER DIVERSITY

33.3%



1.3%

White Collar

Blue Collar

### EMPLOYEE SKILLS

47%

Technical

53%

Non-Technical


# UNILEVER HSE&S VERTICAL AND DOOM DOOMA FACTORY TEAM




**SCHUMACHER HEIN**  
CEO




**REGINALDO ECLISSATO**  
CDO



**LAURA AMBROSE**  
C SHEO



**TEJAL TYAGI**  
GM SHE SA




**SNEH SHRIYANSH**  
CAT- SHE MANAGER, B&W




**BIKROMJIT TAMULY**  
UNIT SHE MANAGER, DDF




**RAFIKUL RAHMAN**  
SHE EXECUTIVE, DDF




**ROHIT JAWA**  
CEO, HUL




**YOGESH MISHRA**  
ED & VP, SC




**SUNDAR MAHAJAN**  
HEAD B&W




**APOORVA SINGH**  
SITE DIRECTOR, DDF




**ASHISH BANSAL**  
SITE ENGG & Process Mgr




**Rupsha Bhattacharya**  
Site Engg




**ISHANI SARMA**  
MANEX EXECUTIVE, DDF



**BITUPAN BHUYAN**  
UTILITY EXECUTIVE, DDF



**SOMASHRI ROY**  
UTILITY EXECUTIVE, DDF



**KIRAN BHAGORA**  
UTILITY EXECUTIVE, DDF





# ENVIRONMENT: VISION AND OBJECTIVE

## Unilever VISION



Be a **WORLD class Excellence center** in delivering outstanding safety results and Superior Quality products with world class service at an optimal cost pioneering in digital as a **GLOBAL Multi-Category sourcing unit**.

**Make sustainable living commonplace – The Unilever Sustainable Living Plan**

- ✓ **De-couple our growth from our environmental footprint**, while increasing our positive social impact
- ✓ **450 billion+** litres of water conservation potential created
- ✓ **47%↓** in carbon footprint vs 2008 baseline
- ✓ **30%↓** in plastic use vs 2010 baseline`

## Doom Dooma Vision



Having a brilliant Compliance , Eco-Efficient and Positive Impact on Environment.

## Factory Objectives

- **Till 2022 December**
  - 15% Electricity through Solar and , 70% of site fuel is now biomass
  - ZLD site, 30% process water Rainwater harvesting.
  - Zero waste to landfill site.
- **Road map till 2025 for becoming**
  - Net CO<sub>2</sub> Neutral – Zero non-renewable fuels (gas and HSD),
  - Becoming Water positive site (No net intake for process water),
  - Zero packaging waste.

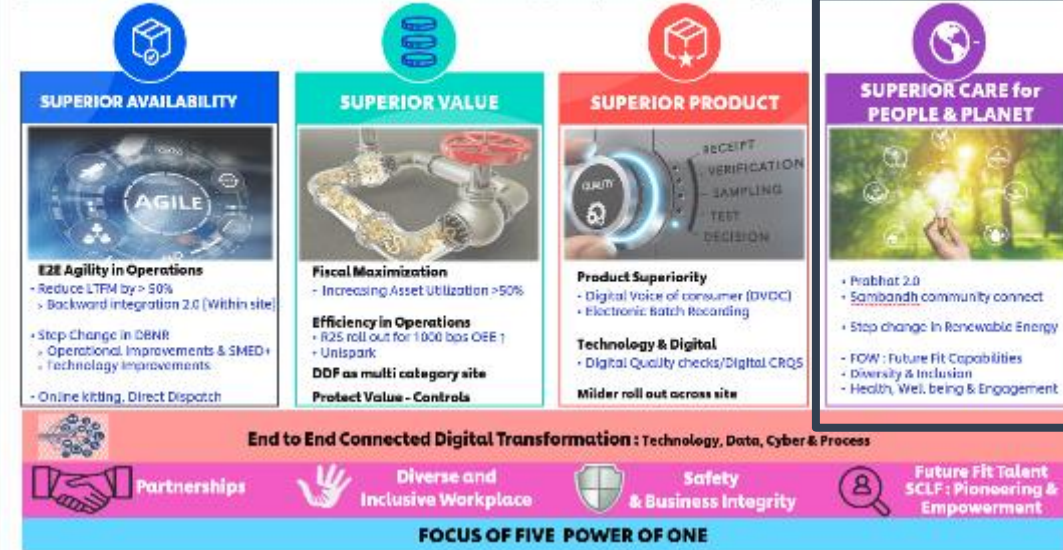


## SITE STRATEGY – 2022 TO 2025

Leaner, Faster, Greener, Stronger

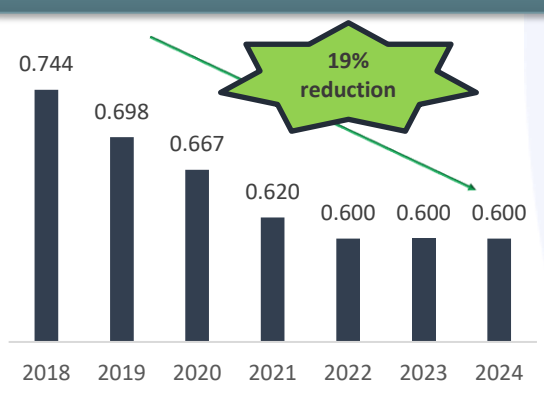
**Vision : To be a Beacon for end-to-end Agility in Unilever, embedding Digital**

Thru, 50% LTFM Reduction | 100% Backward Integration | 100% Renewable Energy | 100% Future Fit

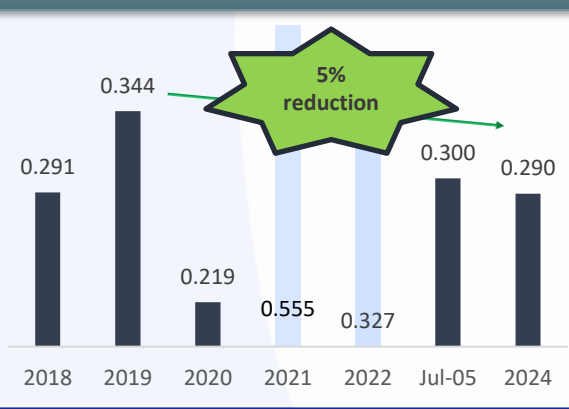


# ENVIRONMENT PERFORMANCE REVIEW (2018-2024)

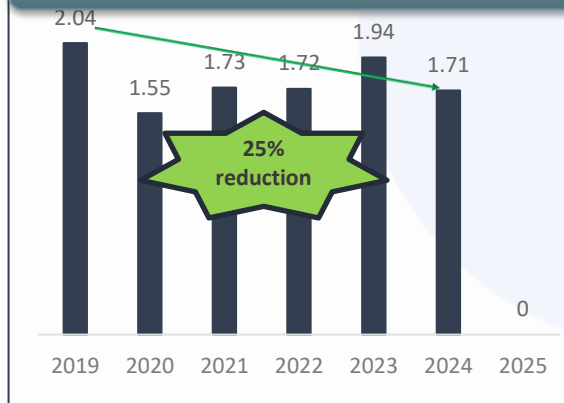
## Grid Energy per ton (GJ / T)



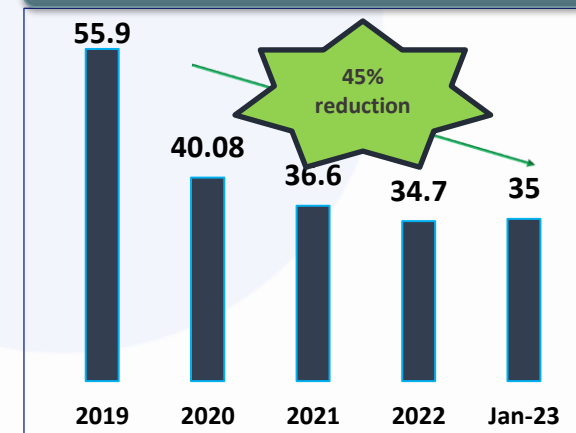
## Natural Gas (GJ / ton)



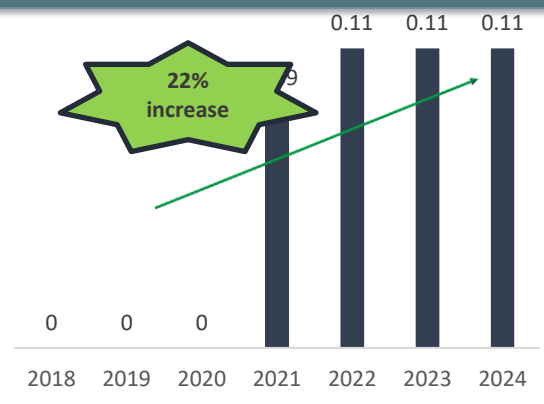
## Groundwater (KL/Ton)



## Waste (Kg/Ton)



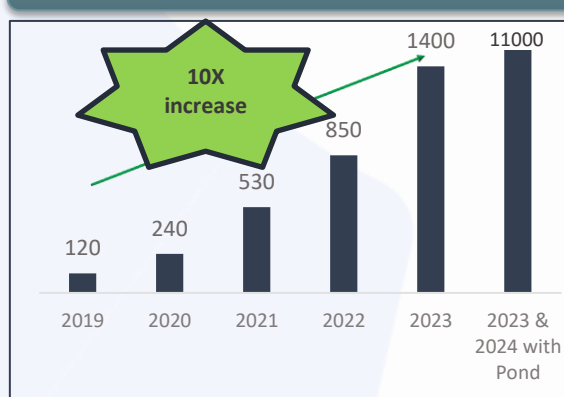
## Solar Energy (GJ/T)



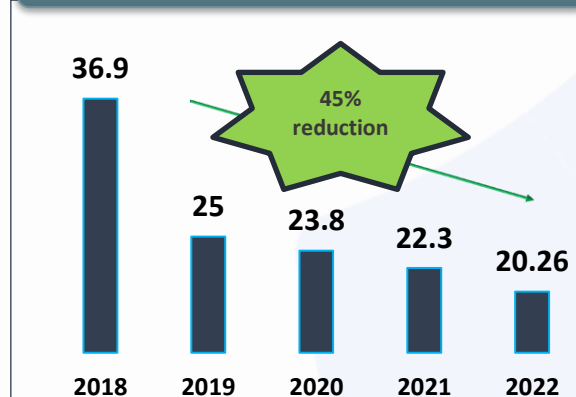
## Carbon-dioxide (Kg / ton)



## Rainwater Storage (KL)



## Recycle Waste (Kg / T)



### Energy

Savings: 10 Cr / annum

### Water

Scope of 40k Tonnes of Volume Insourcing

### Waste

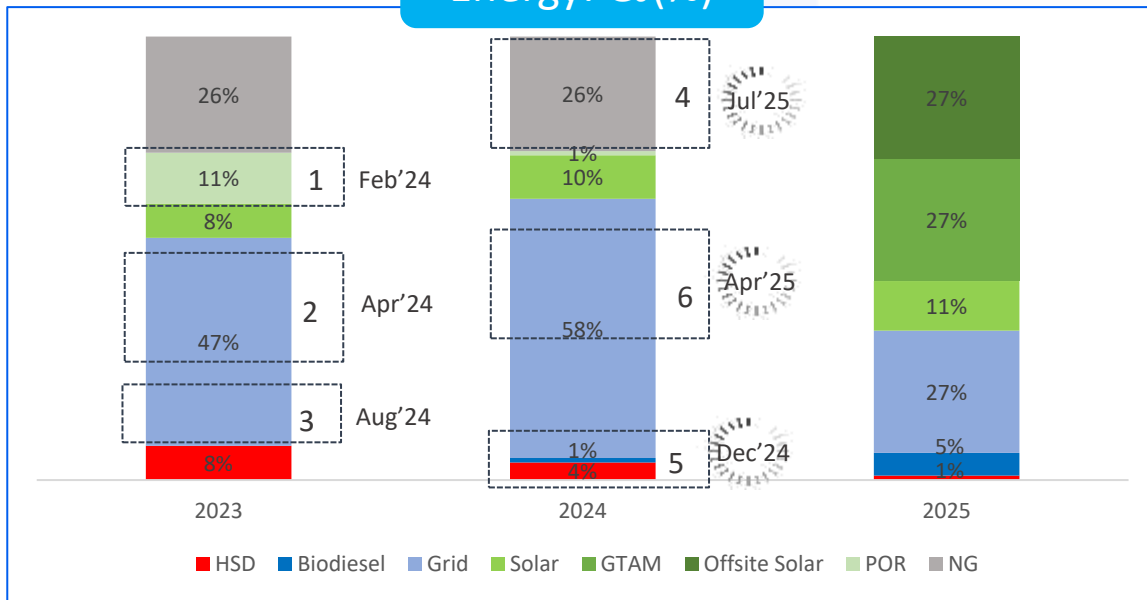
455 Tons



# ENERGY ROADMAP 2025

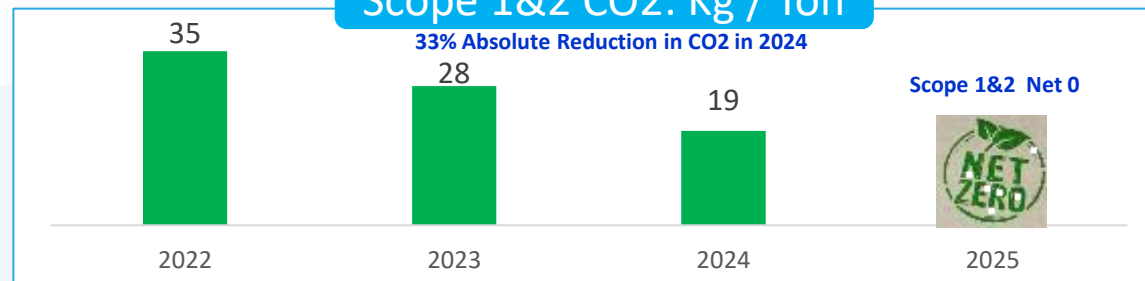
## CARBON NEUTRAL JOURNEY – ELIMINATION OF NG & HSD BY 2025

Energy: GJ(%)



	Target	2023	2024	2025
<b>Criteria 1:</b> Scope 1&2 GJ as % of Total GJ	<2%	34%	30%	0.63%
<b>Criteria 2:</b> Scope 1&2 GJ	<1000GJ	33,289	22,412	394
<b>Criteria 3:</b> Refrigerant top up (T)	<50T	18	21	0

Scope 1&2 CO2: Kg / Ton



Electricity Natural Gas



**Project 1 : 0 Waste Utility** - High COP Heat Pump from waste Heat Recovery | **Boiler Less Site Phase 1**  
Savings – **1.7 Cr (FY 2.4 Cr)**

NG Elimination

**Project 2 : Next Practices:** AirNet + ATCS + Vacuum Pumps Consolidation) + HP LP Air Circuit + HWCW Consolidation + U1&3  
Savings – **3 Cr (FY 3.8 Cr)**

**Project 3:** Low GWP Refrigerant based Magnetic Chiller  
Savings – **0.3 Cr (FY 1.6 Cr)**

High GWP Refrigerant elimination

1.9

11.6

**Project 4:** Modular Steam Generators for pure steam | **Boiler Less Site Phase 2**

NG Elimination

**Project 5 :** 100% Biodiesel in DGs  
Savings – **0.3 Cr**

HSD Elimination

**Project 6 :** Offsite Solar & GTAM  
Savings – **2 Cr (Assam Solar trading policy revision pending)**

1.9

9.3

**Scope 3:** 80% Reduction achieved in logistics through vendor park

2024 DNS

5 CR savings

2024 CV

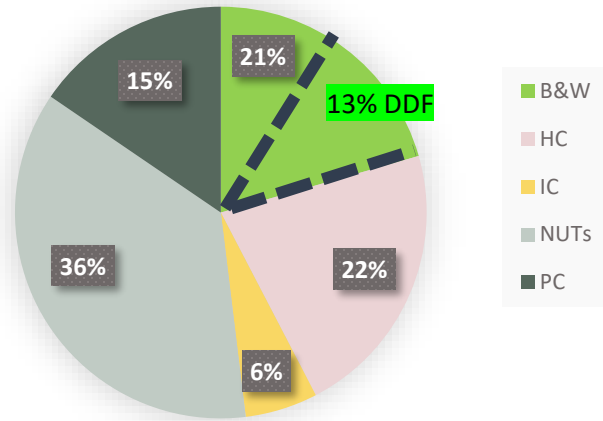
2.3 CR SAVINGS

2025

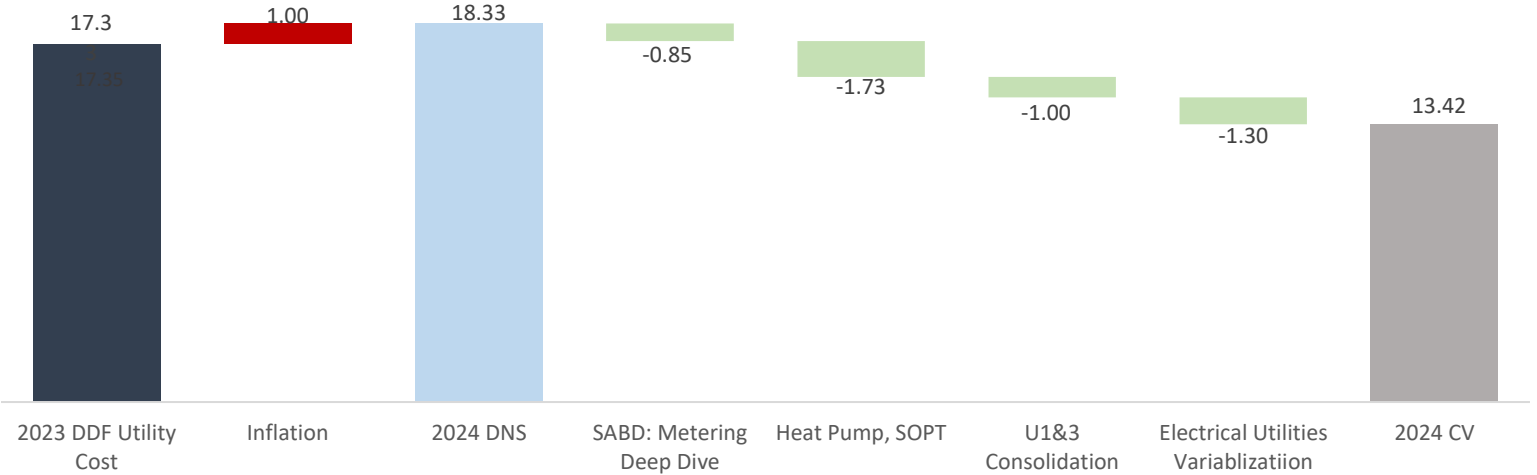
# NET PRODUCTIVITY – UTILITIES

## NEXT TECHNOLOGIES TO REDEFINE STANDARDS

DDF contributing 10% of SA Energy saving

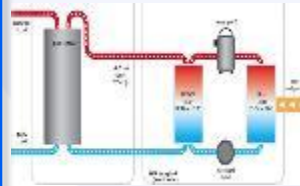


DDF Utility Cost (Crores)



	DDF	U1&3	U2	U4
2023 DDF Utilities Cost (Cr)	17.35	4.79	2.19	10.34
Volume	71691	30,342	9,862	31,487
2024 Utilities Cost (Cr)	13.42	3.03	1.94	8.42
Volume	65013	19203	10,106	35,704
Absolute Reduction %	-23%	-37%	-11%	-19%
Utility CPT Reduction %	-15%	0%	-14%	-28%

### 46% Absolute Thermal Bill Reduction – Rs 1.73 Cr



- Waste recovery-based heat Pump
- SOPT for high temp condensate recovery
- High efficiency economi

### 18% Absolute KWH Reduction – Rs 3.3 Cr



- ATCS: Automate d chiller cleaning system

0.5 Cr



- IE5 Pumps
- Magnetic Chiller
- HWCW consolidation

0.9 Cr



- Air Net
- HP LP Segregation

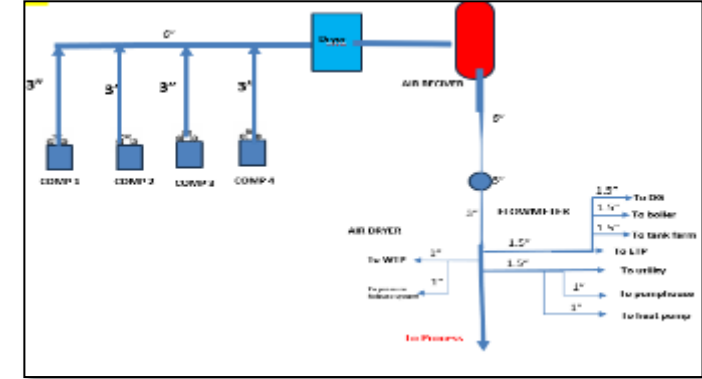
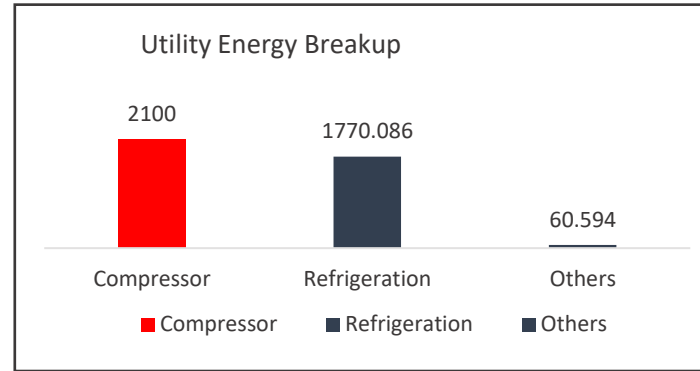
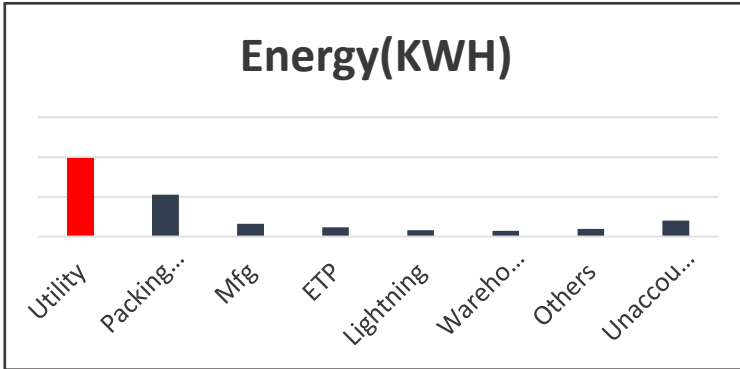
0.4 Cr



- U1&3 Consolidation
- 6 days operation

1.3 Cr

# Enhancing Compressed Air System Efficiency - Actions from Generation to Distribution



## GENERATION

### Step-1 - Advance VFD+ compatible Compressor



Compressed Air cons @100 KW motor for 1hr	
Capacity	500 CFM
Requirement time	250 CFM/hr
Motor capacity	55 KW
	Before After
Loading Time	1 2
Unloading Time	1 0
Energy cons during loading (KWH)	55 27
Energy cons during Unloading (KWH)	18 0
Total	73 27

63% Reduction

The new revolutionary GA 75L-110 VSD\* is packed with innovative features that increase its efficiency, cut its energy consumption, lower its noise levels, and reduce its operating costs. On top of that, it meets or even exceeds all currently applicable standards.

### Step-2 - Cool Air intake



Heat Pump Installation next to compressor to provide cooler suction air

#### Cool air intake

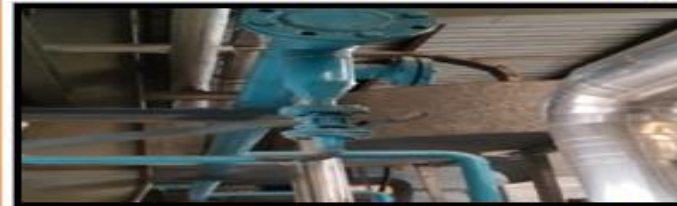
As a thumb rule, "Every 4°C rise in inlet air temperature results in a higher energy consumption by 1% to achieve equivalent output". Hence, cool air intake leads to a more efficient compression (see Table 3.2).

## TRANSMISSION

### Step-1 - Inlet from Bottom, Outlet from Top



### Step-2 - 5°C inclined header for moisture separation



### Step-3 - Ideal Process Flow Design



Dry receiver closes to highest consumption section  
Even utility tapping taken after dry receiver header

## DISTRIBUTION

### Step-1 - Loss Because of Excess air pressure in Pneumatic cylinder

Description	@5KG	@6KG	UOM
Cylinder Bore	0.025	0.025	mtr
Cylinder stroke	2	2	mtr
no. of strokes	6	6	per min
Air cons.	8.7	10.4	CFM

Description	@5KG	@6KG	UOM
Cylinder Bore	0.025	0.025	mtr
Cylinder stroke	2	2	mtr
no. of strokes	6	6	per min
Air cons.	8.7	10.4	CFM



### Step-2 - Separate Air header for Mfg and Packing with different pressure setpoint





# Enhancing Compressed Air System Efficiency - Actions from Generation to Distribution

## GENERATION

### Step-3 – FAD Testq for Compressor Delivery

$$Q = \frac{P_2 - P_1}{P_0} \times \frac{V}{T} \text{ Nm}^3 / \text{Minute}$$

- P<sub>2</sub> = Final pressure after filling (kg/cm<sup>2</sup> a)
- P<sub>1</sub> = Initial pressure (kg/cm<sup>2</sup> a) after bleeding
- P<sub>0</sub> = Atmospheric Pressure (kg/cm<sup>2</sup> a)
- V = Storage volume in m<sup>3</sup> which includes receiver, after cooler, and delivery piping
- T = Time take to build up pressure to P<sub>2</sub> in minutes

P2	7.2	
P1	1	
P0	1	
V	2.1	M3
T	0.95	Min
FAD	506	CFM

- Area should be clean as suction filter choking ill increase the power cons
- Proper PM schedule

## TRANSMISSION

### Step-4– Right Dryer selection based on correction factor

Parameter	Value 1	Value 2	Unit
Dryer capacity	800	800	CFM
Pressure	7	7	KG/cm <sup>2</sup>
Ambient temp	35	40	DegC
Inlet air temp	35	40	DegC
Dryer Capacity	736	598.4	CFM

### Step-5 - Right selection of pipe dia to avoid transmission loss

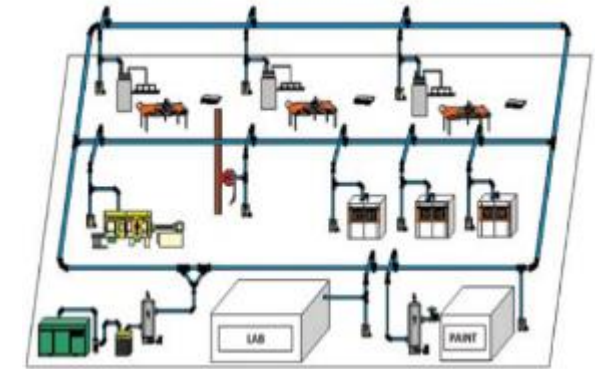
Table 3.11 Typical Energy Wastage due to Smaller Pipe Diameter for 170 m<sup>3</sup>/h (100 cfm) Flow

Pipe Nominal Bore (mm)	Pressure drop (bar) per 100 meters	Equivalent power losses (kW)
40	1.80	9.5
50	0.65	3.4
65	0.22	1.2
80	0.04	0.2
100	0.02	0.1

- For multiple Air dryer same concept can be applied of connections
- Dry air receiver should be installed near to plant
- Auto drain valve for all receivers

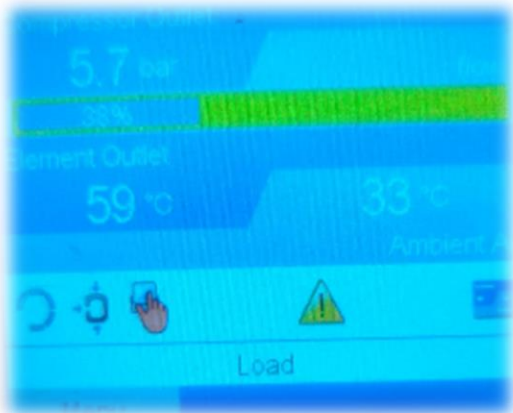
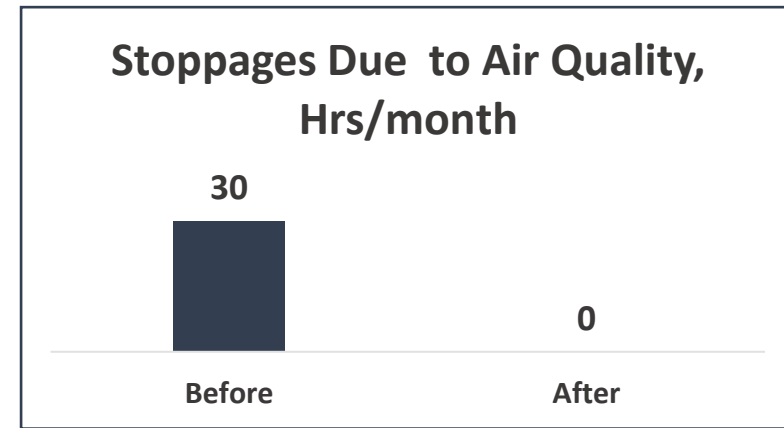
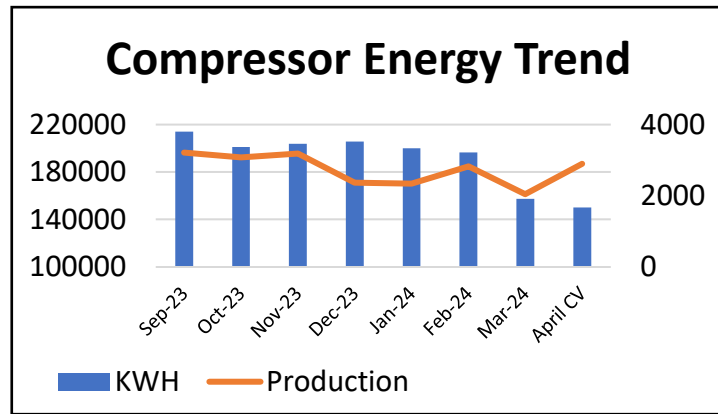
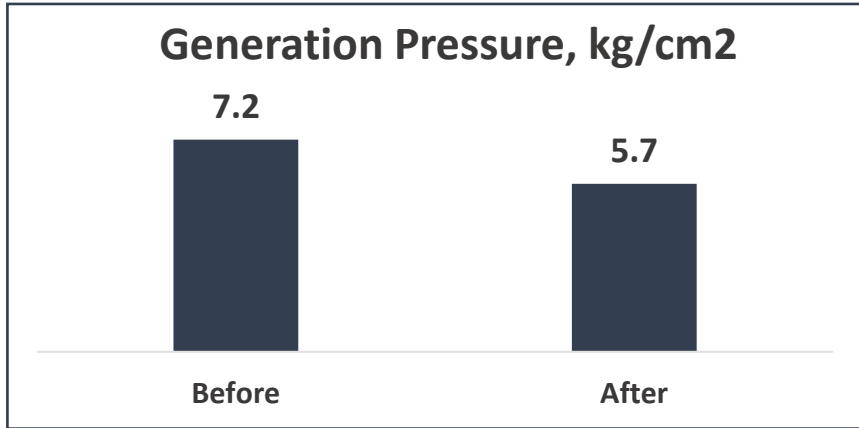
## DISTRIBUTION

### Step-3– Ring main Air header for packing hall



- Different size lines used to control differential pressure to manufacturing and packing from same header.

# Enhancing Compressed Air System Efficiency - Actions from Generation to Distribution



Reading at Compressor

5.7



Reading at Receiver

5.7

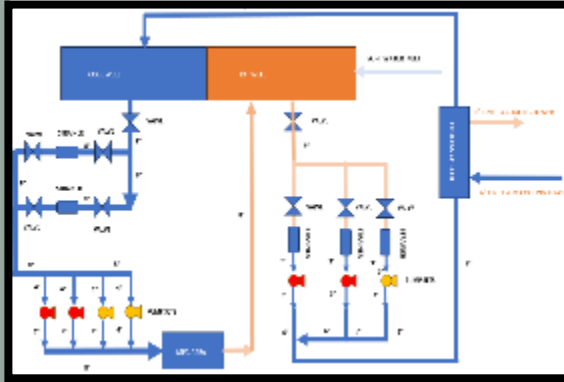


Reading at Machine

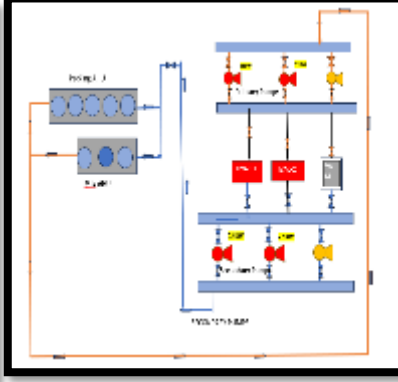
# U4 UTILITIES - REFRIGERATION SYSTEM'S PERFORMANCE

BEFORE

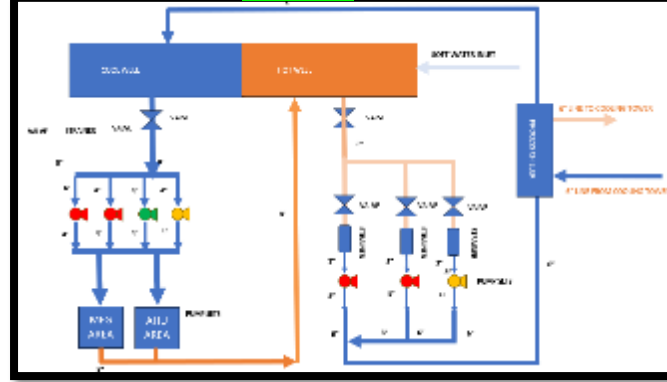
AFTER



Existing Process Chiller Layout



Existing HVAC Chiller Layout



Post Consolidation



Inhouse Redesigning Piping



Cooling Tower Consolidation

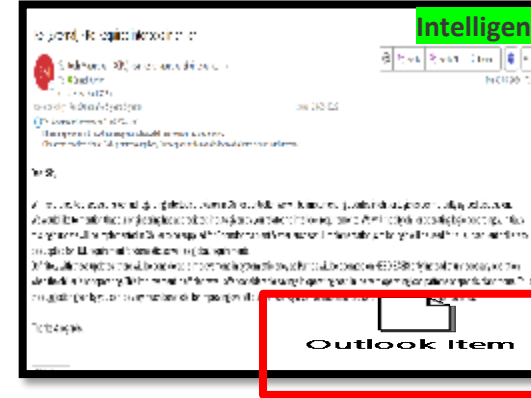


15 enabled High efficiency pump

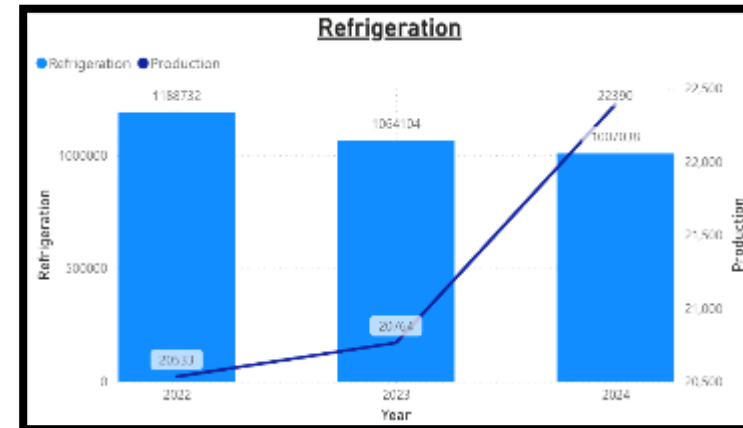
AI Pumps



Magnetic Chiller



Intelligent Process Control



✓ Annualised savings of Rs 70 lakhs  
 ✓ Electricity savings of Rs 5 lakh KWH



# ***OEM – ACCEPTANCE FOR TECHNOLOGY CHANGE EMAIL***

**From:** Santosh Masurekar (KCPL) <[santosh.masurekar@kirloskar.com](mailto:santosh.masurekar@kirloskar.com)>  
**Sent:** Thursday, May 30, 2024 5:29 PM  
**To:** Bansal, Ashish <[Ashish.Bansal@unilever.com](mailto:Ashish.Bansal@unilever.com)>  
**Cc:** Nilesh Raut(KCPL) <[nilesh.raut@kirloskar.com](mailto:nilesh.raut@kirloskar.com)>  
**Subject:** Re: [External] - Re: Required interlocks in chiller

Dear Sir,

With reference to discussions we had regarding interlock provision in Chiller controller, we will be implementing updates in chiller logic as per mutually agreed discussion.

We would like to mention that our engineering has appreciated inputs given by you related to interlock requirements. We will modify chiller operating logic accordingly. Initially this logic update will be implemented in Chiller to be supplied for Doomdooma plant & after successful implementation, similar logic will be used for all subsequent chillers to be supplied for HUL requirement for domestic as well as global requirements.

Definitely with these updates, there will be considerable improvement in system efficiency as Pumps will be operated on NEED BASIS only instead of unnecessary operation when the chiller is not operating. This improvement in efficiency will offer considerable savings in operating cost, inline with operating load patterns at specific plant rooms. Thus the suggestion given by you can be very much beneficial for improving overall plant efficiency & can be implemented for other chillers too for similar benefits.

**Subject:** Intelligent Process Control - Major Breakthrough in Chiller Efficiency Achieved through! - FIRST FOR ANY COMPANY GLOBALLY

Dear Sirs,

We're excited to share with you a significant development that will lead to **major cost savings of 25 lakhs INR ( 30k Euros) annually in our chiller operations** with **Zero cost**.

Through a collaborative effort with the Kirloskar team, we've successfully modified the internal operational logic of our chillers, which is **first of a kind for any chiller Globally as confirmed by Kirloskar team** [New logic acceptance Mail appended].

This is achieved through **real-time Intelligent Process Control** system being inbuilt in Chiller itself.

## **Current System Inefficiency:**

In the current system, both the evaporator and condenser pumps (200 TR - 18.5 kw condenser and 11 kW for evaporator) operate continuously, even when the chiller is under unload.

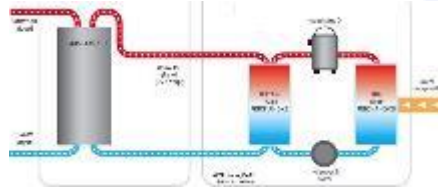
While this ensures the chiller can sense and respond to increased cooling demands, it also leads to unnecessary energy consumption during periods of low activity.

# OTHER INITIATIVES: VARIABALIZED UTILITIES

DRIVING BUSINESS GROWTH THROUGH BOTTOM LINE IMPROVEMENT **ACROSS B&W NETWORK**

## THERMAL

PASTEURIZATION



- Waste Recovery Based Heat Pumps for hot water generation process
- Complete Boiler Elimination – 5 ton boiler switched off
- 27% Absolute thermal bill reduction achieved July YTD

STEAM FOR MELTING APPLICATION



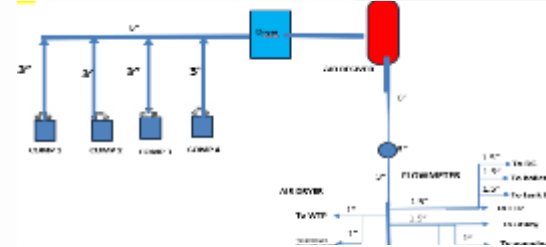
SOPT: Manuf. pressure changed from 3.5 bar to 1.7 bar



High Efficiency Economizer for >80C condensate recovery

## ELECTRICAL

COMPRESSOR



HP LP Segregation: Set point changed from 7.1 to 6.1



Airnet installed

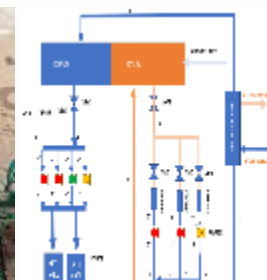
CHILLERS



ATCS installed



IE5 Pump with consolidated HWCW operations



Magnetic Chiller COP 8

VACUUM PUMP



Consolidation of packing Vacuum Pumps

ETP



AI based ETP Operations

# ZERO WASTE UTILITY

This Singapore tech company says its recycling 90% of waste heat from Bitcoin mining

Godrej & Boyce reduces carbon footprint with innovative heat recovery system

Waste Heat Recovery System Market to Worth USD 127.2 Billion by 2030 | Skyquest Technology

## Waste Recovery based Heat Pump



Air Compressor Heat Recovery



Centralized Vacuum Pump Heat Recovery

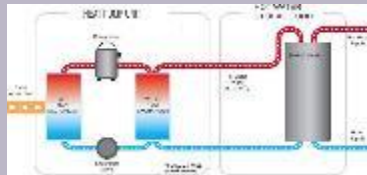


Cooling Tower Heat Recovery



SOPT for high temp condensate recovery

### Heat Pump



50% reduction in cost of heating wiz-a-viz boiler, to make pasteurized water

70% of Boiler Elimination

## Waste Heat Turbine

Cooling Tower exhaust air waste based Heat Recovery to generate electrical power



## AI Based waste alerts & autonomous decision to suggest energy strategy

### Electrical

- Onsite Solar
- Wind Turbine
- Power trading: GTAM & Offsite Solar
- Biofuel, Grid
- HSD

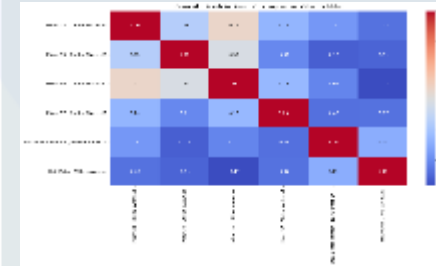
### Thermal

- Waste recovery
- Heat Pump
- POR boiler
- Electrical heat Pump
- Modular steam generator, Biofuel
- NG

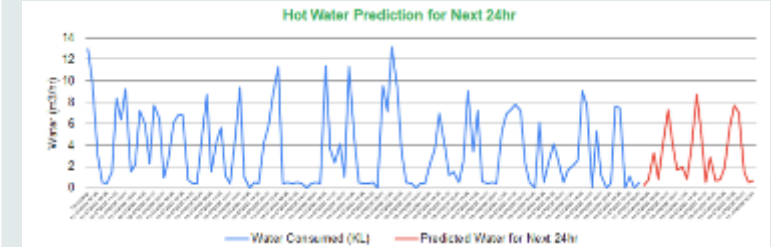


Potential of 40%-60% Waste heat recovery

## AI Based Demand Supply Mismatch Mitigation



Basis forward planning of mixer, we predict requirement of various utilities like hot water & steam. Basis this the readiness level of these systems get balances to optimize cost



### Recommendations:

- Level of 25 Kl tank with predicted process demand
- Heat Pump running status basis COP benefit analysis
- Flow rate of recoveries

### Benefits Delivery :

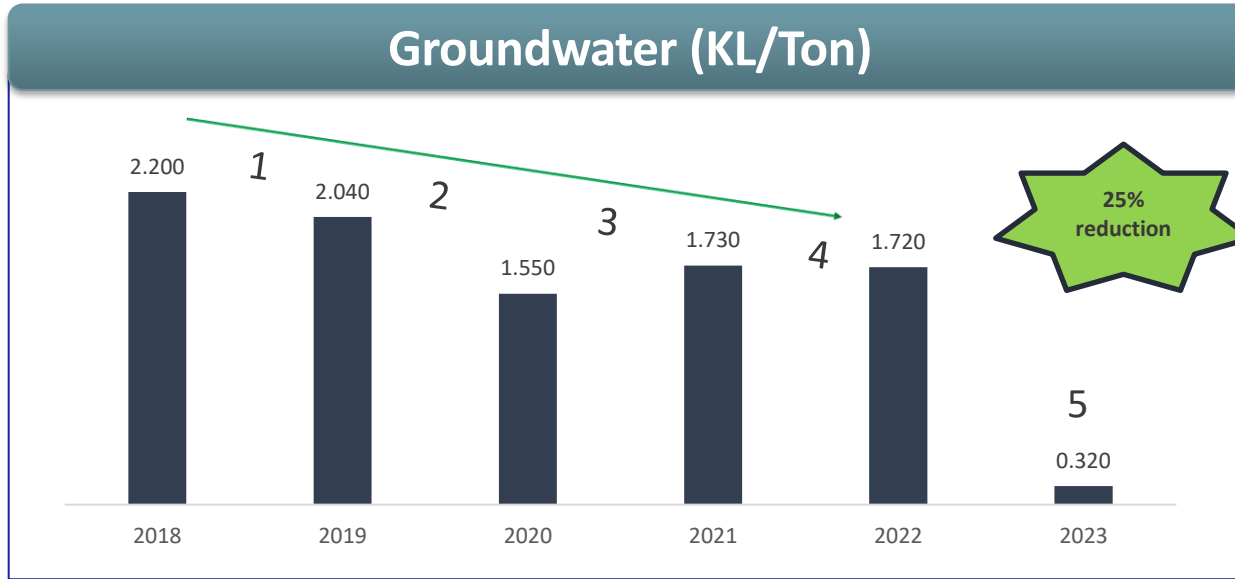
Recommendation	Timeline	Average SSC	% Reduction
Water Buffering	7 mo. 15 days	1.7%	0%
Parameter based COP Recalculation	17 mo. 15 days	1.5%	0%
Tank level based Recalculation	27 mo. 15 days	1.2%	0%
Stack Temp based Recalculation	37 mo. 15 days	1.0%	0%





# WATER ROADMAP 2020 - 2023

30% RAIN WATER HARVESTING TO WATER POSITIVE FOR NON PROCESS WATER  
ZERO LIQUID DISCHARGE SITE



## Project 1: SABD:

- Reusing ETP treated water for ETP incoming effluent dilution
- Reusing RO rejected water for toilets flushing
- Arrested multiple minor and major water leakages points and overhead tanks overflowing

## Project 2: Rain Water Harvesting: Complete roof top cover

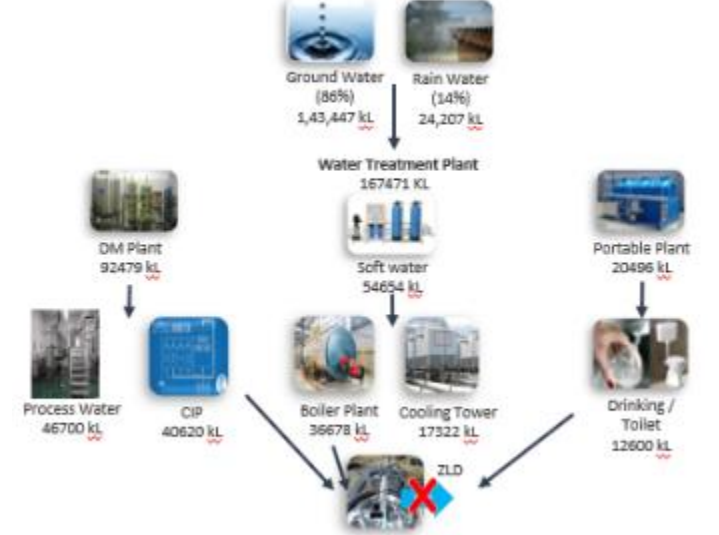
Project 3: IOT based Closed loop water monitoring and daily tracking

Project 4: Changeover Playbook

## Project 5: DDF Pond

Savings  
70k KL water

## DDF Pond



Product Water: 57%  
Process Water: 43%

Scope of 3x increase in Rainwater Harvesting  
to be net positive for non product water



1 lakh Litre water required, 5000 KL storage capacity  
Sufficient area present to safely execute plan

# NET PROCESS WATER POSITIVE SITE: A STEP TOWARDS WATER POSITIVITY

**1.2 LAKH KL RWH POTENTIAL CREATED | RWH - 52% 2023 VS 14% 2022**

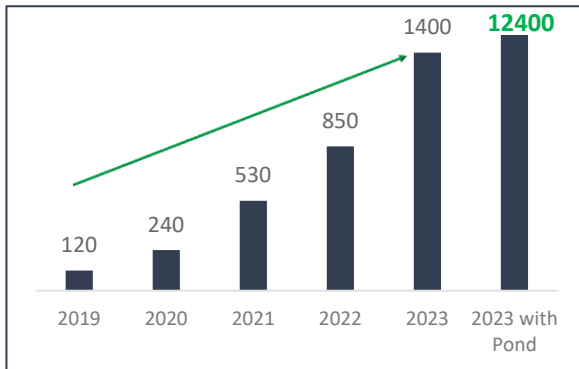
\*\* [PCP & eMOCS under closure]

## Water Storage: DDF Pond



11000 KL Pond water storage created: **10X increase from 2022**

## Rainwater Storage (KL)



Necessary to increase storage

## Water Collection & Transmission



### Collection Source & annual capacity

1. Rooftop RWH: 72k KL
2. Solar Panel 2MW: 18k KL
3. Pond: 6k KL
4. ETP Reuse: 21k KL

**Total: 1.17 lakh KL**

Q3

### Water Transmission

1. ETP U4
2. Soft Water Circuit U4
3. Central Soft water Circuit
4. Overflow lines connection
5. RO plant inlet & Outlet

**Max Usage: 0.74 lakh KL**

Q3

Product Water & CIP: 0.93 | KL

Soft Water 0.54 | KL

Portable Water 0.2 | KL

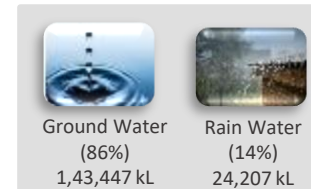
**Net Process Water Positive in SH'23!**

## Results & Way Ahead

### Groundwater (KL/Ton)

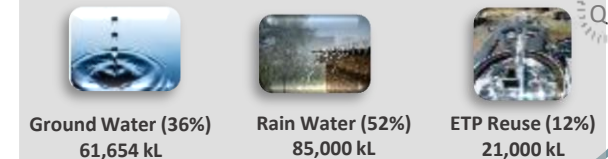


### CURRENT



1. PCP for Product water: 0.43 | KL: All learnings from AmlI incorporated
2. 7 acres surface catchment to be increased for rem 0.5 | KL

### 2023



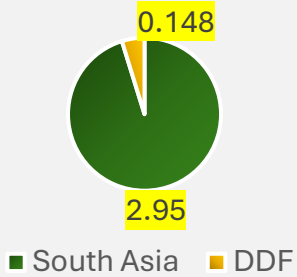
Q3

**Next Practice:** 20+ new water meters ordered. Real Time AI-based water consumption & harvesting forecasting to be better prepared logistically and utilize all water

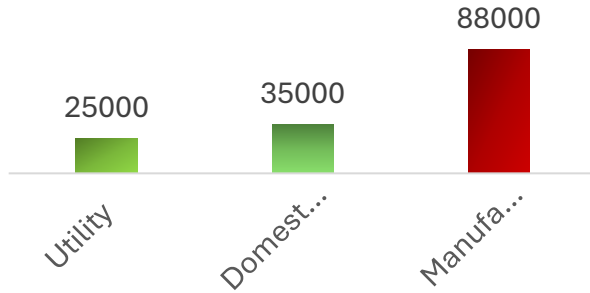


# Groundwater Recharging Project

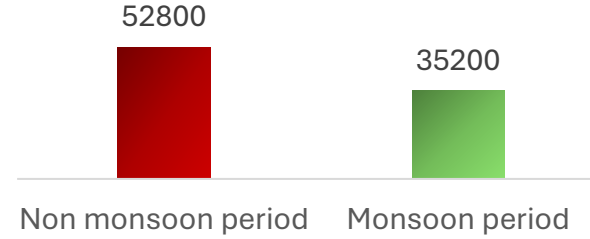
DDF Water contribution - SA



Water Consumption (M3)



Season wise Process water Breakup (M3)



Monsoon Period



Capacity- 11000 KL

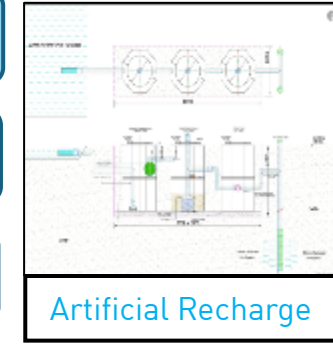
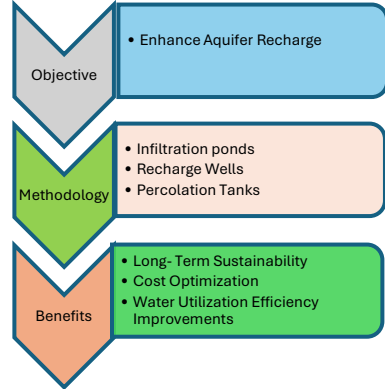
Non-Monsoon Period



Heading: 0.0000000	Tilt: 0.0000000
Range: 5,939.8669036 m	
Latitude: 27.5356117	Longitude: 95.5254201
Altitude: 152.8148339 m	

**Total Land Potential - 3.75 KM2**  
**Current area identified - 0.07 Km2**  
**GWR potential - 10000 KL**

Groundwater Recharging Technology

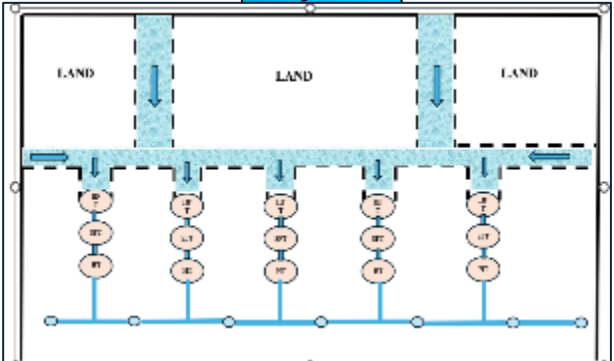


Ground Water Recharge

Well No.	Well Depth (m)	Well Diameter (mm)	Well Type	Well Status	Well Location
1	100	150	Open Well	Active	Area 1
2	120	150	Open Well	Active	Area 2
3	150	150	Open Well	Active	Area 3
4	180	150	Open Well	Active	Area 4
5	200	150	Open Well	Active	Area 5
6	220	150	Open Well	Active	Area 6
7	250	150	Open Well	Active	Area 7
8	280	150	Open Well	Active	Area 8
9	300	150	Open Well	Active	Area 9
10	320	150	Open Well	Active	Area 10

Artificial Recharge

Layout



Site Implementation



Way Forward -Doom Dooma Tea garden's



**Annual potential of 30 M -M3 an overall Net Zero for HUL South Asia**



# RAINWATER HARVESTING

**SUSTAINABLE DEVELOPMENT GOALS**

- 7 AFFORDABLE AND CLEAN ENERGY
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- 13 CLIMATE ACTION
- 15 LIFE ON LAND
- 17 PARTNERSHIPS FOR THE GOALS

**RW Storage capacity (KL)**

Year	Capacity (KL)
2019	120
2020	240
2021	550
2022	850

**65963 KL water harvested in the last 4 years**

- 3x of Rain water harvesting achieved in last 4 years
- Plan of 60 KL RWH in 2023 utilizing DDF Pond
- Ambition of Water positive factory for non process water by 2023

# CHANGEOVER PLAYBOOK

**CHANGEOVER PLAYBOOK FOR FAST PRODUCT C/O - BL**  
**JUST ENOUGH CLEANING to achieve the QUALITY GOAL** 963 Combinations ...m<sup>3</sup>/T of water saved

**Problem Statement**

- To improve Agility, the number of changeover has doubled resulting in high Water & Product wastage

**Wave 1- Landed In 2020-21 – attacking ~300 Combinations**

Year	No. of changeovers	Energy (GJ)	CO2 (KT)	Water (m <sup>3</sup> )	Waste & COD (T)	Changeover Loss
2020	2140	38.12	1.18	38.74	437.58	9%
2021 DNS	2854	48.54	1.45	51.07	604.2	12.33%
2021	2854	45.07	1.32	45.23	523.61	10%

**Wave 2- Completed by July 2022**

Year	No. of changeovers	Energy (GJ)	CO2 (KT)	Water (m <sup>3</sup> )	Waste & COD (T)	Changeover Loss
2021	2854	45.07	1.32	45.23	523.61	10%
2022 DNS	4000	57.38	1.62	59.62	722.98	13.54%
2022	4000	41.84	1.20	40.05	453.76	9%

**Dove & Tresemme Variants**

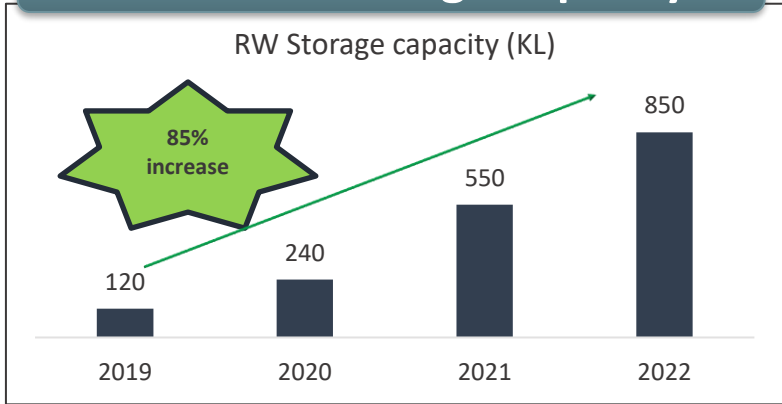
**30% of Combinations without Sanitisation**

**Balance Hair Variants**

**Another 100 Combinations Addressed in Wave 2**

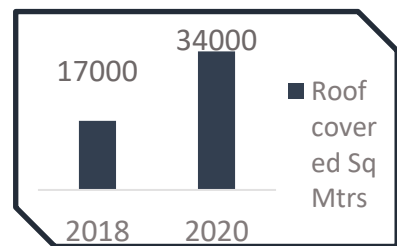
**Sustain Changeover Losses to less than 9%, Despite 2X increase in 24 months, with step change in all KPIs**

## Rainwater Storage Capacity



73%

Rain water realisation of Roof water covering 34k Sq meter - Achieved



70% of Roof Area is connected to RWH

## IOT CLOSED LOOP WATER MONITORING

**PROBLEM ADDRESSED**

- As per statutory adherence we can draw ground water 250 KL per each borewell so that we maintain the optimum ground water level. But had no system to check current ground level.
- All operator dependent actions
- No CCP transparency
- No real time visibility

**DIGITAL SOLUTION**

- IOT ground water monitoring system
  - Ground Water Consumption
  - Ground Water Level
- IOT water quality monitoring system
  - Covering all CCP's
  - Water pH
  - Water Conductivity
  - Water Temperature
  - Chlorine pH
  - Chlorine PPM
- Interlock with Transfer & Recirculation pump
- IOT Storm water discharge system

**DASHBOARDING**

**Dashboards**

**BENEFITS**

**in HUL**

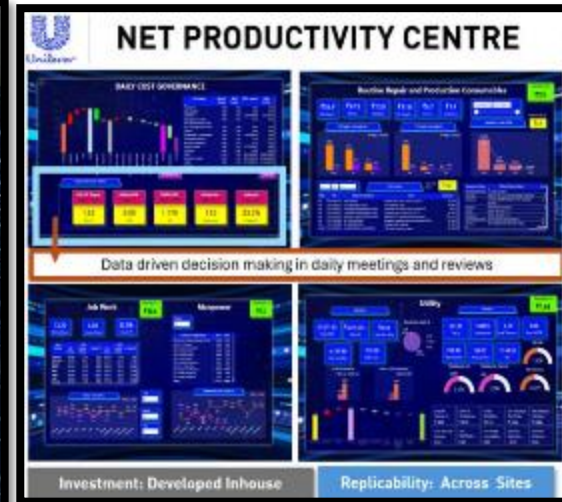
- CCP Transparency
- Digitally enabled data
- Logs and Real time alerts
- Operator Independent
- Real Time Intervention and Benchmarking Shift Wise
- NOC Compliance Check
- Alert option on overconsumption
- Online Multiparametric Analyser
- IoT enabled , Real time Alert
- COD / BOD / TSS/ PH / Temp /color every 10 sec
- With GPRS data to cloud Server



# DAILY COST GOVERNANCE DATA DRIVEN DAILY COURSE CORRECTION



Factory Control Tower



Net Productivity Centre  
Conference Room



Plant Control Tower



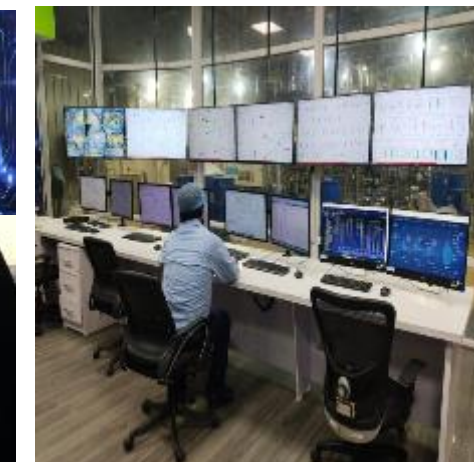
Sachet Control Tower



Utility & Engg Control Station



FGI Control station



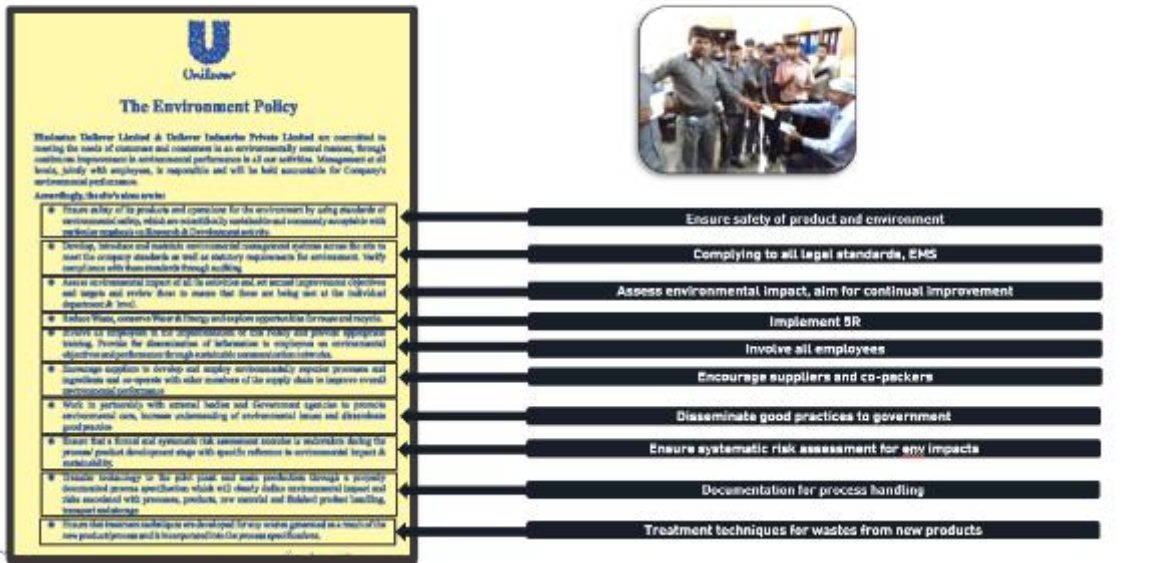
Manufacturing



Quality Station

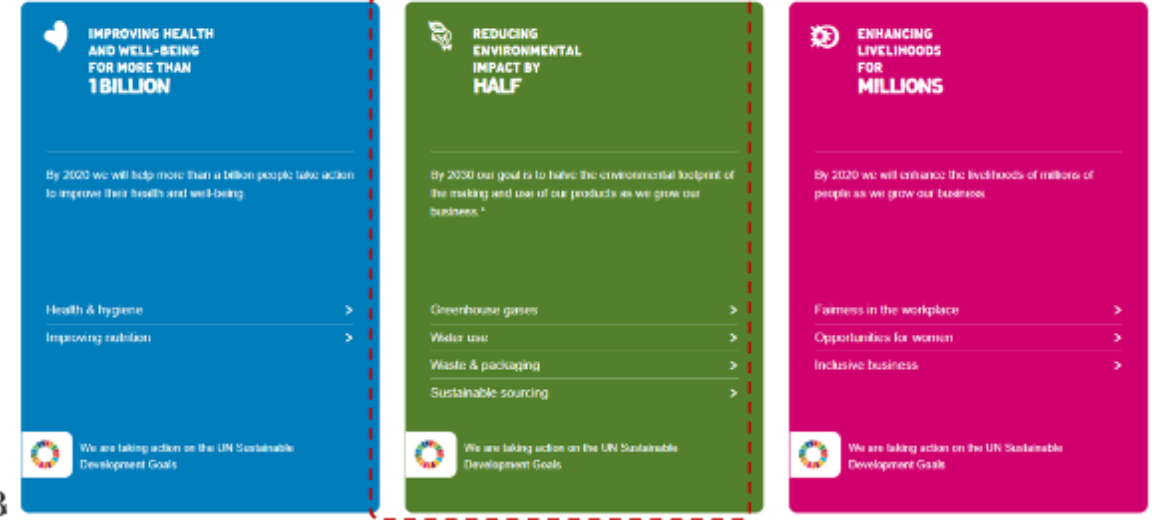


# UNILEVER'S GREEN POLICY

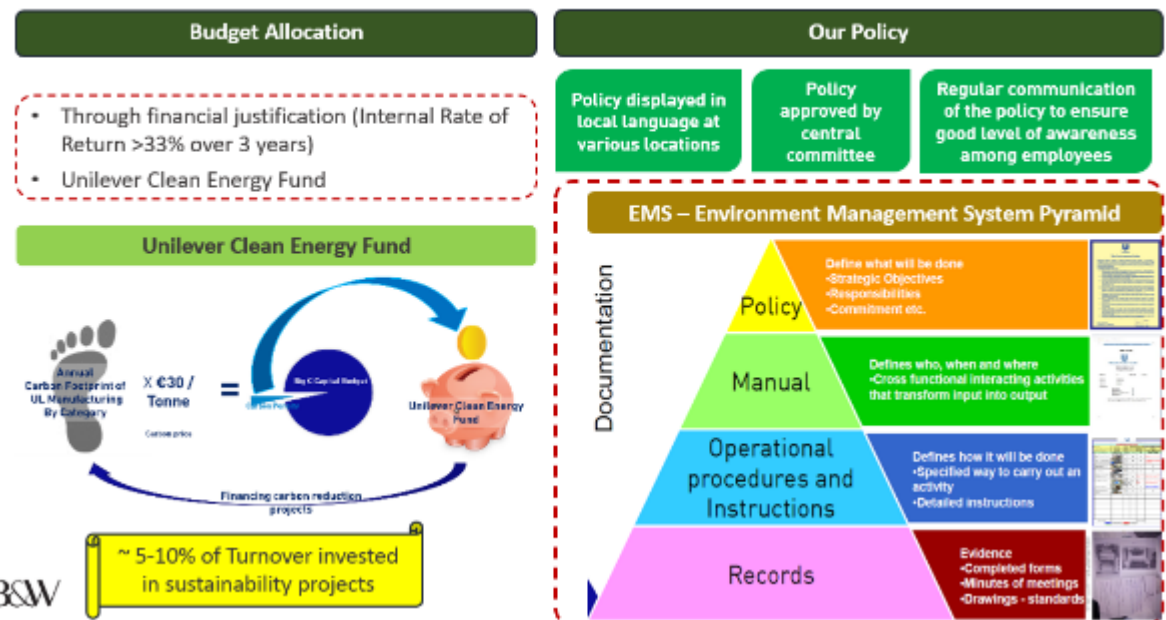


# SUPPLY CHAIN MANAGEMENT: UNILEVER'S BRANDING

## UNILEVER SUSTAINABLE LIVING PLAN (USLP)



# GREEN SUPPLY CHAIN MANAGEMENT POLICY



## Road map till 2025 for becoming

- Net CO<sub>2</sub> Neutral – Zero non-renewable fuels (gas and HSD) + Boiler Less Site
- **Becoming Water positive site (No net intake for process water)**
- Zero packaging waste.



# We Take Pride In Saying!

No. of trees equivalent to CO<sub>2</sub> reduction Achieved - **1,00,000 Trees**

No. of LED lights that can be lighted up with KWH reduction - **50,000 Nos**

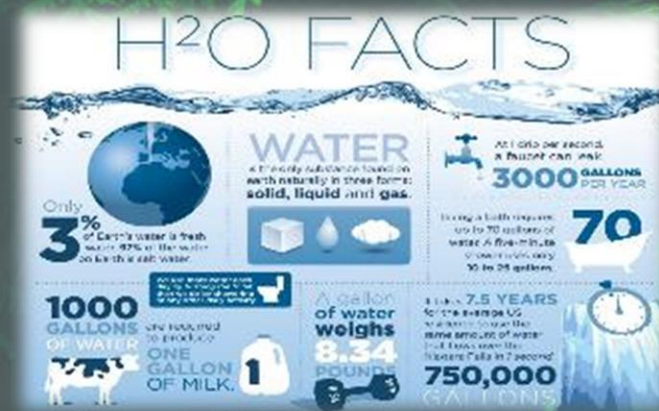
Km travel savings achieved with in housing projects - **4 times of India perimeter**

Water saving achieve in terms of Drinking water - **20,000 member**

Transport accounts for about one seventh  
Global CO<sub>2</sub> emissions by sector



Source: IPCC, 2005, 2006



## How Can Trees Save the Earth?

We could increase the world's forest cover by **0.9 BILLION HECTARES** without affecting existing cities or agriculture

This tree cover would take up an area equivalent to **THE UNITED STATES**

Restoration of forests could store **205 BILLION TONNES OF CARBON**. This would capture about 2/3



# 2018



Leed Certification for Green Manufacturing Building by US Green Building Council(USGBC)

# 2019



Winner of Factories Act Compliance Award 2019 by Labor Welfare Dept., Govt. of Assam

# 2021



Winner of India Green Manufacturing Challenge 2021 by the International Research Institute for Manufacturing



Gold Award in Greentech Safety Excellence Award 2021 by Greentech Foundation



# 2022



Gold award in Greentech CSR Award 2022 by Greentech Foundation



Winner of CII Best Energy Efficient Awards in Large Sector 2022 by Confederation of Indian Industry

# 2023



Gold Award in OHSSAI, Sustainability in Large Sector 2022 by OHSSAI Foundation

# RECOGNITIONS FOR DDF IN 2023 - 24

## HI'23



Sustainability Award by OHSSAI Foundation



Best Safety Kaizen in Business Group Kaizen Championship



Safety Excellence Award by Greentech Foundation



Winner of Business Group Kaizen Championship

## H2'23



Prabhat Best Factory Award & Winner in Nutrition Category



Runners up in South Asia Kaizen Championship



Runners up in SMED+ South Asia



IR 4.0 Smart Operations Award by FICCI



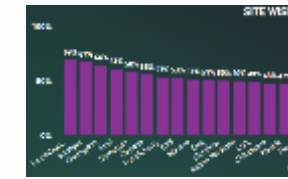
IR 4.0 Certificate for Good practices in Digital System



Global UMS Award for Best-in-Class OEE B&W and PC



2nd Highest Blue Collar Safety Engagement in SA



Highest Digital Master Apps adoption in SA

## H1'24



CEO Safety Award



PCWR Award by Greentech Foundation





B&W

**THANK YOU!**