

CIJ National Award for Excellence in Energy Management

2

0

2

3



Creating Lasting Impression



JKPM –Time Capsule

Women Empowerment



Sustainable Farming



Youth Engagement



Community Healthcare



Holistic Education



Rural Infrastructure



Watershed Development



1970

PM-3

PM-2

Coating Plant

5.4 MW TG

PM-4

1988

1995

PM-5

WILLS Cutter-1

LFB

12 MW TG

WILLS Cutter-2

RDH

1998

2001

PD Plant

New Coating Plant

ET Plant

2004

2007

WILLS Cutter-3

Lime Kiln Plant

2008

2013

New Exp_n

2014

Pet Coke

Centralize Refiner

2016

2018

Methanol Plant

3.4 MW TG

Digitaliz_n LEAP-200

2021

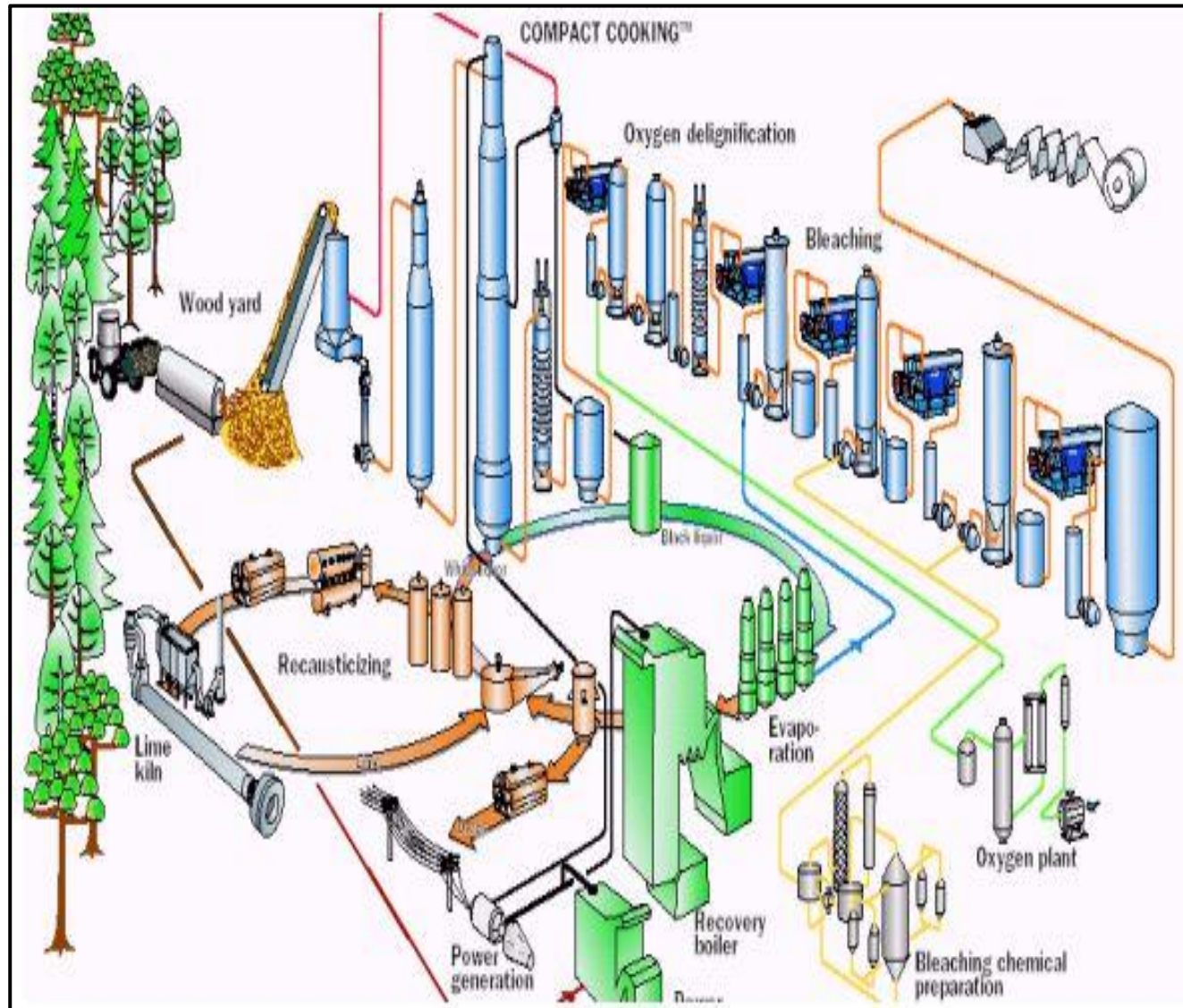
2022

Journey To "ZFF" 2030

**Shut Plant



PROCESS FLOW

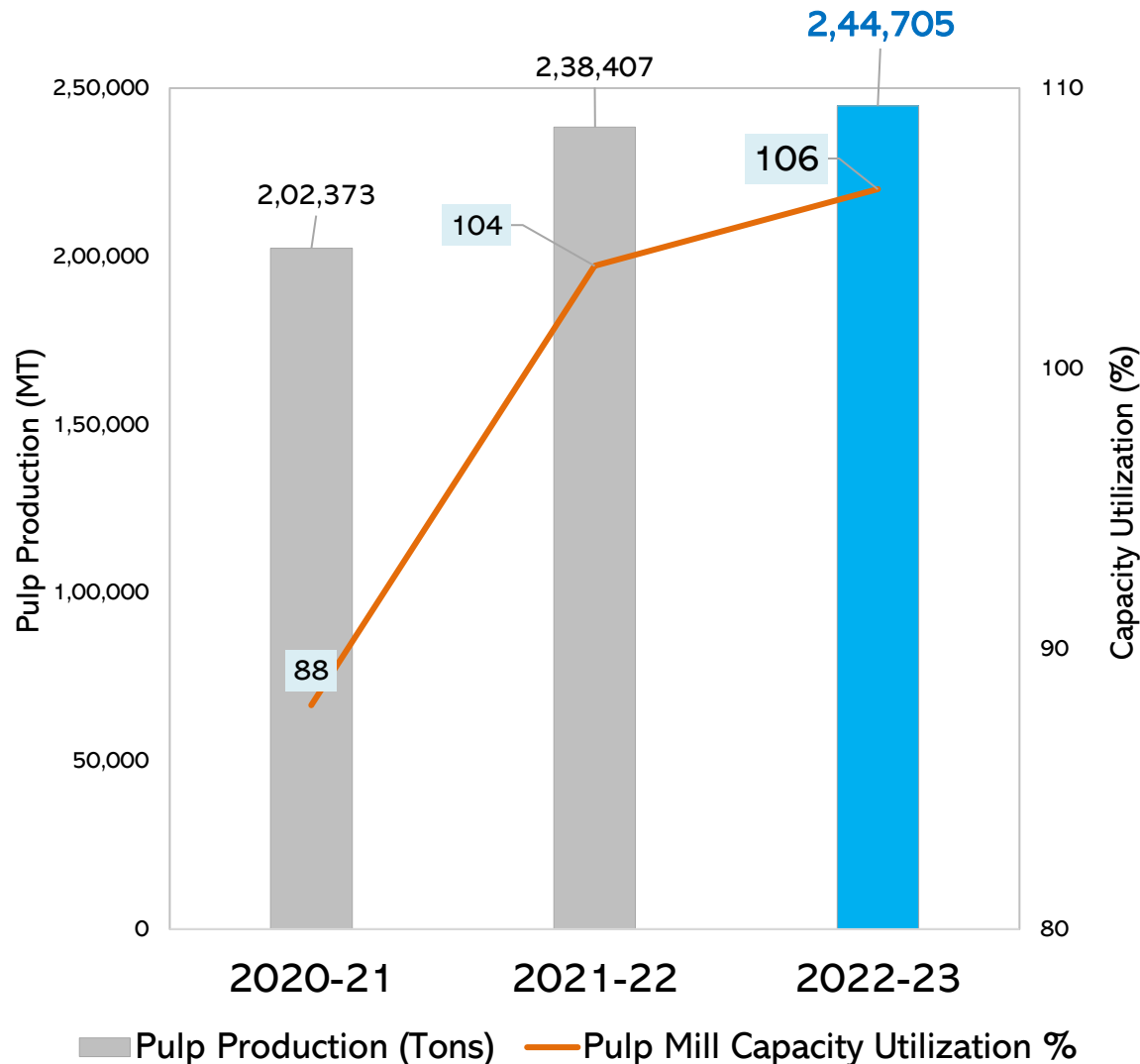


- ✓ **Pulp Mill 230,000*
TPA bleached pulp**
- ✓ **Soda recovery
1400 TPD solids**
- ✓ **Paper Machine
315,000* TPA**
- ✓ **Power block 58.4
MW**

**Installed Capacity*

Sp. Energy Consumption

Pulp Mill Production (MT)



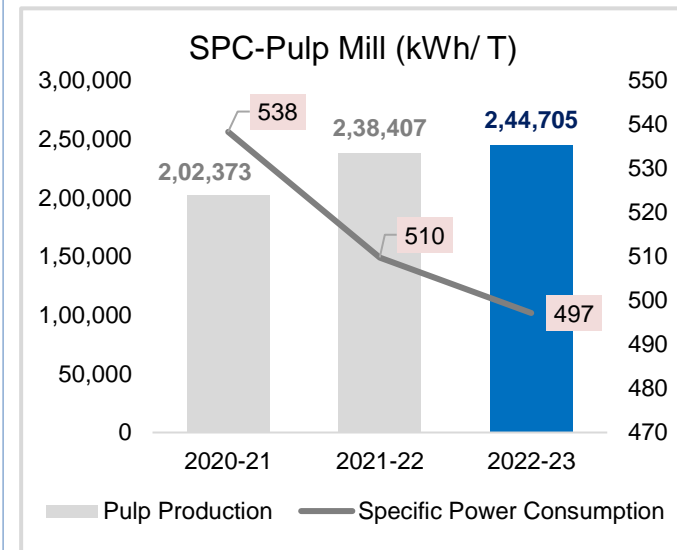
Capacity Utilization
106%



Production Increased
21%

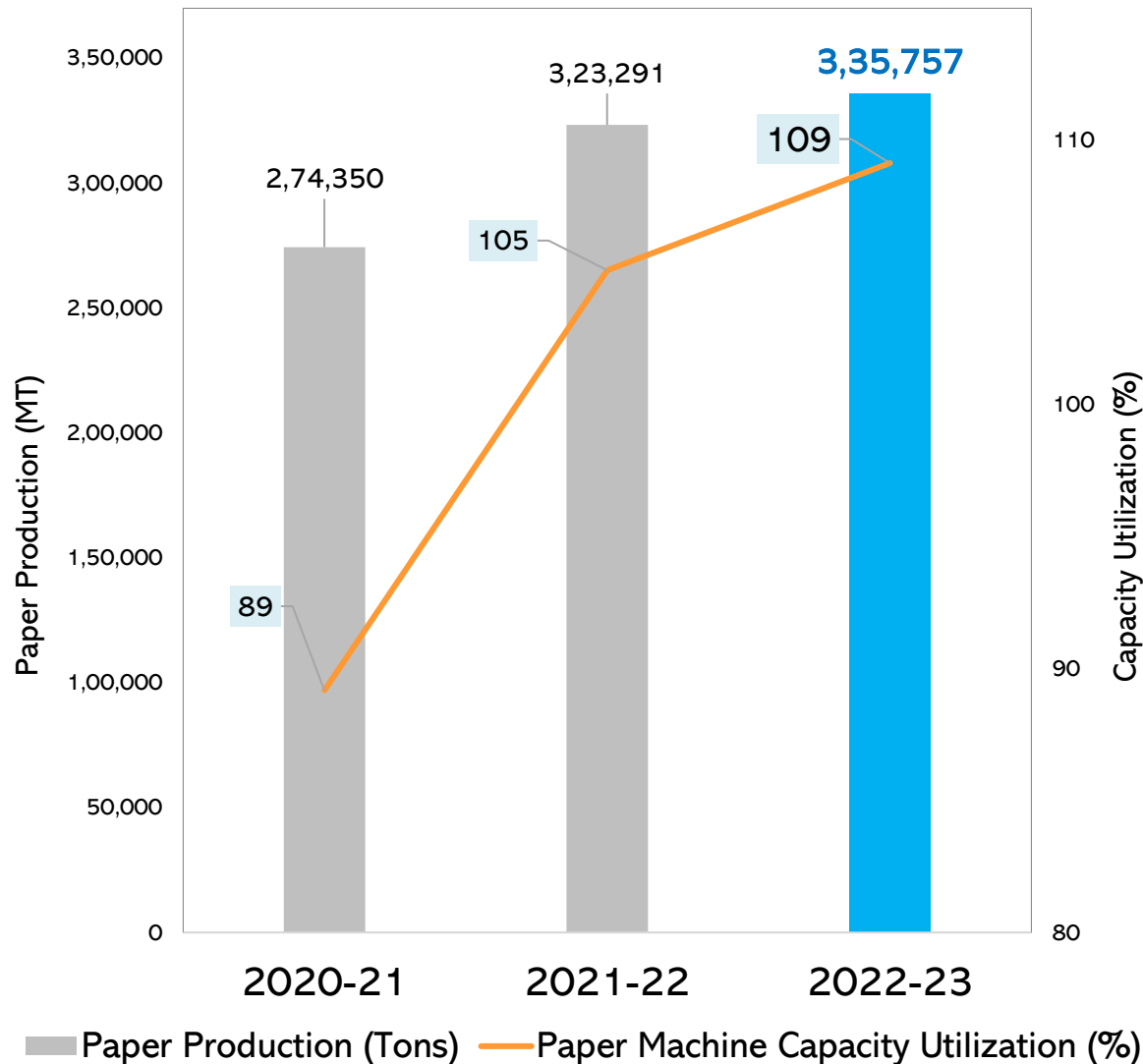


SEC Reduced
7.6%



Sp. Energy Consumption

Paper Production (MT)



Capacity Utilization
109%

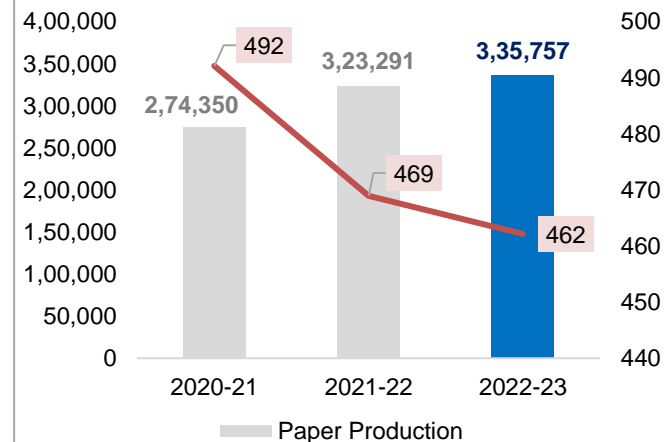


Production Increased
22%

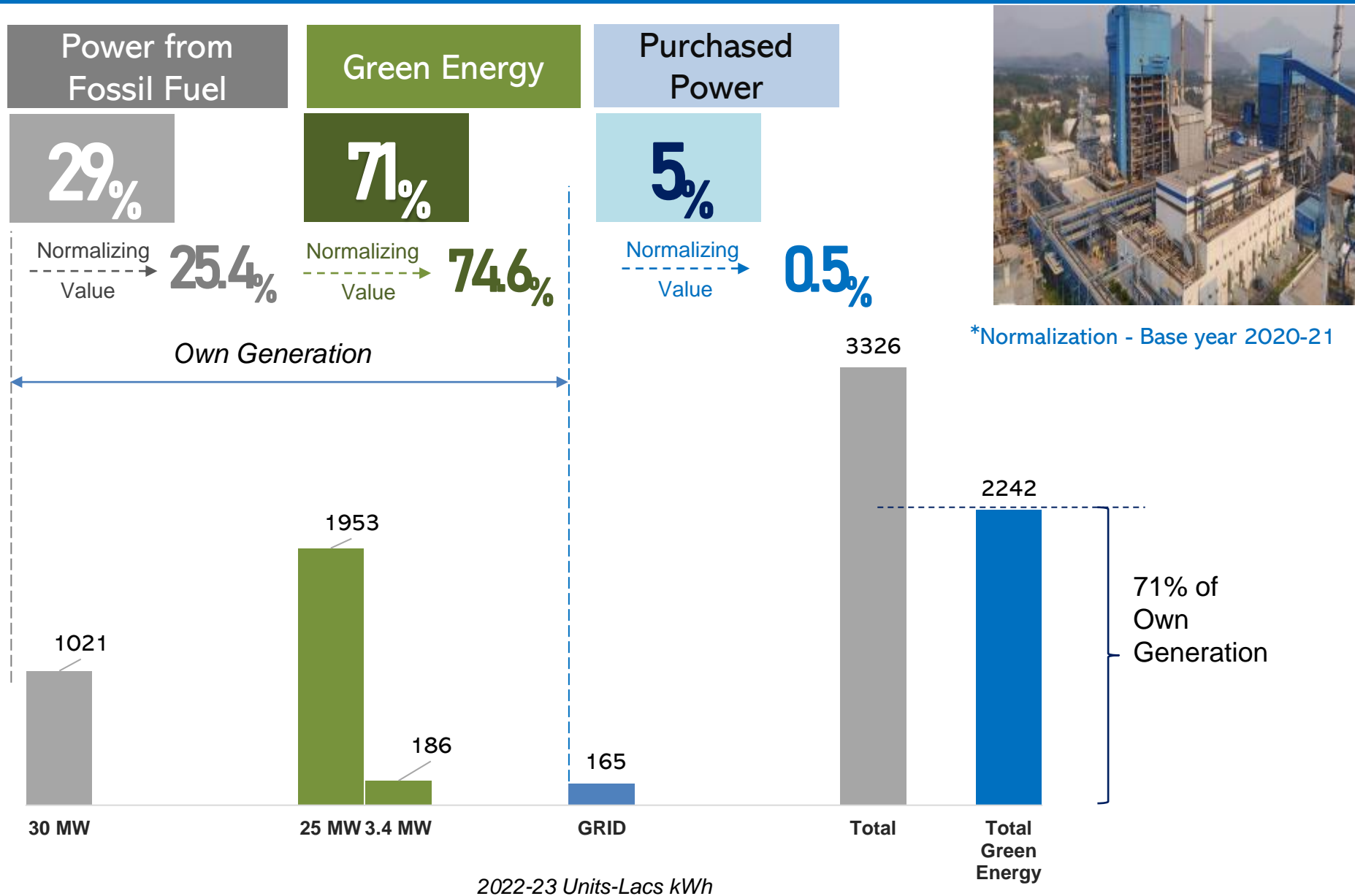


SEC Reduced
6%

SPC-Paper Machine (kWh/ T)

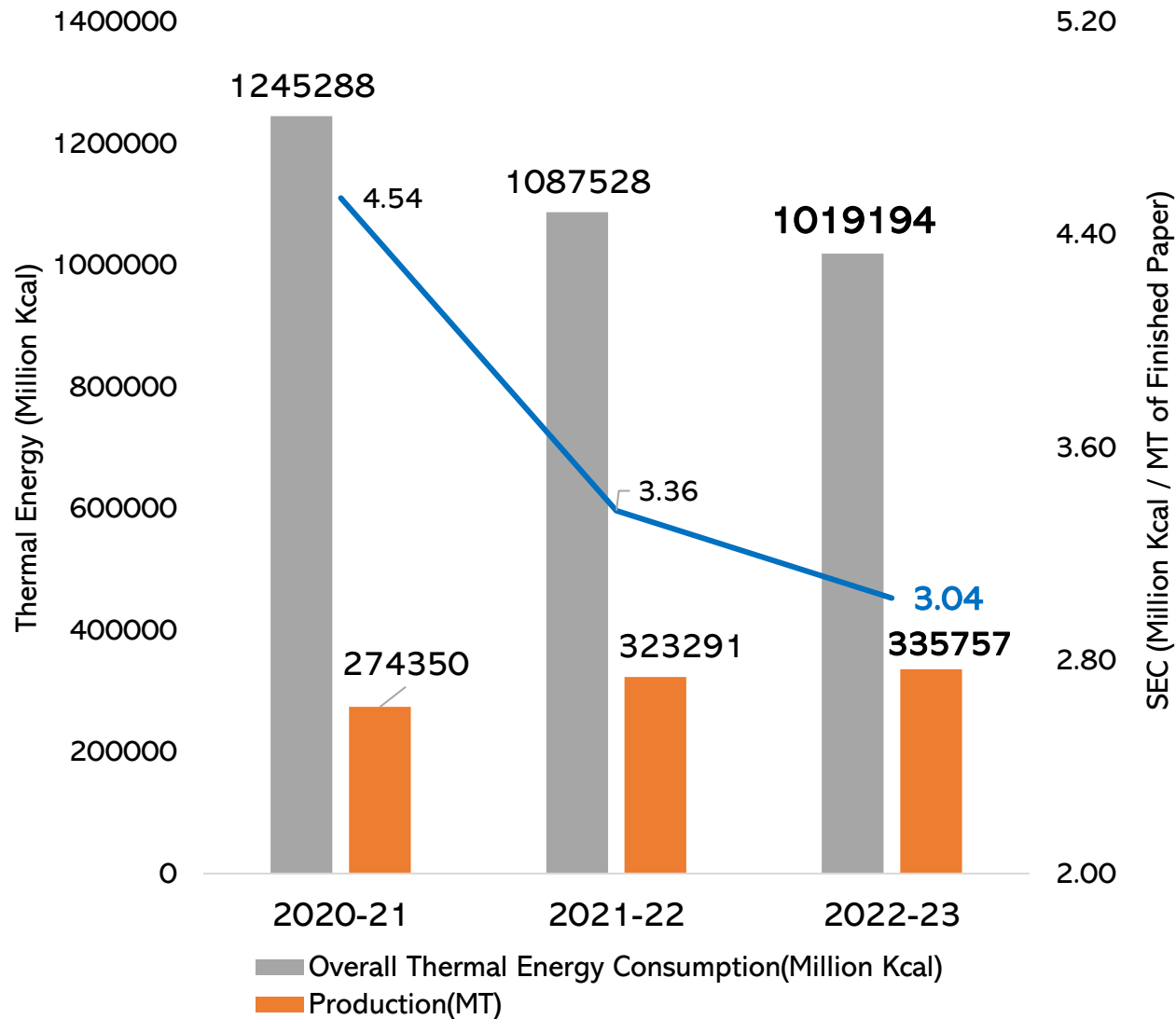


Sp. Energy Consumption – Co-Generation



Sp. Energy Consumption

Energy Consumption and SEC trend



Overall Energy Consumption Reduction

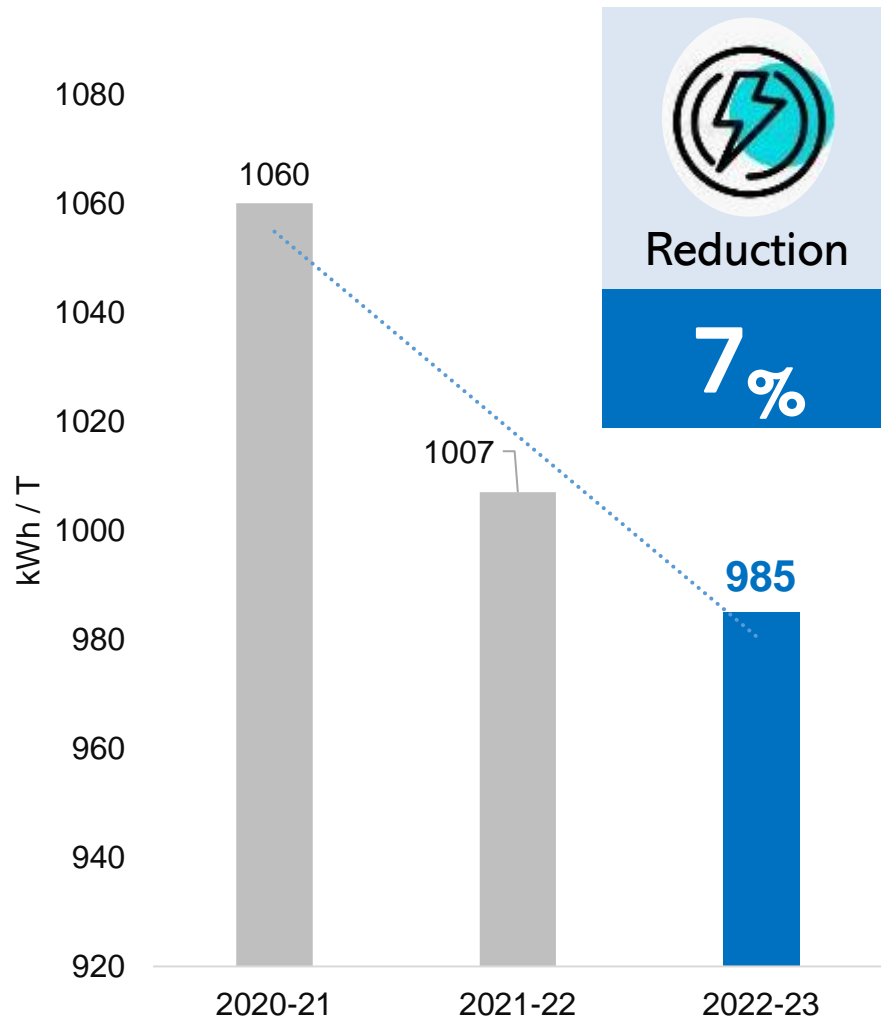
18%



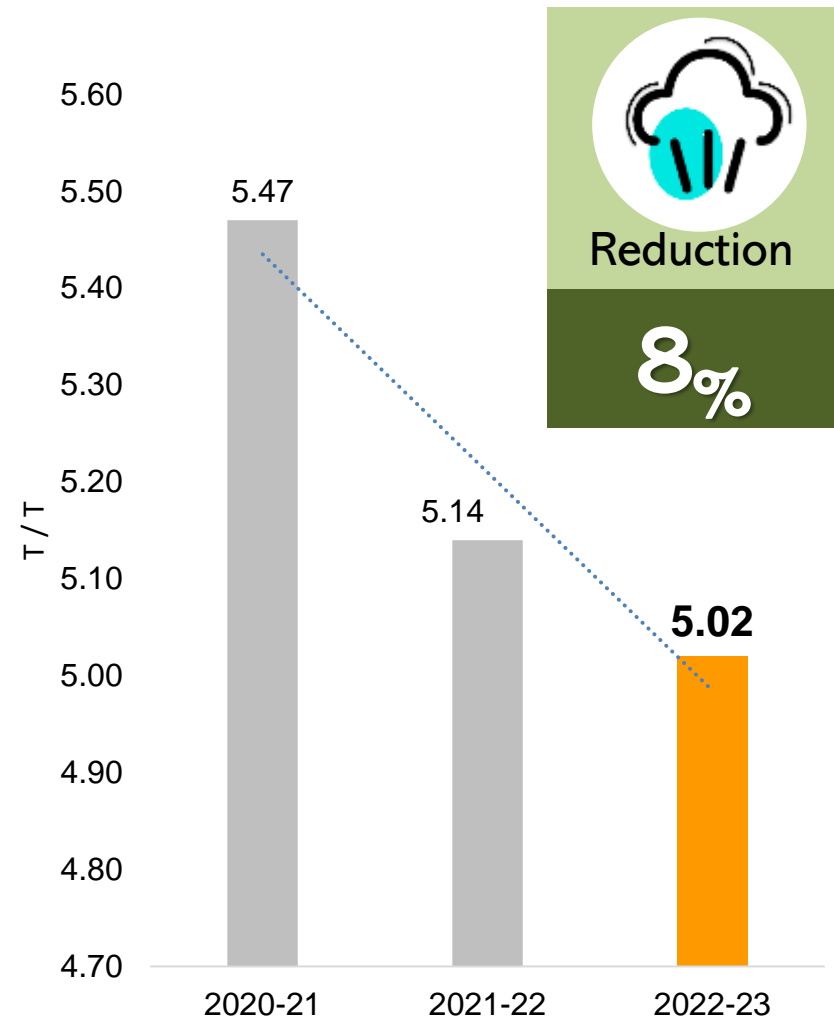
SEC Reduction

33%

Sp. Energy Consumption



Specific Power Consumption



Specific Steam Consumption

Competition and Benchmark



SPC
(kWh/T)

985

Global Best

1000-1100

National Best

1400-1500

SSC
(T/T)

5.02

7.0-9.0

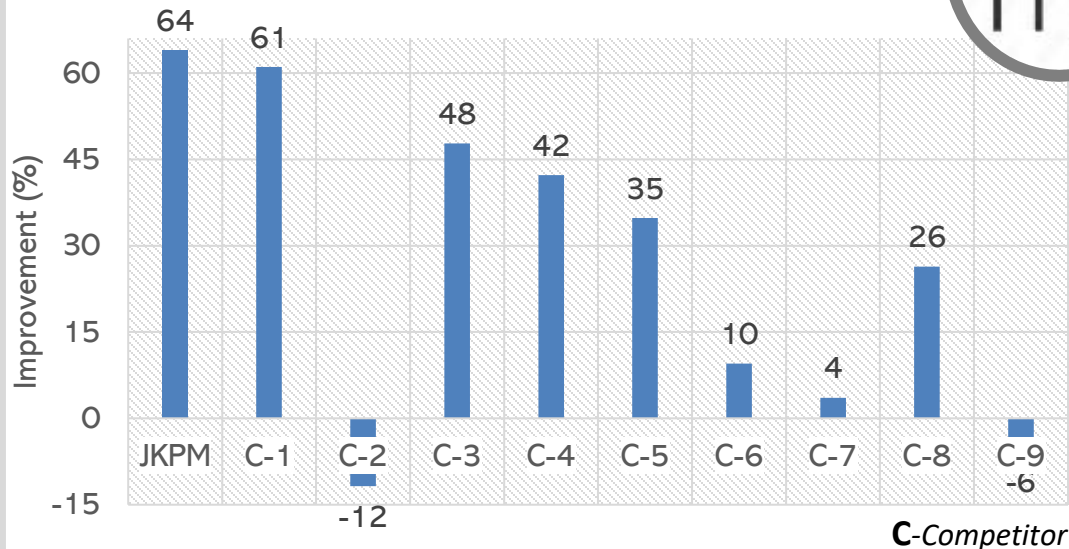
12.0 -13.0

SWC
(M3/T)

27.04

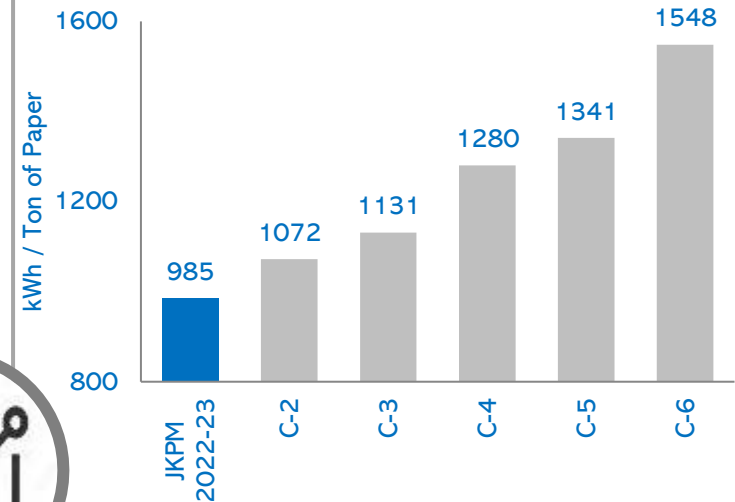
Lowest
among Indian
Industry

Overall Improvement (%),
PAT-1 (baseline) to PAT-7(Target)

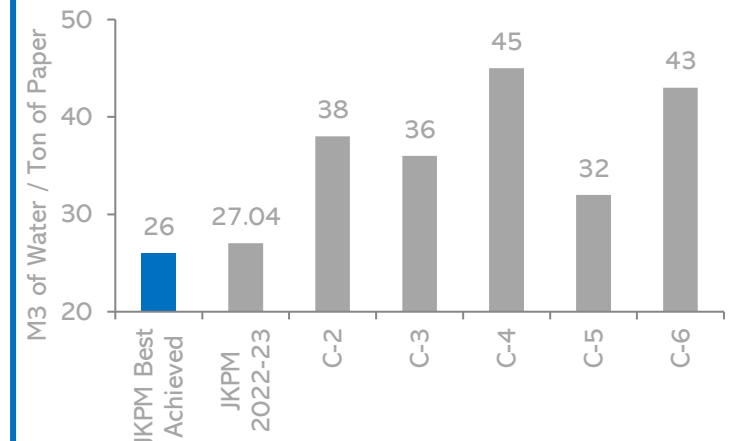


C-Competitor

Specific Power Consumption
(kWh / Ton of Paper)



Specific Water Consumption
(M³ / Ton of Paper)



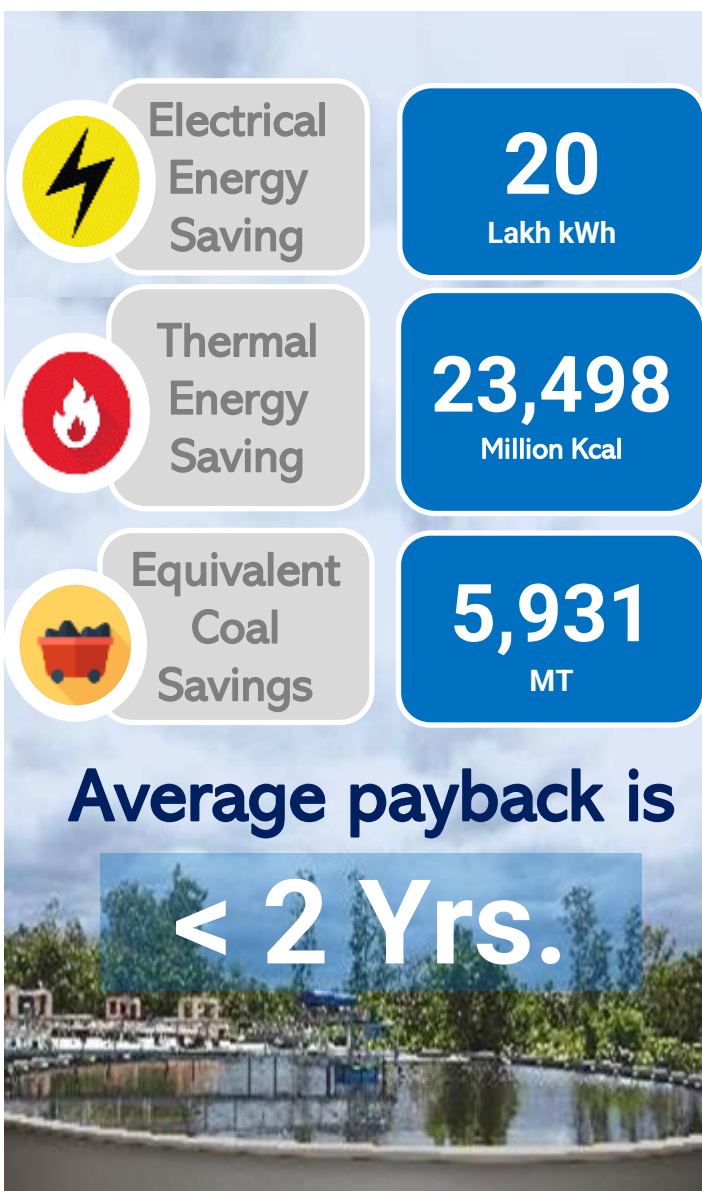
* Data source- PAT gadget

* Data source-CPPRI 2018-Wood Based Mill Global & National Best Figures

*CII



Major Encon Projects planned FY 2023-24



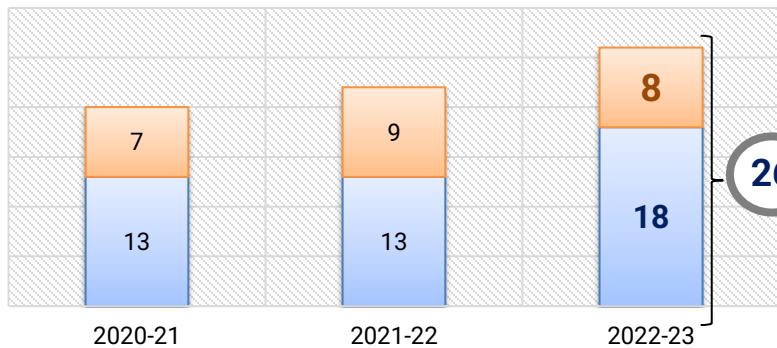
Sl.No.	Proposed EnCon	Project description	Annual Electrical Savings (kWh) Thermal Savings (MT of Steam)
1	PM-4 Steam & Condensate modification.	Steam and Condensate system modification.	25 MT
2	Coating machine blower speed optimization.	Coating machine Moisture control with Hood temperature control and blower speed optimization.	1.17 Lacs kWh, 20 MT
3	Hood humidity sensor given in operation	Hood humidity sensor given in operation.	1.85 Lacs kWh
4	Upgradation of DC Motors and drive with Energy Efficient AC system at Super calender.	Upgradation of DC Motors and drive with Energy Efficient AC system at Super calender.	16.80 Lacs kWh
5	LP steam header control valve (PRV) tuning in PM-6 to avoid unwanted and frequent blow off during paper break.	Reduction in specific steam consumption in old paper machine with integration of old paper machine by reducing the set point of PRV with paper break interlock. Save 30 ton / break	2512 MT
6	Steam saving in shoot blower at recovery boiler area.	Steam consumption reduction in recovery boiler Shoot blower through fault detection system	25900 MT

The mentioned Major Projects are under nascent stage , the values are tentative and indicative only.

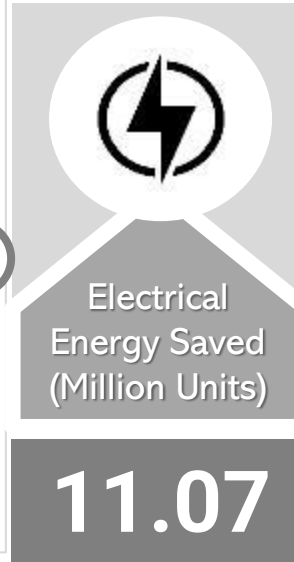


Energy Saving Projects implemented in last three years

En-Con Status- 2020-2023



■ Nos. of En-cons with Minimal Funds Investment
■ Nos. of En-Con Projects with Investment



Key Project
1

“Power Saving” through
Compressed air
Optimization

Reduction
in SPC

6%

Savings
(Rs. In lacs)

26

Key Project
2

“Chemical Saving” through
APC by
ITOT system

Reduction
in Lime Sludge
generation

15%

Savings
(Rs. In lacs)

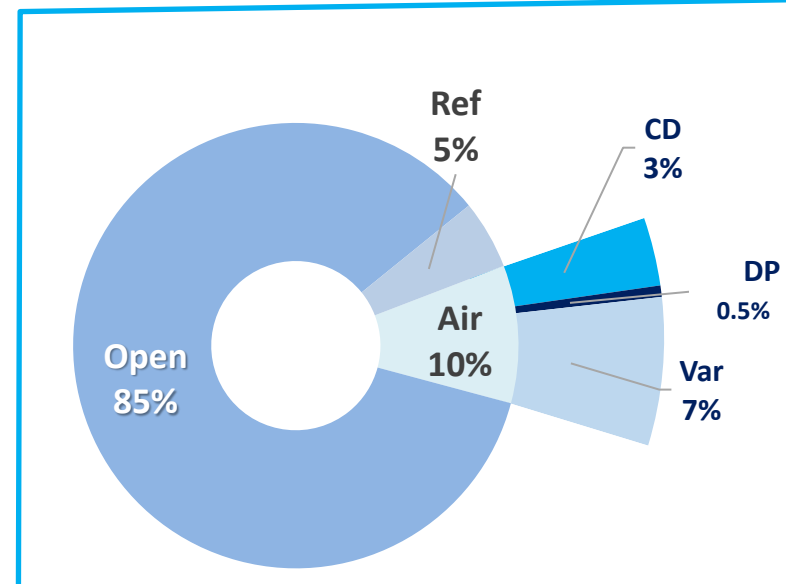
52



Power saving through Compressed air Optimization

Background

- Compressed air one of the single equipment with higher power consumption.
- More than 10% of the total compressed Air flow variation. Power trends indicates high variability, indicate the scope of improvement.
- Data analytics, machine learning techniques correlation study with multiple process variables taken.

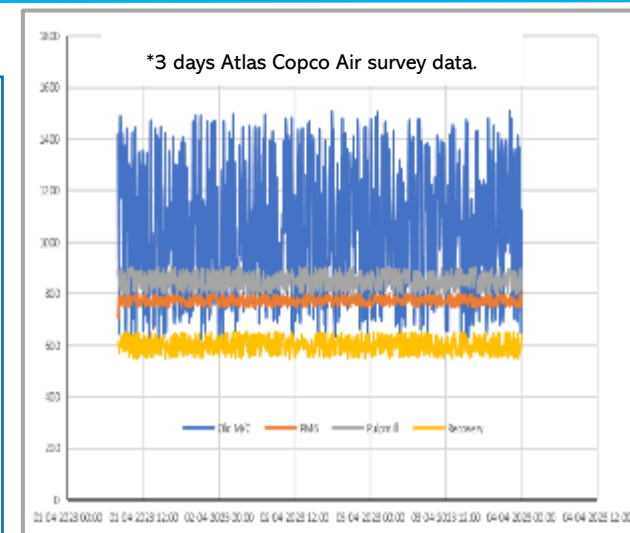
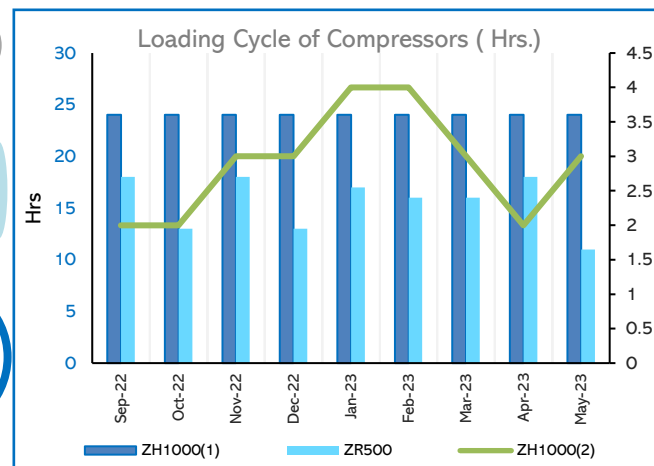


Need of En-Con



Power Saving

Environmental Sustainability.

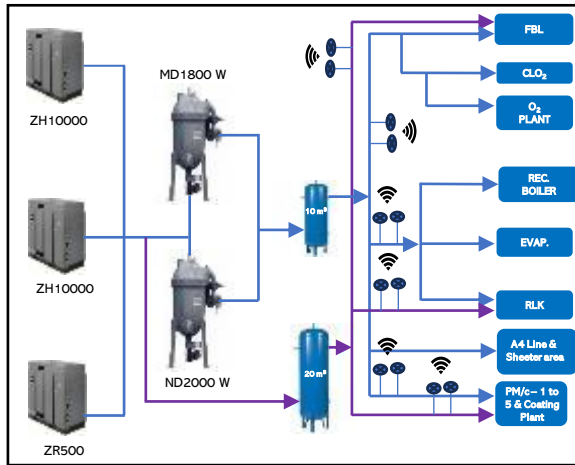


Contd.



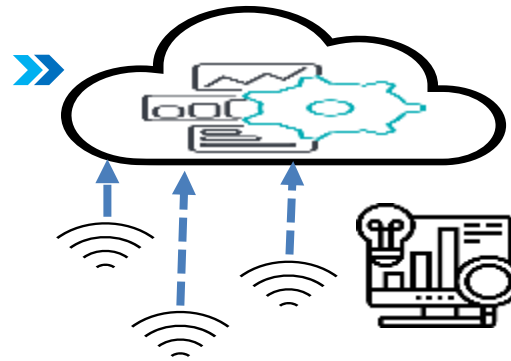
Major En-Con Project-1

Action Taken



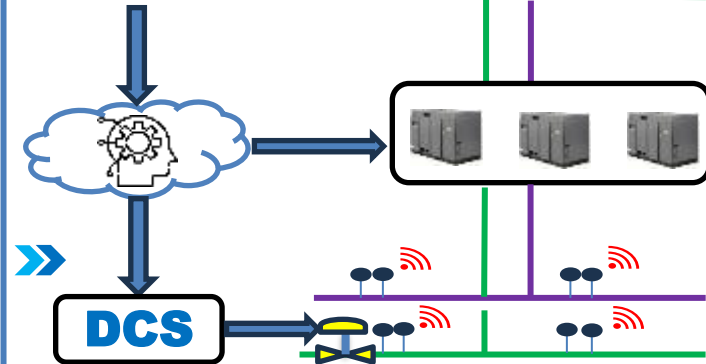
Wireless Monitoring

- Wireless Pressure & Flow Measurement.
- Identify the consumption pattern of various user



Alert & Visualization

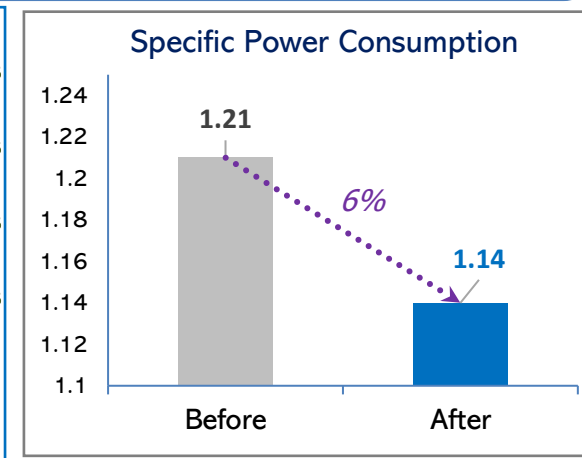
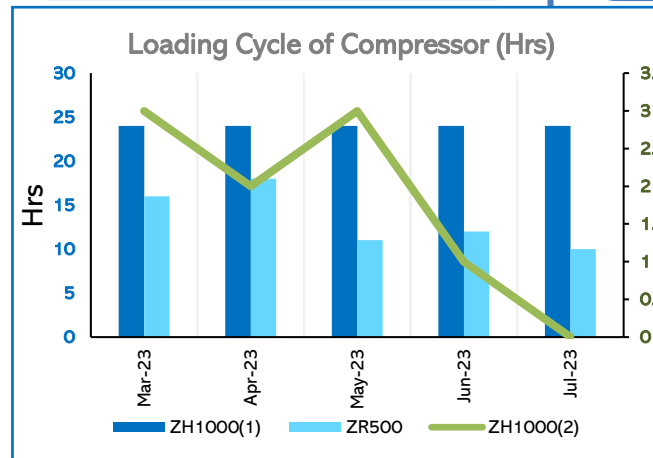
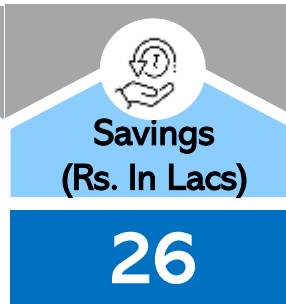
- Data was taken into Cloud server.
- Pop up alert was created in case of high demand.



Advance Analytics

- ML model was created for Compressor IGV control.
- Intelligent demand control using Control valve.

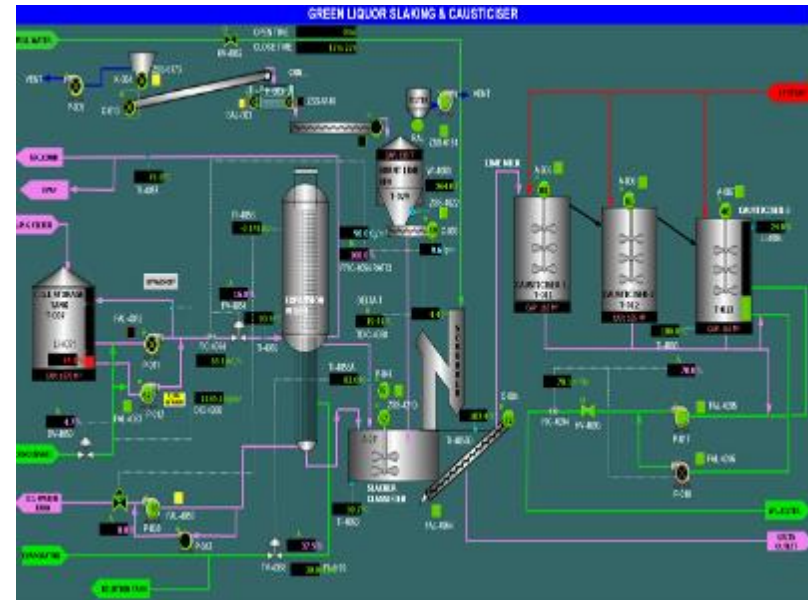
Savings & Benefits



Chemical Saving through APC by ITOT System

Background

- We were generating large amount of lime sludge form lime slaker due to improper liming.
- After detail study we found that lime dosage to slaker was non -cascade open loop control.
- After analyzing the correlation matrix of lime sludge with various process parameter we found that it was impacting Total active alkali of generated white liquor.
- As white liquor is input to digester, hence variation in TAA lead to higher consumption of MP steam.



Need of En-Con

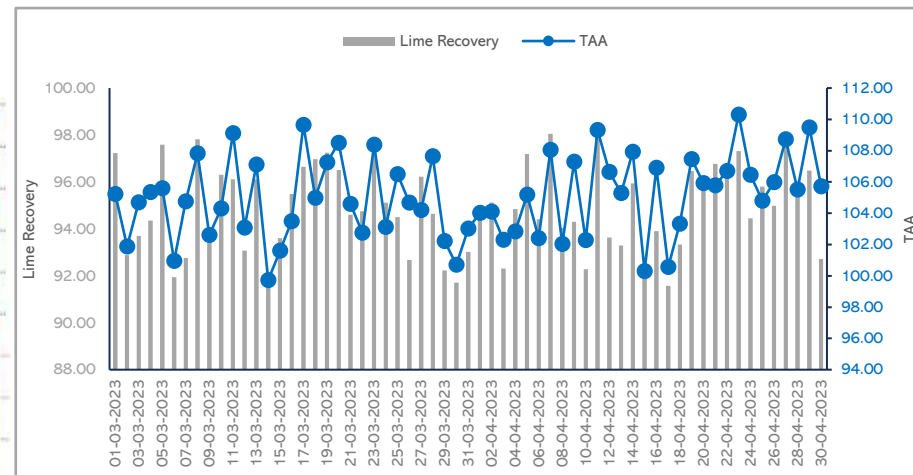
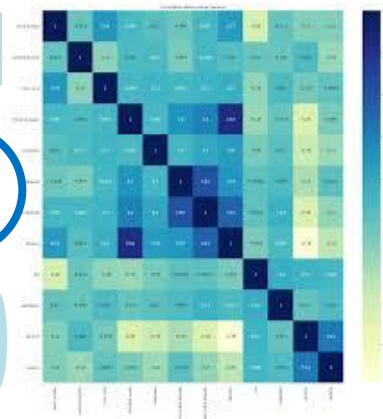


Waste Reduction

Quality
Variation Reduction



Chemical Saving



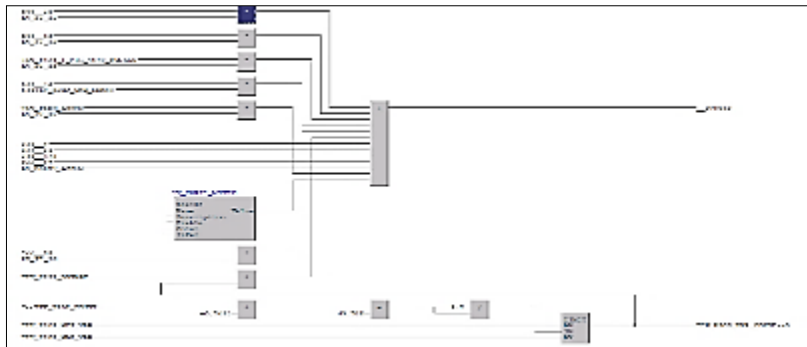
Contd.



Major En-Con Project-2

Action Taken

Project was executed in two stage development as follows



Advance Process Control

- Study operator controlling pattern.
- Explore dependency.
- Develop Feed forward cascade Logic.

```
from sklearn.cross_decomposition import PLSRegression
from sklearn.preprocessing import StandardScaler
scalerx = StandardScaler()
scalery = StandardScaler()
train_X_pls_scaled = scalerx.fit_transform(train_x.values)
test_X_pls_scaled = scalerx.transform(test_data_x.values)
valid_X_pls_scaled = scalerx.transform(valid_x.values)

train_y_pls_scaled = scalery.fit_transform(train_y.values.reshape(-1,1))

xgb_r1 = PLSRegression(n_components=9, scale=False)
xgb_r1.fit(train_X_pls_scaled, train_y_pls_scaled)

train_x.shape, train_X_pls_scaled.shape
Coeff_df = pd.DataFrame({
    'Feature': xcols_log, #, drop('Y', axis=1).columns,
    'Coefficient': xgb_r1.coef_.reshape(-1,)
})
Coeff_df = Coeff_df.set_index(['Feature'])
# Coeff_df = Coeff_df.sort_values(by = 'Coefficient', ascending=False)
Coeff_df
```



Model Predictive control

- 6 months data collection and cleaning.
- variance threshold & PLS Regression were used.
- Model Building and deployment.

Savings & Benefits



Lime Sludge
Reduction

15%



Savings
(Rs. In Lacs)

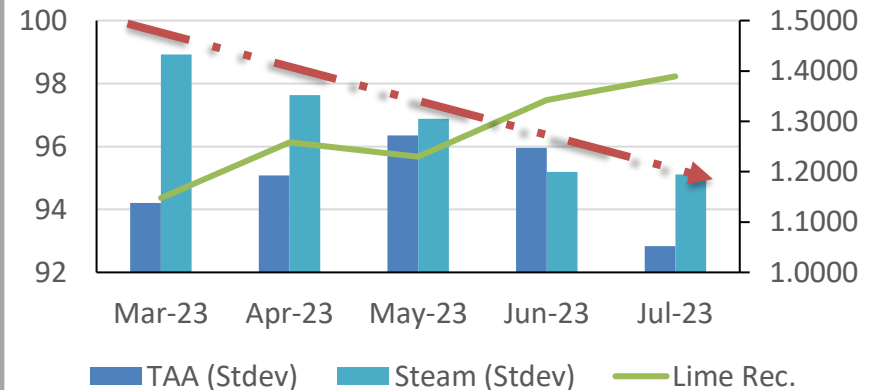
52

*In terms of Lime Consumption



Decrease
in SD of TAA

22%





Why Innovative

Improper Tuning

FCE Issues

Mode changes

Cascading Disturbance

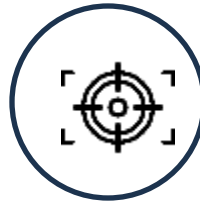
Mode changes



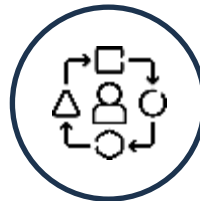
Pioneer: 1st Indian Paper industry in advance analytics approach of loop tuning



Efficiency and Time-Saving: Control loop tuning software automates the tuning process, reducing the time and effort.



Accuracy and Consistency: Software-based algorithms on advanced mathematical models and optimization techniques, high level of accuracy and consistency.



Adaptability: Software can handle various control system configurations and respond to dynamic changes.



Data-Driven Decision Making: Software can leverage data analytics and historical process data to make informed tuning decisions.

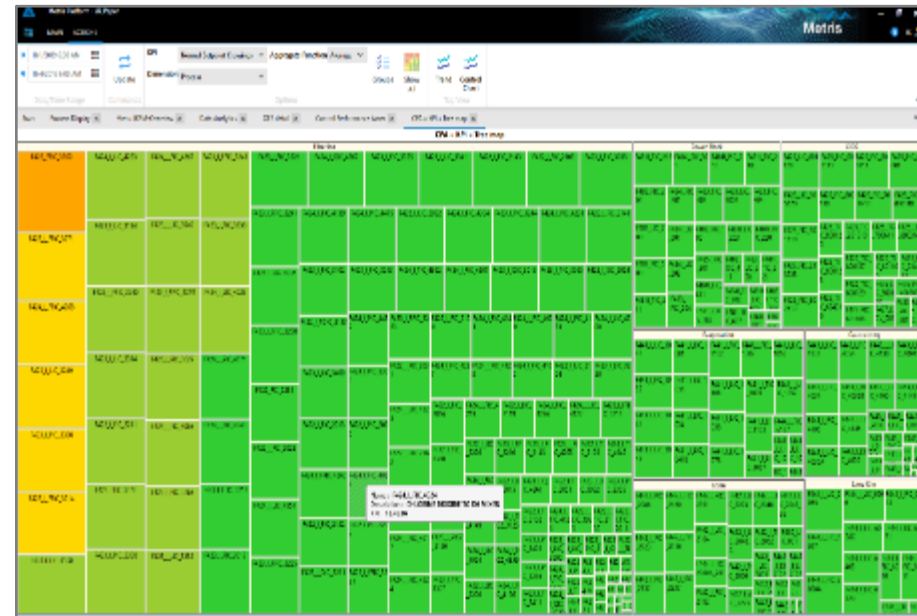


User-Friendly Interface: Allowing engineers with varying levels of expertise to tune control loops effectively.

Process Optimization by Control Loop Tuning

Background

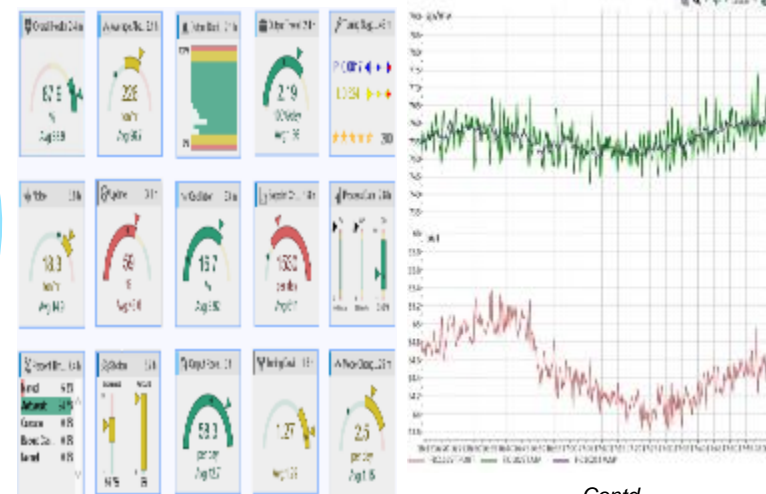
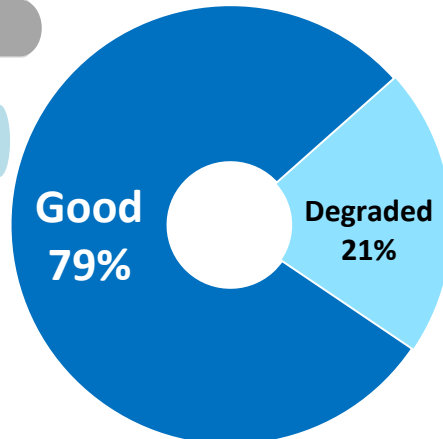
- Industrial 4.0 open opportunity of close monitoring of multiple activity.
- Digitalization and data lake make all the control loop closely monitoring with analytical tools.
- Loop analytical analysis done on 22 different parameter with various factors were responsible for performance of the loops.
- Variables indicate that 79% of control loops were working well and balance 21% performance were degraded.



Need of En-Con

Resource Conservation

Being Future Ready



Contd.

Action Taken



A technology service provider was on boarded for loop performance management system



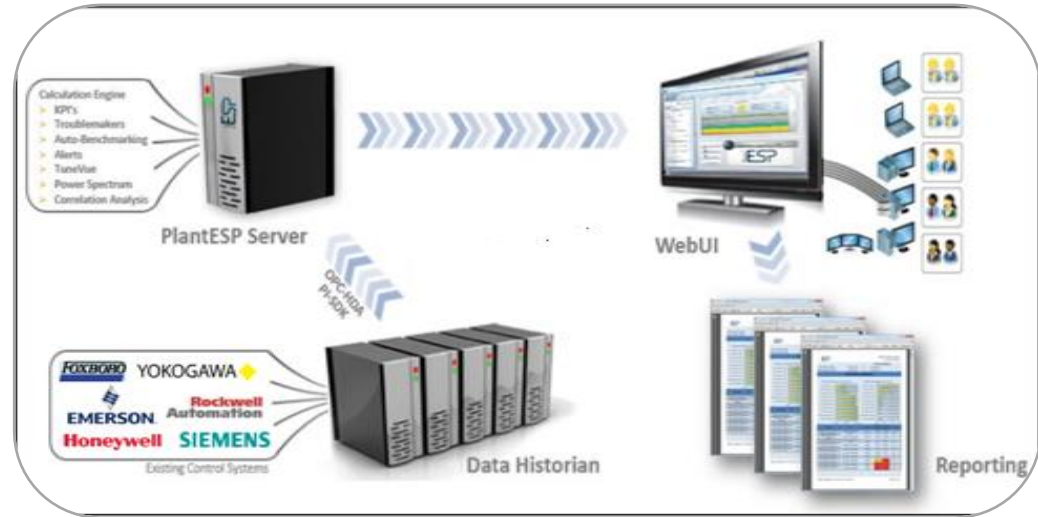
All control loop identified were ranked based on their major impact on process parameters, valve tuning was one of the major contributor of non-performing control loops.



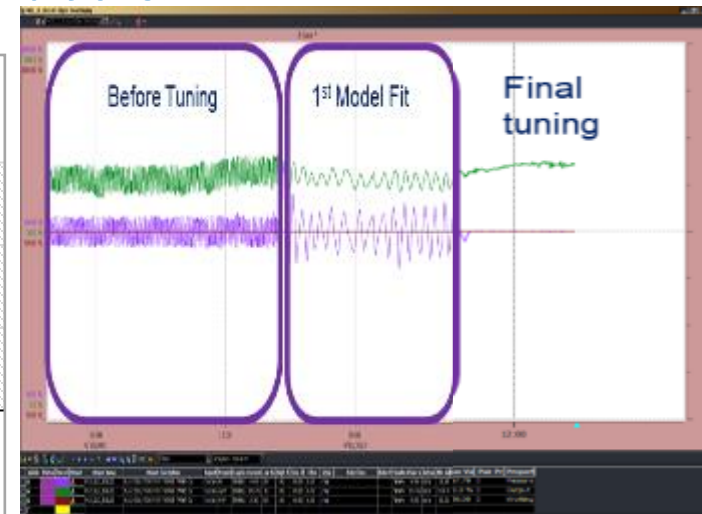
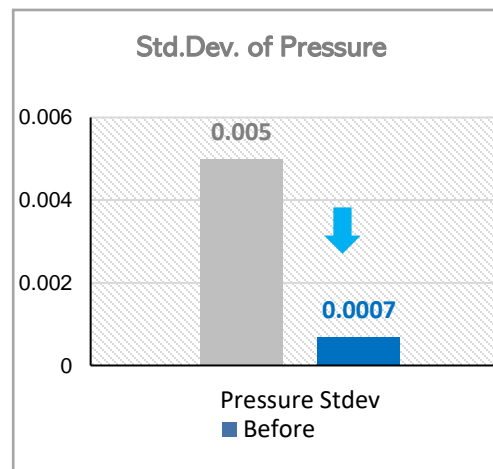
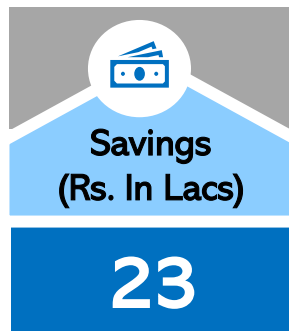
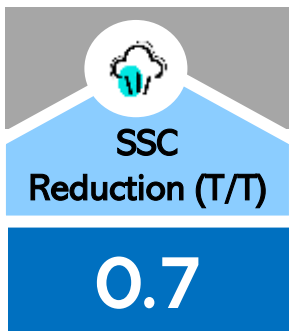
Found that Recovery Boiler Deaerator LP steam pressure control loop was having high degree of variation.



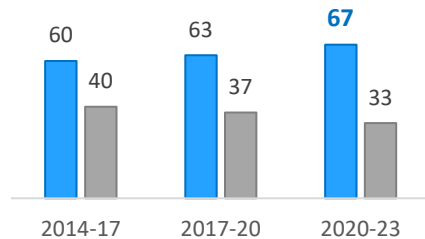
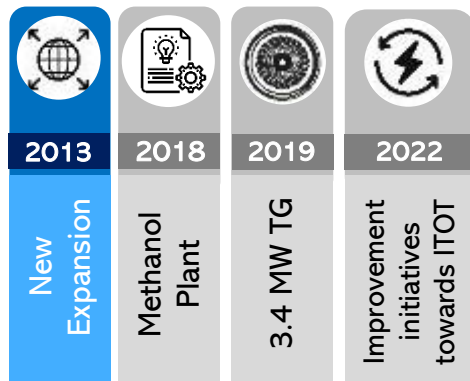
Adaptive tuning was done to get the optimum response in various conditions.



Savings & Benefits



Utilization of Renewable Energy sources



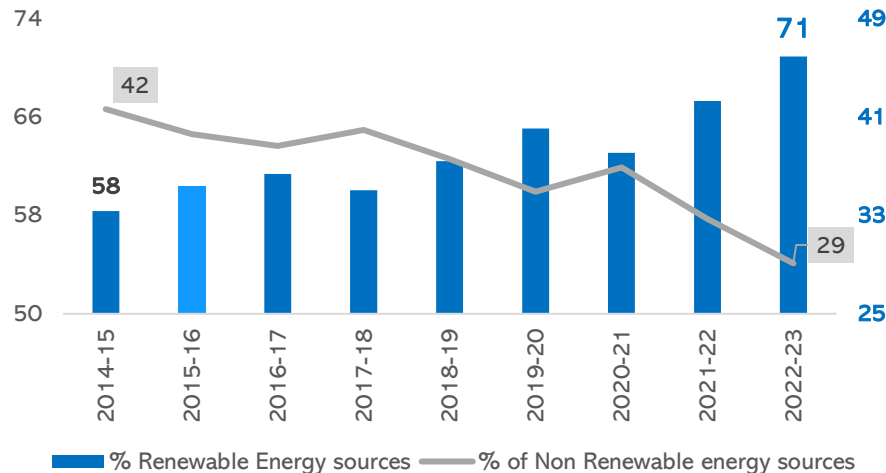
■ % Renewable Energy sources
■ % of Non Renewable energy sources



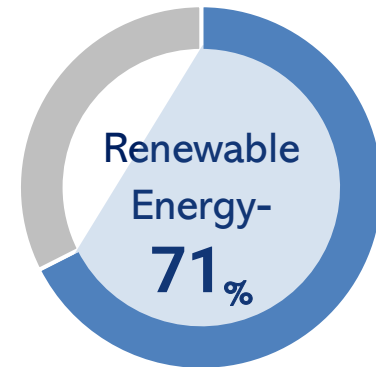
Renewable Energy Share increased over the Decade by

21%

Renewable Energy (kWh) Share %

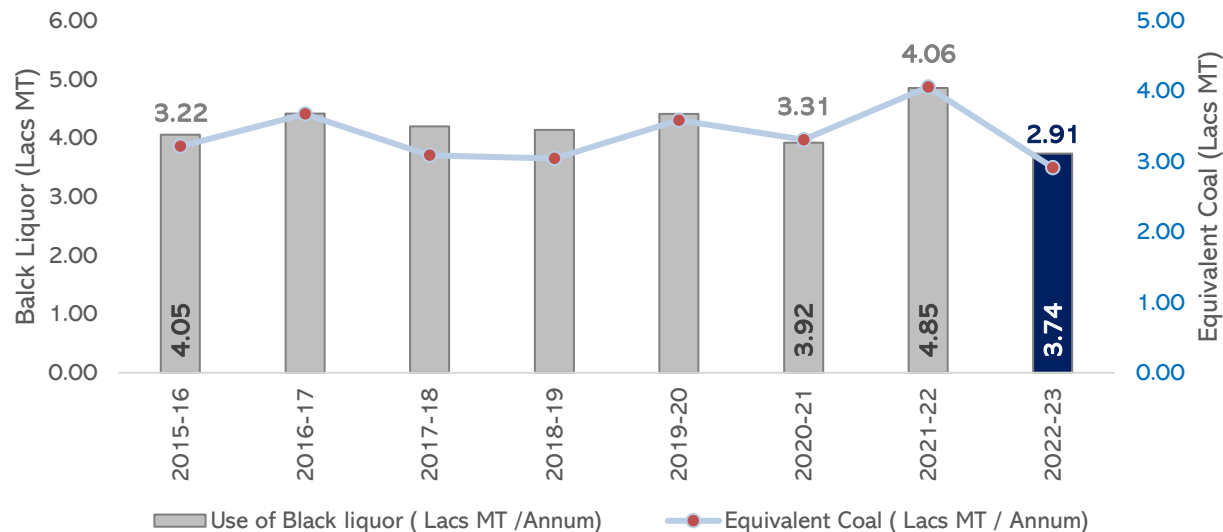


2022-23



REC – 74282 Nos.

Black Liquor consumption and Equivalent Coal



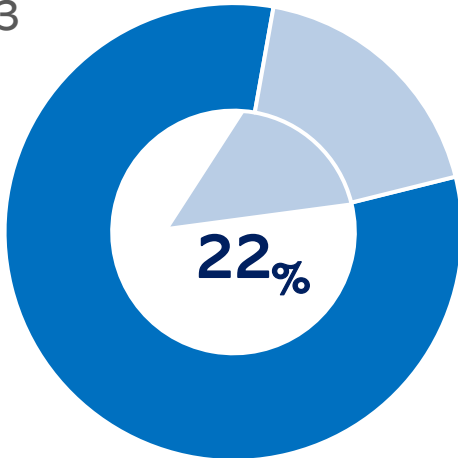
Utilization of Renewable Energy sources



Alternate Fuel
Source increased
(*equivalent FO)

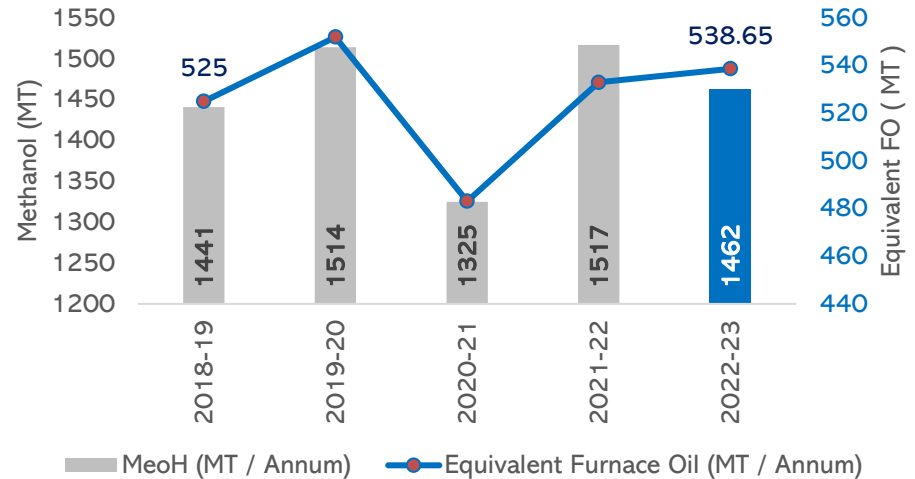
2.59 %

2022-23

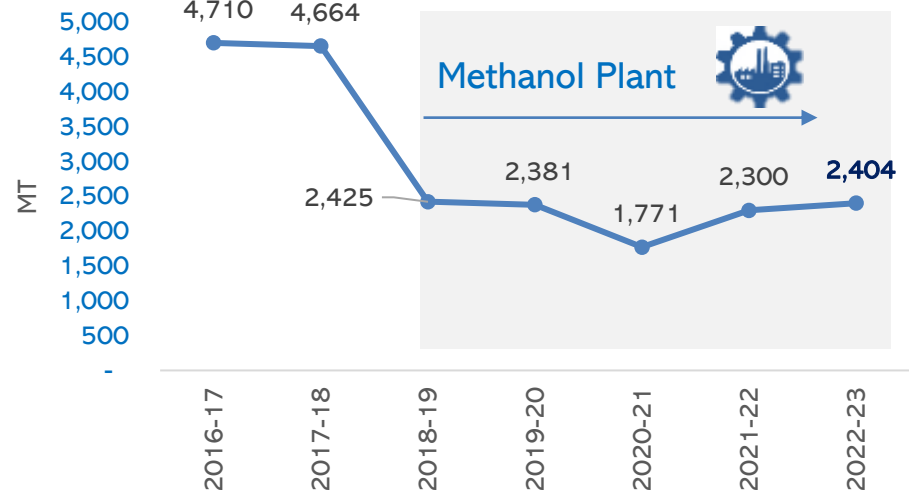


- Furnace Oil used in Process (MT)
- Equivalent Furnace Oil from MeOH (MT / Annum)

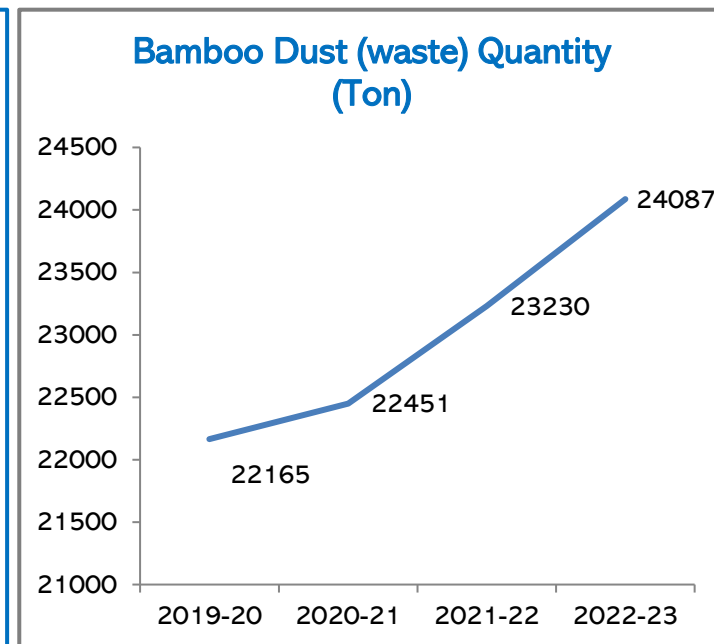
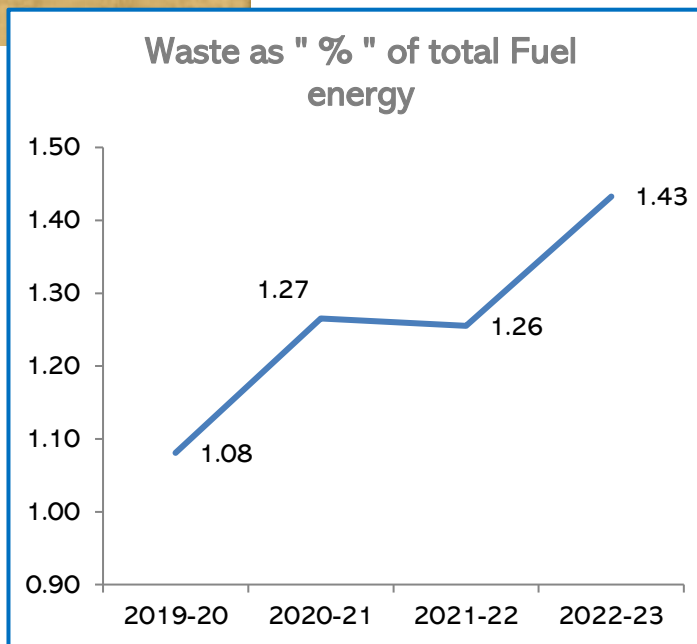
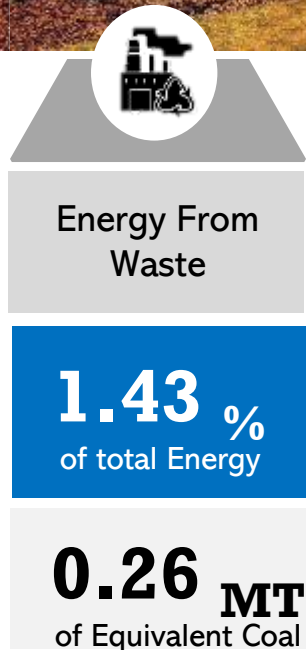
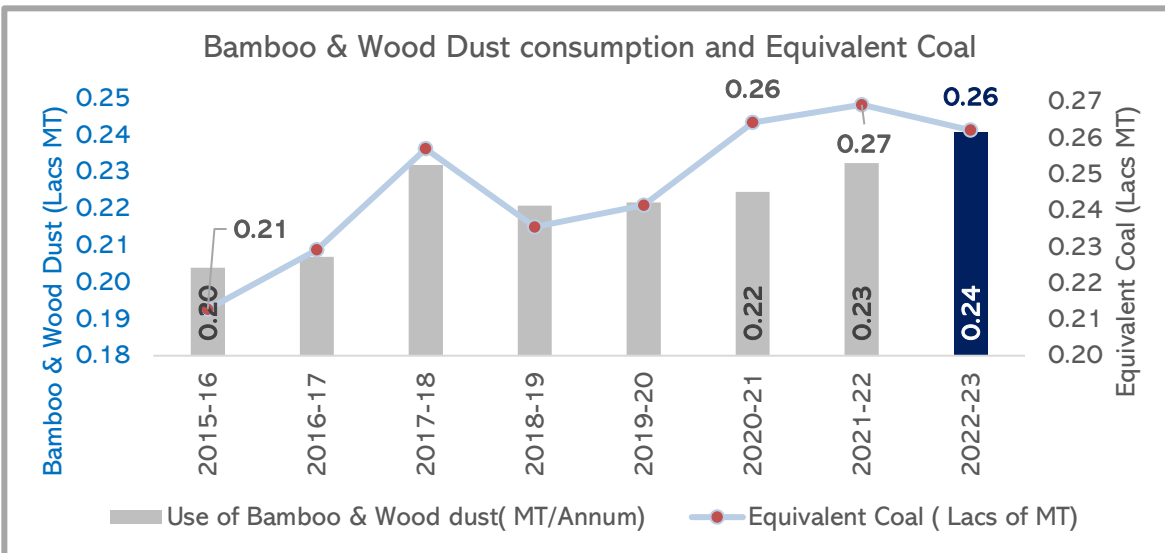
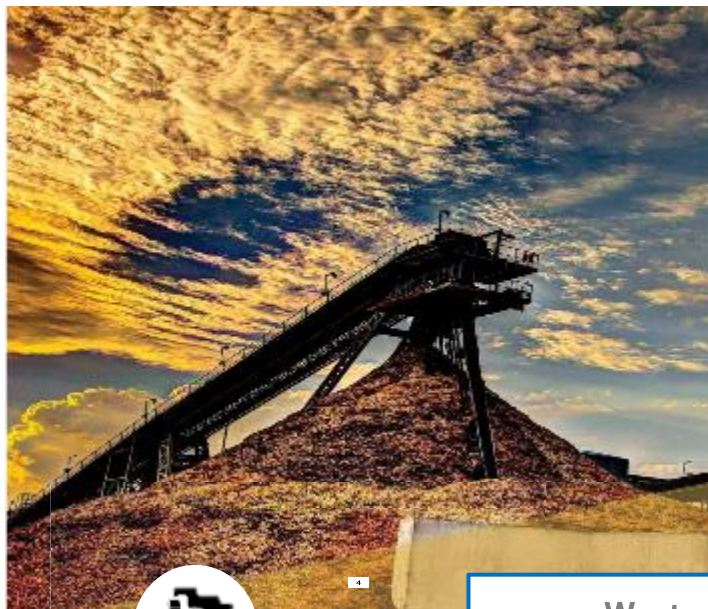
Methanol consumption and Equivalent Furnace Oil



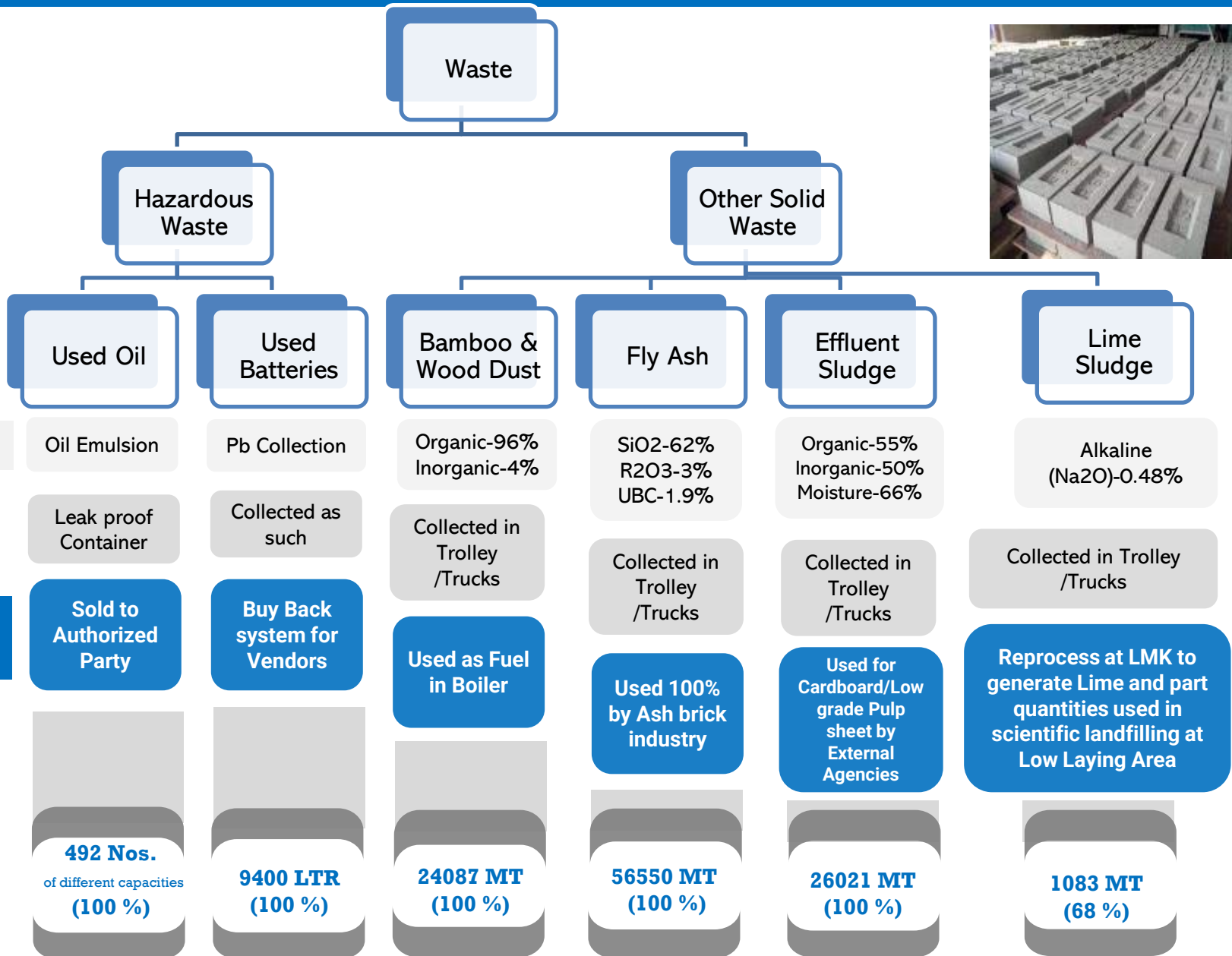
Furnace Oil used in Process (MT)



Utilization of Renewable Energy sources

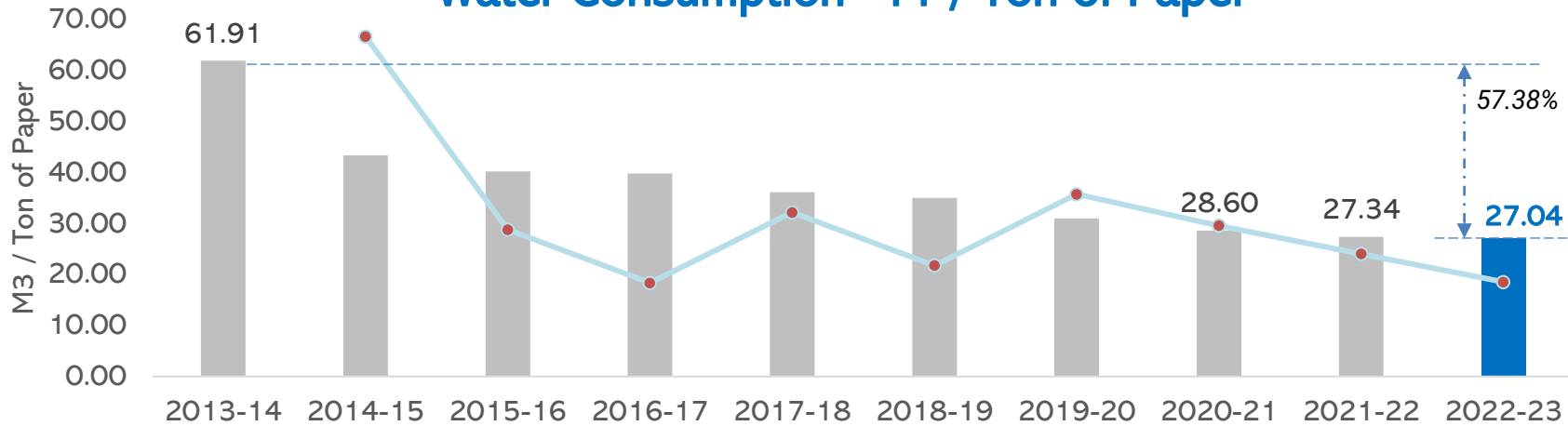


Waste Utilization and Management



Water Conservation

Water Consumption - M³/ Ton of Paper



Reduction - % over the year



Specific Water Consumption

27 M³



Reduction (FY-2020-21)

5.5 %



Water Conservation



Total Saving

437 M³



Average
payback

< 1 Year

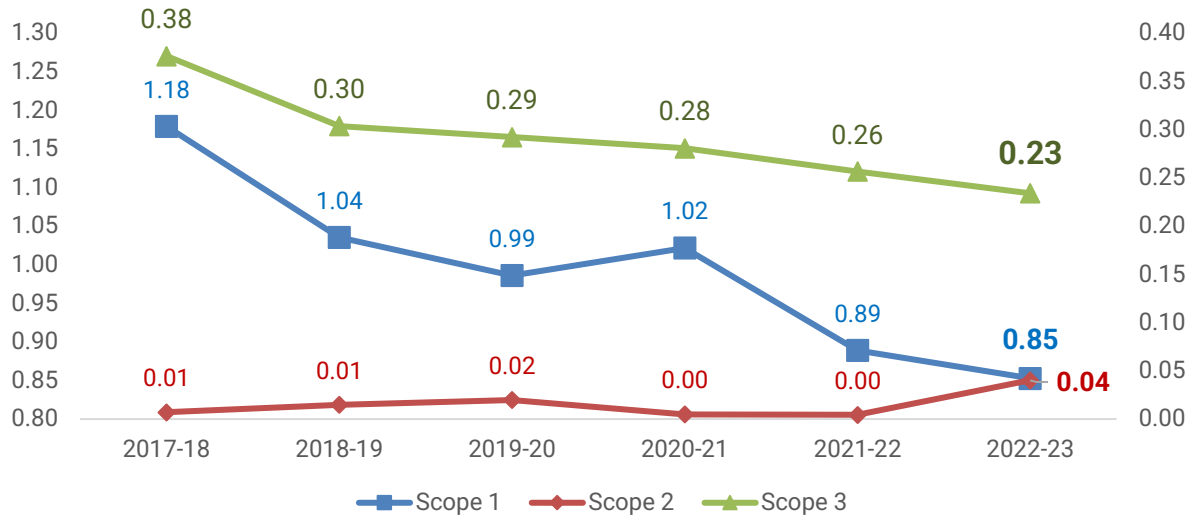
Water Conservation initiatives 2022-23

Sl. No.	Title of water saving project implemented	Annual Water Saving
		M ³ /Annum
1	In Pulp Mill reclaimed water is used in place of fresh water in D1 wash spray.	210000
2	Recovery Boiler(LFB-6) all pump sealing water, agitators sealing water, high pressure machine overflow water taken to seal pit and then to cooling Tower.	84000
3	Recovery Boiler(LFB-6) all pump sealing water, agitators sealing water, high pressure machine overflow water is replaced with cooling tower recirculating water.	84000
4	Steam condensate vacuum pump seal water is taken to warm water tank which will be used as fresh water make up warm water tank in PM-1,3,4 & 5. Earlier it was going to drain.	33600
5	Rewinder Hydraulic cooling water taken to warm water tank which is used in place of fresh water in PM-3,4 & 5 .	25200

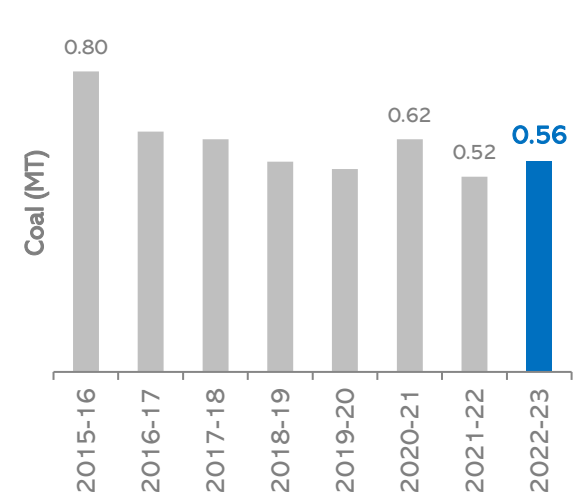


GHG Inventorisation

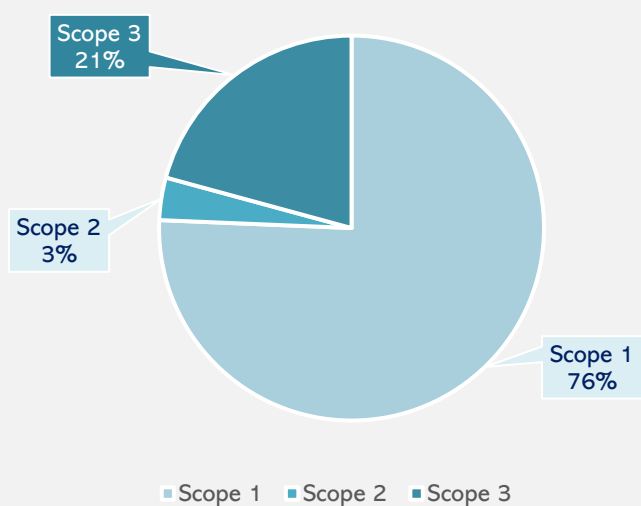
Emission Intensity – Kg CO₂ / T of Paper



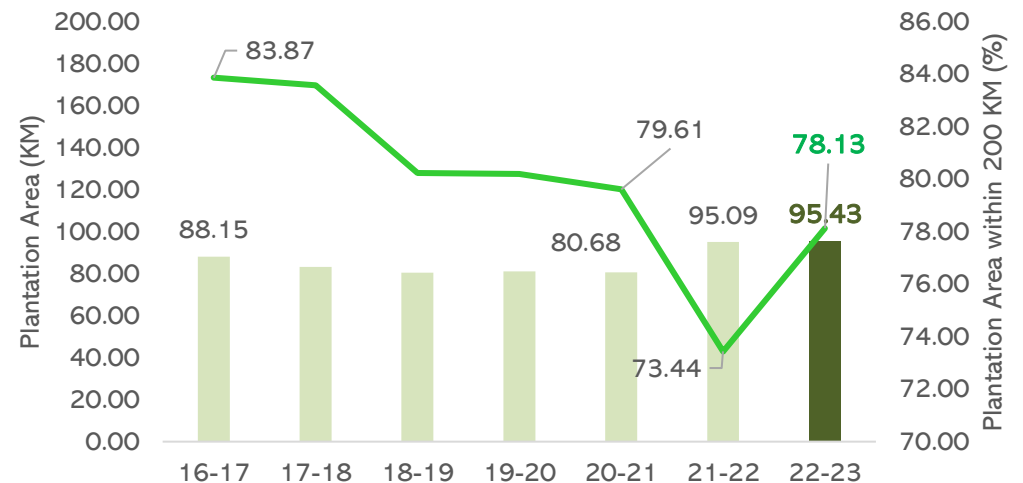
Specific Coal consumption (T of Coal / T of Paper)



GHG - 2022-23



Plantation



Environment Project – GHG Reduction

Optimize use of High Global Warming Potential Refrigerants

Overall
Reduction
TCO₂

416.14

Obsolescence

Phased out
Inefficient AC units

46 Nos. of
1.5TR capacity

70 TR

Replacement

Replace R22 with
R32 &
More Usage of
Less GWP
refrigerant-R32

Optimization

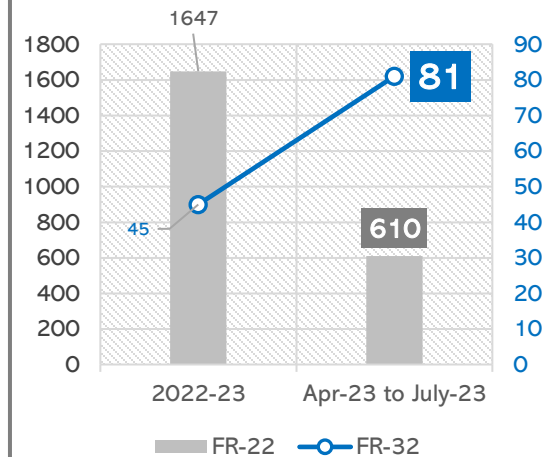
Optimized present
Chiller capacity for
installation of New
AHU in place
multiple stand-alone
AC units.

Refrigerant	R32	R22	R410A
Global Warming Potential (GWP)	657	1810	2088
Ozone Depletion Potential	NIL	M	NIL
Energy efficiency	H	L	M
Flammability	L	M	M
Toxicity	L	M	M
Pressure	L	H	H

	AC capacity	Compressor rating	AC	
Area	TR	kW	Qty	Total (kW)
VFD Room	7.5	8.25	4	33
Power Block	11	12.5	3	37.5
	7.5	8.25	3	24.75
New Blower capacity		22	2	44
Electrical Energy Savings kWh				60.05

Total 95.25 kWh stopped

Consumption of CFC (KG)



Savings
(GHG)

2 TCO₂

*Till date

Savings
(Rs.)

27 lacs

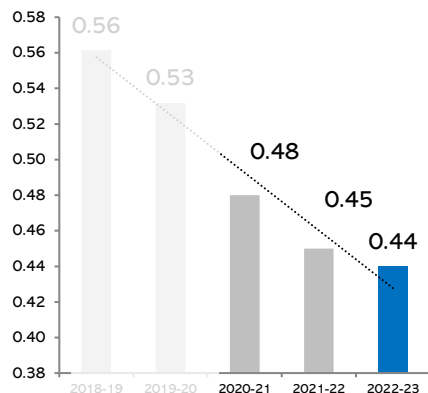
Savings
(GHG)

414.14 TCO₂



GHG Incentivization- Treated Effluent Quality parameters

BOD (Kg/ T of Production)

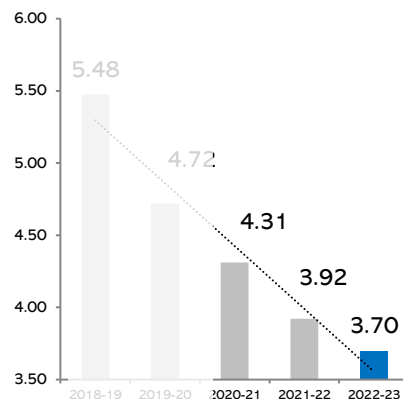


BOD

Reduction

22 %

COD (Kg/ T of Production)

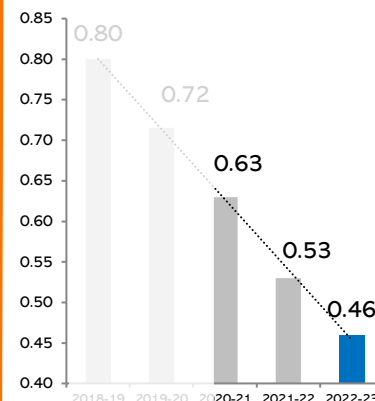


COD

Reduction

32 %

TSS (Kg/ T of Production)

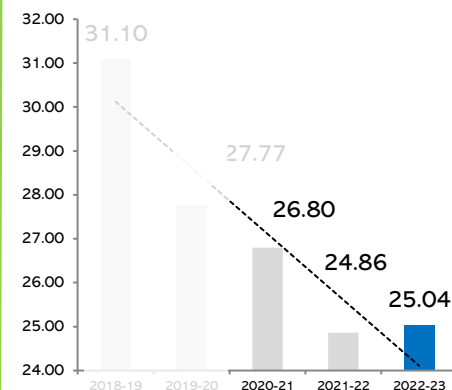


TSS

Reduction

43 %

Effluent (M3/ T of Production)



Effluent

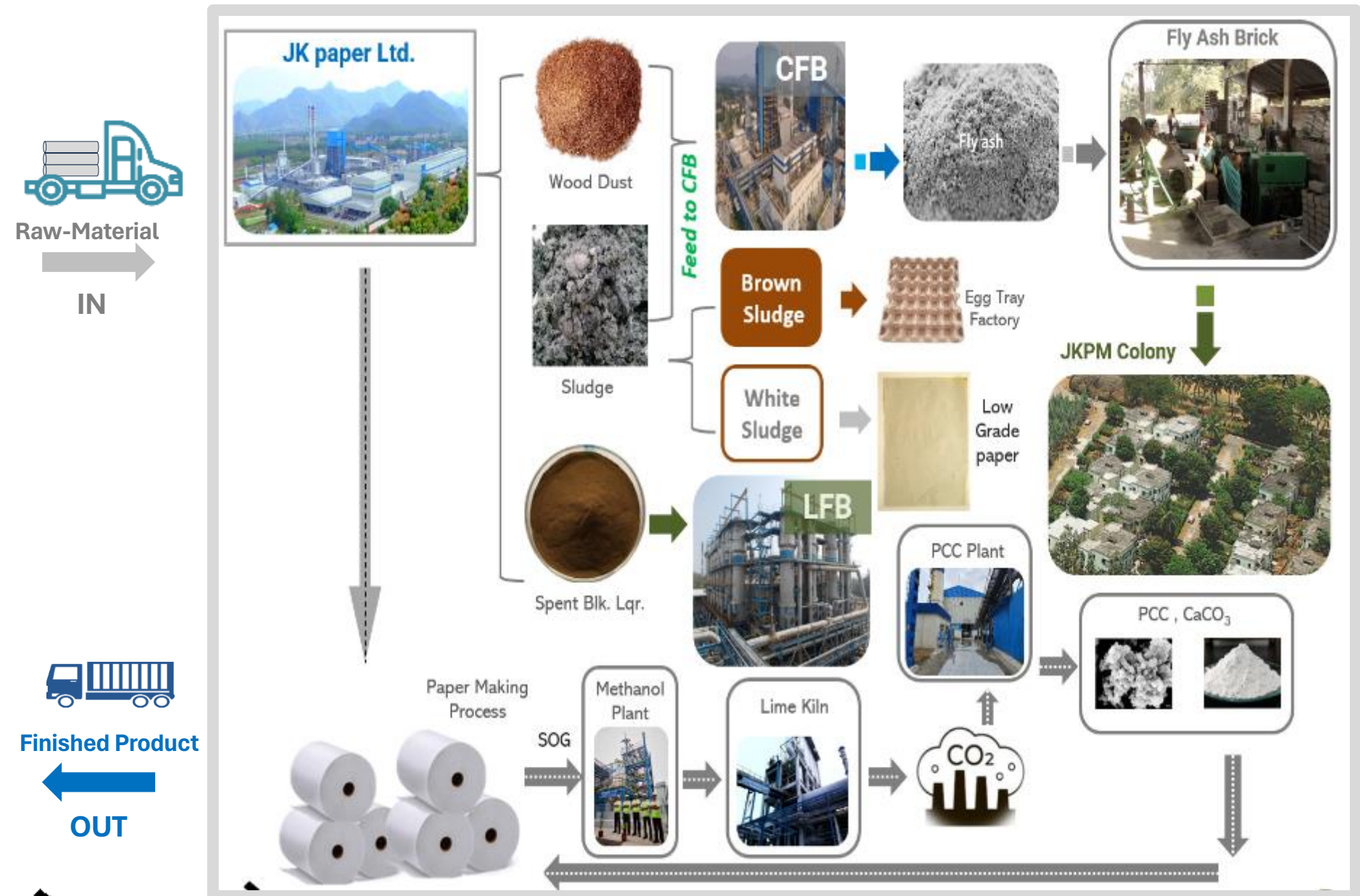
Reduction

19 %

***Reduction in consecutive 5 Yrs.*

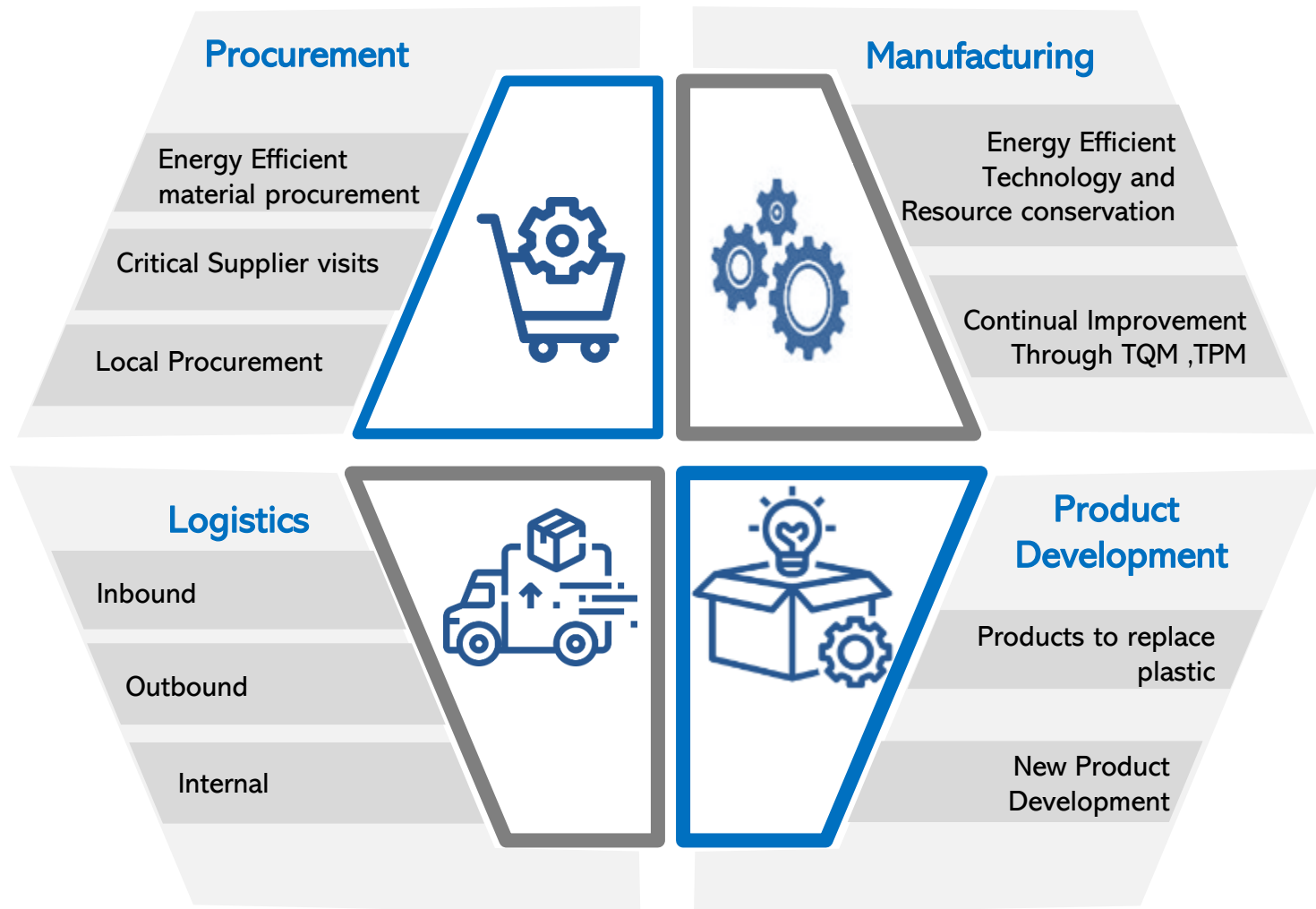


GHG Incentivization- JKPM Circular Economy



Green Supply Chain Management

Green Supply chain Policy is integrated with our Environment Management Policy



Green Supply Chain Management

Procurement

Logistics

Manufacturing

Product Development

Potential Ancillaries Business Partners

Identification

Sl. No.	Potential Ancillaries Business Partners	Contribution (%)
C-1	Chemical Supplier	9
C-2	Chemical Supplier	9
P-1	Packing Material Supplier	8
P-2	Packing Material Supplier	4

Contribute of total 30%

Visit to Vendor's facility and consult for Recourse Conservation

C1

P2

Potential Achievement of Ancillaries Business partners

An ISO 9001 , 14001 , 18001 , 22000 , cGMP & Halal Certified Company

Vendor Name :	Products	Logistic Optimization
C1	Native Starch, Modified Starches & Bi Products (Germs, Gluten & Fiber) Maize crushing: 350 mt /day Paper Grade Starches: 140 mt /day Native starch used for dry modification: 75 mt/day Food grade starches: 14MT/ Day. bi products: 73.375 mt/ day	Looking for opportunities to clooabrate with customers and trying to incoprare of logistic model where ISO tank are used instead of Jumbo bags to transport material. This system would ensure zero contamination of external moisture and other external contaminants as material would be loaded in closed tanks by vaccum suction which would help us to also avoid the usage of HDPE bags ensure minimum handling losses.

Avoid usage of HDPE storage bags for additional capacity, instead of that, started usage of paper bags



Vendor Name:	Products	Reel size optimization
P2	Wrapper paper & Wrapper reels.	Increase the width of Base Reels from 55.5 CM to 112.5 CM, Previous power consumption-79.2 kWh/ T, Presently it is 39.6 kWh/ T.SEC reduced by 50%.



Green Supply Chain Management

Procurement

Logistics

Manufacturing

Product Development

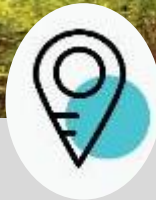


Imported Spare Substitution (Million Rs.)

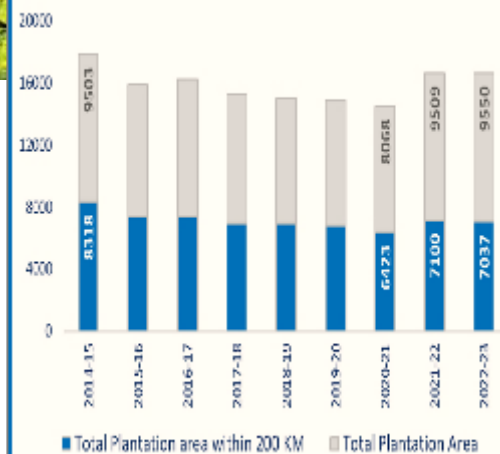
27.4

Raw material procurement within 200 KM

100 %



Plantation Area (KM)



Farmer engagement has increased productivity and enhanced income for Farmers

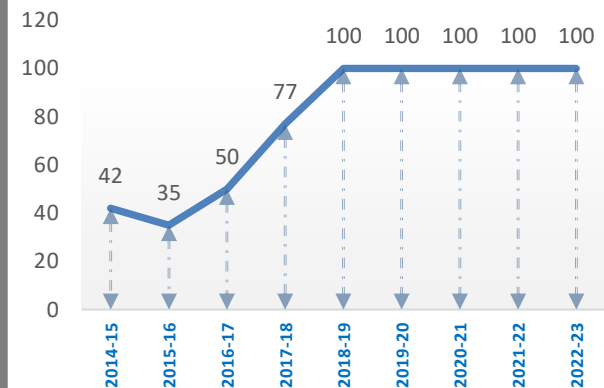
Awareness for higher productivity through silvicultural practices

Reduction in GHG Emission

Plantation based on site clone matching

Technical guidance & improved returns through agroforestry interventions

Proportion of wood from local catchment of the Company's plants (%)



Green Supply Chain Management

Procurement

Logistics

Manufacturing

Product Development



Technology Absorption over the period



1938

Started manufacturing straw boards at Bhopal with a capacity of 3,600 tonnes per annum



1962

Installed Paper machine-1 , First paper machine



1995

Installed Paper Machine -5



2013

Installed Paper machine-6 . High speed paper machine .

Wood Handling

Modern Disc choppers ensures uniform chip size, Low dust generation and lower specific power consumptions. This will help us in improving overall pulp yield %.

Pulp Mill

Modern digesters for cooking with advanced controls helps us in producing uniform quality pulp at High yield with minimum energy consumption. Environment friendly Elemental Chlorine Free (ECF) bleaching improves fiber strength and brightness.

Recovery Island

Falling film Multistage evaporators ensures high efficiency and reliability by utilizing Lamella heating surfaces. Higher solids Black liquor generated out of these evaporators helps us in getting more steam per ton of Solids.

PM-6

- Disc Filters, Auto Dilution Hydraulic Head boxes, Speed sizer, Curtain Coaters, Twin Drum Winders ,
- Automatic storage and Retrieval systems



Green Supply Chain Management

Procurement

Logistics

Manufacturing

Product Development



Coated Cup stock Paper of 140 to 210 gsm for making High-end **Tea & Coffee Cup** making application and Soft Pillow Pack Food product.



2780 Million Units

Eco sip Paper for Paper Straw Application



2060 Million Units

EcoStic Paper for **Lollipop / Ear Bud** Application



OGR (Oil & Grease Resistance) Paper for Food grade wrapping application



6170 Million Units

This helped to Replace Plastic Product

15218 MT

Carry Paper for **Carry Bag** application



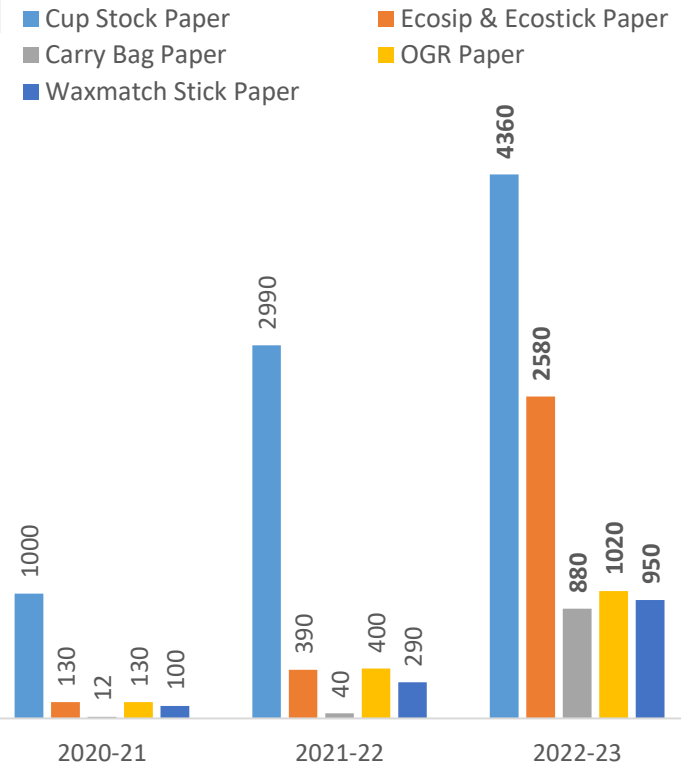
24 Million Bags



Hazardous carcinogenic gas emission is minimized.
eCO2t gas emission @ 2.94 T / Ton

45 MT

YOY New Product Development (MT)



Products	Cup Stock Paper	Ecosip & Ecostick Paper	Carry Bag Paper	OGR Paper	Waxmatch Stick Paper
2020-21	1000	130	12	130	100
2021-22	2990	390	40	400	290
2022-23	4360	2580	880	1020	950



Teamwork, Employee Involvement & Monitoring



Optimization

Plant and Equipment Efficiency

Paper Machine

↑109%

Pulp Mill

↑106%



Elimination and prevention

All type of losses in the use of water, power, steam, coal, compressed air.

SPC reduction

↓7%

SEC reduction

↓8%



Maximize

Condensate recovery and use process heat recovery .

SWC reduction

↓4%

SCC reduction

↓9.7%



Minimize

Waste

Black Lqr. Energy

↑68%



Increase

Co-generation of steam and power

Self Power

~ 100%

Self Steam

100%



Improve

Utilization of natural resources leading to Environmental benefits.

Waste utilization Wood Dust

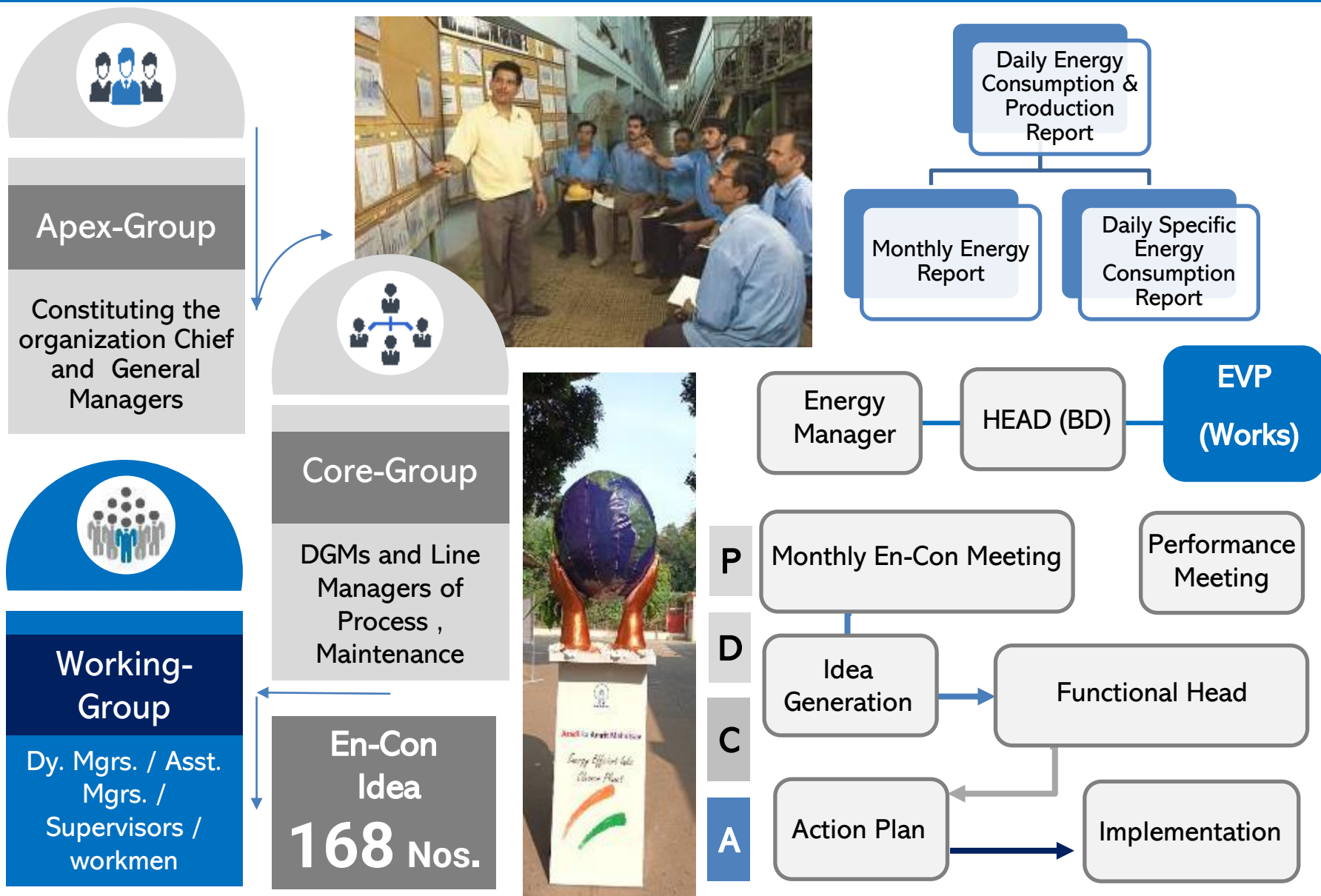
↑1.43%



Energy conservation through
Total Employee Involvement.

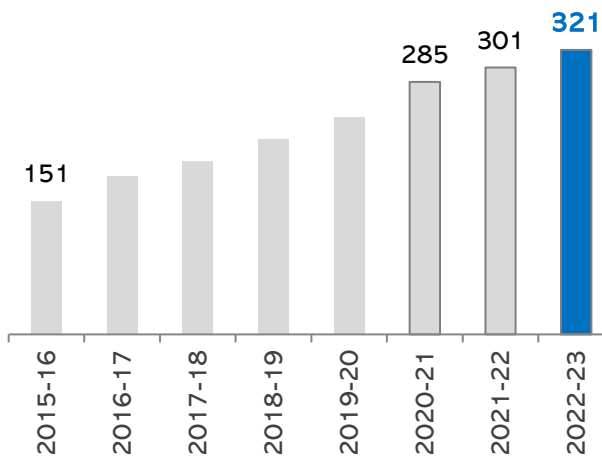


Teamwork, Employee Involvement & Monitoring



Teamwork, Employee Involvement & Monitoring

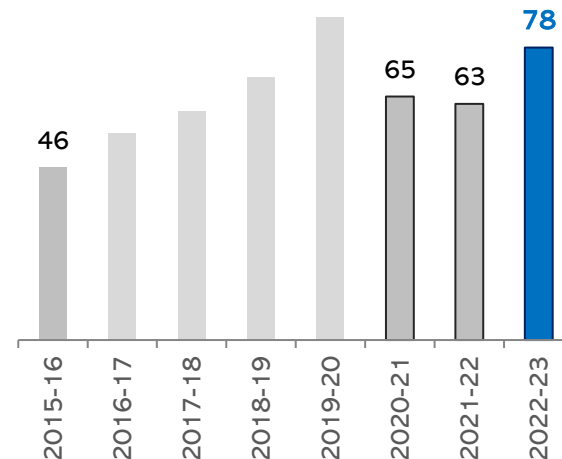
No. of KAIZENs



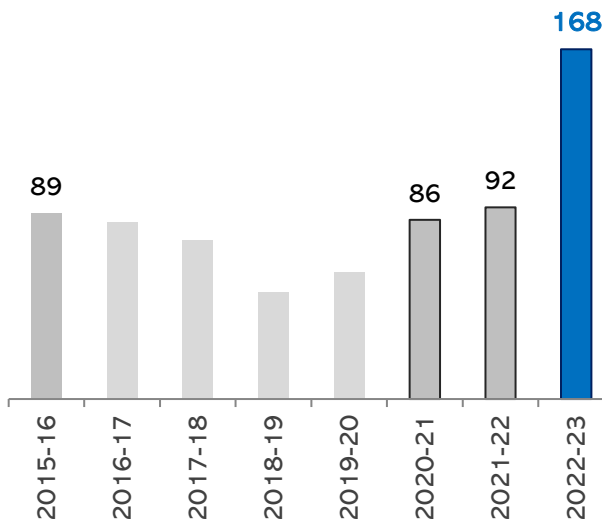
Observance of Environment Day



No. Of QCs



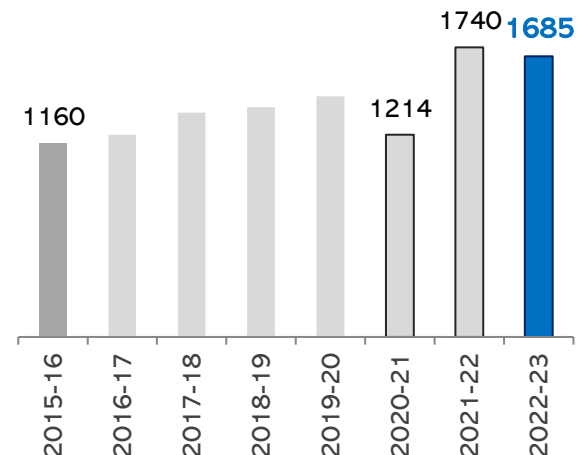
No. of En-Con Ideas



Observance of Energy Conservation Day



No. of suggestions

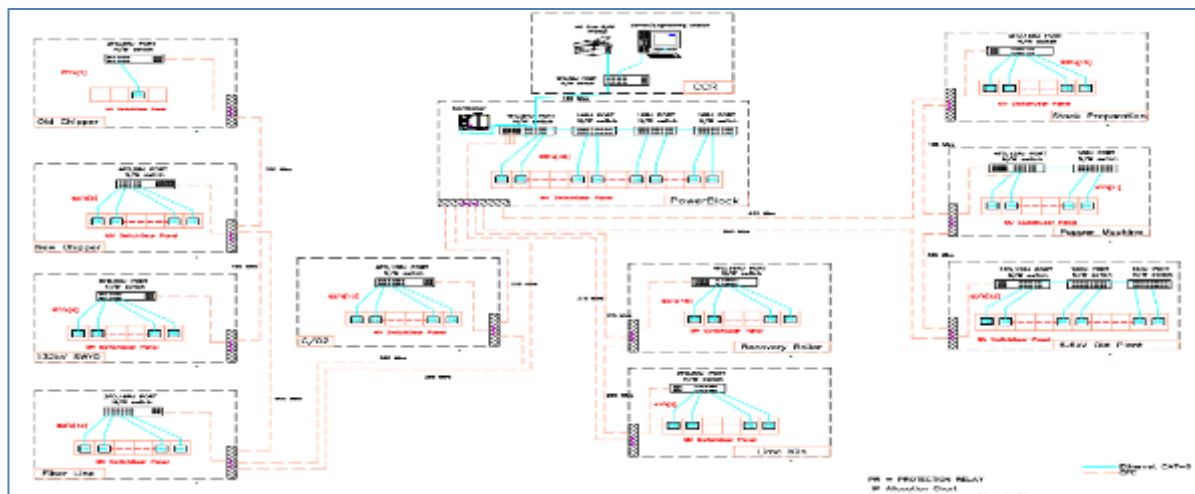


Teamwork, Employee Involvement & Monitoring

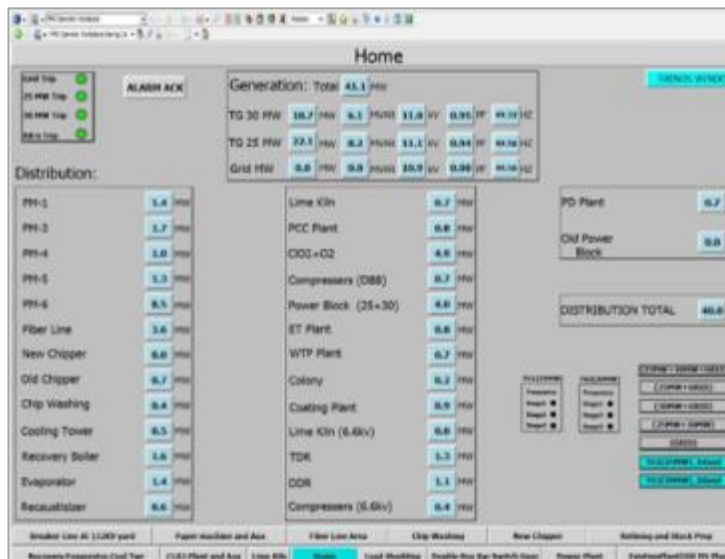
SEC - Template

ELECTRIC DEPARTMENT						
DATE: 28 Jul 20						
DAILY ELECTRICAL ENERGY UTILIZATION REPORT						
S.NO	DEPARTMENT NAME	POWER CONSUMPTION				
		TODAY		TODAY		YTD/2019/20
TAU CONSUMPTION		KWH	MW	KWH	MW	
1	COMPRESSORS	35175	1.47	76480	3.19	23209
2	POWER BOLDS M	40934	1.69	91453	3.81	23771
3	UT DOLLER VY	52961	2.23	110500	4.59	26740
4	EVAPORATOR-COOLING TOWER	48256	2.01	114936	4.78	40965
5	RECAUSTIZER	13957	0.58	33458	1.39	14563
6	LINE KLIN	13332	0.55	30380	1.25	13699
7	PCC PLANT	25988	1.08	45945	1.91	10860
8	CHIPPERS HOUSE	3787	0.16	8425	0.35	3054
9	CHIPS WASHING	8256	0.34	18865	0.78	5689
10	NEW RESE LINE	339219	1.40	2423674	10.09	273342
11	COOL	70369	2.93	147712	6.16	83634
12	CO PLANT	7465	0.31	170040	7.08	7885
13	PAPER MACHINE - M	210707	8.84	4973981	20.72	206260
14	NEW E.T. PLANT	5047	0.21	134050	5.62	5855
15	32MM TGAUX	14777	0.61	322423	13.85	14423
16	30MM TGAUX	14554	0.60	363518	15.15	15805
17	3.4MM TGAUX	272	0.01	3640	0.01	346
18	WATER SUPPLY & S	12005	0.50	286292	11.93	13447
19	COMPRESSOR & AUX	0	0.00	0	0	0
20	SEWAGE TREATMENT PLANT	2526	0.10	7980	0.33	3477
21	MELT (OLD PRC STOCK)	2806	0.12	64126	2.76	2875
22	CHIPPERS HOUSE (NEW)	2984	0.12	147510	6.16	7139
23	PET COOL	485	0.02	17805	0.74	757
24	PAPER MACHINE - I	42169	1.76	3013404	12.53	44905
25	PAPER MACHINE - II	42896	1.79	906005	40.44	42200
26	PAPER MACHINE - III	25155	1.05	147588	6.16	29878
27	PAPER MACHINE - IV	28448	1.19	671408	28.06	20449
28	TDR-DOE	42155	1.76	990240	41.51	42315
29	COOLING PLANT	14779	0.61	448226	19.10	20849
30	P. OF PLANT	0	0.00	0	0	0
31	E.T. PLANT	14108	0.59	356651	14.86	10507
32	WATER RECLAMATION	3300	0.13	82900	3.35	3300
33	ADM. BUILDING & TECH BUILD	700	0.03	18950	0.79	824
34	COLDWATER	9830	0.41	227540	9.44	4071
35	CHILLER (NEW)	1527	0.06	45648	1.89	1758
36	GRID EXP. OFF	0	0.00	330	0.01	22
TOTAL		940230	39.18	21790000	90.47	947294
GENERATION		940230	39.18	21790000	90.47	947294
1	30MM GENERATOR	360000	14.25	7811000	32.15	34
2	20MM GENERATOR	200000	8.20	1284000	52.25	34
3	5.6MM GENERATOR	48000	1.99	1187330	4.98	34
SUB TOTAL		940000	39.17	21794100	90.46	
4	GRID	230	0.01	5900	0.02	34
5	TRANS. LOSS	0	0.00	0	0	0
TOTAL		940230	39.18	21790000	90.47	
POWER FACTOR						REMARKS
1	30MM GENERATOR	0.916	0.916	0.916		
2	20MM GENERATOR	0.914	0.914	0.914		
3	5.6MM GENERATOR	0.932	0.932	0.932		
4	GRID	0.917	0.917	0.917		
5	TRANS. LOSS	0	0.000	0.000		
GRID MEAN MW		2.084		700478		
SPECIFIC POWER		70848		2147484		
TOTAL PAPER PRODUCTION		1027		25434		
TOTAL PAPER SPECIFIC POWER		973		785		
COATING UNIT		13379		488026		
COATING UNIT PRODUCTION		254		3972		
COATING SPECIFIC POWER		136		128		
TOTAL PAPER PRODUCTION		0		0		

EMS – Configuration layout



PMS - Screenshot



Implementation of ISO 50001/ Green Co / IGBC rating

ISO 50001 implementation under process

IMPLEMENTATION OF CORRECTIVE AND PREVENTIVE ACTIONS FROM ISO 9000& ISO 14000 CERTIFICATIONS

JK PAPER LTD. - UNIT - JKPM
15-Feb-2022
M/s. DNV Recertification Periodic Audit 25th to 29th January 2022 Minor NCN / OBS / ORI Distribution List

Sl. No	Category / NCN No.	Department	Standard
1	Minor-01	Stock Preparation	ISO 9001:2015
2	Minor-03	Stock Preparation	ISO 9001:2015
3	Minor-02	Paper Machine-6 (Opm.)	ISO 9001:2015
4	Minor-04	Paper Machine-6 (Opm.)	ISO 45001:2018
5	Minor-04	Instrumentation	ISO 45001:2018
6	Minor-05	Finishing House PM-6	ISO 45001:2018
7	Minor-06	Electrical	ISO 45001:2018
8	Minor-07	Soda Recovery (Medh.)	ISO 45001:2018
9	Minor-08	Purchase (HO, ND)	ISO 9001:2015
10	Minor-09	Pulp Mill (Opm.)	ISO 14001:2015
11	Minor-10	Coating Plant	ISO 14001:2015
12	Minor-10	Canteen	ISO 14001:2015

Legend:
NCN : Non Conformity Note-Minor
OBS : Observation
ORI : Opportunity for Improvement

JK PAPER LTD. - UNIT - JKPM
Form No. QP/NCN/001
Revision No. 002 Date: 01-01-2019
NCN No. Minor-01

NONCONFORMITY REPORT FOR EXTERNAL AUDIT

Clause No. 8.3
Department / Section : Design / Spec Prep.
Audit No. Recertification Audit
Responsibility : (Spec Prep / Spec Prep)

DETAILS OF NONCONFORMITY

ISO 9001:2015 8.3
ISO 14001:2015 8.3
ISO 45001:2018 8.3

CORRECTIVE ACTION REPORT

Root Cause Analysis:
The cause of the non-conformity was the lack of control of the design and specification process. The design and specification process was not controlled and the design and specification process was not controlled.

Proposed Corrective Action:
The design and specification process will be controlled and the design and specification process will be controlled.

Proposed Completion Date: Regular

JK PAPER LTD. - UNIT - JKPM
Form No. QP/NCN/001
Revision No. 002 Date: 01-01-2019
NCN No. Minor-02

NONCONFORMITY REPORT FOR EXTERNAL AUDIT

Clause No. 10.2
Department / Section : Paper Mills (Opm.)
Audit No. Recertification Audit
Responsibility : (Spec Prep / Spec Prep)

DETAILS OF NONCONFORMITY

ISO 9001:2015 10.2
ISO 14001:2015 10.2
ISO 45001:2018 10.2

CORRECTIVE ACTION REPORT

Root Cause Analysis:
The cause of the non-conformity was the lack of control of the design and specification process. The design and specification process was not controlled and the design and specification process was not controlled.

Proposed Corrective Action:
The design and specification process will be controlled and the design and specification process will be controlled.

Proposed Completion Date: Regular

JK PAPER LTD. - UNIT - JKPM
Form No. QP/NCN/001
Revision No. 002 Date: 01-01-2019
NCN No. Minor-03

NONCONFORMITY REPORT FOR EXTERNAL AUDIT

Clause No. 8.2
Department / Section : Pulp Mill (Opm.)
Audit No. Recertification Audit
Responsibility : (Spec Prep / Spec Prep)

DETAILS OF NONCONFORMITY

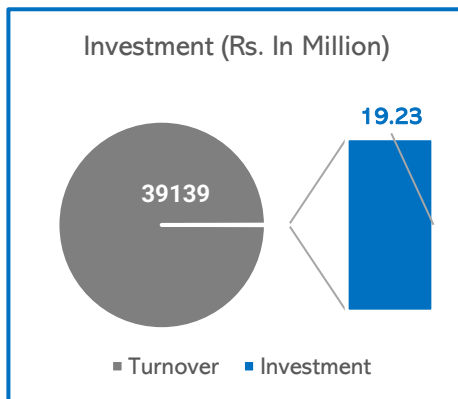
ISO 9001:2015 8.2
ISO 14001:2015 8.2
ISO 45001:2018 8.2

CORRECTIVE ACTION REPORT

Root Cause Analysis:
The cause of the non-conformity was the lack of control of the design and specification process. The design and specification process was not controlled and the design and specification process was not controlled.

Proposed Corrective Action:
The design and specification process will be controlled and the design and specification process will be controlled.

Proposed Completion Date: Regular

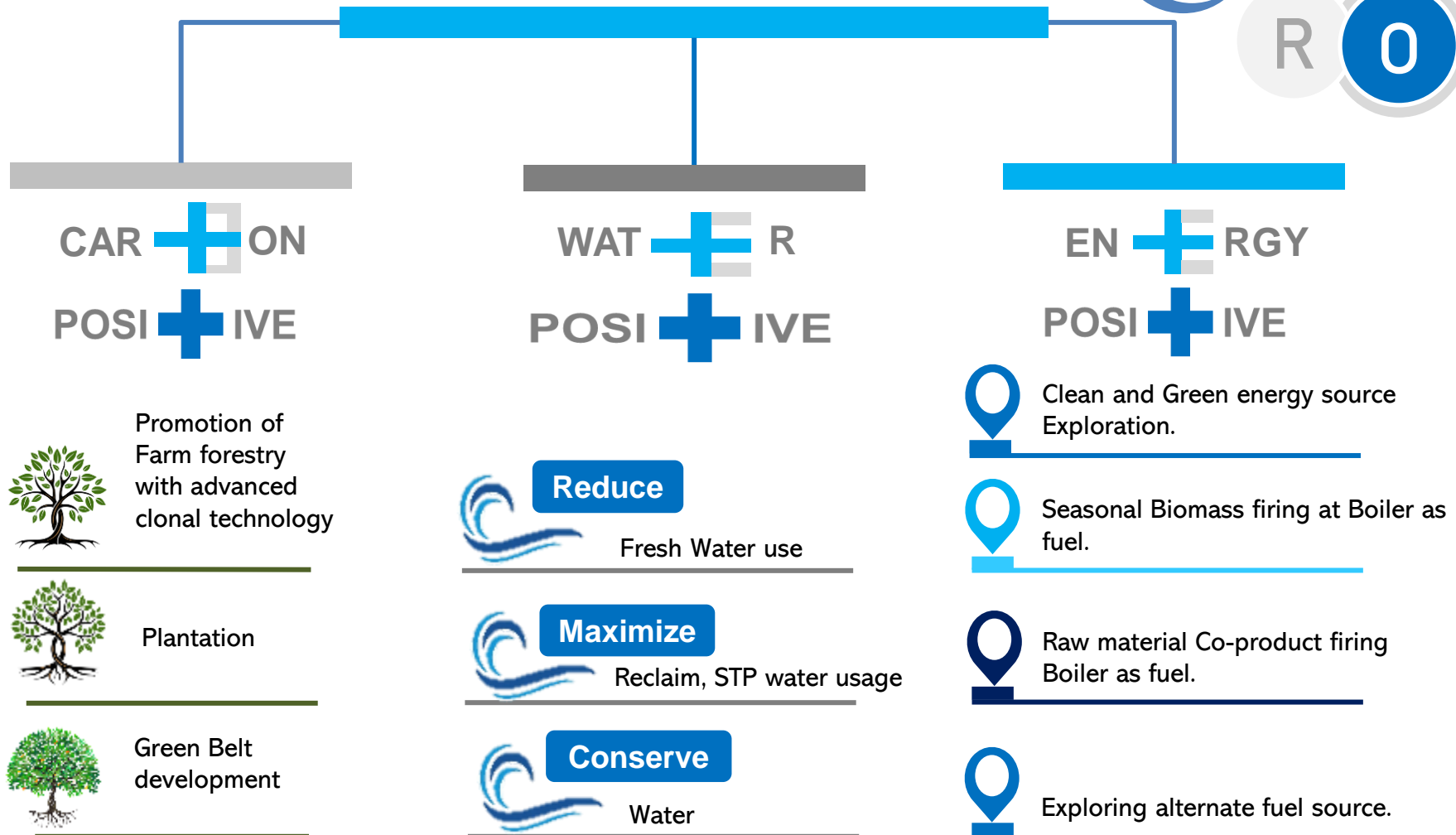


Investment FY 22-23 is 19.23 Million Rs.





Way to “NET ZERO”



Carbon – Posi+ive Journey

CAR + ON
POSI + IVE

Since 2015-16

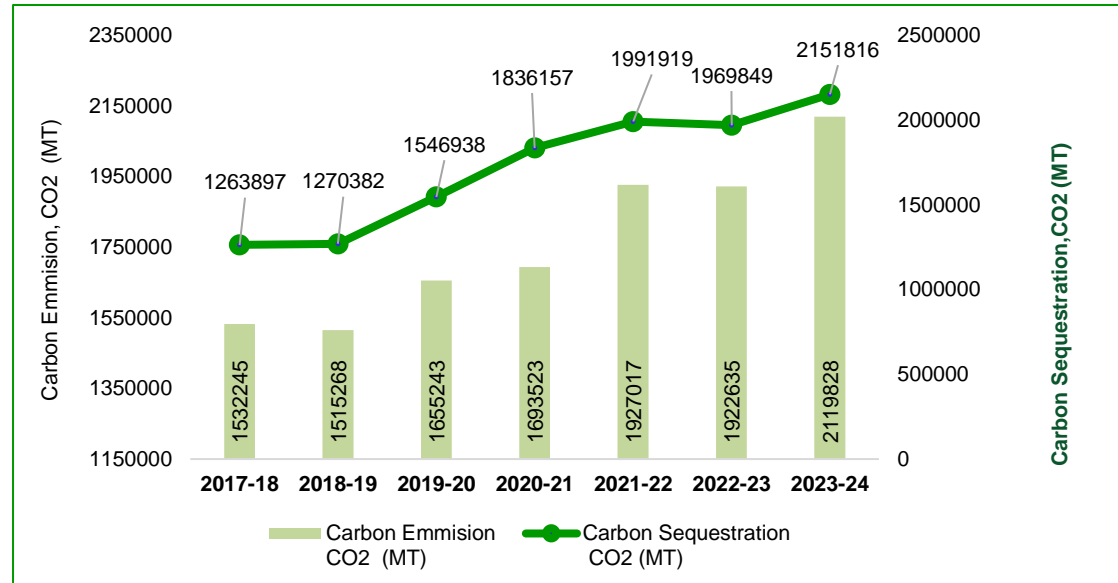
17 Nos. of Green Houses
5500 Sq. MTR Area



3 Crore Clone nursery capacity



Carbon Sequestration



Promotion of Farm forestry with advanced clonal technology

15 types of genetic clones used based on soil property and climate condition

Plantation

Milestone target :- 3 Cr. Clone distribution against best achieved 2.52 Cr.

Green Belt development

41 % achieved.

Sequestration Year	Projected Annual Carbon Sequestration CO2 (MT)
2024-25	22 Lakhs
2025-26	25 Lakhs
2026-27	26 Lakhs
2027-28	28 Lakhs
2028-29	28 Lakhs

Water – Posi+ive Journey

WATER
POSITIVE

Reduce

Fresh Water use

8% reduction by Year 2030

Maximize

Reclaim water

STP water usage

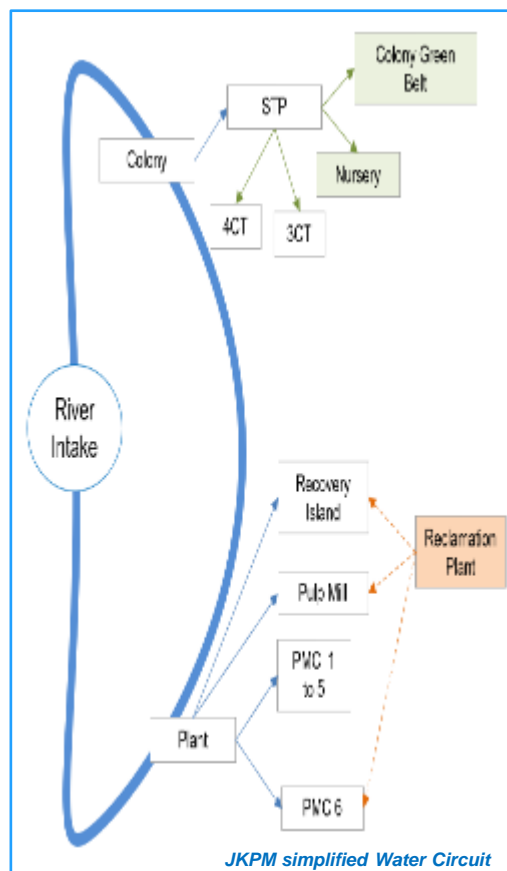
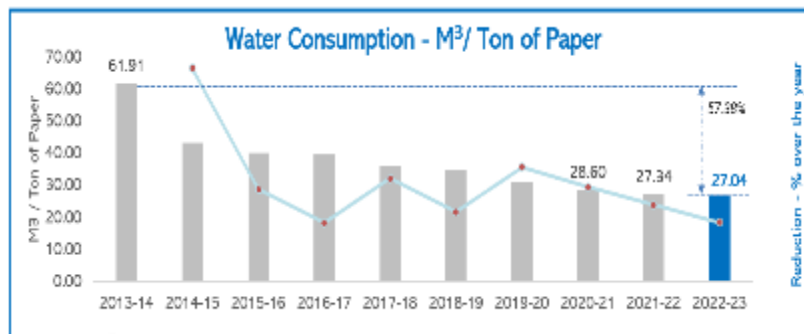
100% of reclaim water & 100% of STP water usage by Year 2030

Conserve

Water

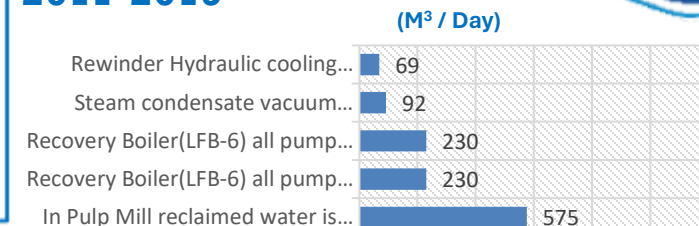
More Rainwater-Harvesting

16 Nos. Present catchment area yields 240 M³ of water / hrs.
6000 M³ Tertiary Clarifier with colour correction system by year 2024.

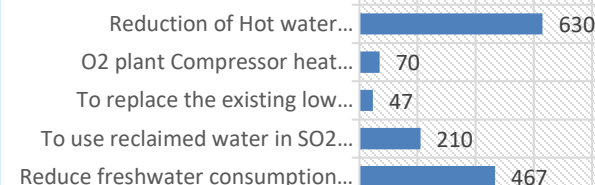


Water Saving Project

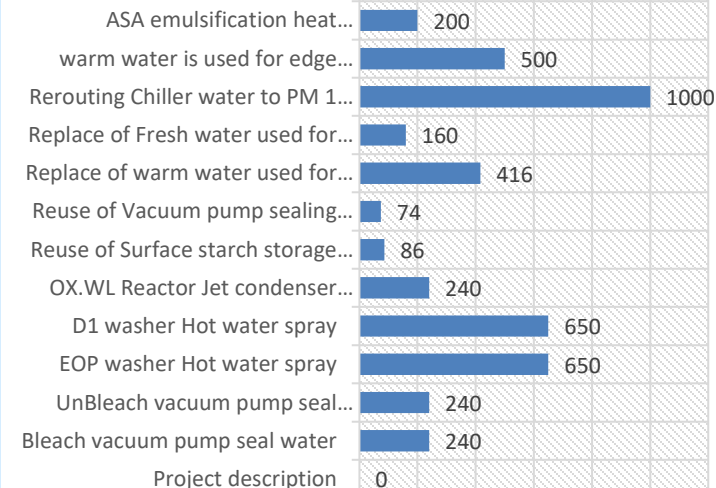
2017-2019



2020-2022



2022-2023



0 200 400 600 800 1000 1200

Energy – Posi+ive Journey

EN + RGY
POSI + IVE



Coal Consumption-
TPD

450

71%

2023

Reduction in
fossil fuel
consumption

400

-11%

+ 78%

Total
proposed
area-45723
MTR²

2025

Study / Primary
Assessment
Completed

4MW solar Plant



Proposed Area

Cashew Shell +
Rice Husk
+Peanut Shell
Firing at CFBC
as Biomass fuel

Reduction in
fossil fuel
consumption

250

- 37.5%

+ 80%

High
availability
of Biomass
Seasonal
Fuel

2027



Wood Bark and
Biomass fuel
firing at CFBC

Reduction in
fossil fuel
consumption

125

- 50%

+ 93%

High
availability
of Barks as
Co-Product
along with
Regular raw
material

2030



Sludge firing
in Boiler as
fuel

Reduction in
fossil fuel
consumption
-100%



+100%

Exploring
"Alternative
Fuel" for
Thermal Plant

1st Report
submitted on
8th May 2023
by IIT Delhi

2030 and
beyond

Green Energy
Share

58%

2014

to

2017

63%

2018

to

2020



Award & Reorganizations

FICCI'S Sustainable Agriculture Award-2022



State Business Leadership Award for Promoting Corporate Odisha 2023



State Energy Conservation Award



22nd Annual Greentech Environment

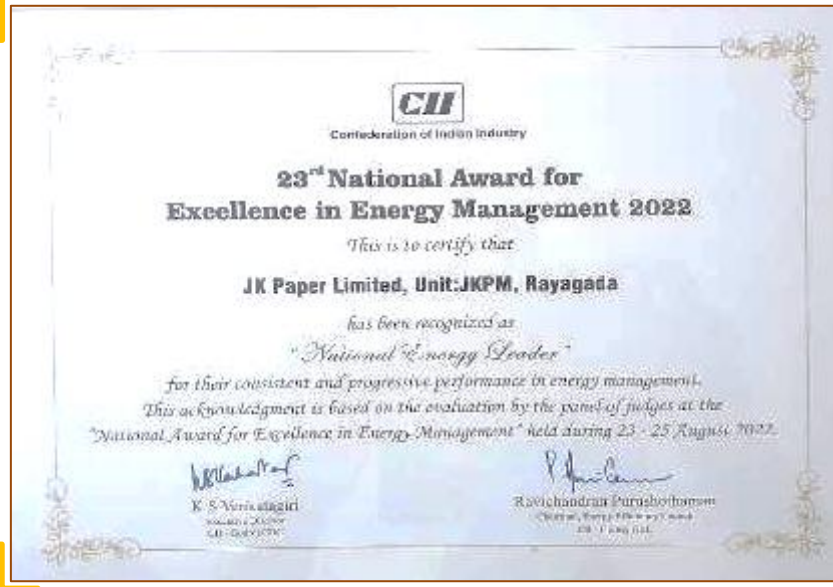


CII Excellence in Water Management



12. Learning from CII Award or any other Award program

CII Excellence in Energy Management



Energy Efficiency Journey with -CII

2021-22

Energy Leader

- Excellent in Energy Management

2019-20

Excellent in Energy Management

- Energy Efficient Unit

2018-19

Excellent in Energy Management

- Energy Efficient Unit

2017-18

Excellence in Energy Management

.Energy Efficient Unit

2016-17

Most Useful Presentation

- Excellent In Energy Management

Learnings

1

4 capital projects from the learning of Energy award program in 2018-19 & 2017-18

2

Use Energy Efficient Equipment
PM-3 all old motors are changed phase wise with new IE rated motor to achieve better efficiency (Phase-1 Completed).

*Networking with other Energy managers has improved and it is helping to reduce the time gap

*Greenco document is of great help to implement best practices

3

Maximize the usages of Natural Resource

Light pipe project is already under proposal stage to mitigate the lighting issue at various sheds of the Plant.

4

Implementation of ISO 50001, the implementation is under progress



1963

2003

2023



Sustaining mankind's future,
requires a commitment to
Eco-friendly practices



SRI. VINAY DWIVEDI

EXECUTIVE VICE PRESIDENT (WORKS)

J K PAPER *Creating Lasting Impressions*