WELCOME

THE SUPREME INDUSTRIES LTD KANPUR-
PLASTICS PIPE AND ROTO DIVISION

H1 TO H8, H-1A, H-9/1 UPSIDC INDUSTRIAL AREA
JAINPUR KANPUR DEHAT(UP)-209311

Presentation For CII National Award For Excellence In Energy Management 2023 (General Sector)

Team Member

1) Mr. Vasudev Sharma(Sr. G.M ENERGY & ENVIRNOMENT)
2) Mr. Saurabh Gupta (Sr.General Manager)
3) Mr. Siddharth Srivastava (Manager-ENERGY & ENVIRNOMENT)

THE SUPREME INDUSTRIES LTD - OVERVIEW

FOUNDED IN
1942

PLANTS
28

OFFICES
8

5400+ WORKFORCE GENERATED

INR 9200 CRORES

3155.38
LAKHS -TOTAL KWH CONSUMED

194220 TCO_2
TOTAL EMISSION

TRIPLE
CERTIFICATION
ISO 14001, 45001, 50001

120.01
LAKHS KWH

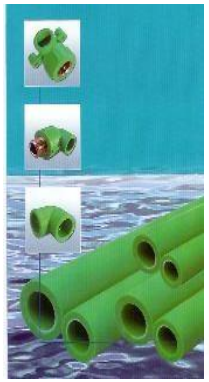
95395 TCO_2
EMISSION SAVED FROM 2019-20 ONWARDS

324.66
LAKHS KWH

28.04
MWP

GROUP'S BUSINESS VERTICALS

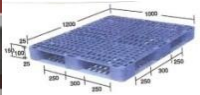
Plastic Piping Division

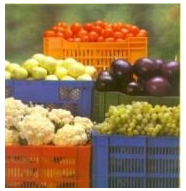


Consumer Products

Packaging Products

- Specialty Films
- Protective Packaging Products
- Cross Laminated Film Products





Industrial Products

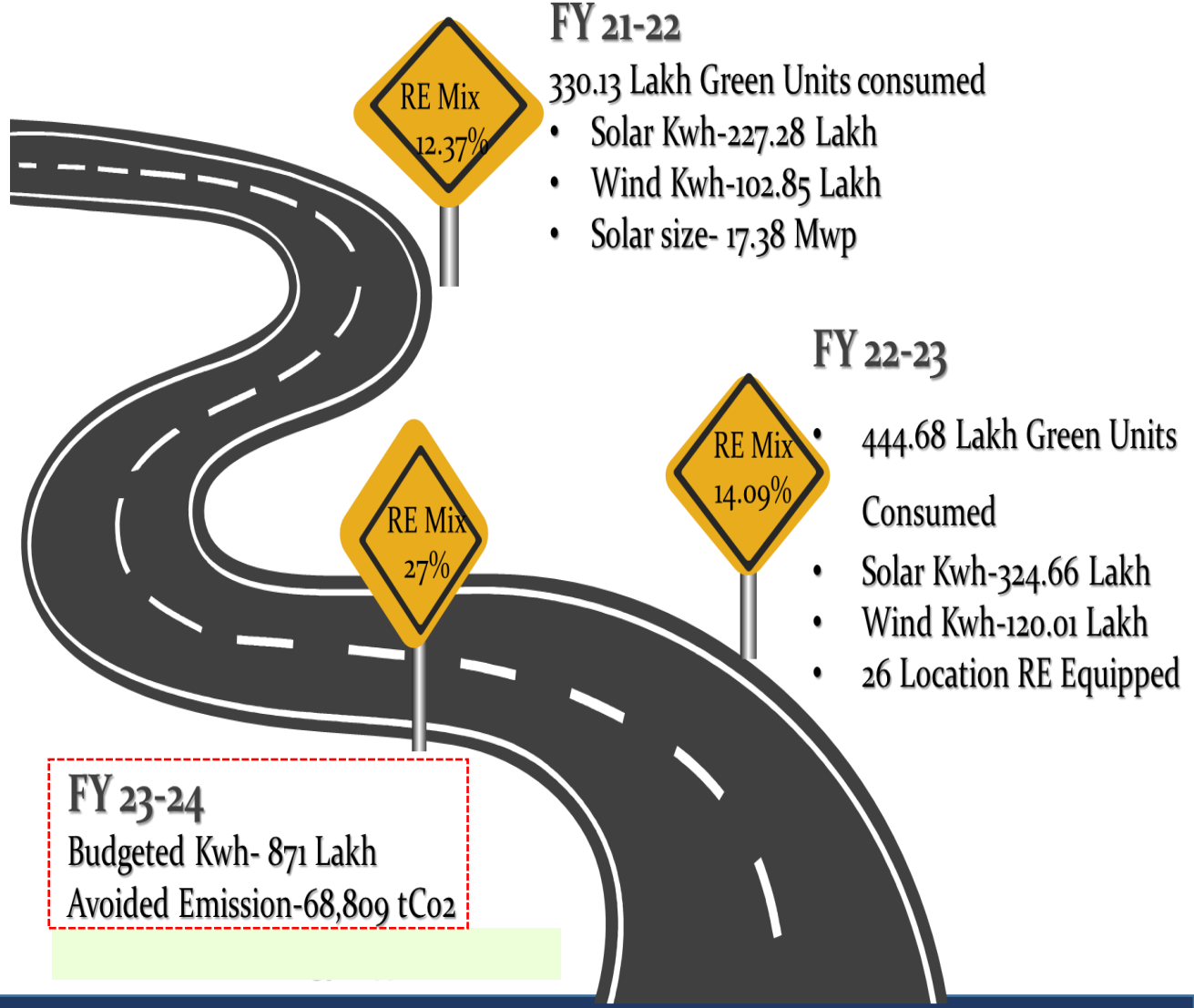
- Industrial Components
- Material Handling Division
- Composite LPG Cylinders

ORGANIZATION LAKSHYA & ROAD MAP

All 28 Units RE presence by FY 23-24*

Towards RE 100 : Chennai and Hosur

25% Green Units Mix by FY 2024-25*



FY 21-22

330.13 Lakh Green Units consumed

- Solar Kwh-227.28 Lakh
- Wind Kwh-102.85 Lakh
- Solar size- 17.38 Mwp

FY 22-23

- 444.68 Lakh Green Units Consumed
- Solar Kwh-324.66 Lakh
- Wind Kwh-120.01 Lakh
- 26 Location RE Equipped

FY 23-24

Budgeted Kwh- 871 Lakh

Avoided Emission-68,809 tCo2

GROUP'S VISION AND MISSION

Vision

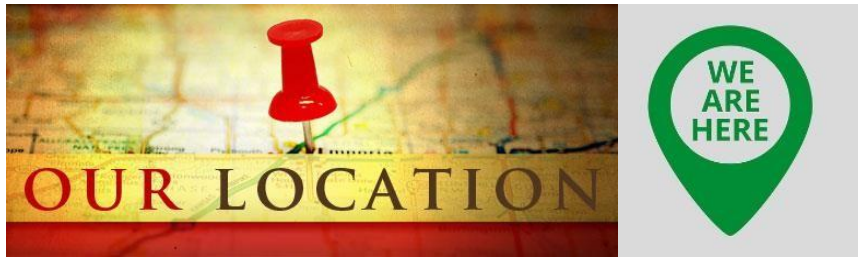
- **Energy Efficiency Improvement**
- Decarbonization by increase share of **Renewable energy**
- **Carbon Neutral**
- **Moving towards Circularity**
- **Sustainable** Sourcing
- **Zero Liquid Discharge**-Stop the drain
- Improving water table by recharging ground water

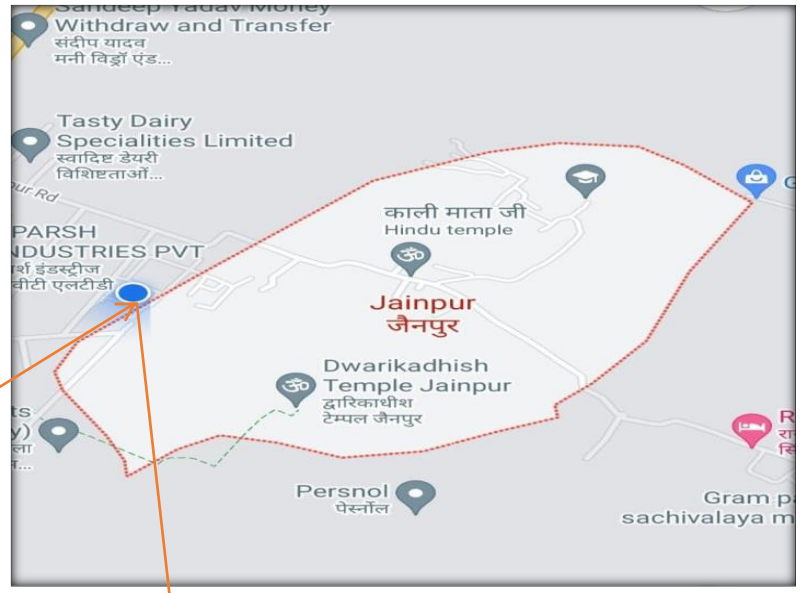
Mission

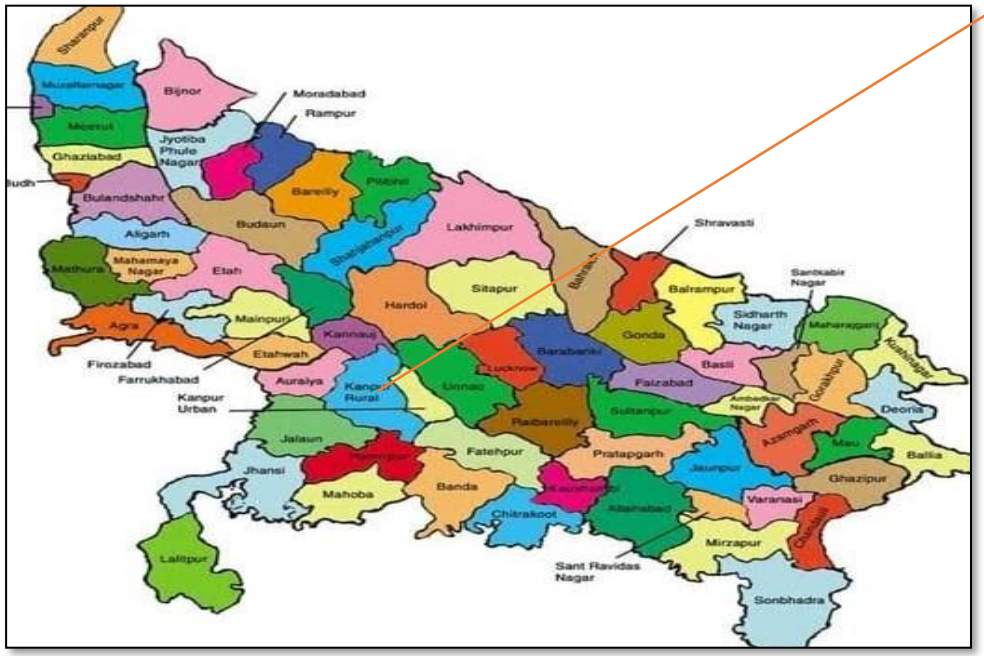
- Certification of all units ISO 50001:2018 by year 2024-25
- All plants to be certified ISO 14001, , ISO 45000 by year **2023-24.**
- Increase the usage of renewable energy from **12% -25% by year 2024-25.**
- **RE 100: Chennai and Hosur Plants by 2024**
- **Energy Efficiency improvement 2 % to 3% YoY.**
- **Water Positive**

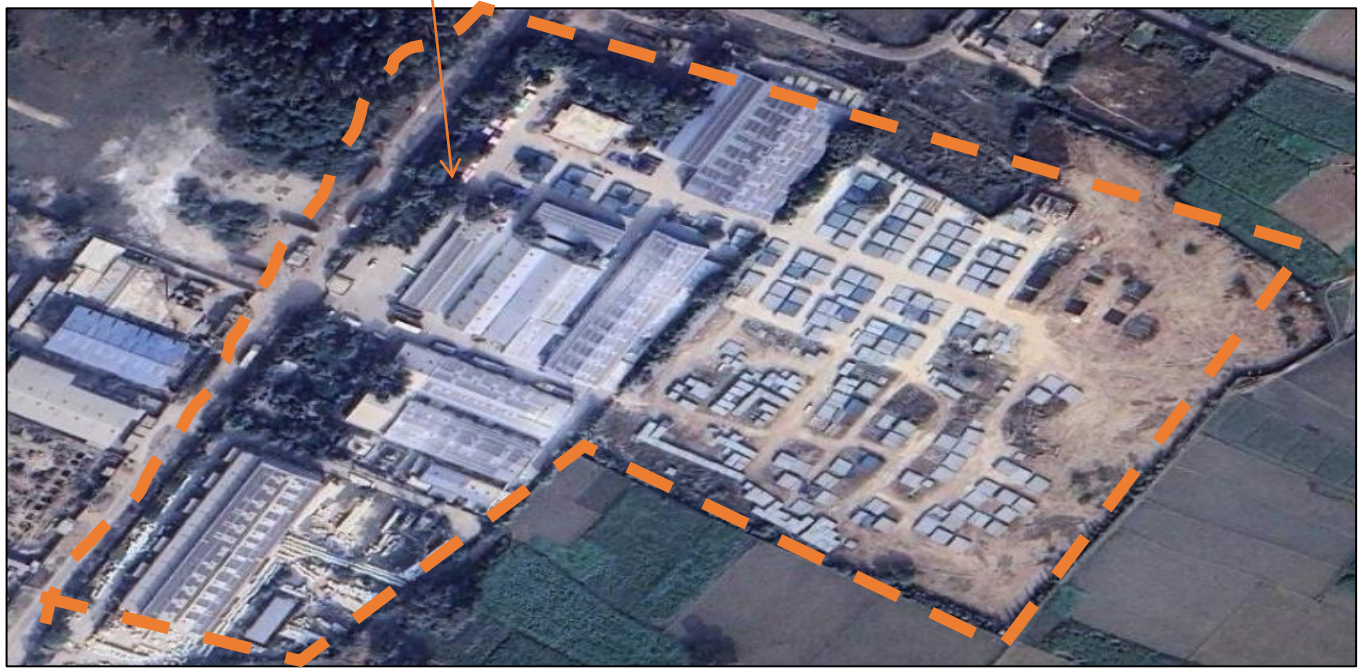
SAVE RESOURCES FOR FUTURE GENERATIONS

THE SUPREME INDUSTRIES LTD
JAINPUR KANPUR DEHAT
PLASTICS PIPE AND ROTO DIVISION



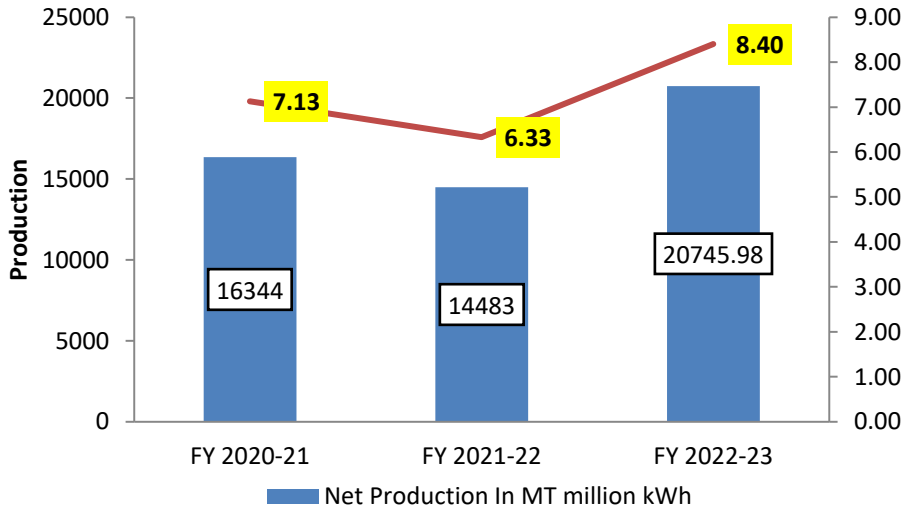


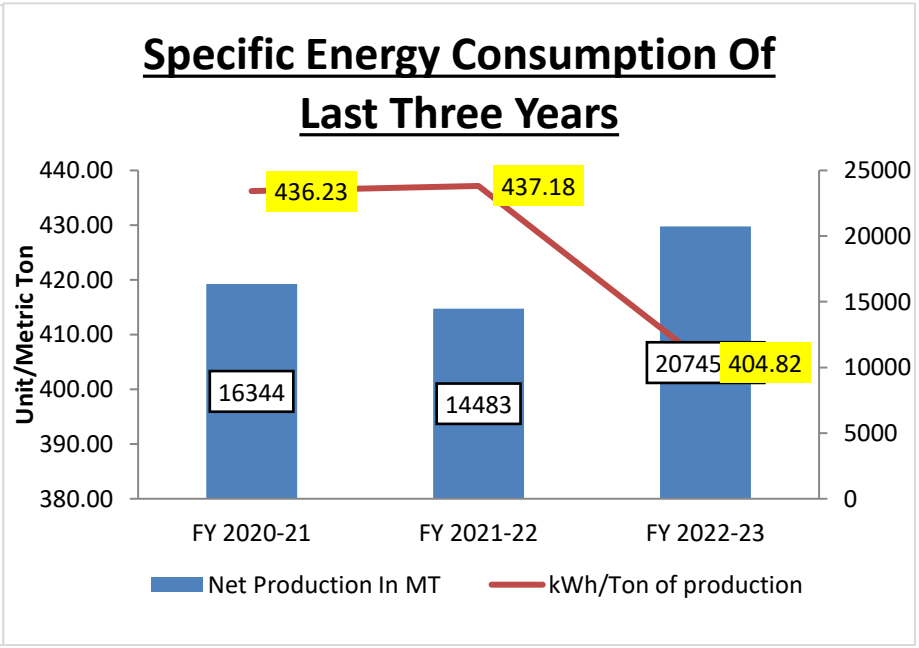




KANPUR- OVERALL SPECIFIC ENERGY CONSUMPTION

Year	Net Production In MT	Million KWh	kWh/MT of Production
FY 2020-21	16344	7.13	436.23
FY 2021-22	14483	6.33	437.18
FY 2022-23	20745.98	8.40	404.82





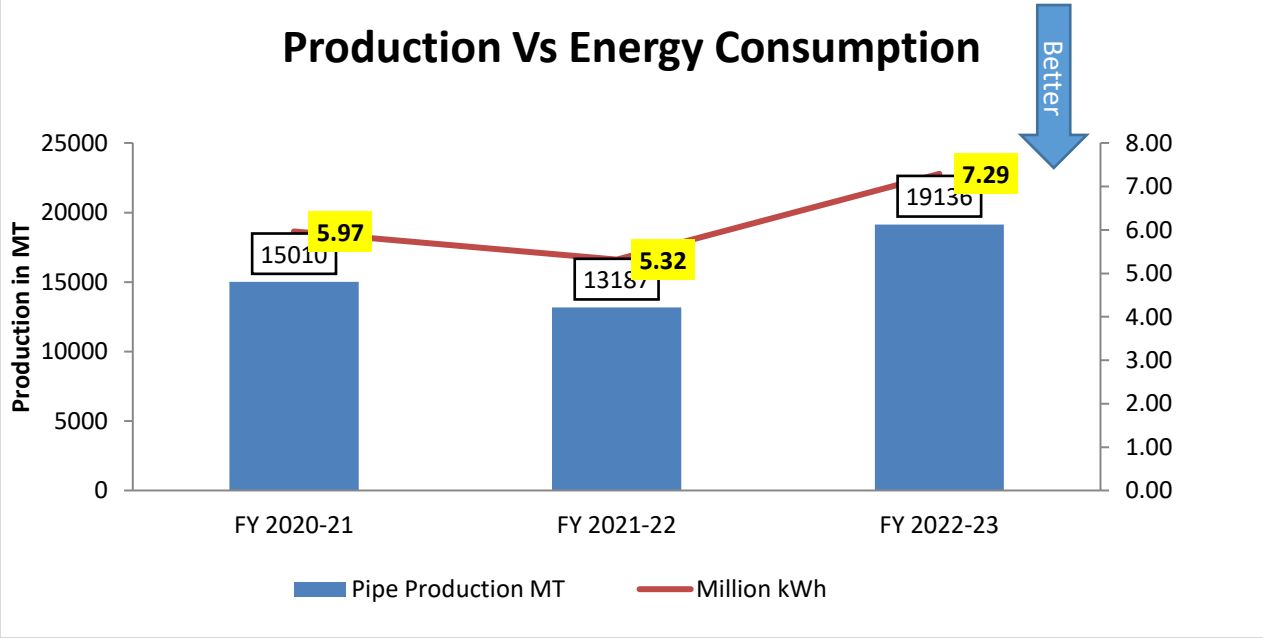
Manufacturing-

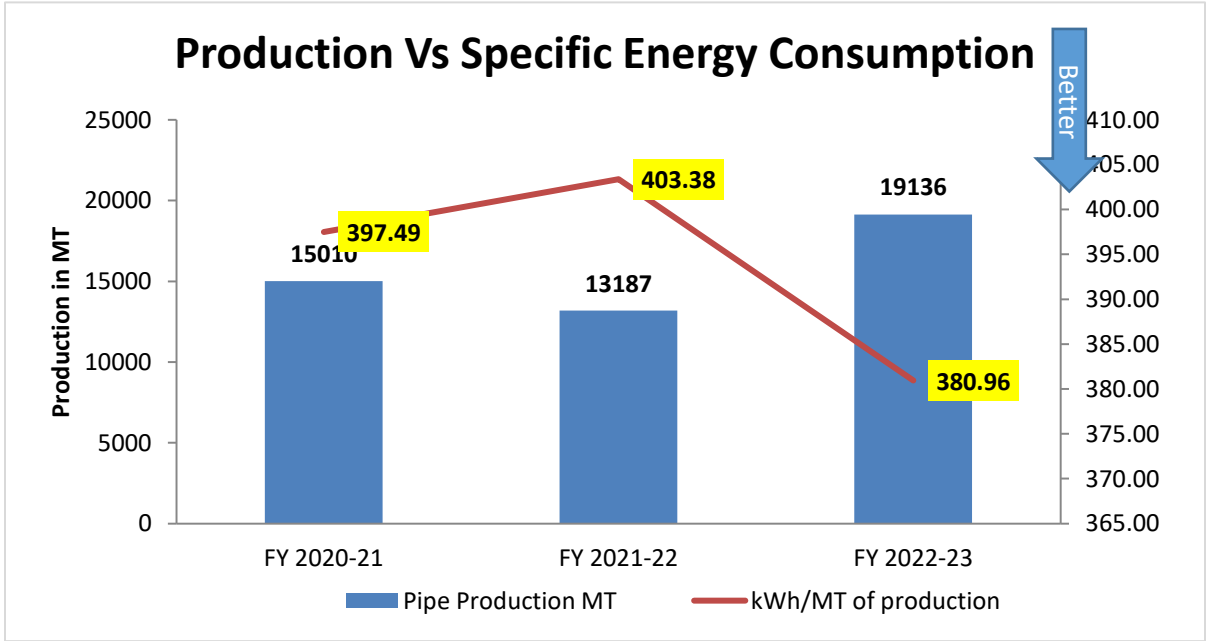
1) PVC PIPE
2) ROTO WATER TANK

KANPUR - SPECIFIC ENERGY CONSUMPTION (SECTION WISE –PIPE)

Pipe Plant			
Year	Pipe Production MT	Million kWh	kWh/MT of production
FY 2020-21	15010	5.97	397.49
FY 2021-22	13187	5.32	403.38
FY 2022-23	19136	7.29	380.96

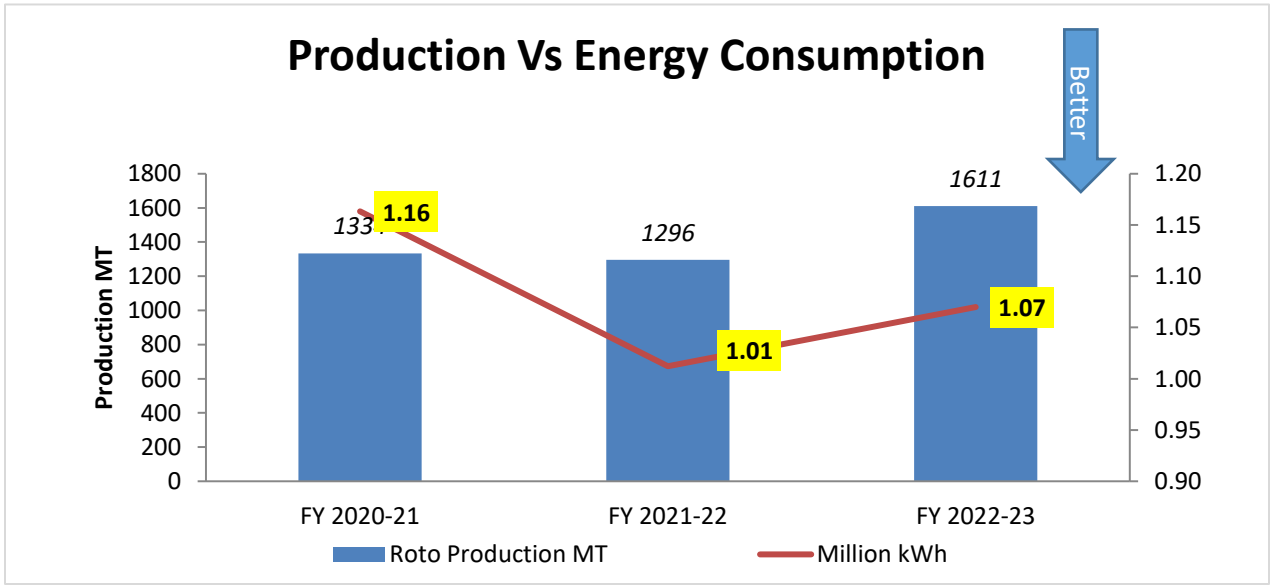
SWR Pipe

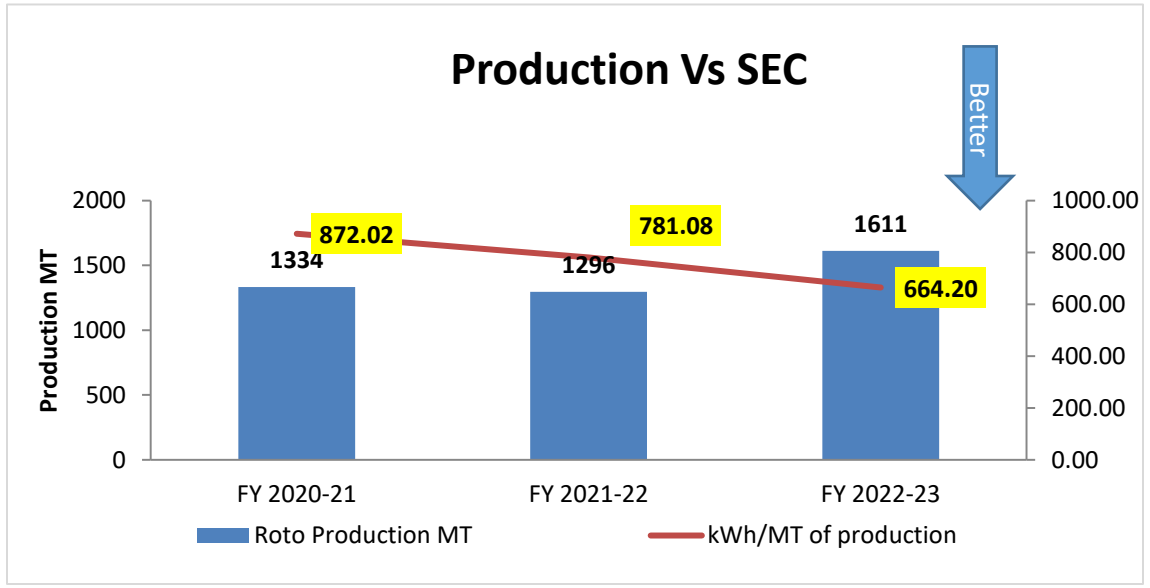




KANPUR-SPECIFIC ENERGY CONSUMPTION (SECTION WISE – ROTO MOULD)

Roto Plant			
Year	Roto Production MT	Million kWh	kWh/MT of production
FY 2020-21	1334	1.16	872.02
FY 2021-22	1296	1.01	781.08
FY 2022-23	1611	1.07	664.20

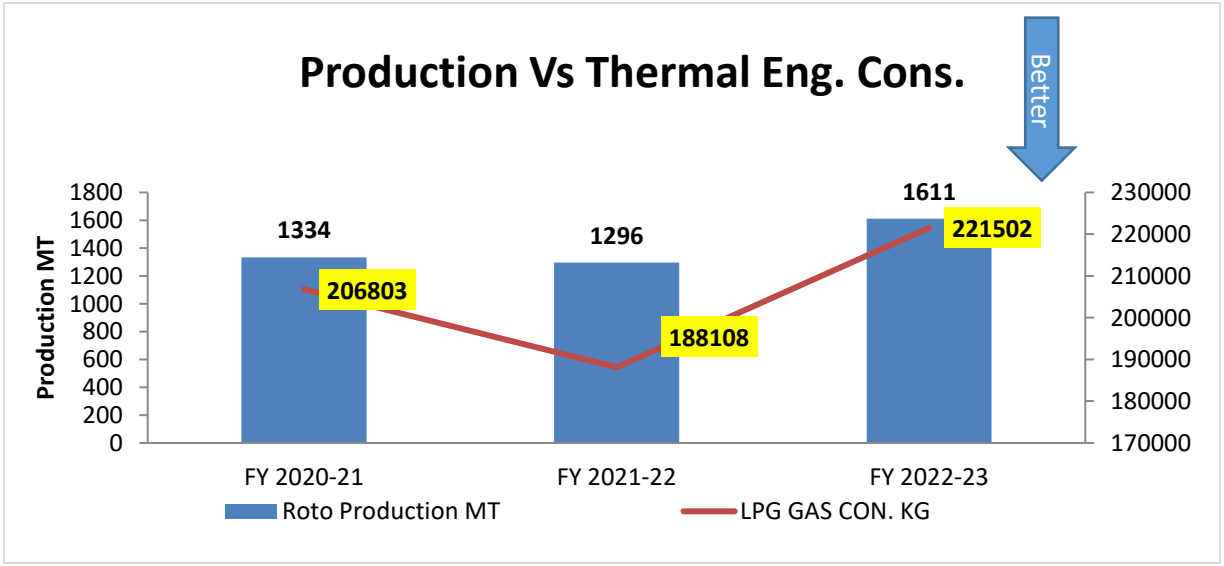


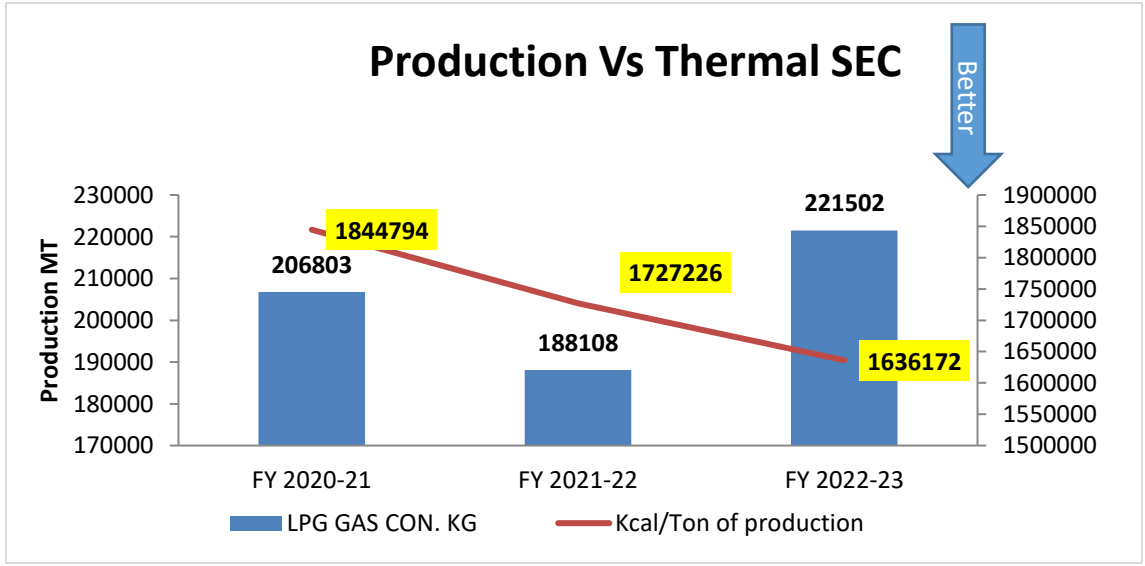


KANPUR- THERMAL SPECIFIC ENERGY CONSUMPTION

Roto Plant			
Year	Roto Production MT	LPG Gas Con. Kg	Kcal/MT Of Production
FY 2020-21	1334	206803	1844794
FY 2021-22	1296	188108	1727226
FY 2022-23	1611	221502	1636172

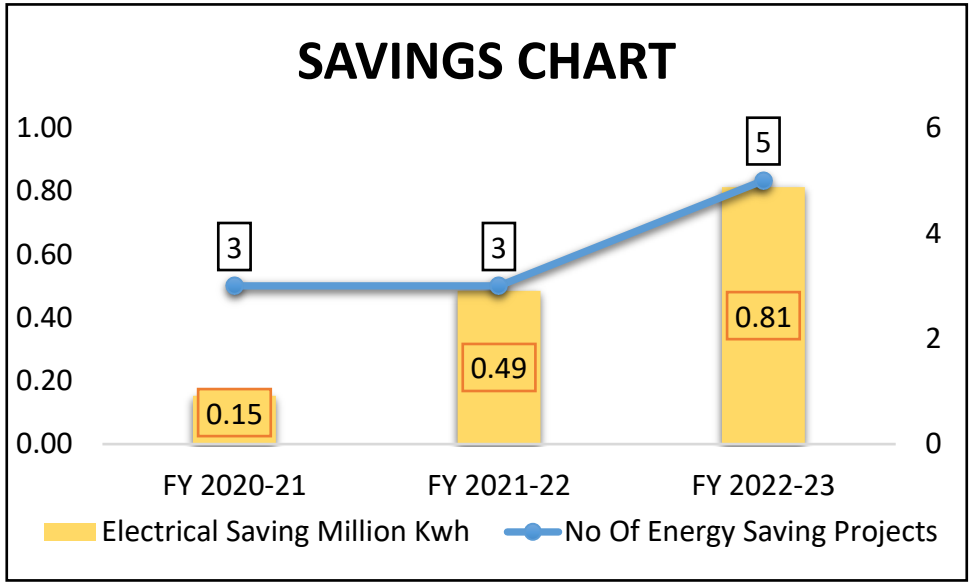
LOWERING





KANPUR-3 YEAR ENERGY SAVING PROJECT (2020-23)

Energy Saving Project Last Three Years					
Year	No Of Energy Saving Projects	Investment (INR Millions)	Electrical Saving Million Kwh	Total Saving(INR Millions)	Payback Period In Months
FY 2020-21	**3**	**0.429**	**0.153**	**1.328**	**59**
FY 2021-22	**3**	**1.195**	**0.485**	**4.214**	**18**
FY 2022-23	**5**	**34.16**	**0.81262**	**48.12**	**5.24**



SUCESSFULLY COMPLETED – 11 MAJOR PROJECTS

	FY20-21	FY21-22	FY 22-23
ELECTRICAL SAVING MILLION KWH	**0.153**	**0.485**	**0.812**

KANPUR- ENCON SAVING PROJECT (2022-23)

Energy Saving Project Fy-2022-23						
Sr. No.	Project Description	Investments Inr Million	Electrical Saving Million Kwh	Thermal Saving Million Kcal	Total Saving Inr Million	Pay Back Period In Months
1	PIR Motion Sensor installed for Office & Wash room.	0.01	0.002	0	0.017	50
2	Air Compressor of Pipe plant GA45 & E 45 pressure reduce 6.2 BAR TO 5.9 BAR without hamper production and save energy	0	0.072	0	0.501	0
3	Digital Timer Switch Installed for Plant Light & Pipe stock Yard	0.05	0.003	0	0.024	40
4	10 Nos 200watt Led Light Fitted In Place Of 400w Mh Light In Roto Plant	0.1	0.002	0	0.021	40
5	Thermal saving through LPG reduction in the Roto moulding process	34	0.73362	48.12	4.68	10
	Total	34.16	0.81262	48.12	5.243	140

KANPUR- ENCON SAVING PROJECT (2021-22)

ENERGY SAVING PROJECT FY-2021-22					
Sr. No.	Project Description	Investments Inr Million	Electrical Saving Million Kwh	Total Saving Inr Million	Pay Back Period In Months
1	18.5kw Motor Run With Star Delta Starter And Power Consumption Not Control As Per Requirement ,So 18.5 Kw Vfd Process Water Pump And Control Motor Speed As Per Requirement	0.101	0.022	0.160	9
2	Cooling Tower Capacity Enhancement in Pipe Utility	1.042	0.450	3.95	3
3	2.2kw Monoblock Energy Efficient Pump Installed In Place Of 3.7kw Monoblock Pump For Extruder M/C In Roto Plant	0.052	0.013	0.104	6
	Total	1.195	0.485	4.214	18

KANPUR- ENCON SAVING PROJECT (2020-21)

ENERGY SAVING PROJECT FY-2020-21					
Sr. No.	Project description	INVESTMENTS INR MILLION	ELECTRICAL SAVING MILLION KWH	TOTAL SAVING INR MILLION	PAY BACK PERIOD IN MONTHS
1	11 nos LED LIGHT FITTED IN PLACE OF 250W MH LIGHT IN Pipe PLANT	0.159	0.006	0.042	46
2	Thermal Jacket In Oven of Auto socket m/c	0.11	0.135	1.19	1
3	0.75kw Mono block Vacuum Pump installed in Place of 2.2kw Mono block Vacuum Pump For Barrel zone in All Extruder M/c	0.16	0.012	0.096	12
	Total	0.429	0.153	1.328	59

OVERVIEW ACTION TAKEN FOR ENERGY SAVINGS

Action Taken For Energy Saving	Remarks
Compressor Set Pressure As Per Process Requirement	Compressor Pressure Optimization From 6.2bar To 5.9bar
Air Leakages Monitoring System	Continual Process
Encourage Use Of Hand Blower Instead Of Compressed Air	Discipline
Die Head 250/600 Installed In Place Of Die Head 200/400 For Increased Productivity	Continual Process
Seasonal Utilization Of Chillers To Optimize Energy Consumption	In Winter Operate Plant From Cooling Tower
Redesigned Calibrator For Column Pipe	Energy Saving
7.5 Kw VFD Installed For Mixer Process	Energy Saving

ENERGY SAVING KAIZEN -1

Before

Investment :
Rs 0.52 lakhs

After

What	Mono block pump 3.7 kw installed for extruder in roto
Connected Load	3.7kw

Replaced with 2.2 kw energy efficient Pump

2.2kW

Financial Savings:
Rs 1.04 lakhs/Yr.

ENERGY SAVING KAIZEN -2

Before

After

Investment :
Rs 34 lakhs

What

4 No of mould on the Spider(Web) for roto Process

Redesigned Mould Spider and 6nos of Mould installed in one side

Financial Savings:
Rs 0.73 lakhs/Yr.

Thermal Saving-48.12 kcal/MT

ENERGY SAVING KAIZEN -3

Supreme® People who know plastics best

	Before	After
		
What	Old cooling Tower & Pipe line under Size as per design	Renovate &Colling Tower Capacity Enhancement with Energy efficient Pump
Units	1525335.40 kWH	526420.13 kWH

Investment : Rs 10.42 lakh

Savings : 998915.26kwh/Year

Financial Savings: Rs 39.5 lakh/Yr.

ENERGY SAVING KAIZEN -4

	Before	After
		
What	18.5 kW Motor run with Star Delta Starter	New 18.5 kW VFD fitted at Pipe process water pump
Current	35amp	30 amp

Investment : Rs 1.01 lakh

Savings : 5 Amp

Financial Savings: Rs 1.60lakh/Yr.

INNOVATION PROJECTS KANPUR

Innovative Project – 1

- **Installation of Auto socket M/c in-house Fabricated from Discard Manual Socket M/c**

Problem identified:

- ❖ Power Consumption more
- ❖ Manpower Increased
- ❖ Reduced Productivity
- ❖ Difficult to Pipe Weight online

Benefit

- ❖ Accurate Weight online of Product
- ❖ Manpower Saved
- ❖ Energy Saved
- ❖ Cost Saving
- ❖ Good Quality of finished Product
- ❖ Increased Productivity

The Supreme Industries Ltd.							Date:	Sr. No. 03
Activity Area							Implemented Area:	Extruder area
Productivity	Quality	Cost	Delivery	Safety	Moral		Implemented By:	Maintenance team
Kaizen Theme:	Value analysis - Value Engineering ,Low cost atomization							
Problem Phenomena :- Shortage of the auto socketing machine							Past Avg. Facing issue to produce inline socket March 2022	Target:
Before improvement							After Improvement	
								
Root Cause :-We are required a New automatic socket machine							Counter measure :-We have a manual socket machine which we have to discard. But due to our requirement we need a new auto socket machine then we convert into auto inside the plant.	
Result :- Presently it is working properly, requirement fulfill & also we save the new auto socket machine cost								
Benefits:	Tangible: We save appx Rs 06 lac if we do comparison new & in house socking machine. Also requirement fulfill. New machine cost appx 25L to 28L.							
	In-Tangible: Self moral increase ,self confidence improved							
Scope for Horizontal deployment: We suggest anyone can save so much amount while making this technology.								
How to sustain: we are watching day to day that it is working properly. After see 30 days no problem found from production & itself. And we are treated this as like branded machine.								

ENERGY SAVINGS PLAN FOR FY 23-24

Plan Energy Saving Project Fy-2023-24						
Sr. No.	Project Description	Investments Inr Million	Electrical Saving Million Kwh	Thermal Saving Million Kcal	Total Saving Inr Million	Pay Back Period In Months
1	Atlas Copco screew vacum pump as a replacement of 15 nos of Monoblok vacump pump on 15 Extrusion Line	2.6	0.066	0	0.520	50
2	Nanotech Infra red Heater install in Extrusion Process	1.974	0.403	0	0.403	25
3	High mask Led Light install in Pipe stock Yard	0.35	0.051	0	0.379	6
4	18.5kw Vfd For Mixer Pump-1 Pipe Plant, Motor Run With Star Delta Starter And Power Consumption Not Control As Per Requirement new ,So 18.5 Kw Vfd Danfoss Make Fitted On Pipe Plant Process Water Pump And Control Motor Speed As Per Requirement	0.11	0.013	0	0.100	13
5	200watt Led Light Fitted In Place Of 400 watt Mh Light In Roto Plant Qty-10	0.13	0.008	0	0.060	27
	Total	5.164	0.541	0.000	1.462	121

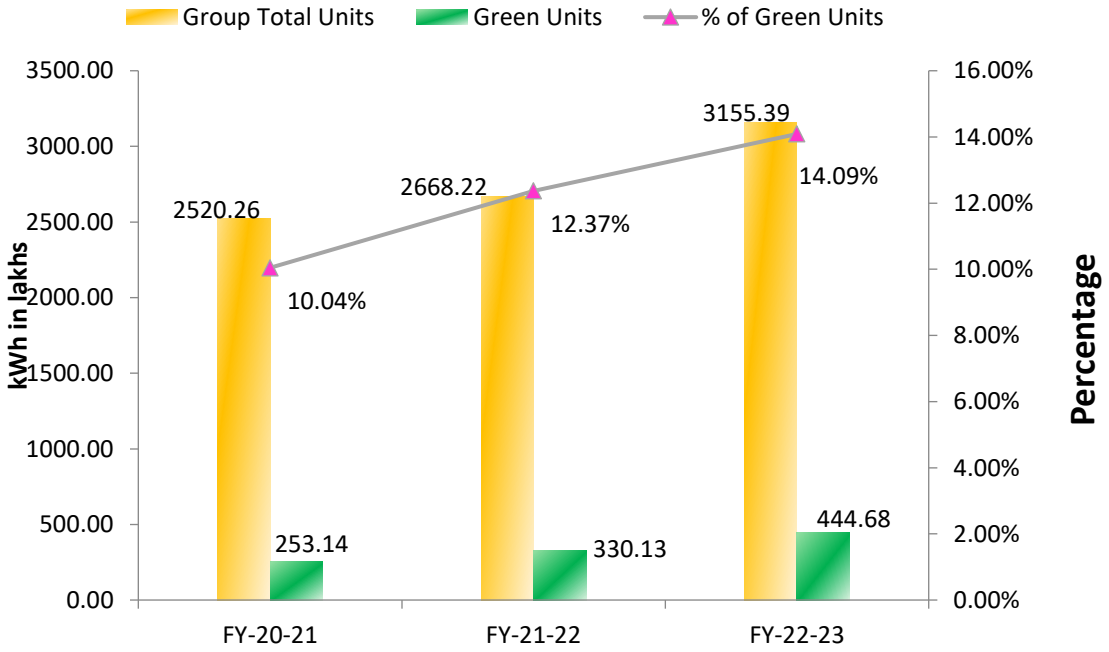
INTERNAL BENCH MARKING

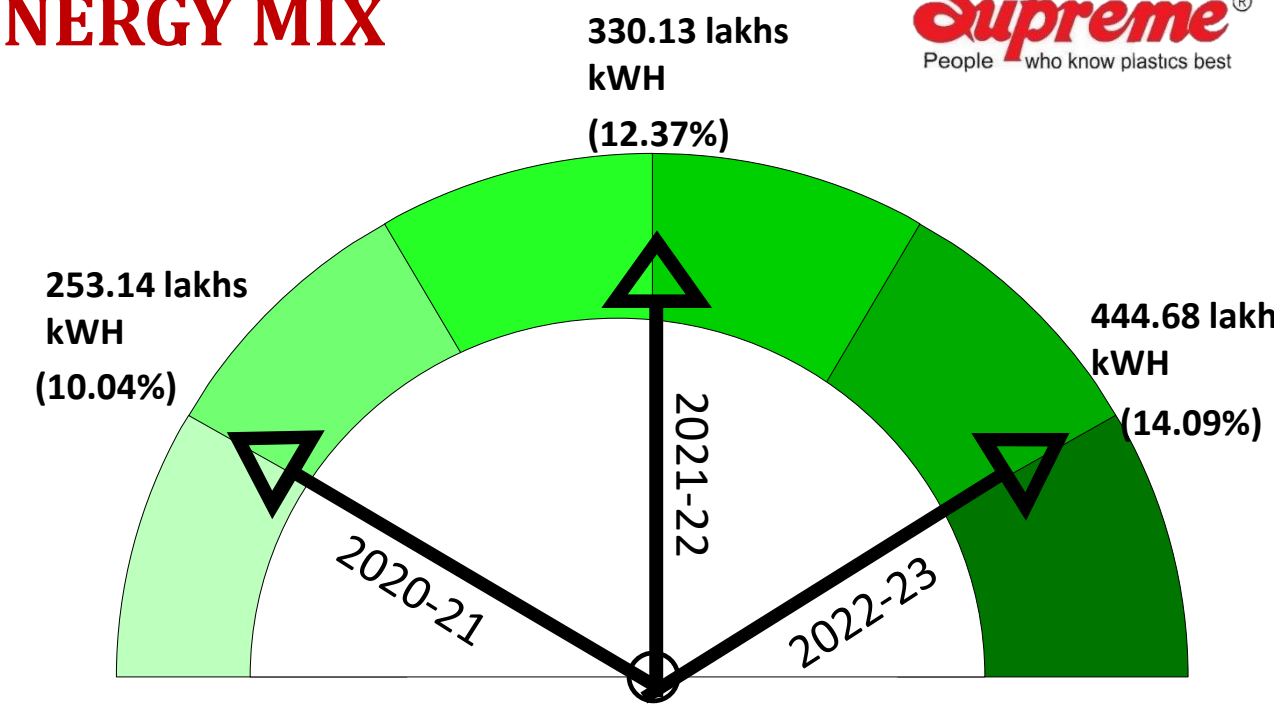
Long Term Energy Goals		
long Term Goal for Pipe		
Year	kWh/Ton of production	
FY 2023-24	375	
FY 2024-25	365	
FY 2025-26	355	
long Term Goal for Roto		
Only Roto	**kWh/Ton of production**	**kcal/Ton of Production**
FY 2023-24	654.00	1612000
FY 2024-25	644.00	1602000
FY 2025-26	634.00	1592000

TSIL – GROUP ROOF-TOP SOLAR CAPACITY ACROSS PAN INDIA

Year	Cumulative Capacity (Kwp)
Upto 2019-20	6,423.52
2020-21	8,907.82
2021-22	17,388.46
2022-23	28,054.95

GROUP RENEWABLE ENERGY MIX

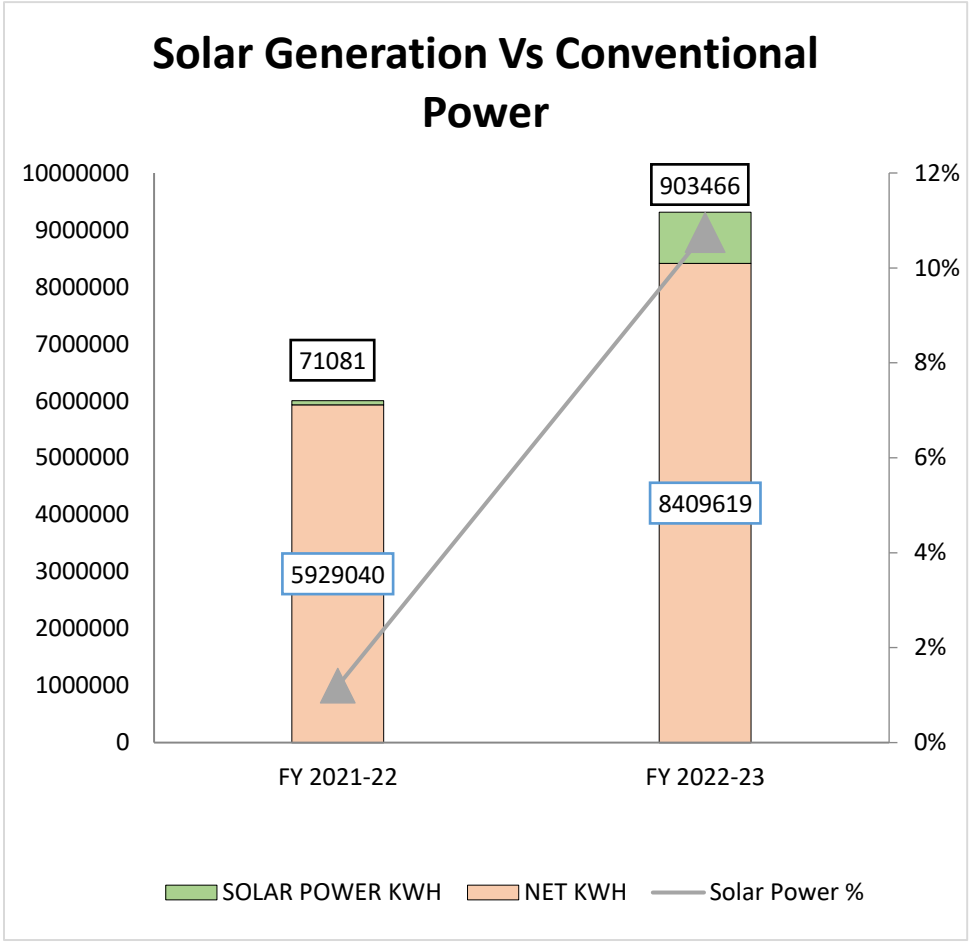




29,860 TCO_2 emission avoided

Onsite Solar Power Generation				
Year	Technology (Solar/wind etc)	Installed Capacity (MW)	Consumptions (million kwh)	Solar Power % of overall electrical energy consumption
FY 2021-22 (Commissioned –Feb-22)	Solar	0.978	**0.07**	**1%**
FY 2022-23	Solar	0.978	**0.90**	**11%**

Insatalled Capacity	**1MW (978 Kw DC/836 Kw AC)**
Type	**Onsite generation**
Investment	**33.93 Million Rs**



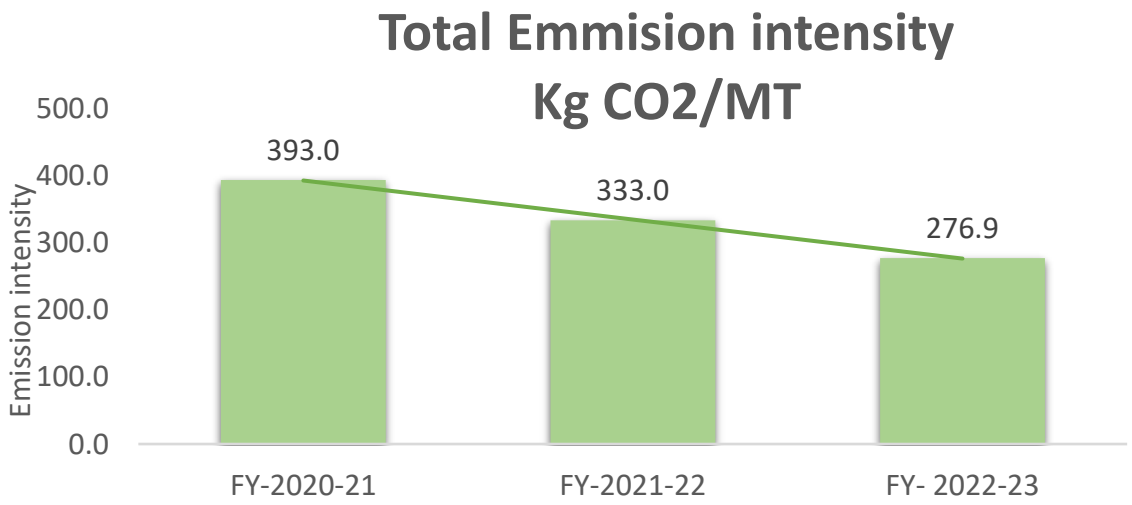
RENEWABLE GAINS ACHIEVED : KANPUR

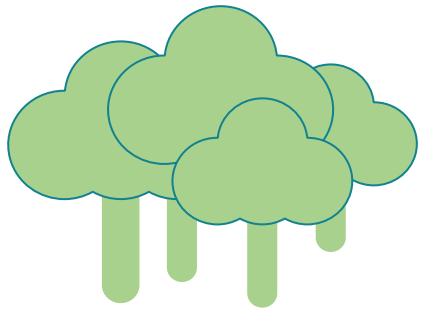
Approx. 9 lakhs (9 lakhs onsite generation) Green kWh consumed (approx. 12% of total requirement)

814.99 tCO_2 avoided emission

GHG PROFILE KANPUR – FY 2022-23

	Total Emission		Production	Intensity		Total Emission intensity Kg CO2/MT
	Scope-1	Scope-2	Mt	Scope-1	Scope-2	
FY-2020-21	1075.2	5285.4	16183.0	66.4	326.6	393.0
FY-2021-22	817.6	3982.5	14413.0	56.7	276.3	333.0
FY- 2022-23	941.1	4805.7	20756.0	45.3	231.5	276.9





TSIL WAY FORWARD FOR SUSTAINABILITY

Supreme® People who know plastics best

- Green Power PPA
  3.48 Cr PA Kwh PPA signed for 8 location PAN India
  (Executed)
- GRI Sustainability Report FY 22-23
  CDP Rating
  DJSI Rating
- ESG Roadmap for Decarboniz-ation
  SBTi Target Setting
- LCA For Piping Products
  Climate Risk Assessment
- Value Chain Assessment
  Training on NGBRC 9 principles
- BRSR Core Report FY 23-24

SUSTAINALYTICS ESG SCORE
22 (Medium Risk)

TREE PLANTATION DRIVE – ENVIRONMENT DAY 2023

ENERGY MANAGEMENT SYSTEM ISO 50001:2018

TÜV NORD

CERTIFICATE

Management system as per
ISO 50001 : 2018

The Certification Body TÜV INDIA hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

THE SUPREME INDUSTRIES LTD.
H1-H8, H1/A, H9/1 & KHASRA NO. 135,136,137 & 141
UPSIDC Industrial Area, Jainpur, Kanpur Dehat, (U.P)
Kanpur - 209 311,
Uttar Pradesh,
India

operates a management system in accordance with the requirements of ISO 50001 : 2018 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope -

Manufacture of Roto-Molded Products, UPVC Pipes for Agriculture Application, Potable Water Supply Application, Plumbing Application, Bore Well/Tube Well Application, Soil Waste and Rain Water Application, Conduit Wiring Application and Hand Molded Fittings.

Certificate Registration No. **IND 764 23393971**
Audit Report No. **Q 12195/2022**

Valid from **23.04.2023**
Valid until **22.04.2026**
Initial certification **23.04.2023**

Certification Body
at TÜV INDIA PVT. LTD.

Mumbai, **23.04.2023**

TUV India Pvt. Ltd., 801, Raheja Plaza – 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India cert.helpdesk@tuvindia.co.in

AWARD PROGRAM FY 2021-22

BRAIN STORMING WITH TEAM

GROUP - AWARDS AND ACCOLADES

CII National Awards For Energy Management 2022

Excellent Energy Efficient Unit Lalru

Energy Efficient Unit Kanpur & Jalgaon-I

Grow Care India Sustainability Award 2022

Econaur Sustainability Award 2022

Nominated for :

- **SEEM NEM 2022 Award : Gold for Malanpur PVC Plant**
- **CII Energy Award 2023 : Malanpur PVC Plant, Kanpur Plant and Jadcherla Plant**
- **National Award for Manufacturing Competitiveness**

ENERGY AND ENVIRONMENT TEAM

Corporate Team

Vasudev Sharma
Senior General Manager – Energy and Environment

Yogesh Gupta
Senior Manager – Energy and Environment

Shashank Srivastava
Manager – Energy and Environment

Siddharth Srivastava
Manager – Energy and Environment

- ISO 50001 handholding for implementation
- Sharing best practices to supplier
- Energy eff. Facility planning
- Upgradation to eff. Technologies
- Supplier training
- Process study and gap analyses
- Benchmarking
- Efficient O&M of utility/IT facilities
- Upgradation to eff. Technologies
- Process study Benchmarking
- Facilitate external training
- Participation in external events
- Rewards and recognition
- Green supply chain initiatives

Plant Team

Saurabh Gupta
Plant Head

Maintenance	Production	Plant	Purchase & HR
Mr. Rajeev Mr. Vikash .	Mr. Manoj Mr. Nitesh	Mr.Narendra Mr. Surender	Mr. Aditya Mr. Bharat

- Daily monitoring & control
- Gap analyses
- Zero investment idea implementation
- Operational efficiency during fluctuating demand
- Idea generation
- Motivate employee involvement
- Training need identification

Total no of Energy Management
System coordinators & Energy champions = 30 Nos

Thank You