# VFY FASHION YARN BUSINESS

## UNIT : CENTURY RAYON, KALYAN

# CII- 25th National Award for Excellence in Energy Management 2024


**Presentation By**

**Mr. M.M. Bhandarkar**
Senior Vice President, Production

**Mr. Ajit Patil**
Assistant Vice President, BH,PH & Inst.

**Mr. Keshav Rajegore**
Designated Energy Manager

# About… Century Rayon

- **Located at Shahad about 60 Kms from Mumbai.**
- **Spread over 121 acres including Colony**

**Establishment of Century Rayon**
(A division of Century Textiles & Industries Ltd)

**1954**

- 1956 - Startup of 5 TPD PSY plant. Followed by Expansions.
- 1960 to 1970 - Tyre cord , Sulphuric Acid, Carbon di- Sulphide & Caustic soda Plants commissioned and capacity expansion.

**1956 to 2016**

- 1998-2016 - Startup of CSY Plant with 12 CSY M/cs in collaboration with SNAICO & expansions up to 66 M/cs. Caustic plant upgraded from Mercury cell to Membrane process

**2018**

Century Rayon commenced operations under Grasim from 01st February 2018.

**Agreement** for the 'Right to Manage & Operate' VFY business of Century Textiles & Industries Limited (CTIL).

**2020**

**Integration of Century Rayon & Indian Rayon** under one umbrella of "One VFY – Fashion Yarn Business"

- Grasim's production of VFY capacity increased from 21,300 to 46,300 TPA. (IR & CR).
- Adoption of best practices across ABG Business & synergy of operations between IR & CR.

| Manpower | |
|---|---|
| Management & Staff | 442 |
| Workmen | 3953 |
| Contractual Workmen | 1659 |
| Total Manpower | 6054 |

| Production Capacity | | |
|---|---|---|
| Pot Spun Yarn | 48 | TPD |
| Continuous Spun Yarn | 12 | TPD |
| Tyre Yarn & Cord | 16 | TPD |
| Caustic Soda | 70 | TPD |
| Carbon Di-Sulphide | 54 | TPD |
| Sulphuric Acid | 200 | TPD |
| Power Generation | 18 | MW |
| Water Treatment Plant | 30000 | M3/day |
| Effluent Treatment Plant | 16000 | M3/day |

# VFY Product Portfolio…

**Viscose Filament Yarn** –is referred to in **Deniers** (D), defined by the fineness of a yarn. VFY industry is an interplay of Deniers. Finer the denier higher the premium can be expected.

**Textile Yarn - Fashion Yarn**

1. Superfine –75D & below up to 20D
2. Fine – Above 75D to 150D
3. Coarse – Above 150D to 1200D

**Technical Yarn**
**(Tyre Yarn / Industrial Yarn)**

1. 1100 Denier to 4400 Denier

## Manufacturing Technologies

### Pot Spun yarn (PSY)

40 Denier to 600 Denier - Zero Shrinkage.
Variety : Bright, Dull & Coloured yarns
Speciality products : Air texturized, Double twisted yarn, Lycra covered

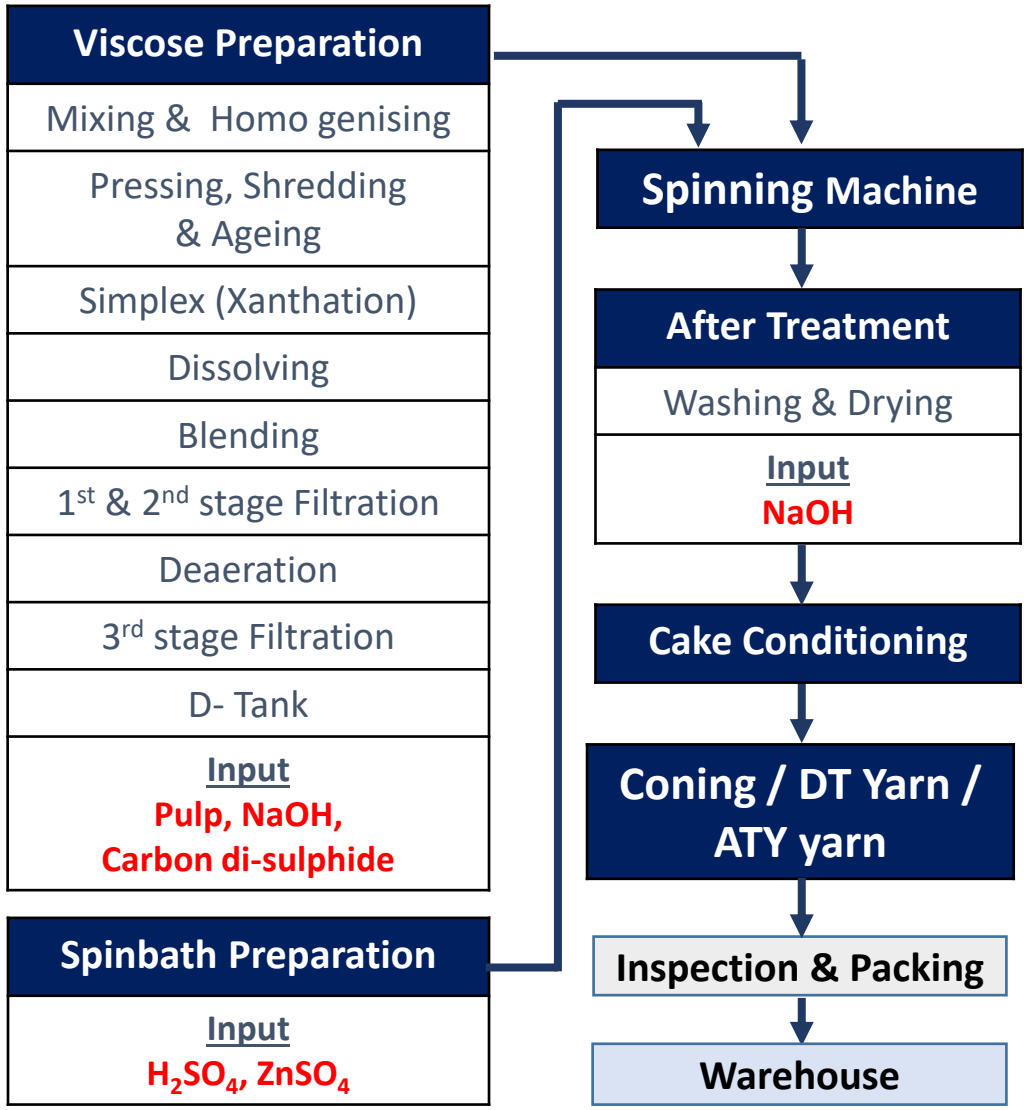
### Continuous Spun yarn (CSY)

20 Denier to 180 Denier – High Shrinkage (About 4%)
Variety : Low Glue, High Glue & Super High Glue

### Tyre Yarn (TC)

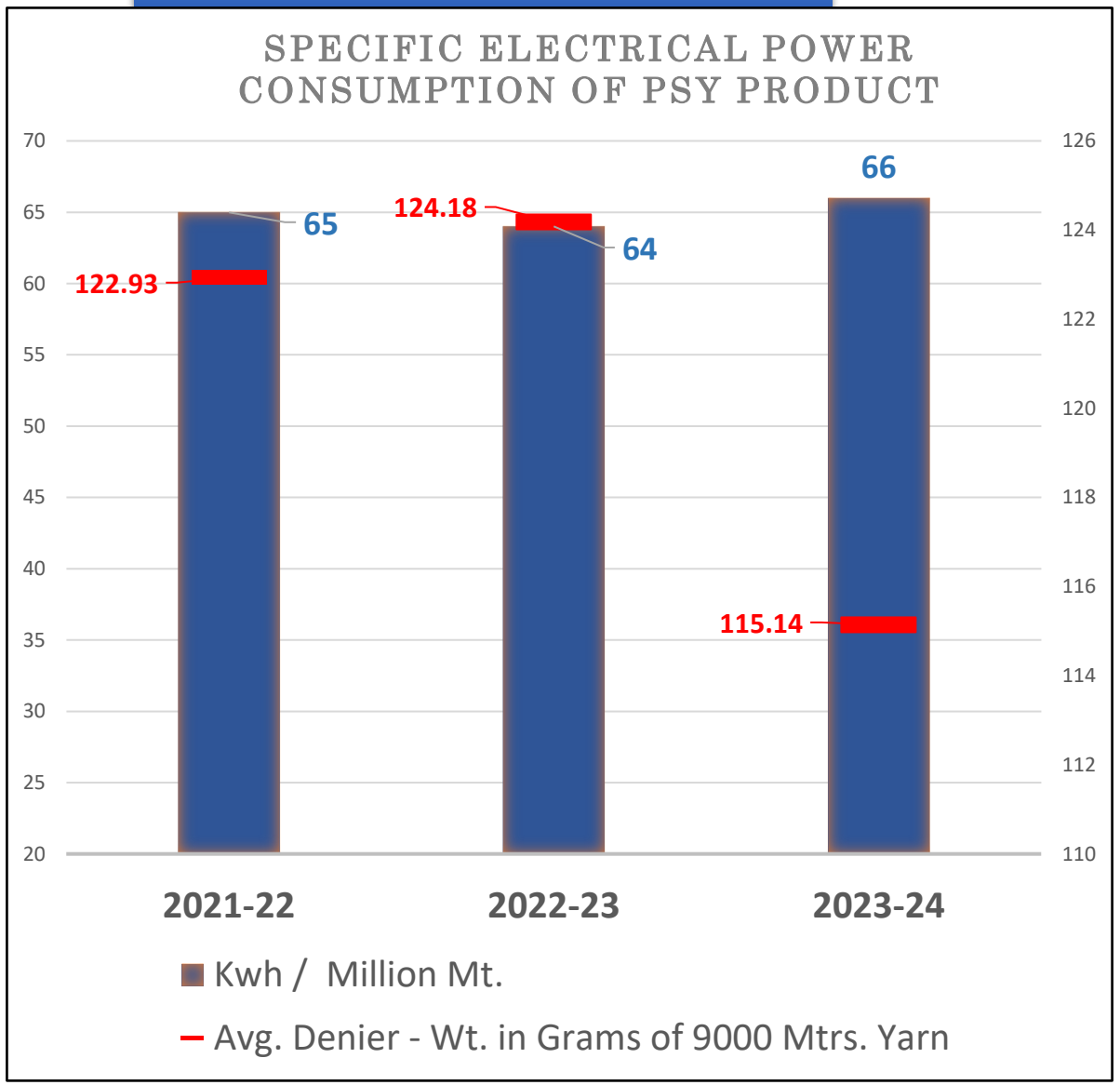
1650 Denier to 2200 Denier
Tyrecord & Tyrecord Fabric
High Tenacity Rayon Tyre Yarn for high performance Tyres & other speciality applications.

## VFY Manufacturing Process Flow Diagram

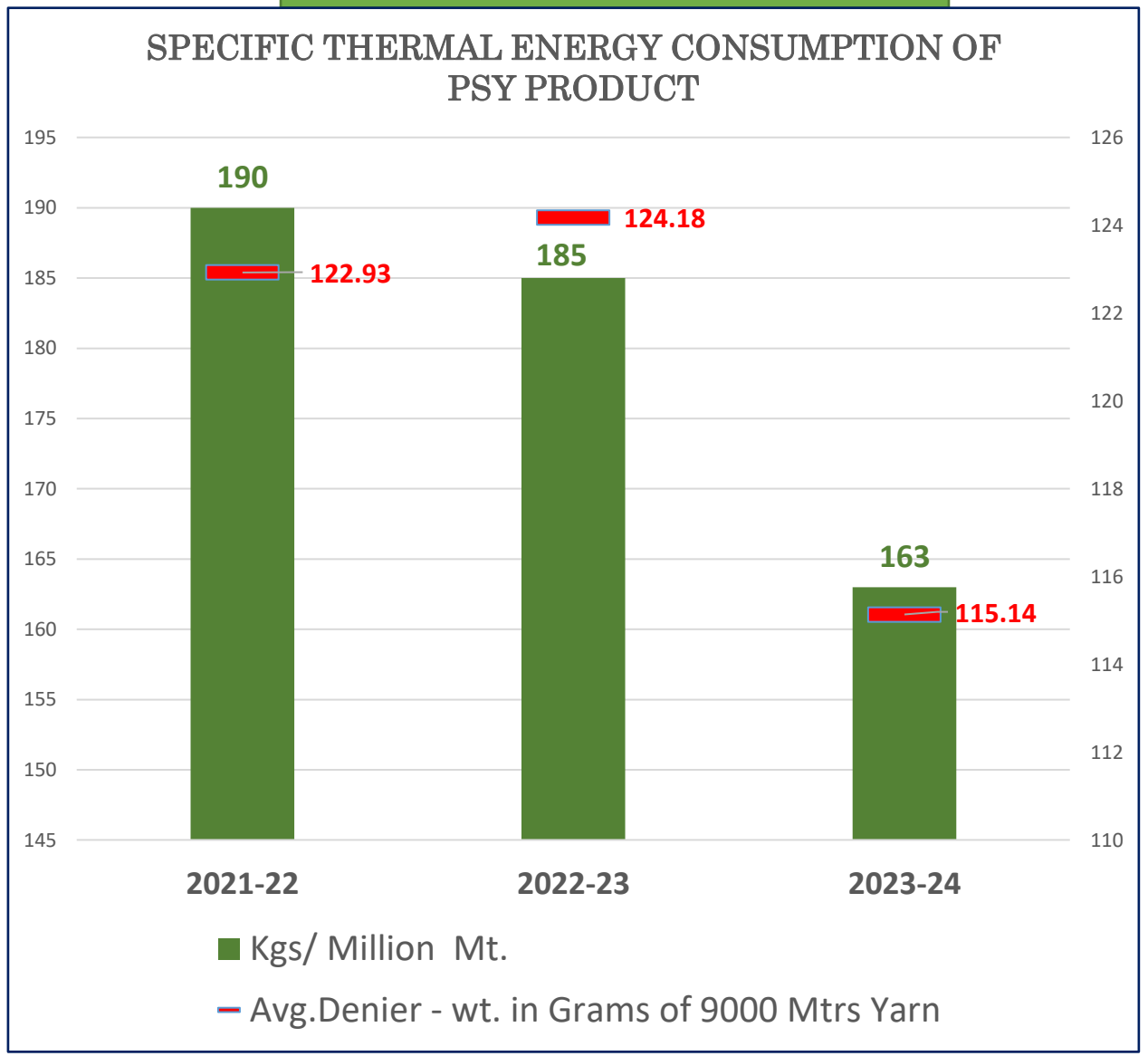


# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

**3.1 % Increased w.r.t 2022-23**



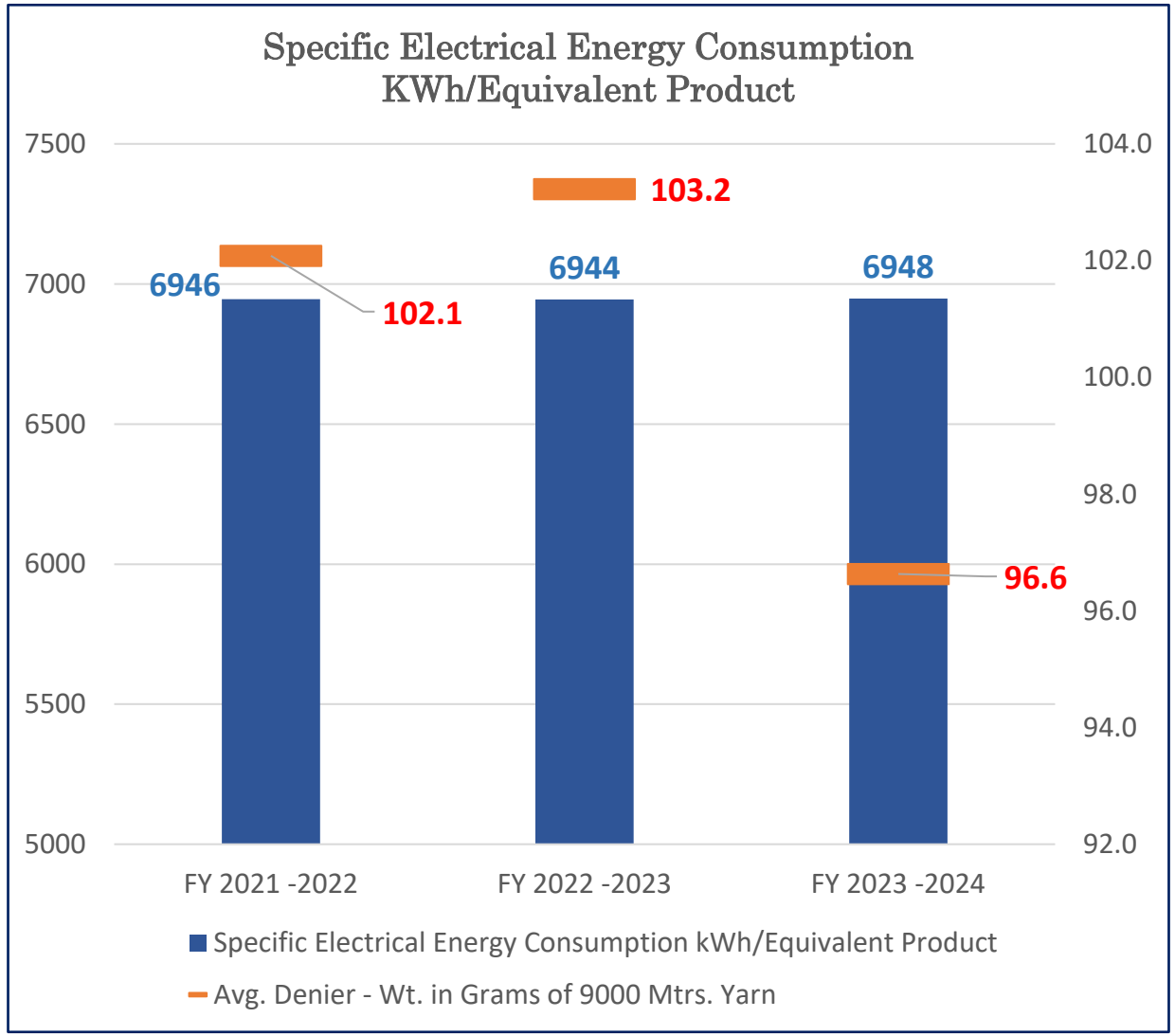

**11.89% Decrease w.r.t 2022-23**

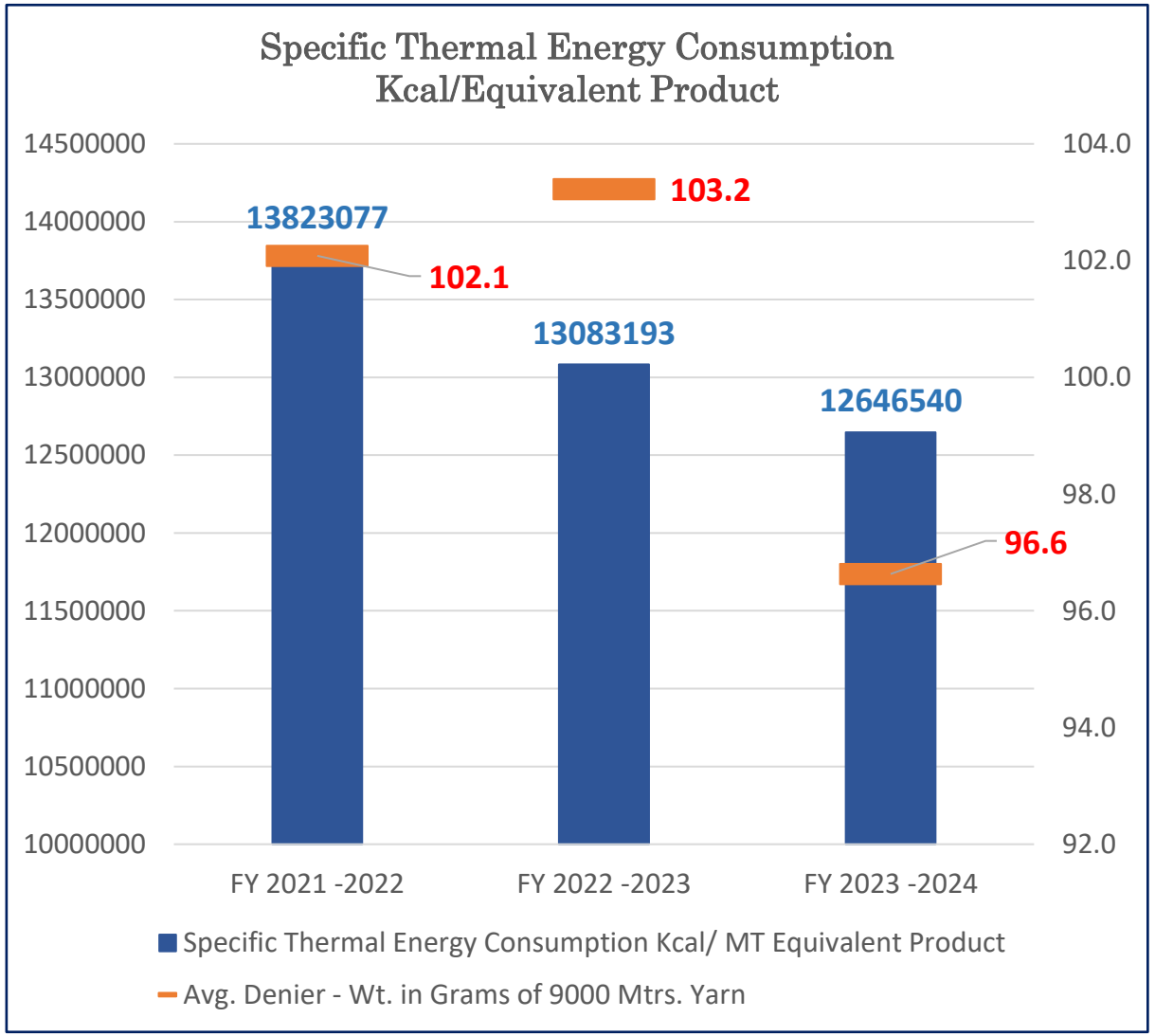


# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

**0.05 % Increased w.r.t 2022-23**

**3.33% Decrease w.r.t 2022-23**



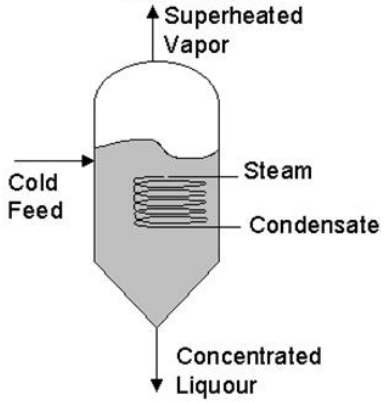
# Installation of MSFE At Rayon Plant

| Single/Double stage evaporators | Multistage evaporators |
|---|---|
| Single stage & Double Stage Effect evaporators, where the steam is used for direct heating in single effect, its vapour is heating to second effect in double stage evaporators. The feed flow is forward as well as parallel type. | The basic fundamental of the multi staging is utilization of the vapours generated in preceding effect heat exchanger or Calandria under negative pressure (vacuum) condition and lowering the boiling point of the feed in the subsequent stages. More the number of effects, lesser is the steam consumption. This helps economize the utility consumption |

11 Stage MSFE at Rayon Plant commissioned in March 2023. Evaporator, Heat Exchangers condensers, pumps, tanks, cooling Tower are the main parts of MSFE. Total saving 48 **tons/Day of LP steam is saved by installation of one MSFE. With investment of Rs. 9.35 Crores.**

**Before Project**

**01 kg steam will Evaporate 1.1 kg in single &1.6 in DEE kg of water from feed.**




Single Stage Evaporators

**After Project**

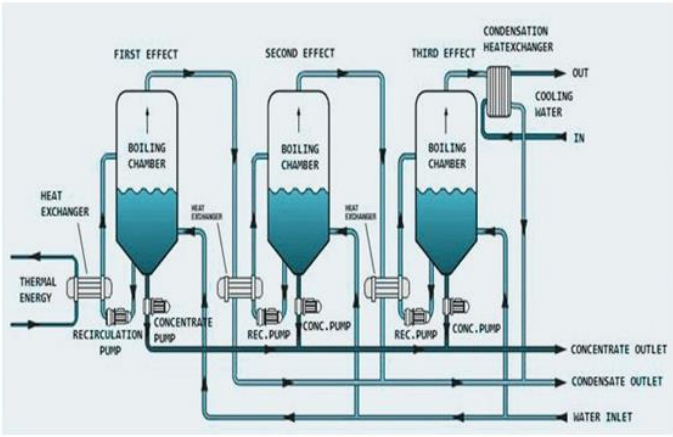
Multistage Evaporators

**Investment Rs.9.35 Cr.**

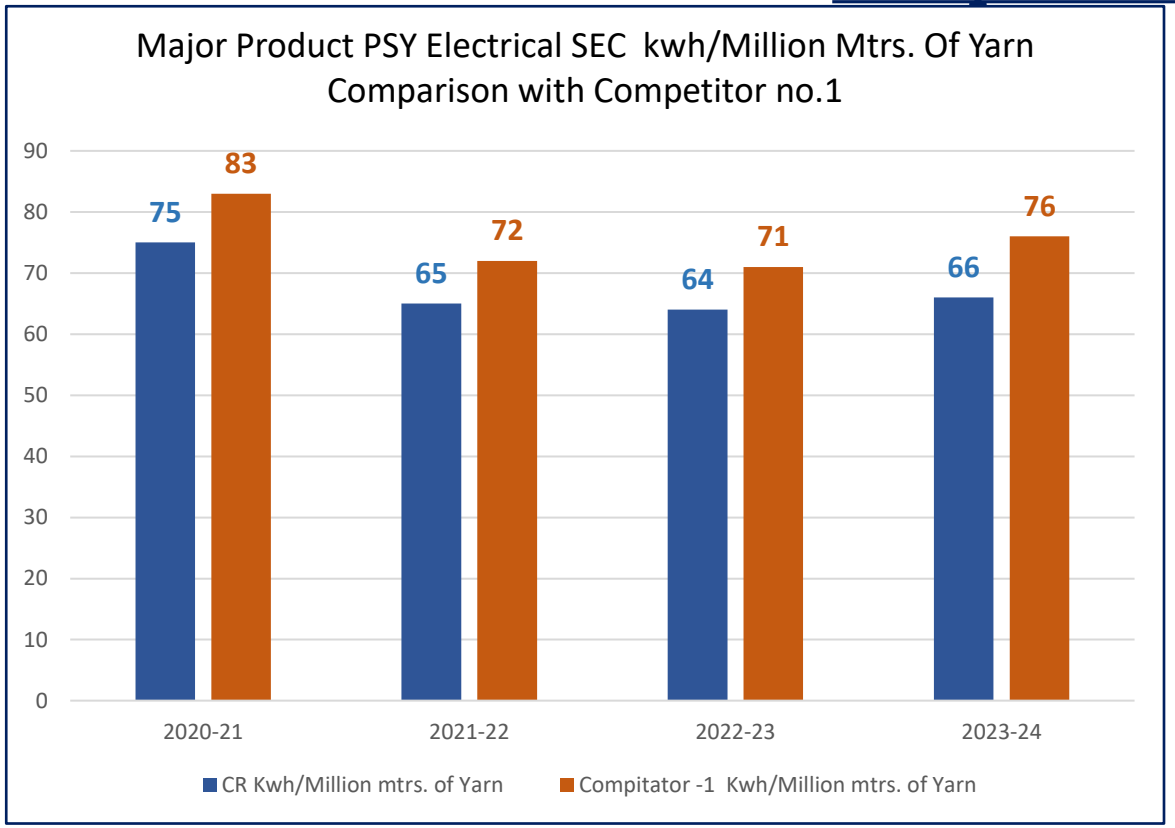
**Steam Saving 48 TPD (13200 MT/Annum)**

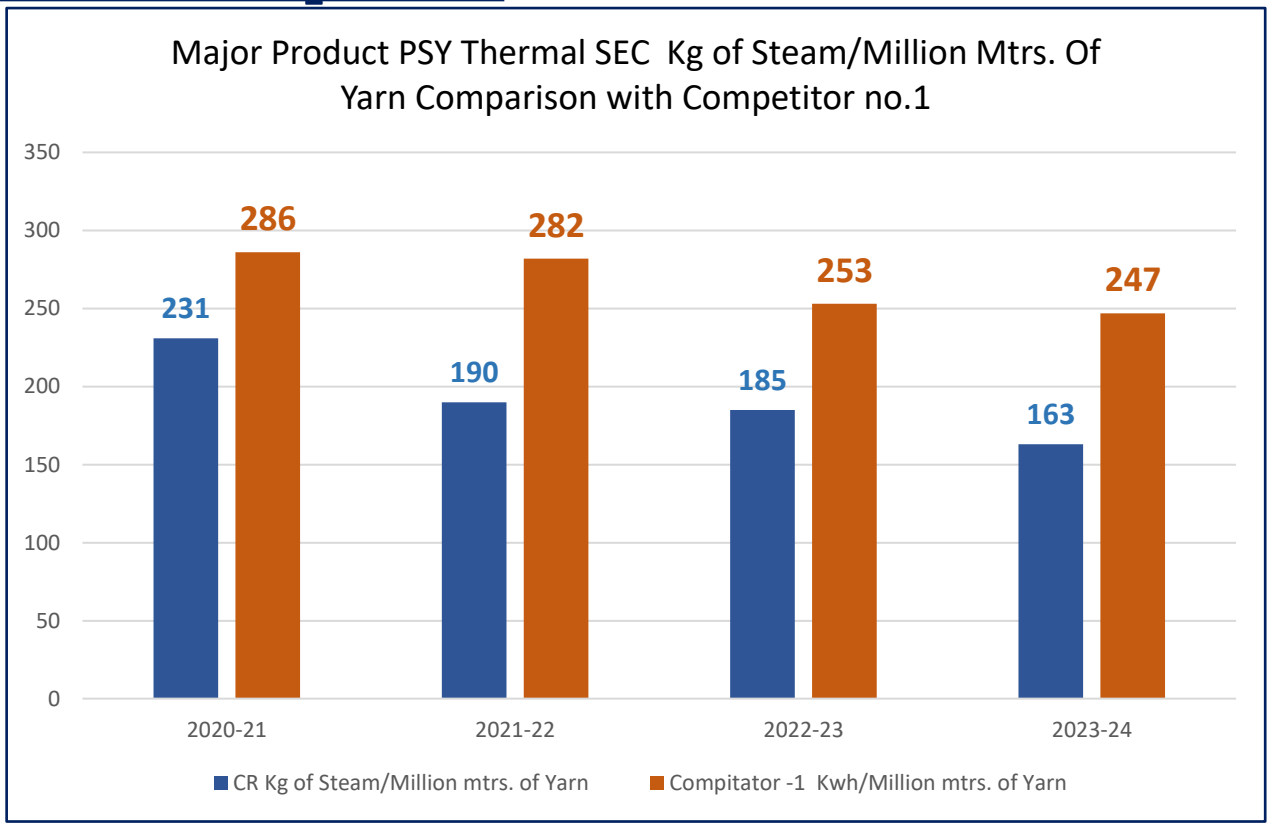
**Saving Coal 2237 & 3766 CO2 Emission MT/Annum**

**01 kg steam will Evaporate 3.5 kg of water from feed.**



# Comparison with Competitor




| Year | CR Kwh/Million mtrs. of Yarn | Competitor -1 Kwh/Million mtrs. of Yarn | CR Avg. Denier | Competitor -1 Avg. Denier |
|---|---|---|---|---|
| 2020-21 | 75 | 83 | 125.49 | 165.39 |
| 2021-22 | 65 | 72 | 122.93 | 157.19 |
| 2022-23 | 64 | 71 | 124.17 | 150.82 |
| 2023-24 | 66 | 76 | 115.14 | 152.67 |

| Year | CR Kg of Steam/Million mtrs. of Yarn | Competitor -1 Kg of Steam/Million mtrs. of Yarn | CR Avg. Denier | Competitor -1 Avg. Denier |
|---|---|---|---|---|
| 2020-21 | 231 | 286 | 125.49 | 165.39 |
| 2021-22 | 190 | 282 | 122.93 | 157.19 |
| 2022-23 | 185 | 253 | 124.17 | 150.82 |
| 2023-24 | 163 | 247 | 115.14 | 152.67 |

ADITYA BIRLA
GRASIM

# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

Raysil
ELEGANCE BY NATURE

# Energy Saving Projects Under Implementation in 2024-25

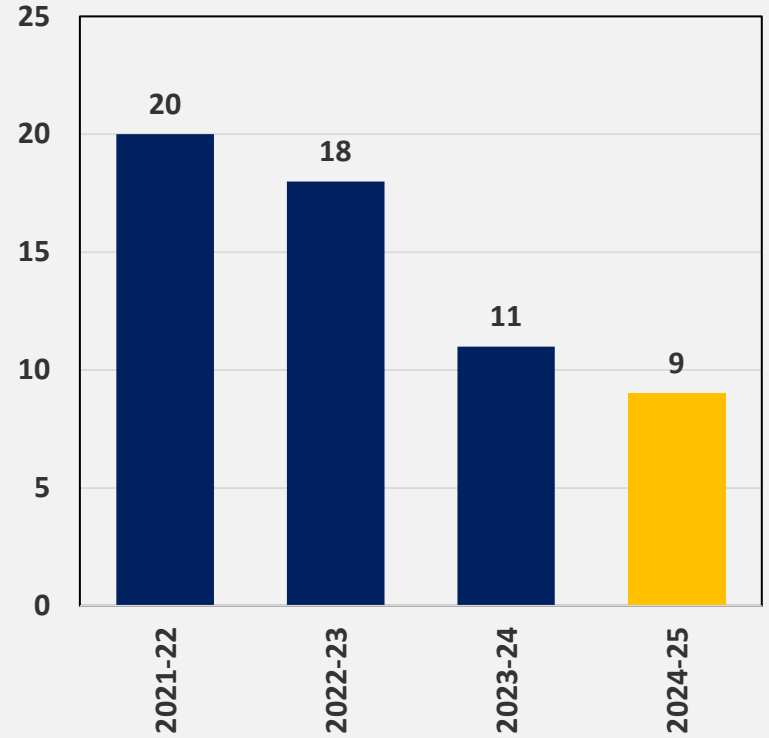
| Sr. No. | Energy Conservation Scheme | Dept. | Annual Electrical Saving (kWh) | Thermal Energy Saving | Unit of Thermal Energy | Total Annual Savings Lacs Rs.) | Investment (Rs. Lacs ) | Pay Back Gross in Years | Status |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Salt Drying with HP Steam in Tyre Cord Calcination Plant instead of Present Kerosene fire Burner system. | T/C & CSY Plant | 0 | 67.2 | KL of Kerosene | 23.3 | 80 | 3.43 | Completed in July 2024. |
| 2 | Recovery of locally drain condensate of Washing tank ( AT New and old Process) | Rayon Plant - AT dept. | 0 | 302 | MT of Coal | 47.5 | 30.1 | 0.63 | Completion Target Feb 2025 |
| 3 | Upgradation of New AT washing line A pump motors by IE4 efficiency motors. | Rayon Plant - AT dept. | 55000 | 0 | | 4.37 | 9 | 2.06 | Completion Target Dec. 2024 |
| 4 | Calcination exhaust blower to be controlled by VFD with closed loop feed back from temperature of the salt. | Rayon Calcination | 43000 | 0 | | 3.41 | 6 | 1.76 | Completion Target Oct. 2024 |
| 5 | Potential to Improve Blow down heat recovery system and flash steam recovery of Acid Plant Boiler | Acid Plant | 0 | 124 | MT of Coal | 18.95 | 34.2 | 1.80 | Completion Target March 2025 |
| 6 | Replacement of Cooling tower (1,2 & 5) fan blades by Aerodynamic Design blades. | T/C and CSY | 43200 | 0 | | 3.672 | 6 | 1.63 | Completion Target March 2025 |
| 7 | Replacement of 2x36W Conventional Tube light fittings by 1x36W LED in CSY Hall (1000 Nos) | T/C and CSY | 245280 | 0 | | 20.84 | 20 | 0.96 | Completion Target March 2025 |
| 8 | Provision of VFD for TC Spinning Air Washer no.1 &2 | T/C and CSY | 61320 | 0 | | 5.21 | 6 | 1.15 | Completion Target March 2025 |
| 9 | Improvement in conditioning of CSY Hall No.2 | T/C and CSY | 334632 | 0 | | 28.44 | 100 | 3.52 | Air washer no 4 Work Completed. Air Washer no 3 Material received Completion Target Dec. 2024 |
| | **Total** | | **782432** | **426** | MT of Coal | **155.7** | **291.3** | **1.87** | |
| | | | | **67** | **Kl of Kerosene** | | | | |

# Energy Saving Potential Identified through Energy Audits

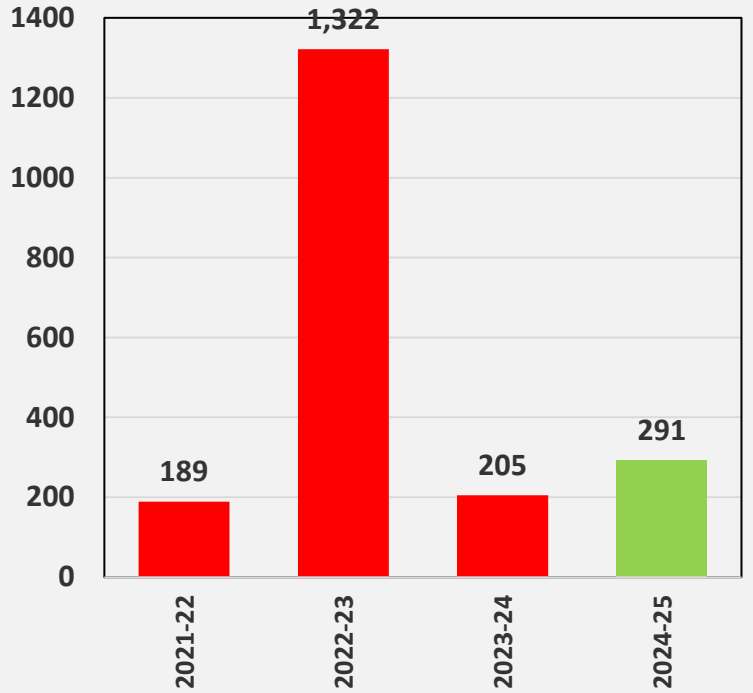
| Department | Action Plan | Potential Savings (Rs. Lakhs) | Timeline |
|---|---|---|---|
| PSY, T/C –CSY , Auxiliary and BH | Implementation of 13 Nos.Thermal Energy Saving schemes recommended by Forbes Marshall | 418.7 | March 2026 |
| Tyre Cord and CSY plant | Chiller Plant and Pumping Optimization with efficiency monitoring | 89 | Dec.-2026 |
| PSY Plant | Chiller Plant and Pumping Optimization with efficiency monitoring | 65 | Dec 2027 |

# Energy Conservation Schemes Implemented in Last Three Year

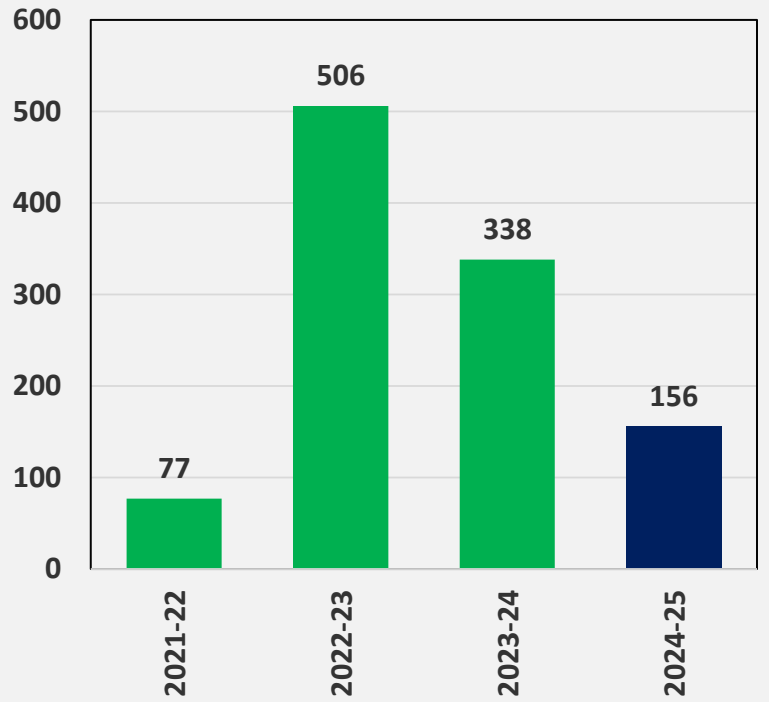
## Projects Undertaken




## Investment (Rs. Lakhs)




## Savings ( Rs. Lakhs)




| Year | No of Energy Saving Projects | Investment (INR Million) | Electrical Savings (Million Kwh) | Thermal Savings (Million Kcal) | Total Savings (INR Million) | Payback period (in months) |
|---|---|---|---|---|---|---|
| FY 2021-22 | 20 | 18.91 | 1.25 | 0 | 7.7 | 29 |
| FY 2022-23 | 18 | 132.2 | 2.5 | 9703 | 50.6 | 31 |
| FY 2023-24 | 11 | 20.5 | 0.91 | 8243 | 33.8 | 7 |

ADITYA BIRLA
GRASIM

# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

Raysil
ELEGANCE BY NATURE

# Energy Saving Projects Implemented in Year 2023-24

| Sr. No. | Name of Energy Saving Projects | Investments (INR Million) | Electrical Savings (Million kWh) | Thermal Savings ( Million Kcal) | Total Savings INR Million) | Payback Period (in months) |
|---|---|---|---|---|---|---|
| 1 | Upgradation of conventional AHU system by energy efficient BLDC motor based system. | 1.5 | 0.05 | 0 | 0.45 | 40 |
| 2 | Replacement of old inefficient motors above 50HP. | 2.6 | 0.25 | 0 | 2.14 | 15 |
| 3 | Replacement of Cooling tower fan blades by Aerodynamic Design blades. | 0.45 | 0.03 | 0 | 0.28 | 19 |
| 4 | Intelligent Air Flow Controller for Compressed air system. | 1.35 | 0.14 | 0 | 1.16 | 14 |
| 5 | Replacement of 250 Nos. 2x36W Conventional Tube light fittings by 1x36W LED in CSY Hall no.1. | 0.5 | 0.06 | 0 | 0.52 | 12 |
| 6 | Replacement of 204 Nos.18W Conventional Tube light fittings of CSY M/C module by 10W LED - 6 CSY M/C's. | 0.214 | 0.02 | 0 | 0.18 | 14 |
| 7 | Replacement Of Old Condenser Water Pump With Energy Efficient Pump And Motor - 2 Nos.( E/R) @365 Days | 3 | 0.14 | 0 | 1.18 | 31 |
| 8 | Replacement of Conventional Ceiling fans by energy efficient BLDC fans | 0.3 | 0.02 | 0 | 0.18 | 20 |
| 9 | Reduction of KVAH consumption by controlling & through Management of plant Reactive Power with Installation of closed loop Auto system. | 2.3 | 0.20 | 0 | 1.71 | 16 |
| 10 | Reduction in steam venting due to Changeover of PSY V Hall power from PGS to Grid Power | 0.867 | 0.00 | 7526 | 23.90 | 0 |
| 11 | Replacement of old Economizer in Acid Plant (1A & 1B) with higher Heat Transfer Area and Efficiency new Economizer to extract more heat from Gases. | 7.371 | 0.00 | 718 | 2.15 | 41 |
| | **Total** | **20.5** | **0.91** | **8243** | **33.8** | **7** |

# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

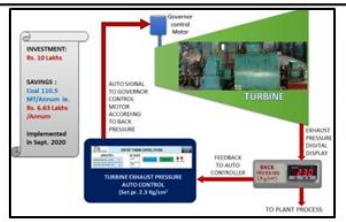
| Sr. No. | Name of Energy Saving Projects Implemented in 2022-23 | No. of Projects | Investments (INR Million) | Electrical Savings (Million kWh) | Thermal Savings (Million Kcal) | Total Savings (INR Million) | Payback Period (in months) |
|---|---|---|---|---|---|---|---|
| 1 | Replacement of conventional lights by LED lights, conventional ceiling fans by Energy efficient BLDC fans. | 6 | 7.33 | 0.61 | 0 | 4.12 | 21 |
| 2 | Improvement in Existing Drives for Energy Efficiency Like VFD, and Belt Drive | 3 | 2.1 | 0.23 | 0 | 1.57 | 16.1 |
| 3 | Replacement of old Equipment with New Energy Efficient Equipment's | 7 | 14.3 | 0.51 | 735 | 6.2 | 27.6 |
| 4 | Installation and commissioning of MSFE spin bath production. | 1 | 93.5 | 0 | 8968 | 30.36 | 37 |
| 5 | Upgradation of TG-1 by Installing New Rotor and Diaphragms for Energy Efficiency-Boiler House | 1 | 15 | 1.19 | 0 | 8.33 | 22 |
| | **Total** | **18** | **132.2** | **2.5** | **9703** | **50.6** | **31** |

| Sr. No. | Name of Energy Saving Projects Implemented in 2021-22 | No. of Projects | Investments (INR Million) | Electrical Savings (Million KWh) | Thermal Savings (Million Kcal) | Total Savings INR Million) | Payback Period (in months) |
|---|---|---|---|---|---|---|---|
| 1 | Energy Efficiency in HVAC system | 6 | 7.55 | 0.72 | 0 | 4.21 | 21.5 |
| 2 | Replacement of conventional lights by LED lights, conventional ceiling fans by Energy efficient BLDC fans. | 4 | 1.40 | 0.15 | 0 | 0.89 | 18.9 |
| 3 | Replacement of old Equipment with New Energy Efficient Equipment's | 6 | 7.27 | 0.28 | 0 | 1.79 | 48.7 |
| 4 | Use of VFD in Pumping System and Flat Belt in Compressors | 3 | 0.83 | 0.06 | 0 | 0.37 | 26.9 |
| 5 | Installation of Roof Top 42 KW Solar PV plant on Roof top of Main Sub Station. | 1 | 1.8 | 0.06 | 0 | 0.48 | 45.0 |
| | **Total** | **20** | **18.9** | **1.25** | **0** | **7.7** | **29** |

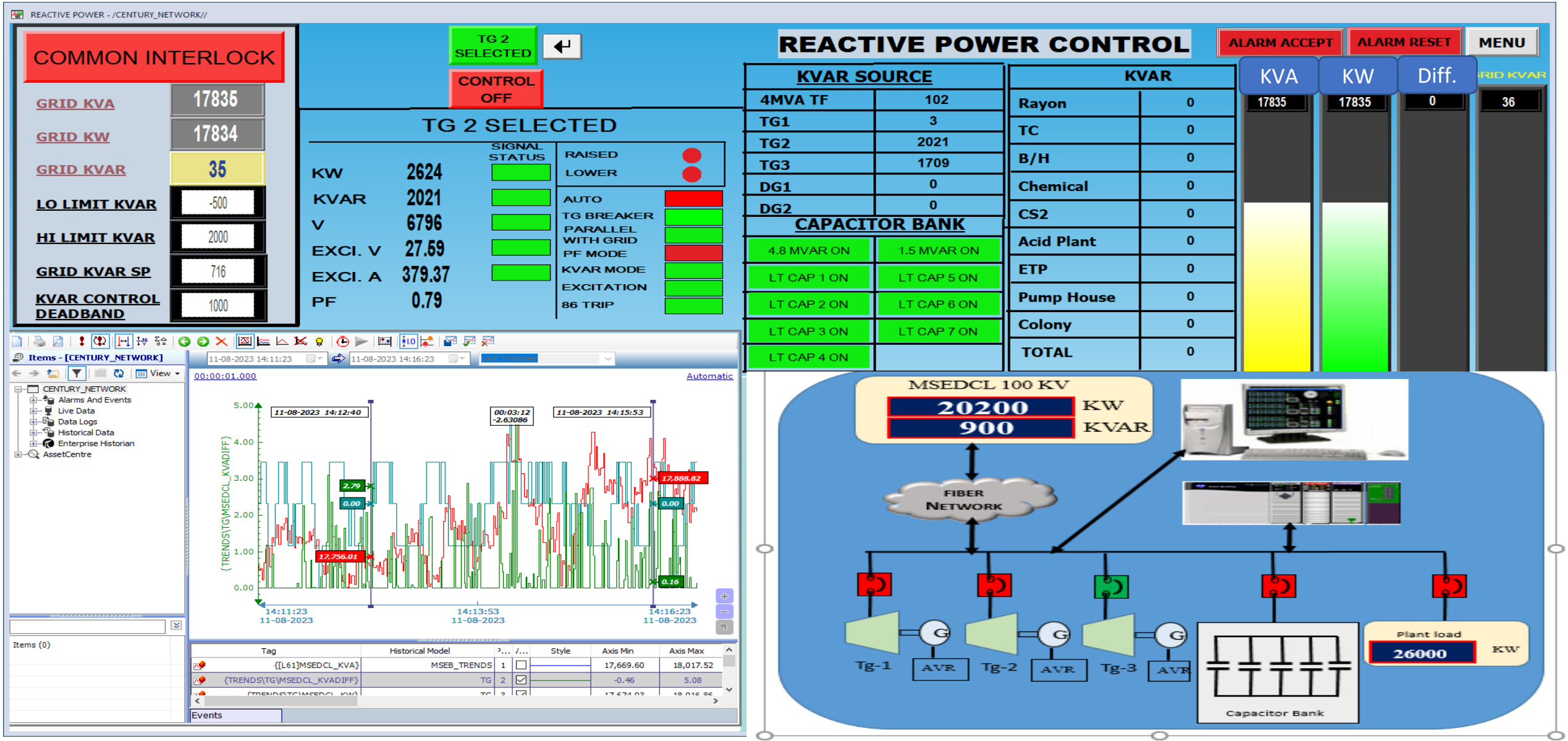
# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN



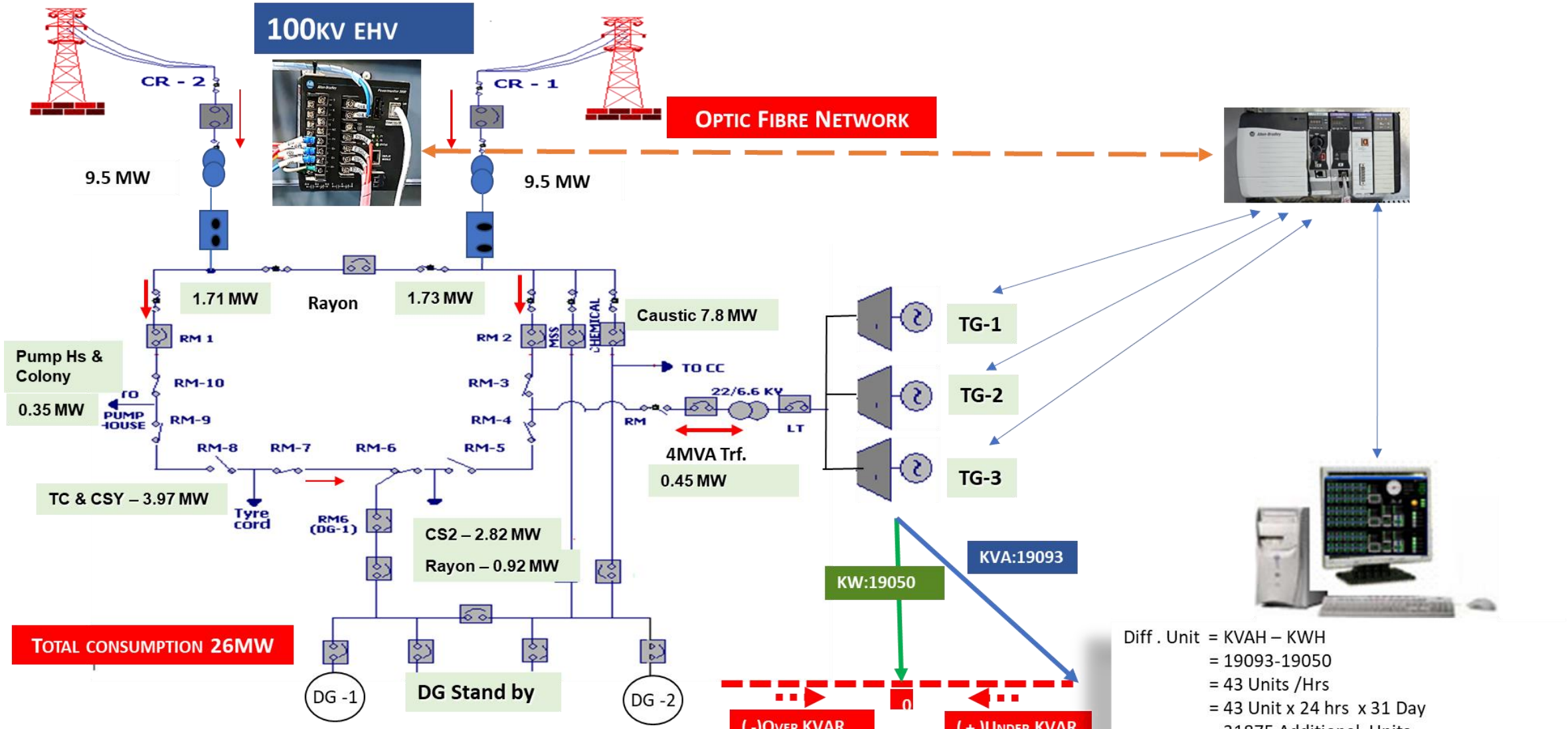
## New Technologies/Innovation Employed for Energy Savings

| | | | | |
|---|---|---|---|---|
|  |  |  |  |  |
| Acid Absorption Crystallizers at PSY Plant 2009-10 | Centrifugal Chiller 2012 | Mist Condenser (2012-13) | Acid Absorption Crystallizers at T/C Plant 2013-14 | Installation Of LP Turbine Aug.2015 |
|  |  |  |  |  |
| Mist Cooling Tower 2015-16 | New Udehdehnora Gen.-4 Electrolyser for Caustic Plant 2018-19 | Mist Combo System for AAC 2017-18 | Jet Type Fan less Induced Draft Cooling Tower Jan2017 | ENERGY EFFICIENT IE4 MOTORS |
| USE OF RENEWABLE ENERGY | | | | |
|  |  |  |  |  |
| Screw Air compressor With permanent Magnet Motor 2019 | Turbine Back pressure Auto Control 2020-21 | SOLAR PV Power Plant 42 Kw at Main Sub Station.2021 | BLDC Celling Fan 2021 | Energy efficient LED LIGHT Installation |

# Reduce KVAH Units by Managing Reactive Power



# Reduce KVAH Units by Managing Reactive Power



# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

## Replacement of Conventional Fan Blades With Aerodynamic Design Fan Blades

**Conventional Fan Blades of ER Cooling Tower 4 & 6**

Before

**Aerodynamic Design Fan Blades for ER Cooling Tower 4 & 6**

After

| Sr. No. | Parameter | Value | Unit |
|---|---|---|---|
| 1 | Power Consumption with old fan blades (22.6x24) | 542.4 | KWh/Day |
| 2 | Power Consumption with Aerodynamic blades(16.9x24) | 405.6 | KWh/Day |
| 3 | Total Reduction in Power Consumption | 136.8 | KWh/Day |
| 4 | Annual Energy Saving (136.8 KWh x 240 days) | 32832 | KWh/Annum |
| 5 | Annual Saving (@ Rs. 8/Unit) | 2.63 | Rs.Lakhs/Annum |
| 6 | Investment | 4.2 | Rs.Lakhs |
| 7 | Payback Period | 1.6 | Years |
| Scope | In another Six Cooling Tower Estimated Saving 196992 Kwh/Annum | | |

## Replacement of Old Conventional Cooling Tower with Mist Cooling Tower

**Old Conventional Type Spinbath Cooling Tower No. 6**

Before

**Mist Type Spinbath Cooling Tower No. 6**

After


| Sr. No. | Parameter | Value | Unit |
|---|---|---|---|
| 1 | Power Consumption with old fan blades (10.17x24) | 244.08 | KWh/Day |
| 2 | Power Consumption with Aerodynamic blades(5.62x24) | 134.88 | KWh/Day |
| 3 | Total Reduction in power consumed | 109.2 | KWh/Day |
| 4 | Annual Energy Saved (109.2 KWh x 350 days) | 38220 | KWh/Annum |
| 5 | Annual Saving (@ Rs. 8/Unit) | 3.05 | Rs.Lakhs/Annum |
| 6 | Investment | 20 | Rs. Lakhs |
| 7 | Payback Period | 6.6 | Years |
| Scope | In another Five Cooling Tower Estimated Saving 191100 Kwh/Annum | | |

# Installation of Roof Top Solar PV Power Plant in Associated School and College

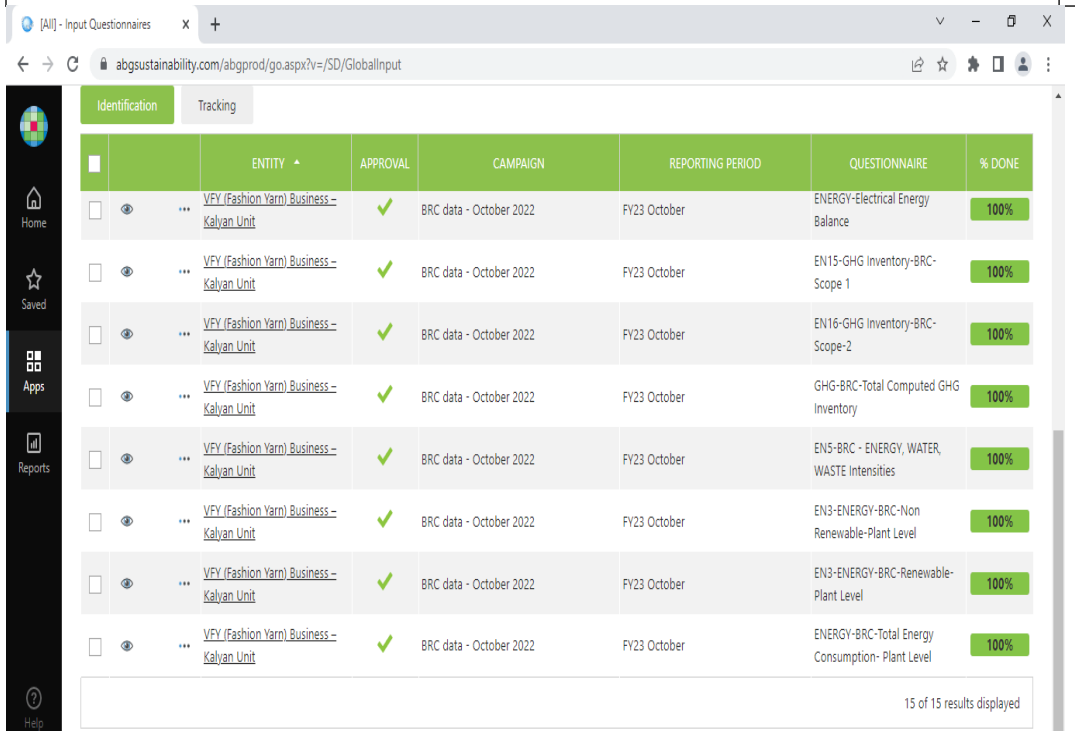
| Installation of Roof Top Solar PV Power Plant (42 KWp) in Century Rayon | Installation of 240 KWp Roof Top Solar at B. K. Birla School, Kalyan in April 2023 | Installation of 193 KWp Roof Top Solar at B. K. Birla College, Kalyan in Feb 2023 |
|---|---|---|
|  |  |  |

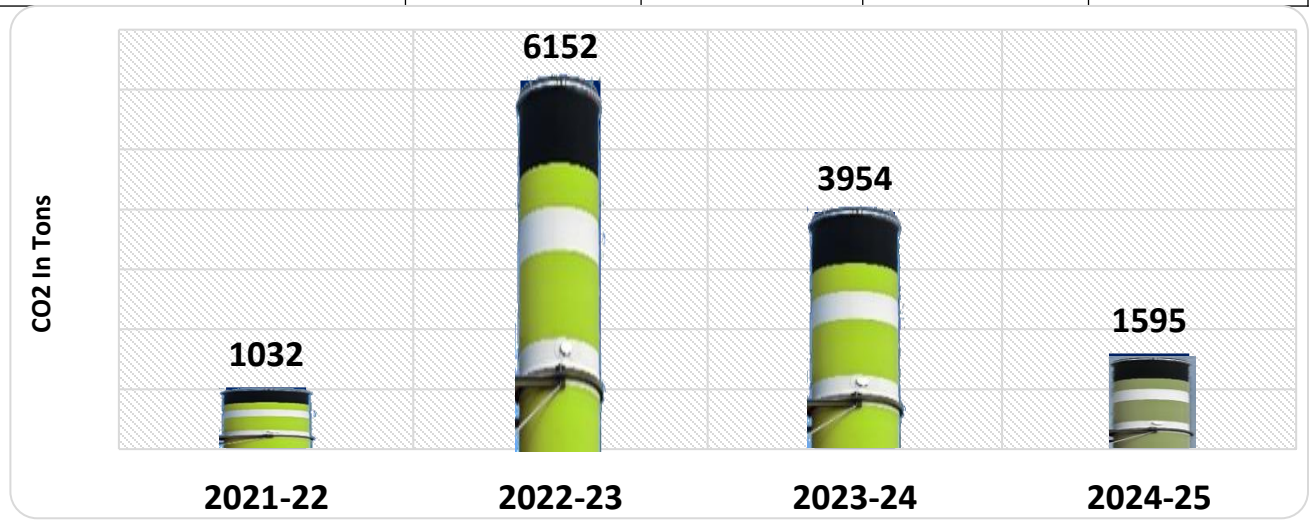
## Upcoming Renewable Projects

| Sr. No. | Details of Projects | Capacity in Kw | Status |
|---|---|---|---|
| 1 | Solar Power Plant at Century Rayon Hospital | 95 | Under Implementation Completion Target Dec 2024 |
| 2 | Solar Power Plant at Century School | 45 | Under Implementation Completion Target Dec 2024 |
| 3 | Solar Power Plant at Vishram Bhavan with | 50 | Under Implementation Completion Target Dec 2024 |

# GHG Emission Monitoring

| Parameters | Unit | FY 2020-21 | FY 2021-22 | FY 2022-23 | FY 2023-24 |
|---|---|---|---|---|---|
| Scope 1 Emission (Direct emissions form Fuel Used | Kg CO2/Equivalent Product | 7272 | 6757 | 6264 | 6436 |
| Scope 2 Emission (Indirect Emissions form Grid Electricity) | Kg CO2/Equivalent Product | 6504 | 5995 | 5866 | 6375 |
| Scope 3 Emission (Employee Commutating, Business Travels, Purchased Goods) | Kg CO2/Equivalent Product | N/A | 7708 | 4937 | 3804 |
| Total Emission (Direct emissions form Fuel Used | Kg CO2/Equivalent Product | 13776 | 20460 | 17067 | 16615 |




| Year | 2021-22 | 2022-23 | 2023-24 | 2024-25 (Proposed) |
|---|---|---|---|---|
| $CO_2$ Emission Reduction In Tones through Encon Projects | 1032 | 6152 | 3954 | 1595 |

# Supply Chain and Procurement Policy

ADITYA BIRLA GROUP

## SUPPLY CHAIN AND PROCUREMENT POLICY

Aditya Birla Group understands the importance of building a sustainable supply chain for the growth and sustenance of businesses. We recognise the importance of developing a strong relationship with suppliers and building their capabilities which will improve the Group's performance. Working with suppliers on improving their process and practices is a priority for the Group and is integral to our commitment towards the Responsible Stewardship of our operations. Further, external factors will affect the suppliers of our raw materials, equipment and components over time and maintaining a robust and viable supply chain is vital to the sustainability of our businesses.

The Aditya Birla Group's goal is to procure sustainable goods and services that represent the best price, quality, delivery and technological offering. Every Aditya Birla Group Company shall therefore endeavour to:

- Ensure compliance to the local, national and international legislation within the supply chain adherence to the ABG Code of Global Business Ethics and Compliance Standards and conformance to the ABG Sustainability Framework requirements by tier one suppliers;
- Create a supply chain that is resilient and viable in presence of risks and opportunities potentially arising from the external legal, technical, environmental and societal megatrends as part of our business future-proofing programme;
- Build capability within the supply chain and work towards creating best in class supply chain solutions;
- Adhere to the principle of traceability to the origin of goods throughout the supply chain;
- Promote resource conservation, use of alternative materials and renewable energy, water stewardship, safety, health, respect for human rights and elimination of child and forced labour across the supply chain;
- Influence our suppliers to adopt the Aditya Birla Group Sustainability Framework policies and standard and encourage developing an equivalent management systems throughout the supply and value chain; and
- Actively communicate and disclose our approach and achievements to the suppliers.

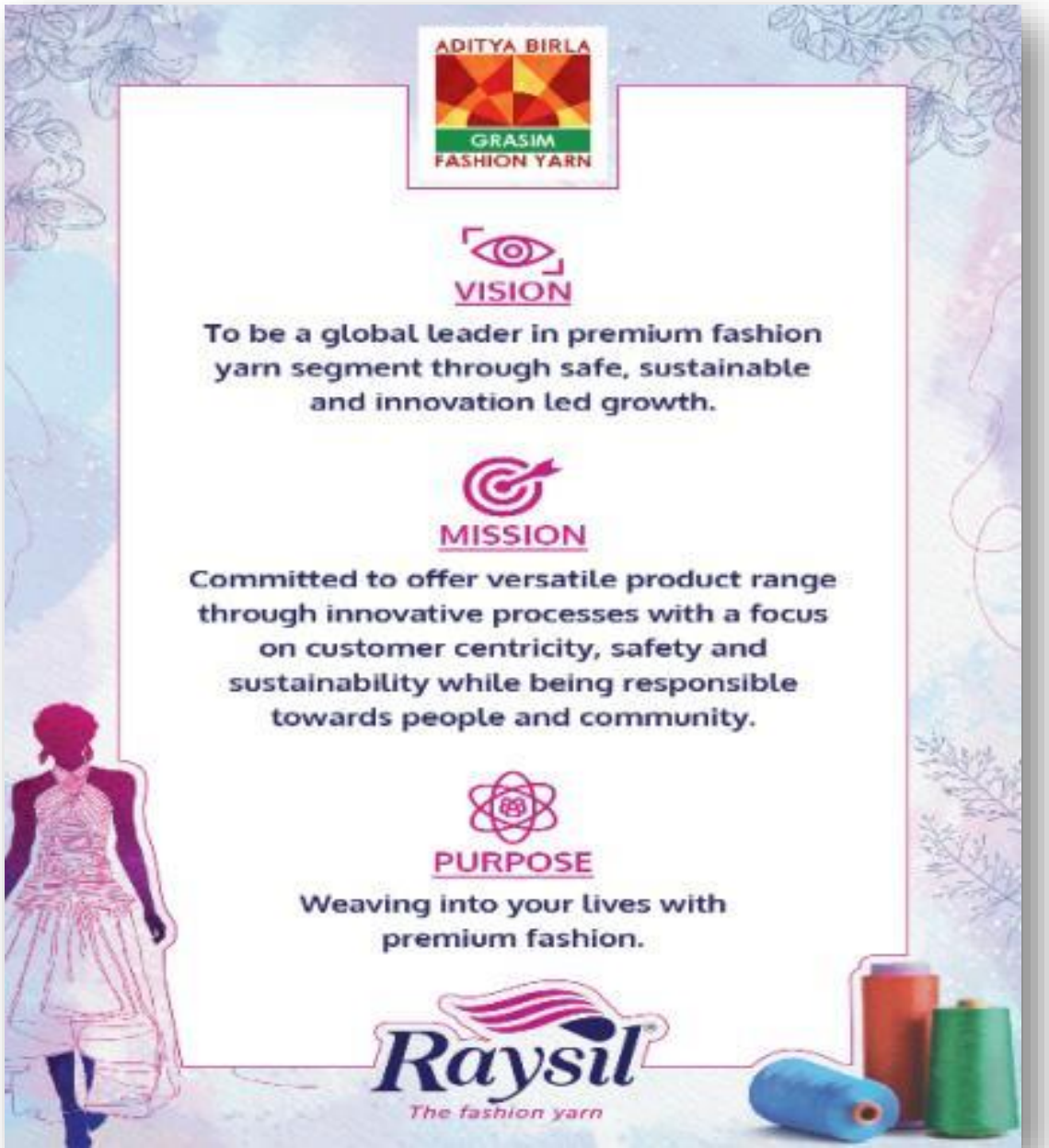
Each Aditya Birla Group Company shall sign up to this policy or develop an equivalent that shall be implemented throughout our operations.

This policy shall be reviewed periodically for its suitability and updated as necessary.

**Date: 17th December 2019**

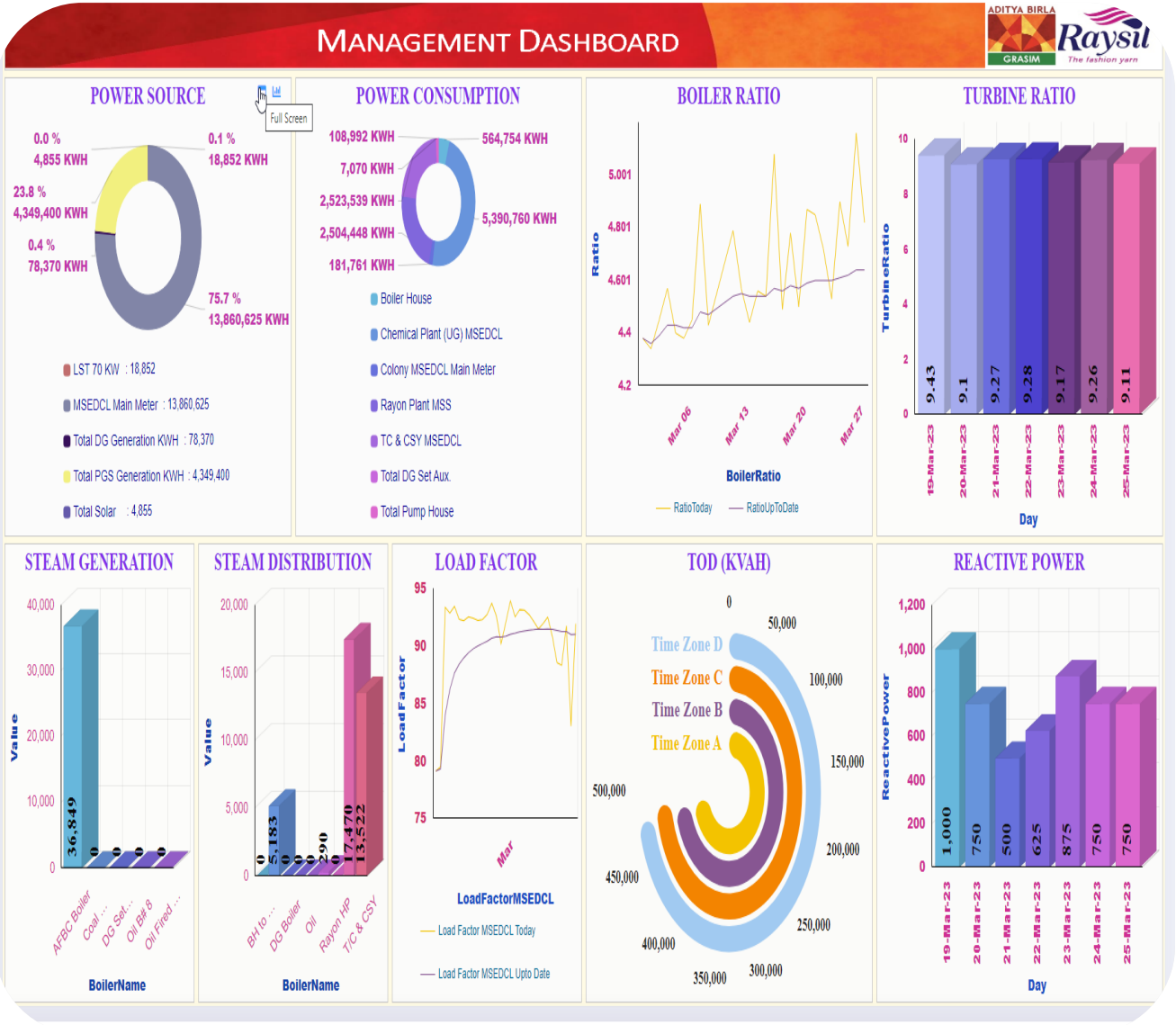
**ABG/SUST/POL/09** **Version: V-3**

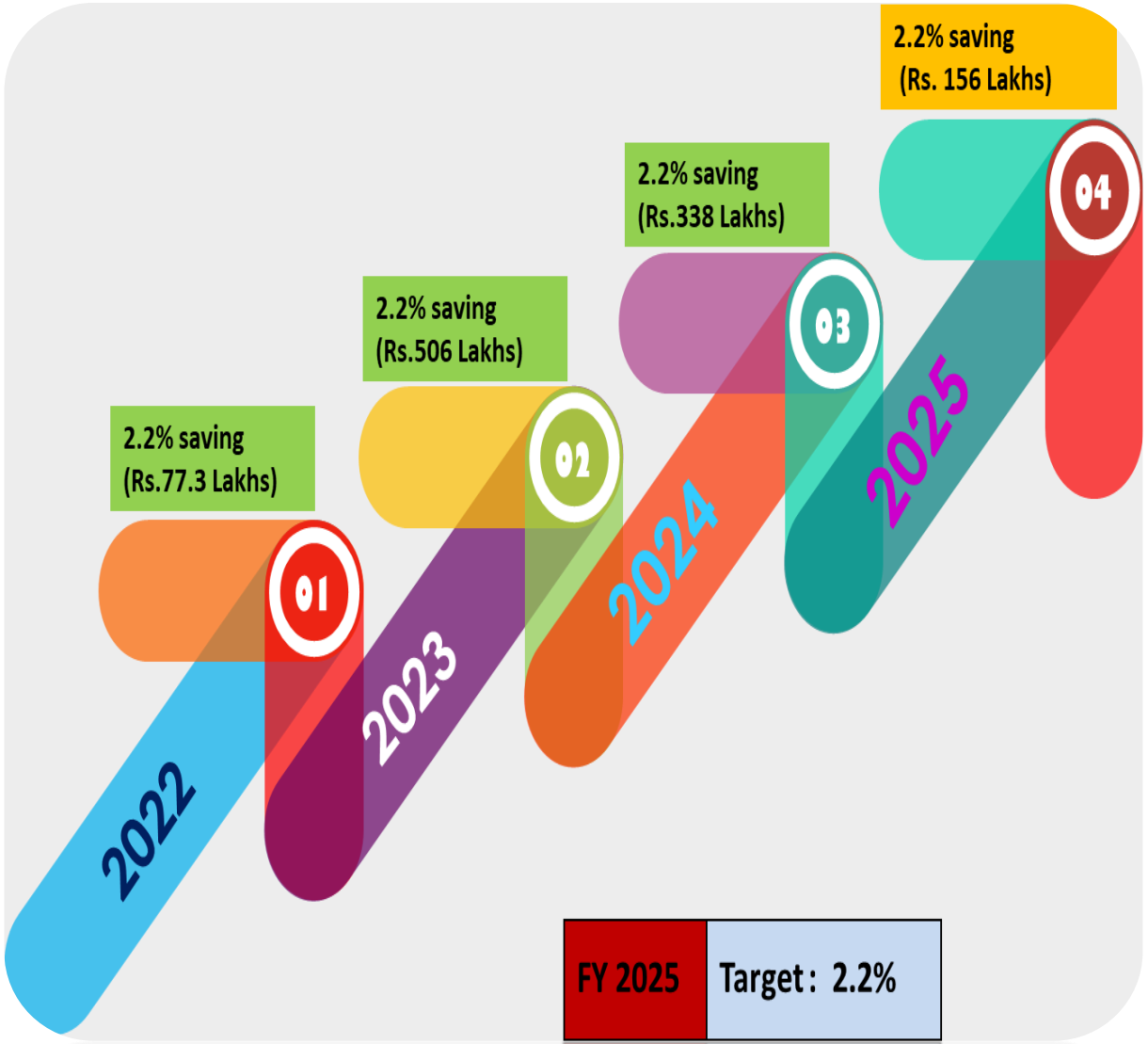




# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

# Energy Target & Monitoring System



# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

# EnMS ISO 50001: 2018 & LCA

**GRASIM INDUSTRIES LIMITED**
**(UNIT : CENTURY RAYON)**
**SHAHAD - 421103**

### ENERGY AND CARBON POLICY

We, Grasim Industries Limited, Unit- Century Rayon, Shahad recognize that energy consumption and carbon emissions are the important issues currently affecting the planet. We understand the risk of dependence solely on fossil fuels and the potential consequences associated carbon emissions related to our operations. We are committed to demonstrate excellence in Energy and Carbon Management Performance on continual basis.

To achieve this, we shall endeavor to:

- Maintain positive legal Compliance to energy and carbon regulations and other requirements;
- Raise awareness to encourage efficient use of energy resources, with a focus on reducing energy intensity and carbon footprint of operations and products;
- Increase the use of renewable energy wherever possible;
- Promote research and development for cleaner and efficient technologies to support adoption of latest low carbon solutions;
- Evaluate technically and financially feasible and cost-effective options to reduce potential carbon emissions during the construction and operation of new projects;
- Continuous up-gradation of process with energy efficient and Eco-friendly technology to optimize the energy cost;
- Continually improve energy and carbon management within and across the supply and value chains by adopting internationally accepted and economically viable Management Systems and best practices;
- Engage internally and externally with the stake holders and wider communities to understand and collaborate on actions promoting reduced energy intensity and low carbon approaches to benefit both the company and associated communities;
- Actively communicate and disclose our approach and achievements to stakeholders and regularly seek feedback through stakeholder forums;
- Provide necessary resources and information to achieve objective and targets and Support the purchase of energy efficient products, services and design for energy performance improvement;
- Monitor, measure and report energy usage and carbon emissions in compliance with internationally recognized protocols; and
- Ensure this policy is communicated at all levels within organization and is available to relevant interested parties on request.

This policy shall be reviewed periodically for its suitability and updated as necessary.

**Date : 12.01.2023**

**Digvijay Pandey**
**Unit Head**

TÜVNORD

# Certificate

Management system as per
**ISO 50001: 2018**

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

**GRASIM INDUSTRIES LIMITED**
**UNIT CENTURY RAYON**
**B.K Birla Marg, Shahad,**
**Dist. Thane – 421 103,**
**Maharashtra,**
**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 Viscose Filament Yarn, High Tenacity Tyre Yarn, Rayon Tyrecord Fabric & Industrial Chemicals.**

Certificate Registration No. 44 764 18391873
Audit Report No. 2.5-1198/1994

Valid from 09.08.2024
Valid until 28.07.2027
Initial certification 29.07.2018

Visit our database to verify the validity of this certificate.

Mumbai, 09.08.2024
Certification Body at TÜV NORD CERT GmbH

TÜV NORD CERT GmbH
Am TÜV 1, 45307,
Essen
www.tuev-nord-cert.com

TUV INDIA PVT. LTD.
801, Raheja Plaza 1, L.B.S Marg,
Ghatkopar (W) Mumbai – 400 086,
India
www.tuv-nord.com/in

TÜVNORDGROUP

sphera

# CERTIFICATE OF COMPLETION

*is presented to*

## Grasim Industries Limited

(Unit Century Rayon Kalyan)

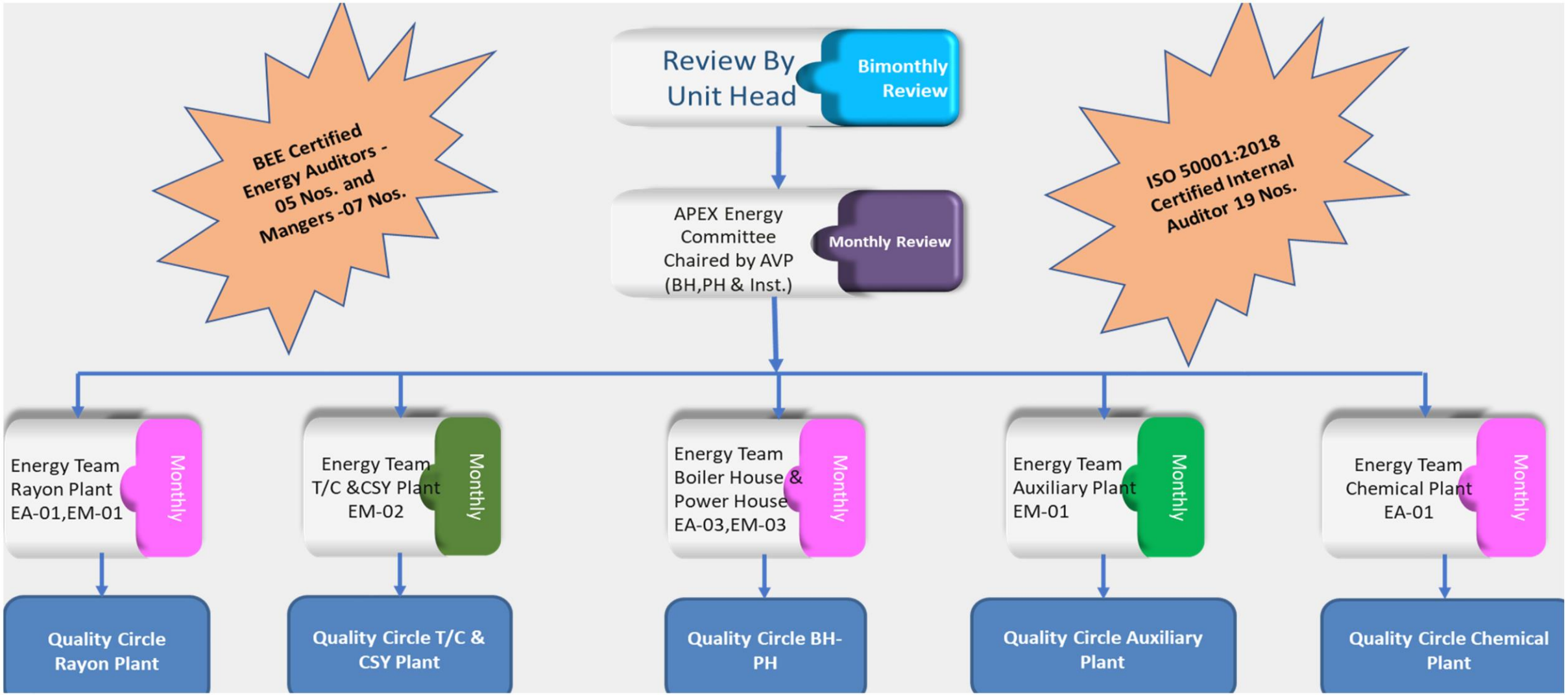
*for*

*completing Life Cycle Assessment of Viscose Filament Yarn (VFY) products*

*on 6th July 2022*

Dr. Rajesh Kumar Singh
Sr. Director, Consulting
thinkstep Sustainability Solutions Pvt. Ltd.

# Energy Management Organogram



# ABG's Sustainability Progress - 16 Commitments on ESG

| Three Pillars | Material Areas | Group Philosophy and Commitments |
|---|---|---|
|  Environment | 1. Decarbonisation | • Net - Zero Carbon Emission by 2050 |
| | 2. Climate Change Adaptation | • Identify and Mitigate Climate Related Physical Risks |
| | 3. Biodiversity Management | • No Net Loss through mitigation Hierchy |
| | 4. Water Resilience | • Reduction in freshwater Consumption<br>• Water Positive at mining Locations |
| | 5. Circularity | • Zero Waste to land fill<br>• % Alternative raw material |

# Way forward

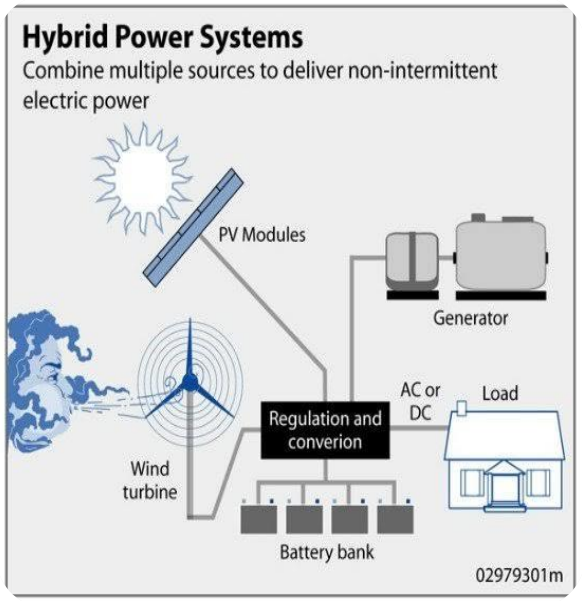
## Energy Saving Schemes under Implementation

1. Steam Saving 18003 MT/ANNUM

1. Condensate Saving 61825 KL/ANNUM

## Use of Renewable Energy

1. Solar and wind hybrid system _ Open Access /Capex proposal under progress.

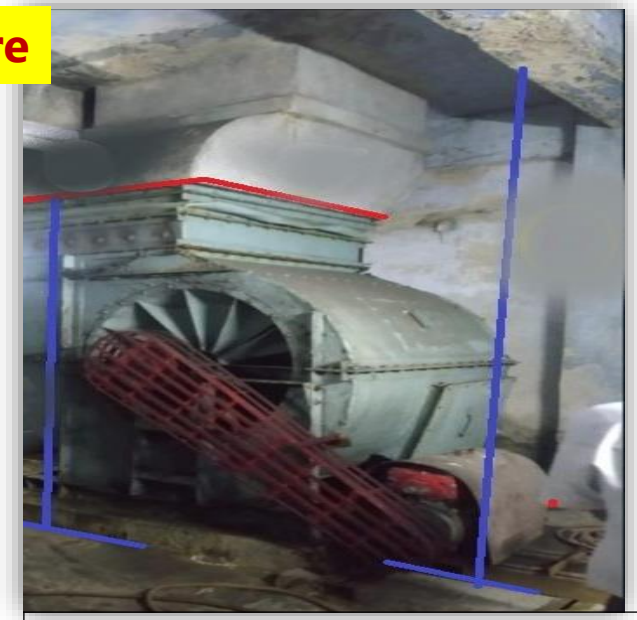



Way forward

# Axial Fan with BLDC Motor for AHU

In AHU System Conventional Centrifugal Blower with Induction Motor

Before



Axial Fan and BLDC Latest Technology motor with microprocessor based closed loop Controller.
43 % Reduction in Electrical Power Consumption

After

| Economics | | | | |
|---|---|---|---|---|
| 1 | Power Consumption with old blower(13.61x24) | 326.64 | Kwh/Day | Scope in 42 Nos. AHU for implementation of this technology in our Plant. Estimated Saving Scope 2170728 Kwh/Annum. |
| 2 | Power consumption with BLDC blower (7.71x24) | 185.04 | Kwh/Day | |
| 3 | Total Reduction in Power Consumed | 141.6 | Kwh/Day | |
| 4 | Annual Energy saved (141.60 KWh x 365 days) | 51684 | Kwh/Annum | |
| 5 | Annual Saving (@ Rs. 8/kwh) | 4.13 | Rs. Lakhs/Annum | |
| 6 | Investment | 15 | Rs. Lakhs | |
| 7 | Payback Period | 3.63 | Years | |

# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN



## Accreditations & Certifications

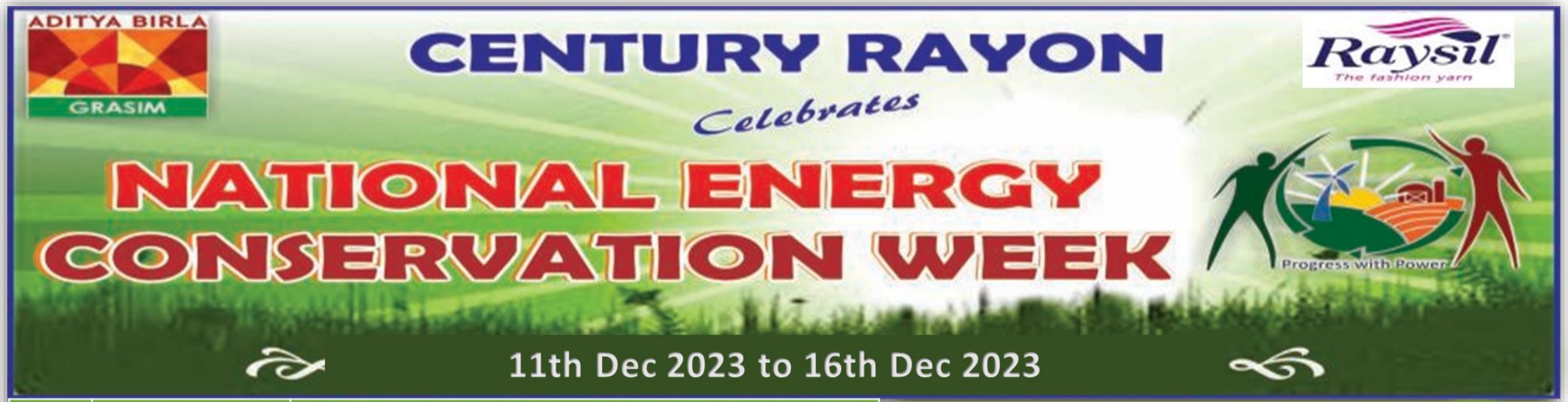
| Certifications/Accreditation | Status | |
|---|---|---|
| ISO 9001: 2015 | Certified | Quality Management System |
| ISO 14001: 2015 | Certified | Environmental Management System |
| ISO 45001:2018 | Certified | Occupational Health & Safety System |
| ISO 50001: 2018 | Certified | Energy Management System |
| ISO/IEC 27001: 2013 | Certified | Information Security Management system |
| STeP | Under Renewal | Sustainable Textile Production – Environmental friendly & socially responsible production |
| SA-8000:2014 | Certified | Social Accountability Standard |
| Oeko Tex | Certified | International Association for Research & Testing (Human- ecological safety of textile products) |
| FSC - COC | Under Renewal | Forest Stewardship Council - Chain of Custody |
| CANOPY STYLE | Certified | Yellow Shirt |
| ZDHC - Contributor | Certified | Zero discharge of Hazardous Chemicals |
| NABL | Certified | Standard for Testing & Calibration Laboratories |
| RCS | Certified | Sustainability By Recycled Raw Material |
| **Others** | Inditex / Higgs Sustainability Index / Coats Supplier Code | |

CONFIDENCE IN TEXTILES
Tested for harmful substances

EC SMART VISCOSE
A Cellulosic Yarn

# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

## Awareness Creation In The Employees & Their Involvement In Energy Conservation & Training Programs




| Day | Date | Program |
|---|---|---|
| 1 | 11th December | ▪ Opening Ceremony<br>▪ Energy Conservation Awareness Training for staff. |
| 2 | 12th December | ▪ Training on Energy Conservation Topic for workmen.<br>▪ Training on Energy Conservation Topic for Staff. |
| 3 | 13th December | ▪ Quiz for workmen<br>▪ Training on Energy Conservation Topic for Staff. |
| 4 | 14th December | ▪ Non-Technical On Line Quiz for Staff<br>▪ Technical On Line Quiz for Staff |
| 5 | 15th December | ▪ Evaluation of Poster , Cartoon, Poem and Slogan competitions. |
| 6 | 16th December | ▪ Prize Distribution |

| | |
|---|---|
| Cartoon Competition | On A4 size paper in big and clean letters |
| Poster Competition | 700 X 500 mm sheet (sheets can be collected from department coordinators.) |
| Slogan Competition | On A4 size paper in big and clean letters in English, Hindi & Marathi |
| Poem Competition | On A4 size paper in big and clean letters in English, Hindi & Marathi |
| Cross Word | English crossword for staff and Hindi cross word for workmen |
| Online Quiz For Staff Technical & Non-technical | Dt. 14.12.2023 at 11.00 to 11:20 Hrs. & Dt. 14.12.2023 at 15:30 to 15:50 respectively. |
| Quiz Competition For Workmen | Dt. 13.12.2023 at 14.00 hrs. in Rayon TQM Hall |
| Red Tag Identification | 11th to 15th Dec 2023 |

# Recognition & Awards in Energy Conservation

| Year | Awards | | Agency |
|---|---|---|---|
| **2023-24** | FAME NATIONAL AWARD 2023-24" In Diamond Award | for the Outstanding Project on "Energy Efficiency" in Textile Manufacturing Industry. | Foundation For Accelerated Mass Empowerment |
| **2018-19** | Certificate of Merit | State level Award for Excellence in Energy conservation and Management( Textile Sector) | Maharashtra Energy Development Agency (MEDA) |
| **2017-18** | Second Prize in 13TH | | |
| **2016-17** | Second Prize in 12TH | | |
| **2017** | Energy Efficient Unit -2017 | | CII |
| **2016** | Energy Efficient Unit -2016 | | CII |
| **2015-16** | Award for Appreciation of the achievement in Energy conservation and Management in the Textile Sector | | MEDA |
| **2015** | Award for Excellent Energy efficient Unit | | CII |
| **2013** | ICC Award for Excellence in Energy conservation & Management | | ICC |
| **2013** | 9th State Level Award in "Excellence in Energy Conservation and Management"1st Prize in Textile Sector | | MEDA |
| **2012** | 8th State Level Award in "Excellence in Energy Conservation and Management"1st Prize in Textile Sector | | MEDA |
| **2010** | 7th State Level Award in "Excellence in Energy Conservation and Management" 1st Prize in Textile Sector | | MEDA |
| **2005,2006** | National Award for "Energy Efficient Unit" in Energy Conservation | | CII |
| **2004** | State Level Award in "Excellence in Energy Conservation and Management" 1st Prize in Textile Sector | | MEDA |
| **2004** | National Award for "Energy Efficient Unit" in Energy Conservation | | CII |
| **2000** | National Award for Excellence in Energy Conservation | | CII |
| **1999 & 2000** | National Energy Conservation Award, Certificate of Merit in Textile Sector | | Ministry of Power, Govt. of New Delhi. |
| **1998** | National Energy Conservation Awards- 2nd Prize in Textile Sector | | |

# VFY FASHION YARN BUSINESS
## UNIT : CENTURY RAYON, KALYAN

# Awards





**14th State Level Award For**

**Excellence In Energy Conservation And Management**

Grasim Industries Limited – Unit Century Rayon, Thane

in Appreciation of the Achievement in Energy Conservation & Management

In Textile Sector : Year 2018 – 19

By Maharashtra Energy Development Agency (MEDA)

# VFY FASHION YARN BUSINESS

## UNIT : CENTURY RAYON, KALYAN