

# Sustainability Report 2024-25



NURTURING NATURE.  
EMPOWERING PROGRESS.

A Journey of Regenerative Growth – *Nirmal*, Our Sustainability Programme

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# From CMD's Desk



A special focus of our ecological efforts is on enhancing soil health and carbon sequestration, aligned with national priorities for improving farmer incomes through Merino Innovation Centre at VNIT Nagpur.



## “Dharmo Rakshati Rakshitah” धर्मो रक्षति रक्षितः is the “Motto” of our Sustainability Journey under *Nirmal* Program

It is with a deep sense of responsibility that I present the Sustainability Report 2024-25 of our company. Our guiding philosophy, encapsulated in Merino's mission—“Universal Weal through Trade & Industry”—underpins our commitment to generating value ethically and sustainably for all stakeholders. We are dedicated for ‘Purusārtha’ without harming the environment, drawing from and reinforcing nature's regenerative capacity.

Sustainability means safeguarding our shared future. So, our sustainability framework is driven by our flagship initiative, the ‘Nirmal’ Program, which focuses on the five elements of nature, Panchamahabhuta (पञ्चमहाभूत)—Bhūmi (Soil), Apah (Water), Analah (Fire), Vayu (Air), and Khang (Akash/Space)—by integrating them into our environmental, social, and economic practices.

Some of highlights of our sustainability performance in FY 2024-25 include:

- ▶ Around 80% of total energy needs in manufacturing were met through non-fossil fuel/renewable sources.

- ▶ 88% of thermal energy (process heat) across manufacturing units was generated from biomass and process waste—marking a significant shift away from traditional fossil fuels such as coal and diesel.
- ▶ Team Merino successfully supported the plantations of over 10.55 million saplings in collaboration with 1,254 farmers, bringing 6,952 acres of land under agroforestry.
- ▶ An estimated reduction of 215,186 tons of CO<sub>2</sub> equivalent in GHG emissions was achieved by utilising biogenic fuels (agro-wastes) in place of fossil fuels like coal.
- ▶ A focussed approach to non-fossil-fuel-based energy generation, water conservation, air pollution reduction, circular economy and waste recycling, large-scale plantation, and the use of organic manure— with reduced dependence on chemical fertilisers and pesticides in agro-farming—is making a significant impact on our ecosystem.
- ▶ Sustained positive community engagement - through initiatives in school education, healthcare, and empowerment programs, carried out under our social commitments and managed by our dedicated trusts—elaborated in the CSR section of the report.

A special focus of our ecological efforts is on enhancing soil health and carbon sequestration, aligned with national priorities for improving farmer incomes through Merino Innovation Centre at VNIT Nagpur. To this end, we have partnered with smallholder farmers and farmlands, providing support through organic manure, compost, biotech-based high-yield potato seeds, and region-specific saplings for agroforestry in Gujarat and Uttar Pradesh.

We are encouraged by recognition from reputed institutions such as CII-IGBC, IFGE, ESG Foundation, and sustainability-focussed global clients like IKEA and Steelcase, who collaborate with us to achieve ambitious sustainability goals and uphold global compliance standards. Sustained innovation, deeper collaborations, and unwavering adherence to global norms will continue to be the cornerstones of our sustainability agenda.

Our achievements are a testament to continuous innovation, strong leadership, collaboration with academic institutions, and the dedication of Team Merino. We remain steadfast in our pursuit of creating lasting value for both internal and external stakeholders through responsible and Green activities-focussed business practices.

**Prakash Lohia**  
Chairman and Managing Director



# Reporting Scope and Boundary

## Merino is promoting sustainability through a multi-functionality internal program - *Nirmal* in Merino Industries Limited.

This Sustainability Report presents the environmental and social performance for the period April 2024 to March 2025, and aligns with various national and international frameworks, standards, and guidelines, including:

1

National Voluntary Guidelines on Social, Environmental, and Economic Responsibilities of Business (NVGs), issued by the Ministry of Corporate Affairs, Government of India

2

Business Responsibility and Sustainability Reporting (BRSR) framework, introduced by the Securities and Exchange Board of India (SEBI) in 2021

3

Sustainable Development Goals (SDGs) adopted at the UN Sustainable Development Summit in 2015

4

Science Based Targets initiative (SBTi) for emissions reduction aligned with climate science.

5

Industry and International Standards, including ISO 9001, ISO 14001, ISO 45001, FSC™ COC/CW, CE, NSF, and AEO T-2 certifications

2

**This report covers the Sustainability Performance across manufacturing locations of Merino Industries Ltd (MIL) in India, namely:**

Products	Hapur, Uttar Pradesh	Uttar Rohad, Haryana	Dahej, Gujarat	Halol, Gujarat	Hosur, Tamil Nadu
Decorative Laminates	Yes	Yes	Yes		
Panels (Prelam/Postlam)	Yes	Yes	Yes		
Compact Boards	Yes	Yes		Yes	Yes
Chipboards				Yes	
Modular Furniture	Yes			Yes	
Plywood		Yes			
Potato Flake & Seeds	Yes				



### Data Management – Sustainability Report

MIL systematically tracks projects for positive environmental and social interventions, monitoring and managing their impact across all manufacturing locations through the '*Nirmal*' DATABASE – a cloud-based platform overseen by a dedicated committee under senior management and governance. Additional sustainability parameters are tracked by respective operational units through specialised internal committees and systems.

We value the insights and feedback of our stakeholders and are committed to continuously enhancing our sustainability performance and reporting. For suggestions, inquiries, or feedback, please contact:

**Mr. Ajay Kumar**  
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#### Disclaimer

This Sustainability Report 2024-25 has been voluntarily produced by Merino Industries Ltd (MIL). The content of this report is proprietary information of the company. It has been prepared with due diligence and best efforts; however, MIL assumes no legal liability for any errors, omissions, or inaccuracies contained herein. No part of this report may be reproduced, distributed, or transmitted in any form or by any means without the prior written consent of MIL.

# Eco-Vision

Merino's Eco-Vision (sustainability vision) is to create enduring value through responsible production and consumption, in harmony with nature's regenerative power.

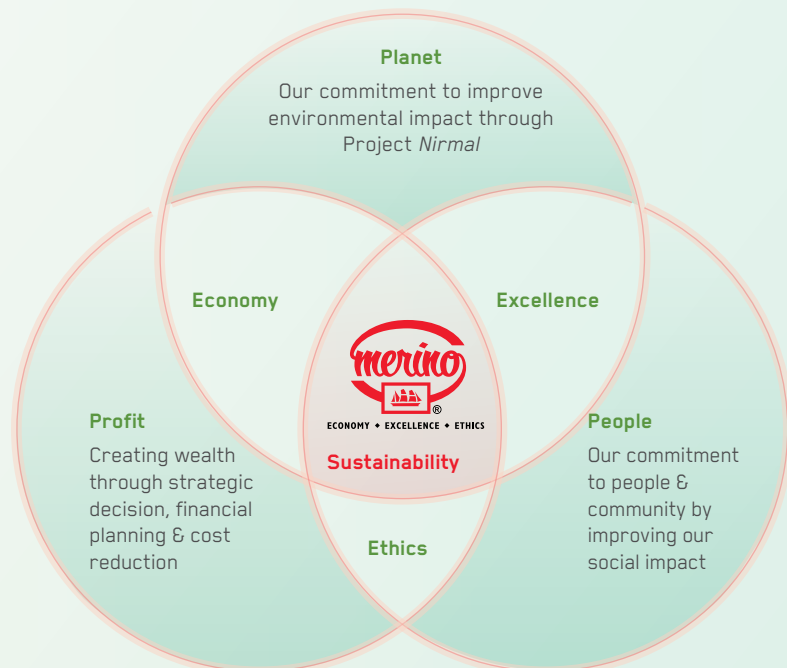
With the mission of "Universal Weal through Trade & Industry," Merino views trade and industry as the means to create wealth for its stakeholders in harmony with nature. The term "weal" signifies that this wealth must be generated without causing harm to any part of the world. Nature will continue to be bountiful for all if we keep it clean and free from impurities. This reflects our understanding of sustainability. Merino refers to this approach as the **Nirmal Way**—a way of living and working that is free from impurities. Our envisioned and purposefully curated sustainability initiative, the **Nirmal Program**, serves as an enabler of our commitment to being a sustainable and responsible industry. Designed with intention and integrity, the *Nirmal* Program acts as a catalyst in advancing Merino's role as a conscientious and sustainability-driven industry leader.

## Nirmal Objectives- A Sustainability Journey

1. Reduce dependency on Fossil fuel.
2. Investments & Innovating for operational eco- efficiency by minimising water intensity, minimising energy intensity, minimising wastes intensity, and maximising circular economy under Wastes Management.
3. Expand and sustain the ecological initiatives through soil conservation, carbon sequestration, watershed management, the promotion of agroforestry and sustainable agriculture in collaboration with farming communities.

4. Achieve global standards in verification, assessment and certification on tangible parameters related to Sustainability Index.
5. Develop, maintain, and leverage from synergistic approach between Industry, Academia, Governments and Research/Scientific Community to achieve the aligned SDG (Sustainable Development Goals).
6. Proactively pursue emerging regulations for sustainable practices by anticipating future statutory requirements and preparing in advance to safeguard stakeholder interests.
7. Foster community collaborations and create positive social & climate impact by leveraging Corporate Funds (CSR).

## Merino's Sustainability Framework



The sustainable journey of Merino is to create a positive societal impact and achieve sustainable outcomes through operational excellence and ethical practices. This commitment reflects Merino's core motto: Economy, Excellence, and Ethics.

## Major Collaborations for Sustainability Initiatives

The list includes:

1

Indian Federation of Green Energy (IFGE)

2

Confederation of Indian Industry (CII)

3

Indian Green Building Council (IGBC)

4

Federation of Indian Chambers and Commerce (FICCI)

5

Federation of Indian Plywood and Panel Industry (FIPPI)

6

Indian Agricultural Research Institute (IARI)

7

National Bamboo Mission (NBM)

8

ESG Research Foundation

9

Central and State Pollution Control Boards (CBCB, UPPCB, HPCB, GPCB, TNCPB)

10

Commission for Air Quality Management for NCR (CAQM)

11

Bureau of Indian Standards (BIS)

12

Merino group sponsored trusts working for community services namely Shri Har Kasturi Memorial Trust (SHKMT), Shri Prem Chand Lohia Memorial Trust (SPCLMT), Shri Man Kumar Lohia Memorial Trust (SMKLMT), Ramakrishna Math and Ramakrishna Mission, headquartered at Belur Math in West Bengal.

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## Industry - Academia Collaboration

1. Merino has a collaboration with Visvesvaraya National Institute of Technology (VNIT, Nagpur) to develop and complement Merino's in-house expertise and experience in multiple areas that includes:

- ▶ Creating products of higher economic value out of any process wastes.
- ▶ Research and laboratory facilities for developing circular economy principle-based projects of 'Nirmaal' Program.

2. Centre for Science and Environment (CSE) for Green School Project of Merino



Industry-Academia Collaboration- Merino Innovation Centre at VNIT, Nagpur

# Sustainability Approach

“Dharmo Rakshati Rakshitah” (धर्मो रक्षति रक्षितः) is the “Motto” of our Sustainability Journey under *Nirmal* program

Element	Merino's Focus Area
Analah (Fire)	Energy Management
Apah (Water)	Water Management
Vayu (Air)	Air Emissions Mitigation
Bhūmih (Soil)	Soil Health & Green Cover
Akasha (Space)	Waste Management & Circularity

The *Nirmal* Program of Merino represents a comprehensive, element-based sustainability journey. The program embodies and implements the core philosophy of the 'Environment First' value, ensuring ecological balance alongside business growth.

Merino's '*Nirmal*' program integrates traditional ecological wisdom and modern sustainability practices, mapped to the Panchamahabhuta (पञ्चमहाभूतः)




The program is guided by cross-functional committees and outcome monitored through the *Nirmal* Cloud Database .

## A. *Nirmal* Practices

Merino focuses on the five elements of the universe, namely, Energy (Analah/Fire), Water (Apah), Air (Vayu), Soil (Bhūmih/Earth), and Wastes as part of Khang (Space). Multiple parameters related to these sustainability aspects are tracked, measured, monitored, and continuously improved through innovation, investments, and the sustained efforts of Merino's team as part of the holistic *Nirmal* Program driving our sustainability journey.

## B. *Nirmal* Outcomes

The sustainability performance report further elaborates on each identified area by providing an overview, key initiatives undertaken, and the outcomes of these initiatives within the following categories:

- I  **Energy Management** - Sources of Energy, Energy intensity and Conservation
- II  **Water Management** - with Water Neutrality Goal
- III  **Air Emissions Mitigation & Air Quality Care** - Focused on Low GHG Emissions & Mitigation of Super Pollutants
- IV  **Soil Care** - Green Activities, Agroforestry & Sustainable Agriculture
- V  **Waste Management** - Circular Economy Principles to Create Valuables & Reduce Resources Intensity, Disposal of Wastes to Recyclers if not Reused in Merino



# I. Energy Management



▲ Biomass Based Energy System in Merino Hapur since 2005

**I.1 Approach:** Merino follows a three-pronged strategy for effective energy management with focus on sources as non-fossil fuels, operational efficiency, and energy conserva.

**Sources of Energy** - Merino's factories across India are fulfilling their total energy requirements from following five distinct sources as on 31st March 2025 :

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**1 State Electricity Boards (SEBs):**

Electricity procured from various state power grids accounted for approximately 8% of total energy consumption.



**2. Fossil Fuels (In-House Energy Generation):**

Coal-fired boilers in MIL Dahej and diesel generators, primarily used during power outages, contributed around 12% of the total annual energy requirement.



**3. Biomass-Based Systems (In-House Energy Generation):**

Biomass-fired boilers and secondary furnaces provided thermal energy, representing the largest share at 60% of overall energy consumption.



**4. Solar Energy:**

Rooftop solar panels, ground-mounted systems, and installations under the Open Access mechanism together supplied about 3% of total energy needs.



**5. Waste-to-Energy (WtE) Systems:**

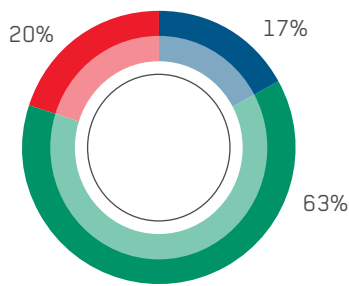
Industrial process waste from Merino's factories was utilised in incinerators to generate thermal energy, contributing approximately 17% to the overall energy mix in a year.

## I.2 Biomass: Merino's Preferred Choice for Energy

At Merino's manufacturing units, in-house energy generation primarily relies on combustible agro and agroforestry waste materials such as rice husk, sawdust, and woodchips/wood waste. These biomass sources are used to generate heat in furnaces, which in turn produce steam and power through turbines. Steam turbine driven through Biomass based Boiler at Hapur for back up of electricity.

Merino's commitment to using biomass including bio-gas locally available as a primary energy source offers several advantages—it is cost-effective, environmentally friendly, and significantly reduces the carbon footprint and greenhouse gas (GHG) emissions.

### Energy Sources of MIL, 2024-25



- Wastes to Energy
- Renewables
- Non-Renewables

#### In FY 2024-25, Merino:

- ▶ Consumed 112,973 MT of biomass sourced from local sources.
- ▶ Generated 1.4 million GJ of thermal energy to meet process heating demands at its units in Hapur, Rohad, and Halol through complete combustion systems.
- ▶ Achieved an estimated GHG emission mitigation of 215,186 tons of CO<sub>2</sub> equivalent by replacing fossil fuels (like coal, LPG etc).
- ▶ Has been a pioneer in biomass utilisation since 2005 as a large industrial units.

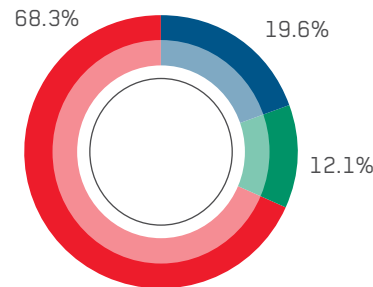
### 1.3 Thermal Energy - Processing Heat at Merino

Around 85% of Merino's total energy requirement is consumed as thermal energy for heat and steam needed in production processes. To meet this demand, Merino has developed advanced in-house energy systems that maximise the use of thermal energy from locally available biomass and waste materials—whether from agro, agroforestry, industrial process wastes such as sanding and trimming dust, or organic wastes for biogas.

Merino Industries is increasingly focusing on waste- to-energy solutions within its factory premises. The in- house energy-efficient boilers and secondary furnaces are designed for the complete combustion of various solid fuels and process wastes, fulfilling the most of heat

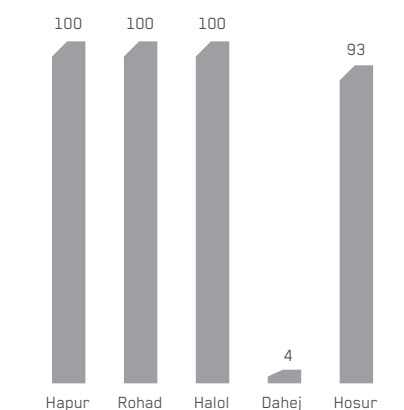
energy requirements of Merino's manufacturing processes. Currently, nearly 20% of the total process heat needs are met through these waste-to-energy systems.

### Thermal Energy Sources, MIL, FY 2024-25



- Process Wastes
- Fossil Fuels
- Biomass

### Process Heat fulfillments from Non-fossil Fuels, Plant-wise in FY 2024-25 (%)



Electricity Supplies Sources in MIL, FY2024-25

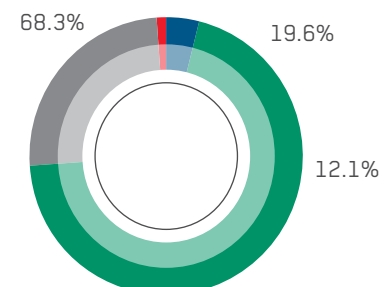
### 1.4 Electrical Energy/Power

Merino has an installed solar power capacity of 10.59 MW, generated approximately 19.35 million kWh of electrical energy in FY 2024-25. This accounted for around 25% of the total electrical energy requirement of 78.01 million kWh across all five manufacturing locations (Hapur, Rohad, Dahej, Halol, and Hosur). The energy generated is utilised for production

processes, utilities, and lighting needs within the factory premises.

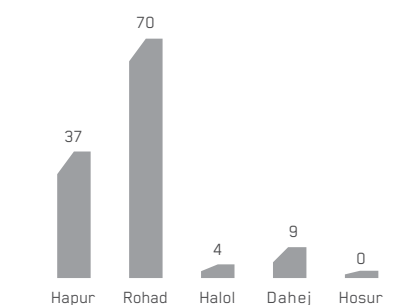
Solar energy has emerged as a critical pillar of India's clean energy objectives. The company has reaffirmed its commitment by implementing solar panel installations and related infrastructure to meet its increasing power requirements. In line with its sustainability goals, Merino is working toward expanding captive power generation through solar and wind energy. Additionally, a 10 MW hybrid captive power facility is planned to become operational by September 2025, aiming to reduce dependence on fossil fuel-based grid electricity at the MIL Dahej and Halol plants in Gujarat.

### Electricity Supplies Sources in MIL, FY2024-25



- Biomass Based Turbine 4%
- SEB 70%
- Solar 25%
- DG 1%

### Contribution of Solar in Electricity Supplies, Factory-wise in FY2025, MIL(%)



### I.5 Key Initiatives for Energy conservation/efficiency in 2024-25 in various manufacturing units

The following initiatives were undertaken to promote energy conservation and reduce the environmental impact of operations:



5 MW Ground Mounted Solar Power of Merino Industries- Rohad (in Haryana)

- ▶ Replaced Thermic Fluid Heater (TFH) vibrator motors, resulting in annual electricity savings of over 34,300 kWh.
- ▶ Upgraded the 45 kW agitator of the resin kettle to a 7.5 kW hydrofoil-type agitator, leading to an estimated annual saving of 13,688 kWh.
- ▶ Replaced 75 kW pumps in the resin plant cooling tower with 45 kW high-efficiency centrifugal pumps, saving approximately 10,950 kWh per year.
- ▶ Optimised the ETP system with Variable Frequency Drives (VFDs)

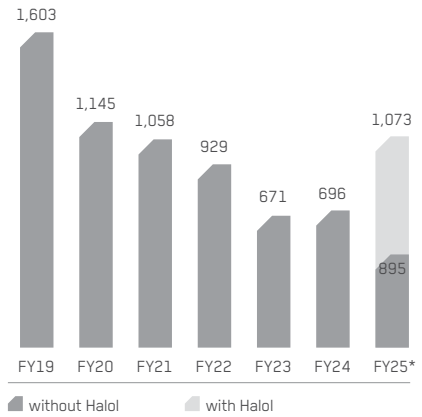
and process improvements, reducing power consumption by 29,654 kWh per year.

- ▶ Installed VFDs on cooling pumps, achieving annual savings of over 62,000 kWh.
- ▶ Further investments in energy-efficient technologies, including partial automation, energy-efficient motors, fuel boosters, and other conservation equipment across manufacturing units.

### I.6 Energy Intensity

Energy intensity is measured as the amount of energy consumed (in gigajoules) per crore of revenue generated annually. The graph on 'Energy Intensity of MIL' illustrates a consistent downward trend in energy intensity, reflecting Merino's commitment to energy stewardship in pursuit of sustainable economic growth. The deviation observed in 2024-25<sup>1</sup> is attributed to the add on of energy consumption at MIL Halol, which operated at very low capacity utilisation in terms of output during the period.

#### Energy Intensity of MIL: GJ/ Cr, of Revenue



\*Surge in FY2025, attributed to the significant add on of energy consumption at MIL Halol but low energy productivity.

### I.7 Alignment with SDGs

Merino is committed to supporting the United Nations Sustainable Development Goals (SDGs), in alignment with the national agenda set by the Government of India. Through its energy management initiatives— centred on the adoption of non-fossil fuels as energy sources, energy conservation, and operational efficiency—Merino makes direct and measurable contributions to several key SDGs.



Steam Generator from Co-Gen plant-Hapur

<sup>1</sup> Due to high fixed operational energy consumption and its relatively low contribution to overall revenue and production by MIL Halol in FY 2024-25, led to a spike in energy intensity reported at the group level.



## II. Water Management



Water Pond – Adopted and Maintained by MIL Rohad (Haryana)

**Approach:** MIL follows the 5R approach for water management, which includes Reduce, Recycle, Reuse, Replenish, and Restore.

### II.1 Journey Toward Water Neutrality

Merino has adopted a comprehensive water management strategy aimed at achieving water neutrality—ensuring that the volume of water consumed is balanced by the volume replenished/Restore. To realise this objective, the company undertakes the following key initiatives:

1. Implementing efficient systems and processes to optimise freshwater use, reduce overall consumption, and minimise wastewater generation.
2. Installing water reuse technologies, including rainwater harvesting systems and greywater recycling.
3. Offsetting residual water demand through watershed management initiatives, such as constructing recharge wells and enhancing natural reservoirs like ponds.

### II.2 Key Initiatives Implemented to Conserve Water, Enhance Efficiency, Enable Recycling, and Promote Groundwater Replenishment in FY2024–25:

1. Replacement of the VAM chiller with a 100 TR Freon chiller and associated pipeline modifications at Hapur, resulting in a reduction of steam-related water consumption by an estimated 15,000 KL/year and lowering operational costs.
2. Installation of humidity sensors in dryer exhaust systems, leading to steam savings of 5 tons/day and thereby reducing water used in steam generation.
3. Installation of flash steam recovery systems at presses, resulting in annual steam savings equivalent to 4,950 KL of water.
4. Commissioning of a UF/RO system at Hapur, enabling the recycling of 250 KLD of wastewater.
5. Reuse of reactor distillates in the chemical section, reducing raw water consumption by approximately 200 KL/year.
6. Reuse of treated ETP water for in-house brick manufacturing after suitable treatment.
7. Regular maintenance and operation of rainwater harvesting (RWH) structures and recharge wells in adopted ponds across factory locations, facilitating groundwater recharge of over 969,300 KL/year.
8. To monitor groundwater levels, piezometers equipped with Digital Water Level Recorders (DWLR) and telemetry systems have been installed at all factory locations.

**In FY 2024–25, Merino:**

- ▶ Recycled and reused water in tune of around 101,000 KL from RO, STP and ETP.
- ▶ Regular maintenance and operation of rainwater harvesting (RWH) structures and recharge wells in adopted ponds across factory locations, facilitating groundwater recharge of over 969,400 KL/year.
- ▶ Cumulatively, rainwater recharge through three ponds with 38 recharge wells contributes approximately 639,585 KL per year in Hapur (UP). In addition, Merino has adopted a pond at Rohad (Haryana), which recharges about 234,500 KL annually. Further, RWH initiatives across Hapur, Rohad, Hosur, Dahej, and Halol collectively contribute an additional 95,362 KL per year.

- ▶ The volume of water recharged or offset was estimated at over 969,400 KL, compared to a freshwater intake of approximately 477,000 KL—

effectively making Merino’s operations water neutral, thanks to offset through watershed management nearly double the freshwater usage.



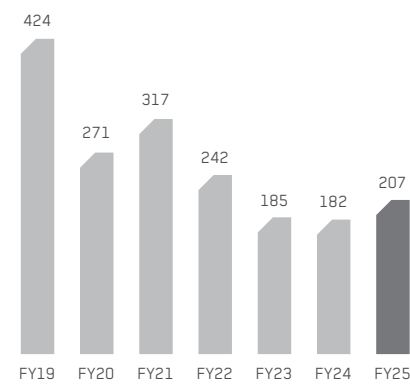
RO Filtration System, MIL Hapur

**II.5 Water Intensity**

Water intensity is defined as the volume of freshwater intake (in KL) per crore of revenue generated annually. Merino has consistently reduced its water intensity over the years, as given in the chart of Water Intensity of MIL, demonstrating leadership in efficient water use, increased reuse of process water, and ongoing conservation efforts—all while expanding production and economic activities. The deviation observed in 2024-25<sup>2</sup> is attributed to the add on water consumption at MIL Halol but operated at very low-capacity utilisation in terms of output during the period.

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**Water Intensity of MIL, KL/ Cr, of Revenue**



**II.6. Alignments for SDG**

MIL water management strategy involves reducing water consumption, implementing water recycling and reuse practices, and replenishing and restoring water sources. By adopting these initiatives, Merino actively supports Sustainable Development Goals (SDGs) as Clean water & Sanitation, and Responsible Consumption and Production.





## III. Air Emissions Mitigation & Air Quality Care



Plantation in MIL Halol

**III.1 Approach:** Merino monitors air quality across all its establishments to maintain AQI (Air Quality Index) levels better than those of the surrounding areas. This is achieved through a focussed approach to mitigating super pollutants, the extensive implementation of Air Pollution Control Measures (APCM) in factories, and proactive interventions to reduce air emissions.

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### III.2 Mitigation of Super Pollutants

Merino has undertaken focussed and proactive interventions to mitigate super pollutants, namely, Black Carbon, Tropospheric Ozone, and Methane—which possess significantly higher global warming potential than CO<sub>2</sub>.

**Black Carbon:** Merino employs Optimal Combustion Technologies across its energy systems to eliminate black carbon emissions resulting from incomplete combustion. Over 80% of its energy is sourced from non-fossil agro and industrial waste materials, ensuring no black carbon emissions into the air.

In FY 2024-25, Merino's positive intervention for Air Care includes:

- ▶ An estimated 125,186 metric tons of greenhouse gas (GHG) emissions, measured in tCO<sub>2</sub>e (metric tons of carbon dioxide equivalent), were mitigated during the reporting year through the use of agro-residues (biogenic fuels) in place of coal in the boilers at the manufacturing facilities.
- ▶ 1,04,415 kWh units of power generated from bio-gas unit utilising organic wastes of potato flake unit in Hapur.

**Tropospheric Ozone:** Tropospheric Ozone: To reduce emissions that contribute to ground-level ozone formation, detrimental to health and global warming potential, Merino implements a range of Air Pollution Control Measures (APCMs), including:

- ▶ Installation of Wet Electrostatic Precipitators (WESP), bag filters, dust collectors etc.
- ▶ Use of fully electric material-handling equipment.
- ▶ Preference for electric or LNG-fuelled vehicles in logistics.

<sup>2</sup> Due to high water consumption and its relatively low contribution to overall revenue and production by MIL Halol in FY 2024-25, led to a spike in water intensity reported at the group level.

- ▶ Conversion of crop residues into compost to prevent stubble burning

**Methane:** Merino captures methane—a potent greenhouse gas that contributes to climate change and acts as a precursor to ground-level ozone—and reuses it as a renewable energy source, thereby preventing its release into the atmosphere. Key initiatives include:

Production of biogas from potato peels (wastes that release methane gas) along other organic waste generated on farms and in factories.

Integration of anaerobic digestion technologies for sustainable waste-to-energy conversion.

Biogas from Potato Peels, Cane Trash and Cowdung for use in kitchen and generator with Patented enhancer for increased productivity of Biogas.



^ Vermicompost Beds in Bamboo Plantation of MIL Hapur

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**GHG Emissions Intensity** measures emissions in terms of tons of CO equivalent per crore of revenue generated annually. The consistent decline in GHG emissions intensity each year demonstrates Merino’s commitment to containing air emissions while expanding economic activities (growth).

**GHG Emission Intensity- MIL, tCO2e/ Cr, of Revenue**



\*Estimated GHG emissions from process waste and grid electricity consumption at MIL Halol have been included in FY 2024-25, resulting in a spike in the GHG intensity of the Merino Group, as the unit operated at very low production and contributed minimally to revenue.

**III.3 Alignments with SDG**

Merino’s dedicated efforts to control air emissions and maintain air quality have successfully kept particulate matter levels within our factory premises lower than those in the surrounding environment. This aligns with the Sustainable Development Goals (SDGs), namely SDG 3 & SDG 13.





# IV. Soil Management



^ Mixed Farming Practices- Supported by Agro-Team MIL

**Approach:** Merino’s soil management strategy emphasises soil care through organic manures, agroforestry promotion, sustainable agriculture practices, and extensive plantation drives.

## IV.1 Soil Care with Farmers’ Collaboration

Merino is dedicated to conserving soil and enhancing its health through a comprehensive range of initiatives. These include the promotion of organic manures, development of plantations, adoption of agroforestry, and encouragement of resilient agricultural practices. Through in-house agro- infrastructure—such as bio-composting, vermicomposting, tissue culture laboratories, high-tech nurseries for agroforestry, and bio-nutrient development— Merino aims to enrich soil quality while fostering sustainable agriculture and agroforestry in collaboration with farming communities.

The overarching objective of these initiatives is to promote locally adaptable farming practices,



^ Bamboo Sapling Nursery in MIL Hapur

encourage the need- based use of agricultural inputs to maintain soil health and crop ecology, and ultimately improve the livelihoods of more than 5,000 farmers directly engaged with the Merino Group.

As part of its green initiatives under the Soil Care Program, Merino supports the production and application of organic inputs such as bio-manure and composts, including vermicompost, on collaborative farms. Each year, over 51 metric tons of vermicompost and 300 metric tons of bio- manure are produced and applied—significantly reducing dependence on chemical fertilisers.

## IV.2 Green Cover Expansion through Afforestation and Agroforestry

Emphasising the importance of vegetation in preserving ecological balance, Merino supports afforestation and agroforestry to improve air quality, biodiversity, watershed health, and climate resilience while supporting rural livelihoods.



▲ Mist Chamber & Clonal Multiplication Zone of Hi-tech Nursery for Eucalyptus Saplings for Farmers in MIL Halol



▲ Eucalyptus Saplings for Farmers in MIL Halol



▲ Miyawaki Forest Between Two Blocks

### Collaborations with Farmers for Agroforestry

Merino works closely with over 1,250 farmers across nine districts in Central Gujarat—Panchmahal, Chhota Udaipur, Mahisagar, Narmada, Anand, Kheda, Vadodara, Dahod, and Ahmedabad. Key interventions include:

1. Promotion of scientific cultivation of fast-growing, high-yield species like Eucalyptus, Subabul, and Casuarina.
2. Distribution of genetically superior clone saplings suited to local conditions.
3. Expert guidance on plant care, clone development, and agroforestry.
4. Organisation of training and discussion forums on farm and social forestry.
5. Operation of a high-tech nursery and gene multiplication centre.
6. Deployment of an agri-extension team of 25+ professionals for field-level support.

As a result of these efforts, a total of 10,547,620 saplings were planted across 6,592 acres, in partnership with 1,284 farmers in Gujarat in FY 2024-25.

### IV.3 Promotion of Sustainable Agriculture

Sustainable agriculture and soil conservation are central to Merino's farming division. In collaboration with national agricultural institutions like ICAR and State Agricultural Universities, Merino has developed Standardised Agronomic Practices (SAP) for its agricultural catchment areas. These practices focus on enhancing crop productivity, maintaining soil ecology, and improving farm profitability.

In FY 2024-25, Merino supported over 700 farmers cultivating potatoes on 1732 acres, facilitating yield improvement through adoption of high yield seeds from Merino, using innovative methods like nutrient management based on soil test values and Integrated Pest Management (IPM). These practices have helped transform traditional farming approaches.

### IV.4 Plantation Drive with focus on Miyawaki in factories

Merino has undertaken several impactful initiatives to promote afforestation and plantation drives across all its establishments. One such initiative is the adoption of the Miyawaki Method for rapid forest development using native species, implemented within the manufacturing campus at Hapur. This method fosters the creation of dense, multi-layered forests in a short period.

Key plantation initiatives include:

1. Extensive Plantation Drive: Over 20,000 tree saplings have been planted across India (operational geography) as part of Merino's efforts to enhance green cover within and around its premises.
2. Dedicated Bamboo Cultivation: Five acres of land have been allocated exclusively for bamboo cultivation, and nearly one-third of factory areas have been brought under green cover.
3. Agroforestry with Farmers: A specific annual target of 10 million saplings has been set under Merino's agroforestry program in collaboration with farmers.
4. Carbon Sequestration Impact: Collectively, these plantation and agroforestry efforts are estimated to sequester estimated around 35,542 tons of CO<sub>2</sub> equivalent, significantly contributing to Merino's climate action goals.

### IV.5 Alignments with SDG

The interdependence of life and soil is fundamental, they are inseparable and one unable to exist without the o

Merino's green initiatives under its soil management program are directly aligned with the Sustainable Development Goals (SDGs) of Responsible Consumption and Production, Life on Land, Climate Action, and Partnerships for the Goals.





## V. Waste Management



^ Vermicompost from Organic Wastes

**III.1 Approach:** Waste management is an integral part of Merino's sustainability journey. Merino is committed to implementing circular industrial ecosystem by focusing on reducing, reusing, and recycling process waste through innovative and environmentally responsible methods.

Merino is actively working to achieve Waste Recycle Positive status—creating positive value from waste, rather than merely managing or disposing of it.

### V.1. Wastes Management of MIL Potato Flake Plant

The liquid and semi-solid wastes generated at the Potato Flakes Plant (PFP) are efficiently segregated, treated, and reused. These wastes are processed in the Effluent Treatment Plant (ETP), where they first undergo anaerobic decomposition through the Up-flow Anaerobic Sludge Blanket Reactor (UASBR). This process generates biogas, which is utilised for electricity generation or direct cooking applications.

Subsequently, the waste undergoes aerobic treatment for further purification. The resulting treated

water is reused for plantation irrigation, potato washing, and flushing systems.

The decomposed (mineralised) slurry from the biogas plants is used as fertiliser in gardens, crops, and plantation fields. Solid waste from potato peels and unused potatoes is collected and converted into compost. This compost serves as an effective manure for enriching soil in agricultural land. The annual compost production from the Potato Flakes Plant is approximately 20 metric tons.

This integrated treatment system not only enables efficient water recycling but also promotes renewable

energy generation & composts for agriculture, contributing to the plant's overall sustainability goals.



^ Biogas System from In-House Organic Wastes, Generated around 1,87, 316 SCM Unit in FY 2024-25

### Industry-Academia Collaboration: Merino-VNIT Innovation Centre for Extracting Valuable Resources from Process Waste

As part of its academic collaboration with Visvesvaraya National Institute of Technology (VNIT), Nagpur, Merino has supported several R&D initiatives by funding research, field trials, and the commercialisation of value-added products derived from industrial waste. The key waste management projects under this partnership include:

#### 1. Extraction of Valuable Chemicals from Potato Peel

Merino's VEGIT plant, which produces a wide range of potato-based ready-mix products, generates a significant volume of potato peel waste. VNIT has developed a novel, green process to utilise this waste effectively. The process involves separating clean peels from residual starch slurry. The peels are used to extract high-value products such as polyphenols and dietary fibers, thereby turning waste into wealth. The starch slurry is further processed through anaerobic digestion to generate biogas, achieving zero waste output.



^ Agro-Wastes for Composts in Merino



^ Agroforestry Wastes (saw dusts) for Energy in Merino

Merino produces approximately 300 metric tons (MT) of bio-manure by utilising around 75 MT of paddy straw and 235 MT of other organic waste materials, including potato peels, biogas slurry, neem, sawdust, bio-ash, and water.

## 2. Paddy Straw Digestion System

Stubble burning in Northern India, especially rice straw, presents a significant environmental challenge due to its lignocellulosic and recalcitrant nature. As a sustainable alternative, Merino and VNIT have developed a cost-effective microbial culture named Paddy Digesting Culture (PDC), capable of degrading rice straw in situ, even under extreme weather conditions.

The process follows aerobic digestion with water addition and no post-separation steps. The entire digestion cycle is completed in 3 weeks.

Merino is now producing 1.5 tons per day of soil nutrients from digested

paddy straw. The final product meets Fertiliser Control Order (FCO) standards and is rich in organic carbon (over 14%) and essential nutrients (both sentient and inert).

## 3. Novel Agricultural Practice Using Biomass Ash

The biomass ash generated from burning rice husk and sawdust in Merino's cogeneration units is rich in potash and phosphorus. VNIT has developed a specialised microbial consortia that stabilises the pH and electrical

conductivity (EC) of bio-ash, making the phosphorus (P) and potassium (K) bioavailable to plants.

Merino is conducting extensive field trials to evaluate the use of this treated biomass ash. Initial results indicate that it can replace up to 25% of chemical fertilisers, with an application rate of 1 ton per acre.

## Waste Management Practices & Performance of MIL

Merino Industries has adopted a circular and environmentally responsible approach to waste management, addressing both non-hazardous and hazardous waste streams through recycling, reuse, and energy recovery.

### ▶ Non-Hazardous Waste

- ▶ Paper Waste & Solid Scraps (steel, plastic, BOPP, etc.) are sold to recyclers via the secondary market. In FY 2024-25, paper waste was 2,671 MT and solid scrap 1,133 MT.
- ▶ Wood/Plywood Waste from cutting operations is incinerated for thermal energy recovery (172 MT in 2024-25).
- ▶ STP Sludge is converted into dry manure for horticulture (18.18 MT in 2024-25).
- ▶ Process Wastewater is treated and reused internally, reducing freshwater dependence to 63,686 KL in 2024-25.



^ Around 27,574 MT of Process Waste, including Sanding and Trimming Waste from Boards along with Woodchips Rejected from Raw Material Process of Particleboard, was used to Generate an Estimated 452,160 GJ of Thermal Energy During FY 2024-25 at the Waste-to- Energy Plant in MIL Halo!

- ▶ **Hazardous Waste**
  - ▶ ETP Effluents & Slurry are treated and sent to CETP (13,451 KL in 2024-25).
  - ▶ Used Oil and Discarded Batteries are responsibly disposed through authorised recyclers.
- ▶ Sanding, Trimming & Resinous Wastes are incinerated/WtE-treated, with a sharp rise to 21,999 MT in 2024-25, reflecting operational expansion or better segregation.
- ▶ Fly Ash is reused for brick-making and roadworks, promoting circular material use.

Wastes Type	Source	Disposal Method	Treatment & Reuse	Units	2022-23	2023-24	2024-25
<b>A Non-Hazardous</b>							
A.1 Paper wastes	Storage/Defects/Process	Recyclers	Sells in Secondary Market	MT	2,882	2,897	2,671
A.2 Solid Scrapes (Steel, Aluminum, Plastic, Bopp, chemical bags etc.)	Storage/Defects/Process	Recyclers	Sells in Secondary Market	MT	1,036	1,591	1,133
A.4 Wooden /Plywood Wastes	Cutting	Incinerator	Complete combustion for energy	MT	292	211	172
A.5 Slurry/Sludge	STP	Recycled as Dry Cake/Manures	Horticulture & Landfill	MT	15.64	16.1	18.18
A.6 Process Waste Water /Distillate	Process/Distillate	Recycled	Used in Other Processes	KL	76,599	70,982	63,686
<b>B Hazardous</b>							
B.1 ETP Effluents & Slurry	Process wastes	Collection & Primary Treatment	Sent to ETP/CETP	KL	10,530	9,120	13,451
B.2 Used/old Oil	DG Sets/Vehicles	Authorised Recyclers	Sells in Secondary Market	KL	17.76	13.7	18.9
B.3 Discarded Batteries	DG Sets/Vehicles	Authorised Recyclers	Sells in Secondary Market	Nos	193	137	140
B.4 Sanding/trimming wastes/resin content wastes	Sanding/Cutting process	Incinerator/WtE	Complete Combustion for energy	MT	3,984	4,700	21,999
B.5 Wastepaper containing resin	Dryer/Press	Incinerator/WtE	Complete Combustion for energy	MT	122.9	411.7	63.8
B.6 Fly ash	HWG, TFH & Incinerator ash	Brick making, TSDF, bio-manure with novel processes, landfilling	Bicks for internal roads/ premises	MT	7,678	5,923	5,379

Source: Waste Management Data from *Nirmal* Database of MIL, WtE- Waste to Energy Plant

### SDG Alignments

Merino’s waste management strategy reflects a commitment to sustainable industrial practices by:

- ▶ Emphasising resource recovery and energy generation from process wastes.
- ▶ Minimising environmental footprint via reduced landfill dependency and increased reuse of wastewater.

- ▶ Enhancing circularity through partnerships with recyclers and reuse in internal infrastructure.

These initiatives collectively contribute to Merino’s alignment with the SDG -12, 13 and 17





# VI. Fostering Community Development, Transforming Lives



Swami Vivekananda Arunoday Vidyalaya - New Admission Class 1 Batch

**Approach:** Merino Group is committed to fostering community development and transforming lives through targeted, impactful interventions. Guided by its CSR vision

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– that true prosperity is shared with the community – the Company adopts a long-term engagement model. This approach is driven by local needs assessments and active stakeholder collaboration to ensure the holistic upliftment of economically marginalised communities in and around its areas of operation.

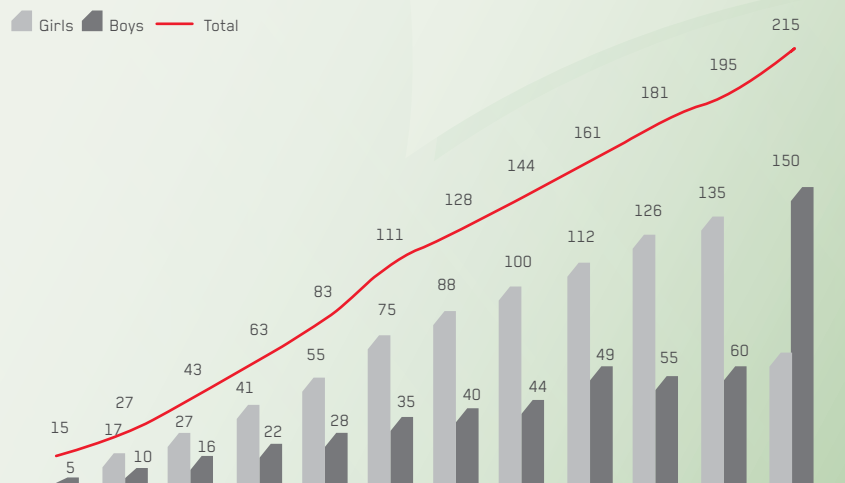
Major initiatives under Merino’s Corporate Social Responsibility (CSR) framework include school education, primary healthcare, and vocational training programs, with a focus on empowering women.

## VI.1 Merino’s school education initiatives

are implemented under the aegis of the **Sri Hara Kasturi Memorial Trust (HKMT)**, the community development arm of the Merino Group. The Trust currently runs three key programs aimed at strengthening education as a catalyst for community development:

1. Swami Vivekananda Arunoday Vidyalaya (SVAV): A formal primary school up to Class VIII, located in Hapur, Uttar Pradesh.
2. Support in SAVERA School: for the education of specially-abled children in Jhajjar, Haryana.

Number of Students in SVAV Campus



3. Yogakshema: A scholarship program for academically bright children from economically weaker communities, operational in Kolkata, West Bengal.

## VI.2. SVAV School: Enabling Holistic Education for Economically Marginalised Communities

SVAV School is fully dedicated to providing quality education with a focus on holistic and scientific pedagogy, aimed at fostering learning outcomes and life skills among children from economically disadvantaged communities.

Established in 2013 in Hapur, the school features comprehensive infrastructure and a team of highly dedicated staff and teachers committed to delivering quality education. The campus has been upgraded in accordance with the Green School Project guidelines of the Centre for Science and Environment (CSE). The SVAV campus offers a

nurturing environment where strong academic learning is integrated with overall well-being.

The school is co-educational, with a strong preference for educating the girl child. Of the 20 new students admitted each year, 80% are girls. As of 31st March 2025, a total of 192 girls and 43 boys from 235 households belonging to the economically weakest sections of the Hapur community are receiving free education through SVAV.

As SVAV offers classes only up to the 8th standard, the Trust ensures continued support for former students by facilitating their admission into higher secondary schools, covering all associated costs, and offering mentorship through SVAV faculty and teachers. The Trust remains committed to supporting each child until they complete their education and transition into gainful employment. As of 31st March 2025, a total of 153 former SVAV students— 95 girls and 58 boys—are beneficiaries of this ongoing educational support program.

## Extended Household-Level Support for SVAV Students:

A wide range of support services—including nutritious meals, transportation, books, clothing, medical care, exposure visits under the Bharat Darshan program, and basic household amenities—are fully funded for SVAV students. Nearly all students come from extremely poor families, primarily of daily wage laborers or low-income workers. The Trust also organises free health check-up camps, provides emergency medical support, ensures sanitation facilities, and conducts awareness drives to improve the health conditions of students and nearby communities.

Additionally, the Trust actively addresses the financial and health crises faced by students' families, ensuring that each child can remain focussed on their education. This holistic approach reflects the Trust's deep commitment to delivering quality education with utmost care and compassion.



△ Mid-day Meals to Support Schooling for Children from Poor



Meals to SVAV Students, Hapur

### Mid-day Meals from the SVAV Campus

**Kitchen:** The SVAV kitchen provides three nutritious meals daily to all students on campus. In addition, mid-day meals are supplied to a few other private primary schools that cater to children from economically weaker families but are not covered under the government’s mid-day meal scheme. This initiative is an integral part of the overall educational intervention program in Hapur, leveraging SVAV’s facilities.

communities. This support includes all meals, residential infrastructure, extensive educational tools, and other assistance for the 71 students residing on campus under educational program.

### 2. A Distinct Educational Support Program for Specially- Abled Children at SAVERA School:

Merino has extended comprehensive support to SAVERA School in Jhajjar, Haryana, which serves specially-abled children from marginalised



Yogakshema - Scholarship Program

### 3. Yogakshema Educational Scholarship

Merino, through its Trust, administers the Yogakshema Scholarship Program to support economically disadvantaged students who demonstrate strong academic commitment and aspire to pursue higher education. The scholarship funds two years of post- matriculation education, enabling students to complete Class XII and access premier government institutes for further studies. It covers educational expenses, certain nutritional needs, and provides a Mediclaim policy for the student’s family. Since 2018, 20 deserving students have been selected annually for this prestigious scholarship to promote quality education among the needy.

### VI.2. Primary Healthcare with a Focus on Tuberculosis Among the Needy and Poor

Merino has established facilities to provide free healthcare services aimed at disease prevention among impoverished and needy communities, with a special focus on tuberculosis (TB), through the Shri Prem Chand Lohia Health Centre (SPCLHC) in Hapur.

The centre offers general outpatient (OPD) services and comprehensive TB treatment, serving around 48 villages

in the Hapur district of Uttar Pradesh in collaboration with the Department of Tuberculosis, Government of India.

The health centre operates three dispensary units– located in Achheja, Garhmukteshwar, and Hapur town– each staffed with doctors and

supporting medical personnel. These units provide general OPD services, with a particular focus on TB care, catering to the healthcare needs of underprivileged communities in the surrounding areas. Since the launch of the TB program nine years ago, over 5200 TB patients have been successfully treated through our direct intervention. SPCLHC offers diagnostic facilities to confirm TB

cases, treatments and provides dietary support to needy TB patients free of cost.

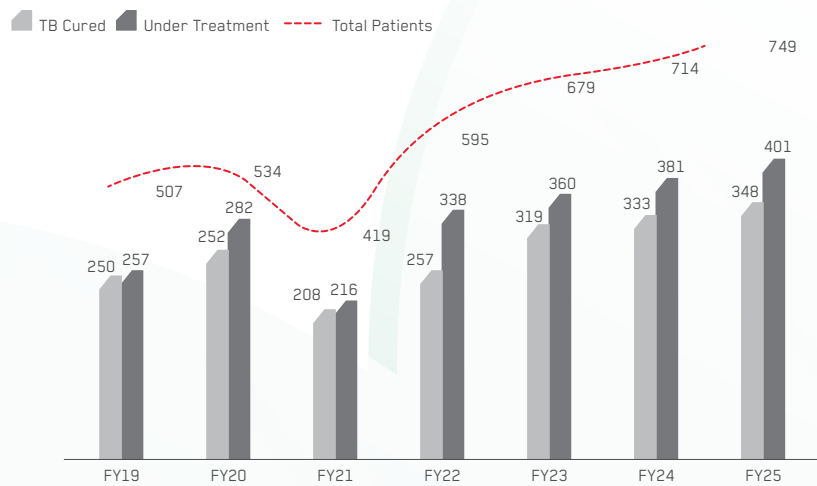
Additionally, the Trust extends medical support to patients from poor communities in and around Merino's establishments in Hapur through its own ambulances equipped with emergency medical facilities. These ambulances transport patients to Emergency Wards in better hospitals in Hapur or NCR-Delhi. During the reporting year, 183 such trips were conducted.

In FY 2024-25, a total of 19,490 patients availed allopathic treatment, while 2,444 patients received Ayurvedic care through the General OPD services extended by MIL Hapur for poor communities. Beyond allopathic care, the centre also offers Ayurveda-based treatment, which has proven to be a cost-effective healthcare option.



Health Education - TB Causes & Symptoms

### Number of TB Patients treated every year in SPCLHC, Hapur



### VI.3 Women Empowerment Program – Learn to Earn

Merino has been running a stitching centre in Rohad, Haryana to provide underprivileged women with free training in stitching skills, enabling them to earn a livelihood. Since 2017, 283 women under 19 batches have completed the trainings, and 21 women are undergoing training at the centre, guided by two master trainers.



Women Workforce

### VI.4 Alignments with SDG

Merino's community development initiatives focus on targeted interventions for economically deprived members of society. These include the direct provision of unskilled jobs through its trusts, meal programs, and philanthropic support, alongside a long-term engagement model for education, healthcare, and skill training—with a strong emphasis on prioritising female children and women as primary beneficiaries. These efforts meaningfully contribute to global sustainable development goals, specifically: SDG 1- No Poverty, SDG 2- Zero Hunger, SDG 3 – Good Health and Well-being, SDG 4 – Quality Education, SDG 5- Gender Equality, and SDG 17- Partnerships for the Goals.





# Sustainability Awards & Recognition

In FY 2024–25, Merino continued to strengthen its market presence and deepen customer engagement through bold product innovations, award-winning campaigns, and immersive brand experiences. Our efforts spanned across digital platforms, physical spaces, and global events—reinforcing our position as a forward-looking brand rooted in design, quality, and innovation.



Merino Industries Partners with GreenLine

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Merino Industries partners with **GreenLine** to lead green logistics in the laminate sector.

As part of its efforts to reduce Scope 3 emissions, Merino is integrating GreenLine’s LNG-powered trucks into its logistics operations—an industry-first for the laminate sector. This collaboration reflects Merino’s ongoing commitment to decarbonising its value chain and promoting sustainable practices within the industry.



Prithvi Award 2024 - Sustainability Icon. New Delhi, September 2024

Merino Industries Limited was honoured with the Prithvi Award 2024 at the ESG Conference held in New Delhi. This distinguished recognition celebrates organisations that exemplify leadership in Environmental, Social, and Governance (ESG) practices. The award was received by Shri Madhusudan Lohia, Director, and Shri Rakesh Tirath, Advisor for Corporate Affairs, symbolising Merino’s pivotal role in driving sustainable and inclusive growth. **The Prithvi Award**, one of the industry’s highest honours, acknowledges Merino as a true “**Sustainability Icon**”.



^ FE Green Sarathi Awards 2024. New Delhi, December 2024

Merino Industries Limited was recognised with two significant accolades at the Financial Express (FE) Green Sarathi Awards.

**Clean Energy Champion** – For its outstanding contributions to the adoption and promotion of clean energy solutions, including solar, wind, and captive turbine-based power.

**Climate Action Leadership** – For its impactful initiatives in combating climate change, reducing carbon emissions, and fostering climate resilience across its operations.

These awards reflect Merino’s proactive approach to environmental stewardship and its role in shaping a greener future.

September 2024, At the prestigious **Asian Brand and Leadership Conclave 2024**, hosted by The Brand Story in collaboration with BRICS Chambers of Commerce and Industry and NGO partner iCAN, Merino Industries Limited was celebrated for its exceptional contributions to industry leadership and brand excellence.

Merino was conferred with the **Social Impact Award**, recognising its meaningful and measurable contributions to community development, inclusive growth, and social responsibility. This accolade highlights Merino’s dedication to creating a positive and lasting impact on society.



^ The Brand Story – Asian Brand and Leadership Conclave 2024







ECONOMY • EXCELLENCE • ETHICS

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