

05

ENVIRONMENT

Operating Sustainably for
Protecting our Planet



India's automotive industry is undergoing a significant transformation, with Roop Automotives Limited leading the charge towards a sustainable future. We are committed to conserving resources such as energy, water and waste through responsible management. By implementing eco-friendly practices throughout the value chain, we are building an ecosystem that meets global environmental standards.

Our Approach to Driving Ecology Transition

Sustainable Material Sourcing
and Process Material
Management



Steps Towards Energy Efficacy

Emphasizing the Importance of
Water Stewardship



Waste Management

Emissions and Climate Action



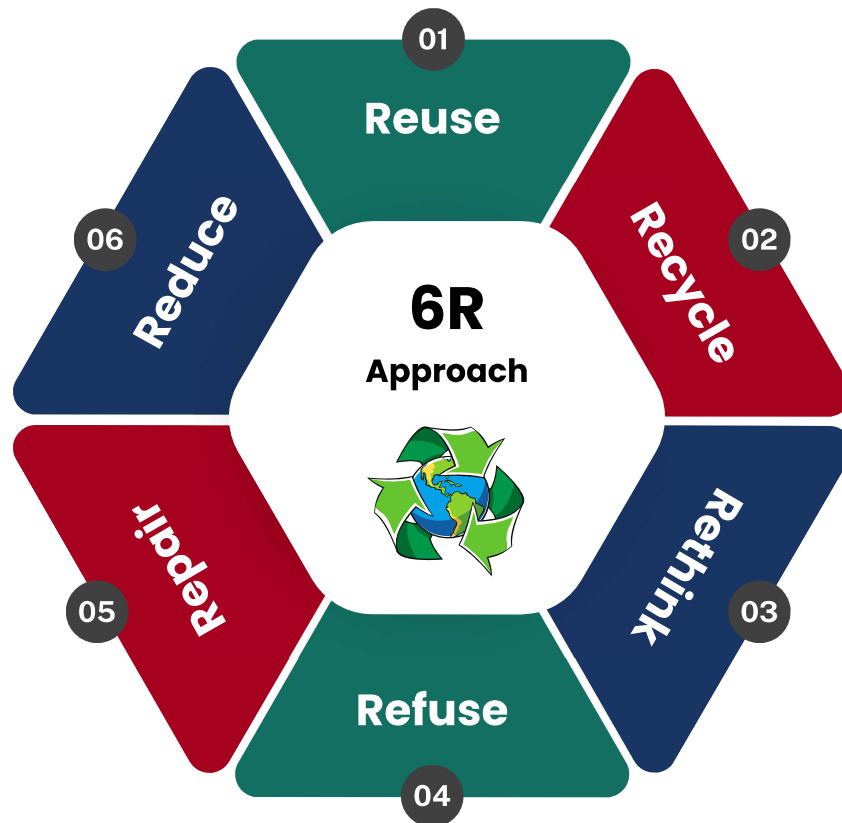
Biodiversity Management

Sustaining the Supply Chain



Sustainable Materials Sourcing and Process Material Management

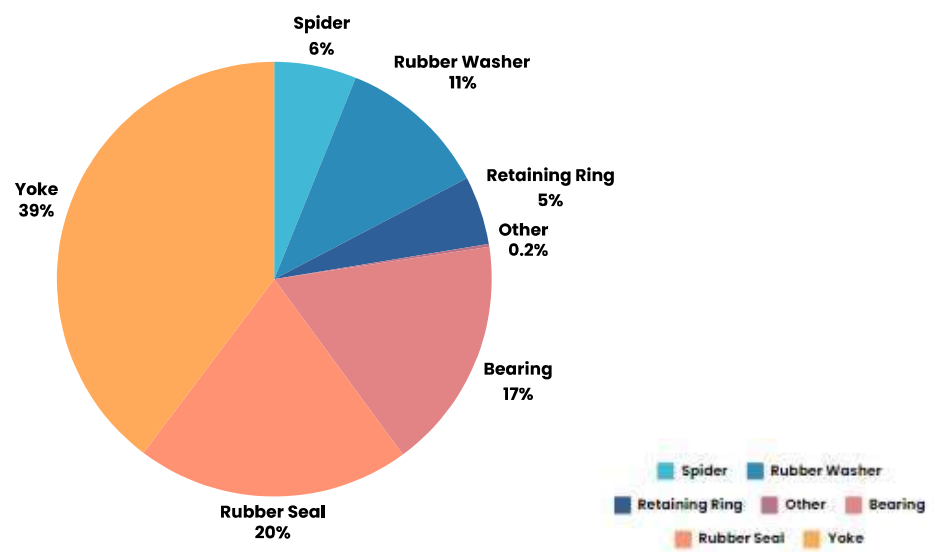
Our operations utilize a range of raw materials, including some non-renewable ones that raise environmental concerns. To tackle this issue, we have initiated a transformative shift towards sustainable material sourcing. By implementing the 6R approach (reduce, reuse, recycle, rethink, refuse and repair), we have successfully decreased raw material consumption per production unit through process optimization, efficient design and waste reduction initiatives.



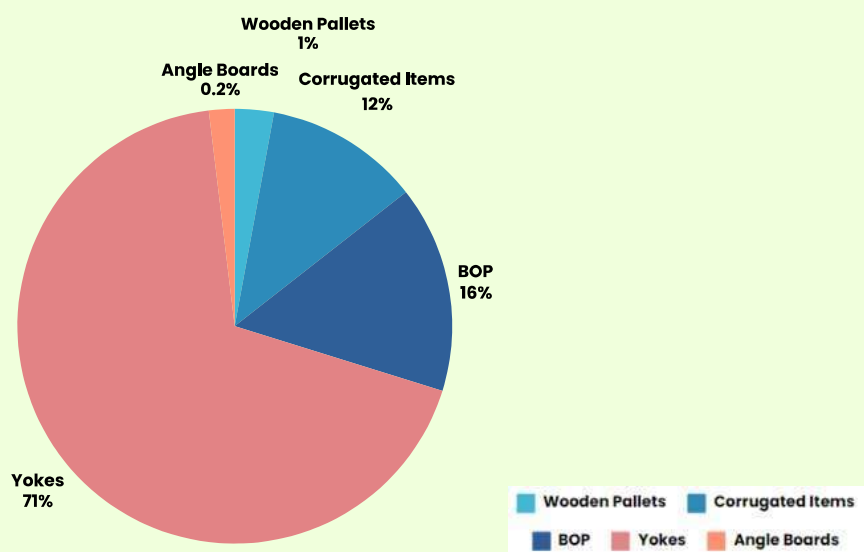
Promoting Sustainability Through Renewable and Recycled Input Materials

To lessen our dependence on non-renewable materials, we have integrated recycled materials into our production and packaging processes and boosted the use of renewable resources. Despite significant progress in sustainable material sourcing, there is still room for improvement. We recognize the need to enhance our product reclamation system to better align with our commitment to environmentally responsible practices.

Non-Renewable Material Consumption in FY(2023-24)



Renewable Material Consumption in FY(2023-24)



Material Type *	Quantity of Input Materials Used	Recycled Input Materials Used	Recycled Input Materials (%)
Non Renewable Materials (VSS Bar, Delrin, Grey screen sheet, Circlip, Snap ring, O-ring, Thermoforming tray, VCI emitter, PET strap, Stretch film, BOPP tape, Metal clip)	583	409	70
Non Renewable Materials (Yokes, Bearing, Rubber Seal, Retaining Ring, Rubber Washer, Damper, Stopper, Grease nipple, Shaft, PE Sheet)	24,975,510	12,190	32
Renewable Materials (Corrugated items, Angel boards, BOP, Yokes, Wooden Pallets)	5,722	213	4
Renewable Materials (Yokes)	1,928,467	0	0

**Study on "material type" was not conducted in the current fiscal year (2023-24). Looking at our standardize processes, previous year data has been used considering sustenance of last year's performance.*

Steps Towards Energy Efficiency

During the reporting year, Roop Automotives Limited made significant strides in adopting sustainable energy practices. Our main electricity source continues to be the grid, supplemented by Diesel Generators (DG) and solar power. We have notably increased the integration of renewable energy sources, which now make up 3.07% of our total energy mix for the year. Additionally, we have eliminated the use of diesel by installing Piped Natural Gas (PNG).

Energy Consumption Data in kWh (2023-24)



Solar
4,52,446



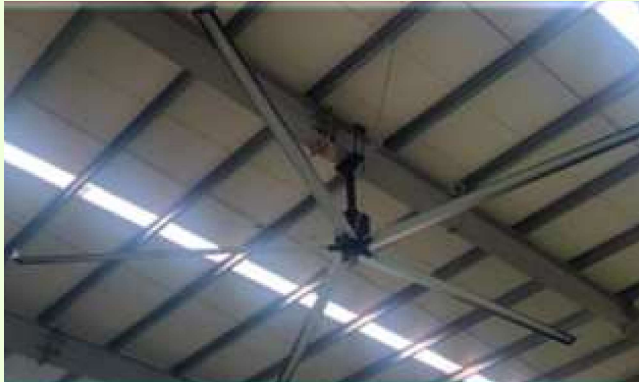
DG Sets
7,04,278



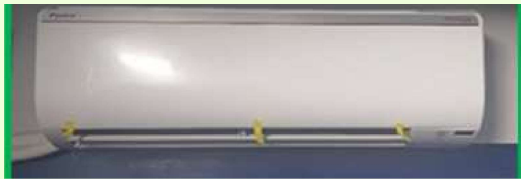
Grid (EB)
1,47,08,105

Energy Intensity and Reduction Initiatives

Driven by our dedication to continuous improvement, we have lowered our energy consumption through the following initiatives

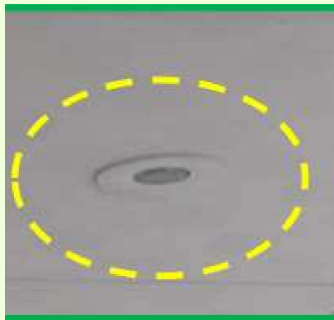


The installation of HVLS (High-Volume Low-Speed) fans, replacing the previous Almonard fans in our plant, has led to an impressive energy savings of up to 9.6 percent. These advanced fans not only significantly reduce energy consumption but are also designed for extended durability, contributing to a longer lifespan and improved operational efficiency.



The transition from 3-star to 5-star inverter air conditioning units has led to a 1.85% reduction in energy consumption. This upgrade also contributes to a decrease in greenhouse gas emissions and a lower carbon footprint, reinforcing our commitment to enhanced energy efficiency and environmental responsibility.

During the measurement gauge's idle time, air was leaking continuously. With the installation of the air saver, this leakage has been reduced, leading to lower energy consumption of the compressor.



The 2x2 LED lights in the admin block area were previously without motion sensors, which caused considerable energy waste. With the recent installation of motion sensors, the lights now automatically turn off when not in use. This improvement has substantially reduced unnecessary electrical energy consumption, leading to significant energy savings compared to the previous setup.

Energy Intensity and Reduction Initiatives

Driven by our dedication to continuous improvement, we have lowered our energy consumption through the following initiatives

The MPI machine formerly utilized two separate processes to inspect cracks in both the eye hole and shaft hole of yokes, leading to elevated power consumption, extended operational time and the requirement for three operators. We have now consolidated these processes into a single, integrated operation. This enhancement has not only reduced power consumption but also decreased manpower and operational time, resulting in a notable energy saving of 1.57%.



In the gents' restroom, the exhaust fans operated continuously, resulting in elevated power consumption and frequent winding failures. We have now implemented a timer system to enhance their efficiency. According to the new schedule, three fans will operate for half an hour, followed by the remaining four fans for the subsequent half hour, ensuring a continuous rotation among all seven fans. This adjustment will significantly reduce power consumption and improve the longevity of the fans.

The hydraulic power pack of the Tsugami machine was once without an automatic timer for switching off during idle periods, which led to considerable energy wastage. We have now enhanced the ladder logic in the FANUC system to automatically cut off the hydraulic power pack after 5 minutes of machine inactivity. This adjustment has resulted in an energy saving of 1.7%, effectively reducing unnecessary energy consumption.



The gang milling machine was originally equipped with a 7.5 HP motor and a clutch setup, resulting in higher energy consumption. We have now replaced it with a 5 HP motor featuring a direct drive system. This upgrade has not only reduced power consumption but also lowered spare part costs, achieving an energy saving of 0.65%.

Energy Intensity and Reduction Initiatives

Driven by our dedication to continuous improvement, we have lowered our energy consumption through the following initiatives



In the absence of air saver units on the CNC machines, substantial energy was wasted due to air leakage during idle periods. We have now installed air saver units, which effectively eliminate air leakage during times when the machines are inactive. This enhancement has led to a notable reduction in power consumption.



The exhaust fans previously operated continuously without timers, resulting in excessive energy consumption. We have now installed timers on all 10 exhaust fans, which allows for a scheduled operation: five fans run for 4 hours, followed by the remaining five fans for the next 4 hours, in an ongoing cycle. This adjustment has led to a more efficient use of energy, resulting in a 0.6% energy saving compared to the previous setup.



In the canteen, the absence of timers for lights and fans led to continuous operation during non-essential times, resulting in excessive energy consumption. We have now installed timers for both the lights and fans, ensuring they operate only during meal times. This modification has effectively conserved energy by reducing unnecessary usage.



Previously, we utilized a Level-1 transformer, which resulted in an energy loss of 7.7 kW per hour. With the recent installation of a Level-2 transformer, this energy loss has been reduced to 7 kW per hour.

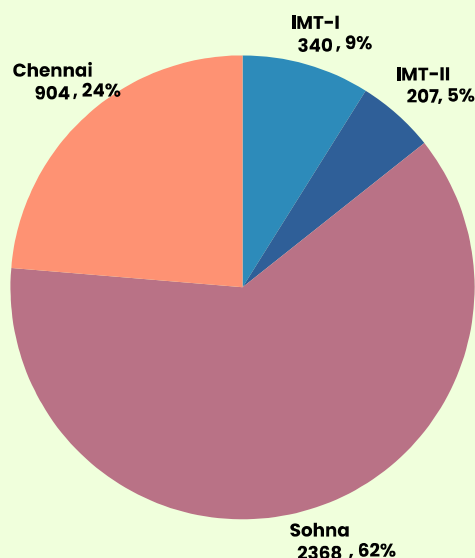
Emphasizing the Importance of Water Stewardship

Water is a crucial resource for Roop Automotives Limited, both in its production processes and within the communities where it operates. We comply with all relevant regulations and standards for water use, including those established by the Pollution Control Board (PCB). As a responsible corporate citizen, we are dedicated to sustainable water use and minimizing our environmental impact.

One of the primary challenges we face in managing water resources sustainably is water scarcity. To tackle this issue, Roop Automotives Limited is enhancing its water efficiency and reducing its dependence on freshwater sources through recycling and reusing practices. To improve water performance, the Chennai plant is exploring rainwater harvesting and groundwater recharge technologies and is committed to working with suppliers to reduce water consumption.

Water Consumption Pattern

In the financial year 2023-24, total water consumption amounted to 55,794.6 KL, sourced from groundwater and third-party suppliers. Our monthly average raw water consumption for the reporting year is illustrated below.



Monthly average Raw water consumption (FY 2023-24)

Reducing Water Consumption

Some measures implemented to enhance water efficiency and achieve zero water discharge in the manufacturing processes include:



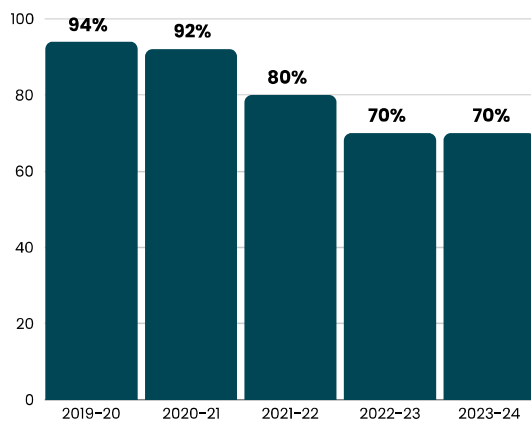
As part of our water conservation initiative, we replaced standard hose pipes with rain hose pipes for garden irrigation. This improvement has reduced water usage from 1.6 to 1.8 kiloliters (KL) to between 0.5 and 0.6 KL.



We reduced water usage by installing the ECO 365 filter, which decreased consumption from 700 milliliters (mL) per flush with the normal filter to 140 mL per flush. This change saves 80% of water, cutting daily usage from 1.03 kiloliters (KL), based on 560 mL per flush across 460 heads used 4 times daily



We addressed water waste by replacing the screw tap with a new model designed to reduce consumption. Previously, hand washing used 800 to 900 milliliters (mL) of water per wash. With the updated tap and reduced water pressure, average water usage is now 500 to 550 mL per wash.



Trend of Fresh water consumption of Chennai plant (in%)

Since FY (2019-20), specific freshwater consumption showed a decreasing trend of 1.6%, 14.5% and 25.3% during the last five years until FY (2023-24) in the Chennai plant location.

Waste Management Journey (FY 2023-24)



Plastic Waste
3.5 Tonnes



E-Waste
0.037 Tonnes



Battery Waste
1.63 Tonnes



Biomedical Waste
0.0015 Tonnes



Other Non-Hazardous Waste
1308.02 Tonnes



Other Hazardous Waste
25.33 Tonnes

Total waste generated- 1338.51 Tonnes

Waste management – From generation to disposal

In 2023–2024, Roop Automotives Limited showed a strong commitment to sustainable waste management in terms of waste generation, recovery and disposal methods. The total waste generated was 1,338.51 metric tonnes.

Responsible Waste Partnerships:

Roop Automotives Limited has teamed up with approved third-party companies to manage waste at its facilities in compliance with the Pollution Control Board (PCB). In the National Capital Region (NCR) region, the company works with Gujarat Environment Protection and Infrastructure Limited (GEPIIL), while waste management at its Chennai plant is handled by Green World Recyclers.

Waste Prevention:

To minimize waste generation in its operations and supply chain, the company implemented the “Reduce, Reuse and Recycle” (3R) principles. This approach led to more efficient resource use, reduced packaging and ongoing product innovation. These measures not only helped cut costs but also lessened the company’s environmental impact.

Waste Recovery:

In terms of waste recovery, the company successfully recycled 1313.18 metric tonnes and reused 0.2 metric tonnes of waste during the reporting year. Looking ahead, the organization is actively seeking ways to further enhance its waste recovery efforts, demonstrating its commitment to continuous improvement in sustainable waste management.

Data-Driven Approach:

Roop Automotives Limited has adopted a data-driven strategy for waste management, with housekeeping and store teams responsible for collecting and tracking waste data. We maintain detailed records on the type and quantity of waste, ensuring it is safely stored in designated areas. This process is verified through internal and external EMS audits to guarantee effective waste management implementation. The waste is then sent to authorized suppliers for recycling, reuse, or appropriate disposal. This data-centric approach promotes continuous improvement, transparency and accountability in the company’s waste management practices.

Emissions and Climate action

Water Conservation: We are actively implementing initiatives to reduce fresh water usage, enhance water efficiency in our manufacturing processes and achieve zero water discharge, ensuring a sustainable approach to water management.

Energy Efficiency: To lower energy consumption, we are optimizing our manufacturing processes through the adoption of energy-efficient technologies and best practices, driving greater operational efficiency.

Renewable Energy: We are exploring the integration of renewable energy sources to power our operations, reducing reliance on fossil fuels and lowering greenhouse gas emissions.

Alternative Fuels: The company is innovating by developing and manufacturing products using alternative fuels, helping to minimize our overall emissions footprint.

Waste Management: We have introduced multiple initiatives to manage different waste streams, aiming to eliminate hazardous waste and achieve zero waste to landfill, aligning with our commitment to sustainability.

Emissions Other than GHG:

Periodic Monitoring: Ambient air quality is monitored biannually across all plants in accordance with National Ambient Air Quality (NAAQ) standards and DG stack consent recommendations.

Preventive Measures: To mitigate its impact on air quality, we have undertaken several initiatives such as-

- We collaborated with the Roop V.K. Jain Foundation and have been planted 13,000+ trees across all plants.
- We switched from diesel to dual fuel (PNG + Diesel) to reduce fuel consumption and emissions at the IMT I and IMT II plants.
- We have invested in state-of-the-art air pollution control technologies to further reduce emissions etc.

Technologies-



Retrofit Emission Control Devices (RFECD) were installed at both the IMT I and Sohna plants and continue to aid in emission reduction this year.



Wind ventilators and turbojet fans were installed at the Sohna plant to enhance shopfloor ventilation and they continue to operate this year.



Fume killers were installed on the machines at the IMT II plant to improve indoor air quality and they remain in use this year.





Greenhouse Gas (GHG) Emissions

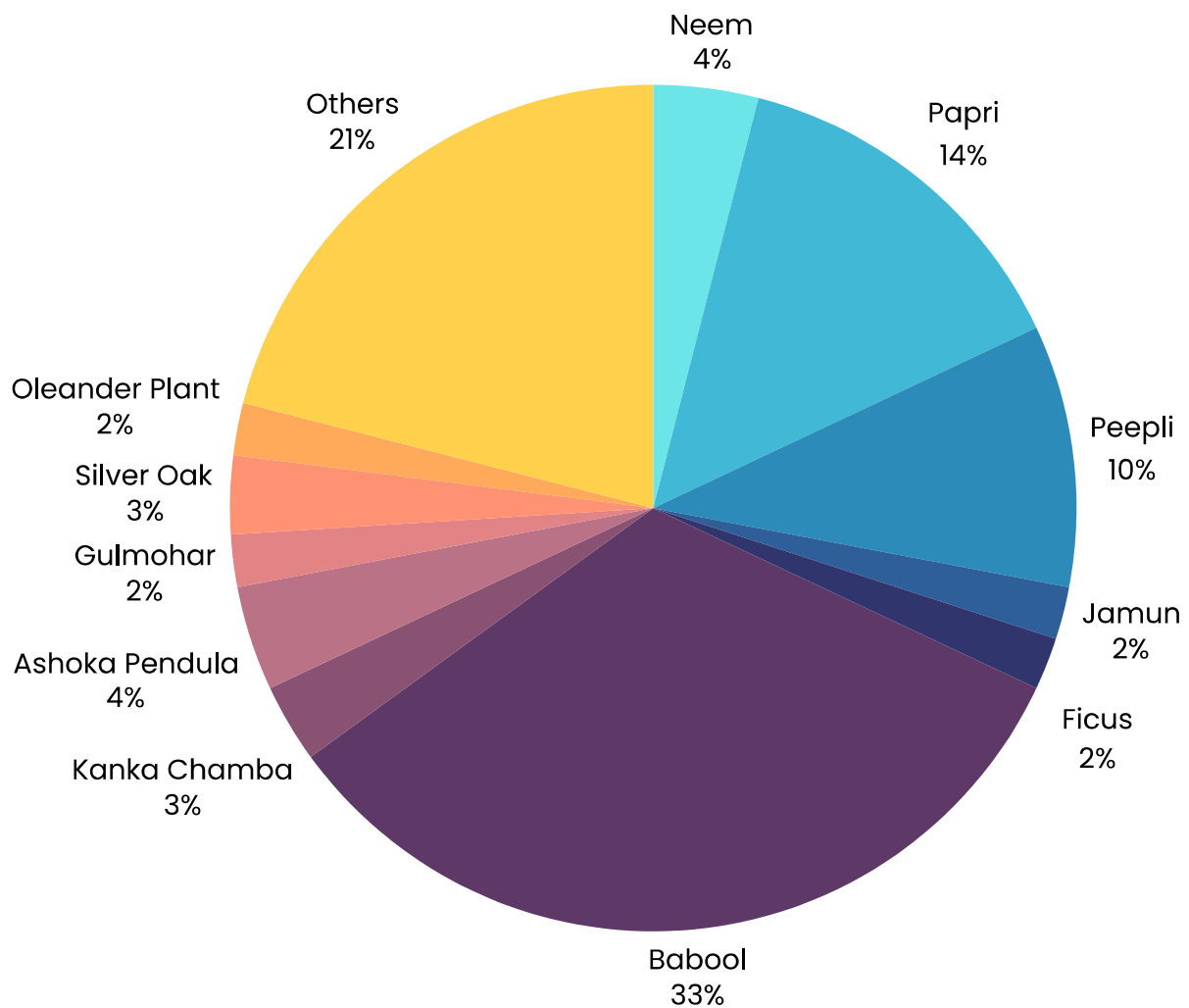
Roop Automotives Limited calculated its GHG emissions in accordance with the GHG Protocol Corporate Accounting and Reporting Standard for the year 2022-23 and has a similar pattern of emissions for the year 2023-24. The company recorded scope-1 emissions at 803 metric tonnes of CO₂ equivalent (MTCO₂e) and scope-2 emissions at 12,211 MTCO₂e. Notably, there was a 12% reduction in direct (scope-1) and a 9% reduction in energy-related indirect emissions (scope-2) compared to the base year.

At the facility level, the IMT plant's combined scope-1 and scope-2 GHG emission intensity was measured at 2.5 metric tonnes of CO₂ equivalent per production unit, while the Sohna plant recorded a scope-2 emission intensity of 33.876 tonnes of CO₂ equivalent per part. These metrics reflect our ongoing efforts to monitor and manage emissions at our key manufacturing locations.

In terms of progress, we achieved significant emission reductions in the previous year 2022-23 and continues the same pace for the year 2023-24. The company reduced scope-2 emissions at its Chennai plant by 54 metric tonnes and achieved further reductions at its Sohna plant, with scope-1 emissions down by 170.712 metric tonnes and scope-2 emissions down by 116.36 metric tonnes. These improvements are indicative of the company's commitment to achieving its emission reduction goals.

Biodiversity Management

In our commitment to fostering sustainable environmental practices, Roop Automotives Limited is dedicated to preserving biodiversity and minimizing the environmental impact of its operations. Roop Automotives Limited, recognizes the potential negative effects of its activities, such as land use, habitat disruption and air pollution, which can disturb the natural balance.



Flora Diversity at Roop Automotives Limited

To address these concerns, we have implemented a comprehensive biodiversity management strategy with a focus on:

- **Land Use Optimization:** We are refining plant layouts and operations to reduce land usage, while also exploring vertical space expansion to increase manufacturing capacity without requiring additional land.
- **Habitat Conservation:** To protect local habitats, the company is planting native trees and shrubs, creating green spaces that support wildlife. Plans are underway to establish a butterfly garden to attract and sustain pollinators, further enhancing our ecological efforts.
- **Air Pollution Control:** We are investing in advanced air pollution control technologies and increasing the use of renewable energy to reduce our impact on air quality.
- **Stakeholder Collaboration:** Roop Automotives Limited is working closely with external stakeholders, including local communities and Non-governmental organizations (NGOs), to develop and implement sustainable biodiversity management practices. These collaborations have helped us achieve short-term goals and we remain committed to continuous improvement, setting future objectives to drive further progress.



10% Land use Reduction in past 5 years

15% Land use Reduction aim for 2025



2356 of native Trees and Shrubs planted

5000 of native Trees and Shrubs aimed to be planted by 2025



Over 100 birds, Butterfly and reptile species identified

150 birds, Butterfly and reptile species identification aimed by 2025



Short-term goals achieved and long-term goals set by Roop Automotives Limited

Sustaining the supply chain

To promote environmental sustainability throughout its supply chain, the company has embedded sustainable procurement criteria into its core business operations. This ensures that environmental considerations are prioritized in the selection of suppliers, fostering responsible sourcing practices and supporting long-term sustainability goals.

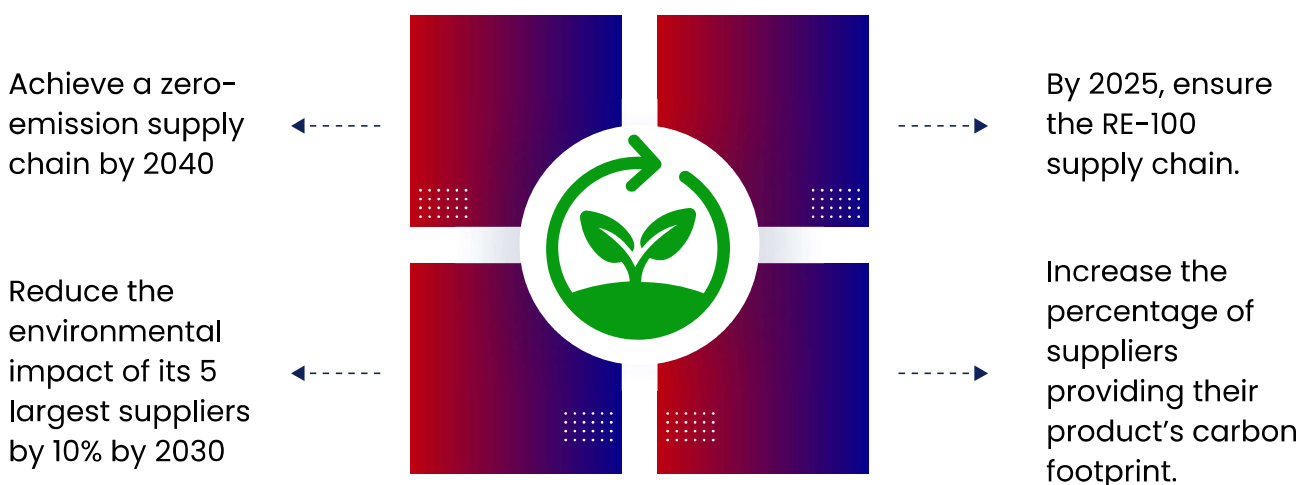
Supplier Sustainability Criteria and Improvement Plans

In line with its sustainable procurement criteria, Roop Automotives Limited evaluated five key raw material suppliers (steel) in the 2023-2024 period, who contribute to 80% of its business. The assessment identified notable actual and potential environmental risks from these suppliers, prompting the company to collaborate with them on developing and executing improvement plans. Additionally, we onboarded 10 new sub-assembly part suppliers who successfully met its sustainability standards, further strengthening its commitment to responsible sourcing.

Greening the Supply Chain

Roop Automotives Limited is actively pursuing its sustainable procurement objectives by partnering with suppliers, offering technical support and providing financial assistance to drive improvements. Additionally, the company is in the process of developing a comprehensive supplier sustainability policy to further strengthen and guide its efforts towards responsible sourcing and environmental stewardship.

Our Value Chain Optimization



Short-term and long-term goals set by Roop Automotives Limited for the sustainable value chain.