Grasim is deeply committed to integrating the principles of environmental stewardship into the core business operations. Given the nature of our industry, we rely heavily on the planet and its natural resources for most of our raw materials. Our goal is to achieve a net positive impact by leveraging our 'Force for Good' philosophy. Aligned with our country's goal to achieve Net Zero by 2070, we have set our target to reach this milestone by 2050.

As a responsible business, we have actively integrated policies and adopted technologically advanced solutions to manage our energy and water consumption, enhance the use of green energy and materials, and promote resource recycling and reuse. Through deliberate efforts, we preserve and enhance the natural capital of our environment enabling us to contribute to creating a greener planet and ensure the well-being of our stakeholders, both today and in the future.

Alignment with SDGs



### FY 2023-24 HIGHLIGHTS

6.7% **Renewable energy** 

share in total energy consumption

46% **Reduction in waste** directed to landfill

14% **Reduction in Scope 3** emissions year on year

94% Waste recovered through reuse & recycling

**50**% Wastewater recycled as a proportion of total consumption

# 53,374 **Trees planted**

### OUR APPROACH

Sustainable use of natural resources is an essential part of Grasim's foundational values and is integral to our business approach. We encourage adoption of new processes and innovative technologies to enable development of ecofriendly products, while optimising resource and energy consumption. Our goal of protecting and enhancing natural capital is evident in our adoption of responsible practices, efficient resource utilisation, and continuous efforts to minimise environmental impact.





#### Stakeholders Impacted

Government and Regulators

Suppliers and Value **Chain Partners** 

Shareholders

Customers

#### Material Issues

Energy Consumption and GHG Emissions
Water and Effluents
Waste Management
Responsible Supply Chain
Climate Change Adaptation
Resource Efficiency
Air and Soil Pollution
Biodiversity and Land Use
Key Risks
External Risk

**Compliance Risk** Sustainability Risk Emerging Risk

Supporting / Aligned Policies -

**Environment Policy Energy and Carbon Policy** Water Stewardship Policy **Biodiversity Policy Risk Management Policy** Responsible Supply Chain Policy

Wood Sourcing Policy

# **FOCUS AREAS**

Climate Change Enerav & Emissions Management Water stewardship Waste management Biodiversity **Environmental Compliance** 

Integrated Annual Report 2023-24

123

# **1** CLIMATE CHANGE

To address the impact of climate change we focus on reducing our GHG emissions through improved energy management. Our strategies include increasing our reliance on renewable energy and optimising energy consumption to reduce our carbon footprint. We are optimising our processes, adopting advanced technologies, and refining production strategies to lower the energy intensity of our operations, to achieve Net Zero emissions. Our climate change management initiatives are governed at the highest levels, with our Board setting strategic direction, and promoting a culture of innovation, transparency, and efficiency.

Our goal is to reach Net Zero emissions across all our businesses by 2050. To achieve this, each business unit is developing a tailored plan to reduce its GHG emissions, leveraging its unique strengths and capabilities to drive progress towards a sustainable future.

# Our Climate-Related Risks and Opportunities

We have analysed the impact of climate change on our operations and have crafted a strategy centred on growth and innovation. Our sustainability efforts focus on decarbonisation, energy efficiency, renewable energy adoption, and the creation of sustainable products. These are key to our emission reduction goals and exemplify our pledge to contribute to a more sustainable and resilient future.

We use a systematic risk management methodology to continuously monitor and analyse possible risks. This approach involves company-wide multidisciplinary risk identification, assessment and management process to achieve strategic and business objectives.

In FY 2022-23, we published our TCFD report detailing climate change-related risks, opportunities and mitigation strategies. Read our TCFD report for more details on our climate-related risks and opportunities identified on our <u>website</u>.



# ENERGY & EMISSION MANAGEMENT

### **Energy Management**

Our proactive approach to energy management includes a focus on innovative solutions and technology upgrades to reduce consumption and optimise energy usage. Our strategy relies on implementing state-of-the-art equipment and processes that prioritise energy efficiency, alongside a commitment to sourcing energy from renewable energy sources. We have increased our renewable power capacity share from 8% in FY 2022-23 to 11% in FY 2023-24.

We conduct regular internal audits to evaluate energy usage and identify improvement opportunities, have quantified targets and action plans for reducing energy usage, and provide regular employee training on energy management.



Note: Indicator covered under reasonable assurance scope

Our total energy consumption was 68.28 million GJ in FY 2023-24, 7.3% higher compared to FY 2022-23. The energy consumption profile of our operations includes energy generation from our coal captive power plants, from fossil and non-fossil fuels, purchased grid and renewable electricity and on-site renewable energy generation through our installed renewable capacity. To minimise reliance on grid electricity and fossil fuels, we are actively investing in renewable sources and energy-efficient technologies.

# **ENERGY MANAGEMENT INITIATIVES**

- Installed a Steep Lye pump equipped with a control device to adjust the pump's speed based on operational needs, leading to energy savings and better workflow synchronisation
- Upgraded from single-stage, single-cylinder, watercooled compressors to more efficient two-stage, aircooled compressors, reducing both energy consumption and water usage



- Replaced conventional ceiling fans with energy-efficient BLDC (Brushless DC) fans and converted exhaust fans from V-belt drives to more efficient flat belt drives
- Replaced reciprocating air compressors with more efficient screw compressors
- Replaced conventional cooling towers with mist-type fill-less cooling towers for the spin bath, improving cooling efficiency
- Implemented renewable energy sources to reduce our reliance on non-renewable electricity

Integrated Annual Report 2023-24

### **Emission Management**

We aim to manage our GHG emissions through effective energy management and efficient utilisation of our production capacity and processes. In FY 2023-24, we strengthened our efforts to combat climate change by developing a comprehensive Net Zero roadmap with defined strategies and targets to reduce our carbon footprint. Our total Scope 1, Scope 2 and Scope 3 emissions in FY 2023-24 were 5.31, 1.19 and 4.85 million tCO<sub>2</sub>e, respectively.

### PERFORMANCE

### **Air Emissions**

We regularly monitor emissions from our industrial stacks, focusing on pollutants like Sulphur Oxides (SOx), Nitrous Oxides (NOx), and Suspended Particulates (SPM), to ensure compliance with regulatory limits. We focus on constantly improving our systems through the adoption of efficient production practices and advanced technologies. Additionally, we have installed AAQ monitors at our facilities to gather real-time air quality data, further ensuring environmental compliance.



Note: 1. Scope 1 and 2 data is covered under reasonable assurance. Scope 3 data is covered under limited assurance.

2. Scope 3 data includes category 1, 2, 3, 4, 5, 6, 7 & 9.







# 3 WATER STEWARDSHIP

Our responsible water and affluent management practices are aligned with our sustainability goals. We focus on reducing freshwater use and enhancing water recycling through effective treatment processes. Advanced Zero Liquid Discharge (ZLD) plants across our manufacturing units efficiently treat wastewater for recycling in our processes. We ensure effective effluent management by regularly inspecting our plants and equipment and taking corrective actions needed. Through our initiatives, we surpass regulatory requirements and set a benchmark for responsible water management. Safeguarding and conserving water resources through robust water management practices and governance systems is integral to our commitment to water stewardship. Our comprehensive policy mandates the establishment of monitoring systems to measure and report on

water and effluent performance and guiding our water conservation efforts. Read our FY 2022-23 TCFD report for comprehensive insights into our water risk management practices - https://www.grasim.com/Upload/PDF/tcfd-reportyear-2022-23.pdf.

We conduct regular internal audits to assess water usage and identify opportunities to improve usage efficiency. We have quantified targets and action plans to reduce water consumption, and provide regular employee training on water efficiency management.



127



# WATER STEWARDSHIP INITIATIVES

Our Cellulosic Staple Fibre business Intellicolor fibre has revolutionised the dyeing process by utilising cationic or basic dyes, significantly reducing dye input. This innovation achieves up to 95% dye bath exhaustion, resulting in brighter shades and superior colour depth while reducing water consumption and effluent generation. This results in savings of 20-25% in Effluent Treatment Plant (ETP) costs. Furthermore, the installation of the DMRO Plant has further optimised our operation by reducing the use of DM water, leading to improved efficiency, decreased chemical consumption, and enhanced system reliability through advanced DMRO technology.

# STUDIES

### Driving Water Sustainability through 12 MLD SWRO Plant Installation

Grasim has commissioned a 12 MLD Seawater Reverse Osmosis (SWRO) plant at its Cellulosic Fashion Yarn unit in Veraval. This plant uses innovative technology to harness seawater for industrial purposes while ensuring environmental responsibility. It will play a significant role in addressing water scarcity challenges in regions like Veraval and providing sustainable water resources for industrial use.

### **Execution and Methodology**

The project progressed through several key stages before establishing an efficient seawater intake and purification system. Initially, two HDPE intake pipelines were installed using horizontal boring techniques to draw seawater effectively. The seawater then underwent a pre-treatment including chemical dosing, sedimentation, and filtration using a Lamella system, to remove larger particles, debris, and organic matter.

Following this, the treated water passed through an ultra-filtration unit that eliminated solids, bacteria, and viruses. Subsequently, a high-pressure RO system with semi-permeable membranes purified the water by rejecting salts and impurities under applied pressure. To enhance efficiency, a Pressure Exchanger device was integrated to reclaim pressure at the RO outlet, achieving significant daily power savings. Finally, the concentrated brine or rejected water was responsibly discharged back into the ocean, adhering to environmental standards to minimise any disruption to marine ecosystems.

#### **Outcomes and Impact**

The 12 MLD SWRO plant has strengthened water security by converting seawater into a dependable freshwater source, reducing reliance on freshwater reserves. It has also enhanced industrial productivity by offering a sustainable water supply, improving operational efficiency and reducing costs. The project has demonstrated environmental stewardship through responsible discharge practices, safeguarding marine biodiversity and upholding ecosystem integrity.

Furthermore, the integration of energy recovery devices has reduced carbon emissions. The deployment of the SWRO project promotes water sustainability, addresses supply issues, and enables carbon-neutral operations in water-scarce areas.

### 4 WASTE MANAGEMENT

Operating across diverse industries, we recognise the We conduct regular internal audits to improve waste environmental impacts and safety risks associated with management. We have defined targets and action plans to reduce waste. We provide waste management training to improper waste management. As our operations generate all employees, and integrate recycling programs to divert various types of waste, including solvents, chemicals, plastic, textile, fly ash, battery waste, e-waste, construction waste from landfills. and demolition waste, etc. proper handling, treatment, and disposal are essential. To address this, we have established a comprehensive waste management system that focuses 74% on minimisation, recycling, and safe disposal. This system ensures compliance with regulations and supports our **Recovery rate for** sustainability goals, including achieving zero waste to hazardous waste through landfill. The majority of waste generated on our sites is reuse and recycling either recycled, reused, or recovered, with a key focus on reducing waste sent to incineration or landfills.











Note: Indicator covered under reasonable assurance scope.

\* Waste Categorised as per "Hazardous and Other Wastes Rules, 2016; E- Waste Management Rules, 2022; Biomedical Waste Management Rules, 2016; and Battery Waste Management Rules, 2022"

# Waste Categorised as per "Solid Waste Management Rules, 2016; Plastic Waste Management Rules, 2016; Construction and Demolition Waste Management Rules, 2016; and Flyash Notification, 2021"

## WASTE MANAGEMENT INITIATIVES

- Our technology to produce Liva Reviva Cellulosic fibre integrates up to 30% textile waste with wood from FSC-certified forests, supporting the circular economy.
- We enhance sustainability with use of recycled materials in our products. For example: By blending recycled cotton with our Excel fibres, fostering successful partnerships, such as our collaboration with SKG Mill and recognition by industry leaders like IKEA.
- To encourage recycling, we have installed plastic bottle crushers at railway stations and bus stands in Ludhiana, Chandigarh, and Amritsar.
- As part of our Corporate Environmental Responsibility (CER) plan, we distributed 5,500 paper and jute bags to schools and offices in Ludhiana to replace plastic bags, and 1,475 glass and metallic bottles to farmers and government offices to reduce plastic waste.
- The Full Circle Textiles Project aims to develop scalable, economically viable solutions for cellulosic chemical recycling, promoting a closed-loop system for sustainability.

### Fly Ash Utilisation at GRCD – Renukoot

At our Chemicals Division in Renukoot, we operate a 50 MW power plant using two coal-fired boilers that produced 1.27 Lakh Metric Tonnes (LMT) of fly ash in FY 2023-24. We utilise 100% of the produced fly ash, by transporting it to cement industries, filling low-lying areas, and manufacturing bricks and paver tiles in-house.

Each paver tile we produce contains 12.09% fly ash, while each fly ash brick contains 50% fly ash. This reduces our need for conventional red bricks, offering cost savings and environmental benefits.

### **Extended Producer Responsibility**

Plastic is an integral part of our packaging, and we<br/>understand the responsibility that comes with its disposal.Grasim has obtained Brand Owner registration and has<br/>submitted its EPR Plan to the CPCB in accordance with the<br/>guidelines. Grasim procures EPR Credits by recycling plastic<br/>waste (both pre-consumer and post-consumer) through the<br/>help of CPCB-registered Plastic Waste Processors (PWPs),<br/>categorised either as rigid or flexible.

- We improve waste management by carefully segregating waste at each site, and tailoring recycling and treatment efforts to specific needs.
- We utilise ETP sludge as gypsum (raw material) in cement manufacturing and co-process it with oil-soaked cotton, sulphur and cellulose waste as Alternative Fuel Resource (AFR) in cement plants.
- In collaboration with Zara and Evrnu, we have transformed unsold garments into eco-friendly clothing using NuCycl<sup>®</sup> technology and our Lyocell fibre production, showcasing the potential of circular solutions in the fashion industry.
- We created the 'Aditya Udyan' green belt using 1,507 MT of fly ash, planting 18,050 trees of 16 different species, and reclaiming 5,000 m<sup>2</sup> of land through the Miyawaki Plantation. Read more about 'Aditya Udyan' in the Biodiversity section on 
  Page 132.

### **Making Manure from Waste**

Our residential complex at GRC, Renukoot generates approximately 1.5 MT of domestic waste daily. We convert this waste into compost for our lush green spaces that cover 62% of our campus. The process includes collection, sorting, and bacterial and enzyme digestion. To date, we have produced 15.95 MT of compost from domestic waste and an additional 3.28 MT from food waste.

This initiative has strengthened our environmental stewardship and generated cost savings of approximately ₹2.5 lakh by reducing the need to purchase manure.

# **5** BIODIVERSITY

Our approach emphasises strict compliance with biodiversity laws and regulations, ensuring responsible stewardship of natural resources. Guided by a robust biodiversity policy, we adopt best practices that respect and protect the environment, aiming for no net loss of biodiversity.

One of our key achievements this year is the successful planting of 53,374 trees adding to more than 7 lakh trees that we have already planted by FY 2022-23. We plan to enhance our conservation work through stakeholder collaboration and increasing our teams' biodiversity awareness. Read more about our Biodiversity Policy <u>here</u>.

# **BIODIVERSITY INITIATIVES**

- Our sustained commitment at Grasim to preserve and enhance ancient and endangered forests within the MMCF supply chain has earned us the prestigious 'Dark Green Shirt' rating in Canopy's esteemed Hot Button Report 2023 for the fourth consecutive year.
- We remain focused on continuously improving our wood-sourcing practices, conserving forests, promoting innovative problem-solving approaches, and developing best-in-class fibres. These efforts prevent the deforestation of ancient forests for rayon and Cellulosic fibre production, providing sustainable alternatives that can be manufactured at scale.
- In line with our biodiversity policy, we have planned to initiate biodiversity assessment studies and develop roadmaps for reaching our goal of 'no net loss' of biodiversity.

# CASE Study

### Aditya Udyan: Green Belt and Ecosystem Restoration Initiative

During the pandemic, Grasim faced challenges in transporting fly ash, leading to its storage within our industrial complex. Post-pandemic, to address this, we sought constructive repurposing of the area.



### Implementation

Under guidance from statutory bodies and with government approval, we initiated the 'Aditya Udyan' project using the Miyawaki model of plantation to reclaim a fly ash-covered area. We planted trees from 16 different species, including neem and peepal, to create a dense, diverse ecosystem that enhances local biodiversity and stabilises the environment.



### **Outcomes and Impact**

This approach quickly established dense foliage, preventing erosion and reducing water leaching. The project transformed the area into a vibrant habitat, improving local ecosystem services and serving as a carbon sink. It also provided employment to local community members, boosting the economy of the region. Aditya Udyan has reclaimed 5,000 m<sup>2</sup> of land, becoming a destination for nature enthusiasts and setting a precedent for sustainable industrial wasteland restoration.

**18,050** Trees planted using Miyawaki model

# **6** ENVIRONMENTAL COMPLIANCE

We prioritise environmental compliance across all facets of our operations and implement stringent measures to adhere to regulations and guidelines. Our dedicated team of environmental experts continuously monitors, evaluates, and implements best practices that go beyond mere compliance and legal requirements to enhance efficiencies. Regular audits and assessments help us identify areas for improvement and ensure ongoing compliance.



Our environmental policies are approved by the Board of Directors and demonstrate a high-level endorsement of our sustainability initiatives. We also conduct incident investigations and implement corrective actions when needed to proactively address environmental risks. We actively participate in relevant multi-stakeholder and industry initiatives to strengthen environmental standards and practices beyond our operations.