

ENVIRONMENT

# Doing business, responsibly

Over our 126-year journey, environmental sustainability has always been at the heart of our business strategy, manufacturing processes, products and solutions



India's first Net-zero building  
at our campus in Vikhroli



Flamingos at the godrej mangroves

Climate change and the domino impact that it triggers is the single biggest risk that confronts human progress. We have already witnessed extreme weather events with devastating impact owing to the current 1.1°C temperature rise so far. Current mitigation policies will lead to a temperature increase of 3°C by 2100, which can lead to devastating effects. Already,

- Half the global population faces water insecurity at least one month in a year<sup>1</sup>.
- Devastating floods and storms have annually displaced 20 Mn people<sup>2</sup>.
- Aspects of human development – food, land and ocean use; infrastructure and the built environment; energy use and extractives – endangers more than 79% of threatened and near-threatened wildlife species<sup>3</sup>.
- Failure to limit temperature rise to 1.5°C may result in a reduction of the world’s real GDP per capita by roughly 7% by 2100.<sup>4</sup>

Hence choosing a pathway as outlined under the Paris Accords of a 1.5°C scenario, is the way forward to protect the ecological balance of the planet. Our core vision and values have always supported cohesion and interdependence between

the environment and business. This has fuelled our constant need to develop disruptive solutions that are both planet-friendly and business-worthy. Apart from environmentally safe products, we have made several positive ecological interventions – the preservation of the large patch of Vikhroli mangroves since the 1940s, being the most notable one. Our 126-year corporate history is replete with such examples in support of sustainable coexistence.

<sup>1</sup> IPCC Report 2022 | <sup>2</sup> Ibid | <sup>3</sup> WEF, IUCN

<sup>4</sup> <https://www2.deloitte.com/us/en/insights/topics/strategy/economic-impact-climate-change.html>

Over the past decade, we have invested more than ₹500 cr in our ESG initiatives to reach where we are today. Our new goals are built on a foundation of pathbreaking science, differentiated collaborations and operational efficiencies, to further our unique blueprint for the growth that we desire.



<b>WASTE REDUCTION &amp; DIVERSION</b>	<b>WATER CONSERVATION &amp; STEWARDSHIP</b>	<b>PRESERVING BIODIVERSITY</b>	<b>ENERGY EFFICIENCY &amp; PRODUCTIVITY</b>
Total waste minimization	Reducing water use intensity	Mangroves conservation	Reducing energy use and emission intensity
Plastic use reduction and recycling	Wastewater recycling	Awareness to rescue and rehabilitation of distressed fauna	Transition to low carbon technologies from Thermal energy to electricity
Increasing adoption of circularity	Rainwater harvesting for own operations and in communities		Green & NetZero buildings developed for company's operations & tenants



Our state-of-the-art greenfield facility in Shirwal powered by solar panels

## Energy & Emissions

We have a long-standing goal of making its businesses carbon neutral and energy efficient. Decarbonisation is of the highest material importance for our businesses, and we have taken progressive steps to meet our energy use related objectives. The company’s energy sustainability strategy is focused on three broad tracks:

- Reduce specific energy consumption.
- Improve the share of renewable power in total energy consumption.
- Transition to Low Carbon Technologies and from Thermal Energy to Electricity.

With an objective of reducing specific energy consumption, the company nearly doubled its productivity in FY21 with respect to the base year FY11, in line with EP100 commitment. The company endeavors to repeat the same again by 2030 (with respect to base year FY 2017). We have been able to double our productivity while reducing the overall energy consumption through:

- Realtime online energy monitoring with alerts, process digitalisation and automation.
- Adaption of energy efficient utilities and process equipment.

- Capability building, Process benchmarking & Integrated Green Sourcing policy for absorption of low carbon technology.
- Technology scanning and absorption of low carbon technologies.
- Integrating energy management system (ISO 50001: 2018) across manufacturing facilities.

**57%**  
reduction in specific energy since FY11

The consistent falling graph underlines the success of our efforts towards upgrading and modifying our processes and equipment to become less energy-intensive and more efficient and using real-time data analytics to better streamline our energy use.

### SPECIFIC ENERGY

	FY20	FY21	FY22	FY23
Absolute energy consumption	724,176	544,199	694,251	733,368
% reduction in energy intensity over base year	47%	57%	53%	57%

## Spectrum of energy efficient initiatives

S. NO	PROJECT CATEGORY	PROJECT DESCRIPTION
1	Compressed air	Integration of two-stage Variable Speed Drive PM motor air compressors
		VFD integration on Compressor and prioritizing the compressor operation as per demand.
		Optimize compressed air pressure at plants by integration of Intelligent Flow Controller (IFC)
		Dedicated high pressure compressors for paint shop and CNC applications
		Reducing losses and leakages by integrating aluminium Piping
		Energy efficient low noise turbo blowers for aeration at ETP/STP
		Eliminating compressed air usage by integration of blower
2	Heat Retention and Recovery	Heat reflective thermo ceramic coating to improve furnace insulation
		Analysing and Improving the insulation health to decrease the heat losses
		Utilizing waste heat recovery from compressor and paint booth to improve GCV of briquette
		Use of heat pumps to offset thermal consumption
		Vacuum packaged electrode to eliminate holding ovens
		Modular furnace with precise control to optimize fuel consumption
		Fueling hot water generator using biodiesel.
3	Optimisation and upgradation of lighting, HVAC and other building support system	IOT enabled energy efficient electronically commutated fan AHU in air conditioning
		Online auto condenser cleaning system to maintain chiller approach effectively
		Absorption of energy efficient VRV and 5 Star inverter unitary ACs at plants
		Temperature sensor based VFD control system for Cooling Tower
		Thermal insulation coating for HVAC
		Energy efficient pump, motors and lighting
		Lighting simulation and installing on shop floor & office area
		Occupancy and motion detector sensors for shop floor & office area
4	Process	Hydraulic power pack with servo motor/Accumulator
		Adaption of direct-to-metal paint to optimize the process
		Machine run time optimization by curtailing the idle time consumption
		IE-4 & IE-5 energy efficient motors at paint booth
5	Ventilation	Energy efficient BLDC air circulator industrial fan and ceiling fan with remote
		Turbo ventilators at rooftop and translucent sheets for natural day lighting
		High-volume low speed fan

Annual energy savings of

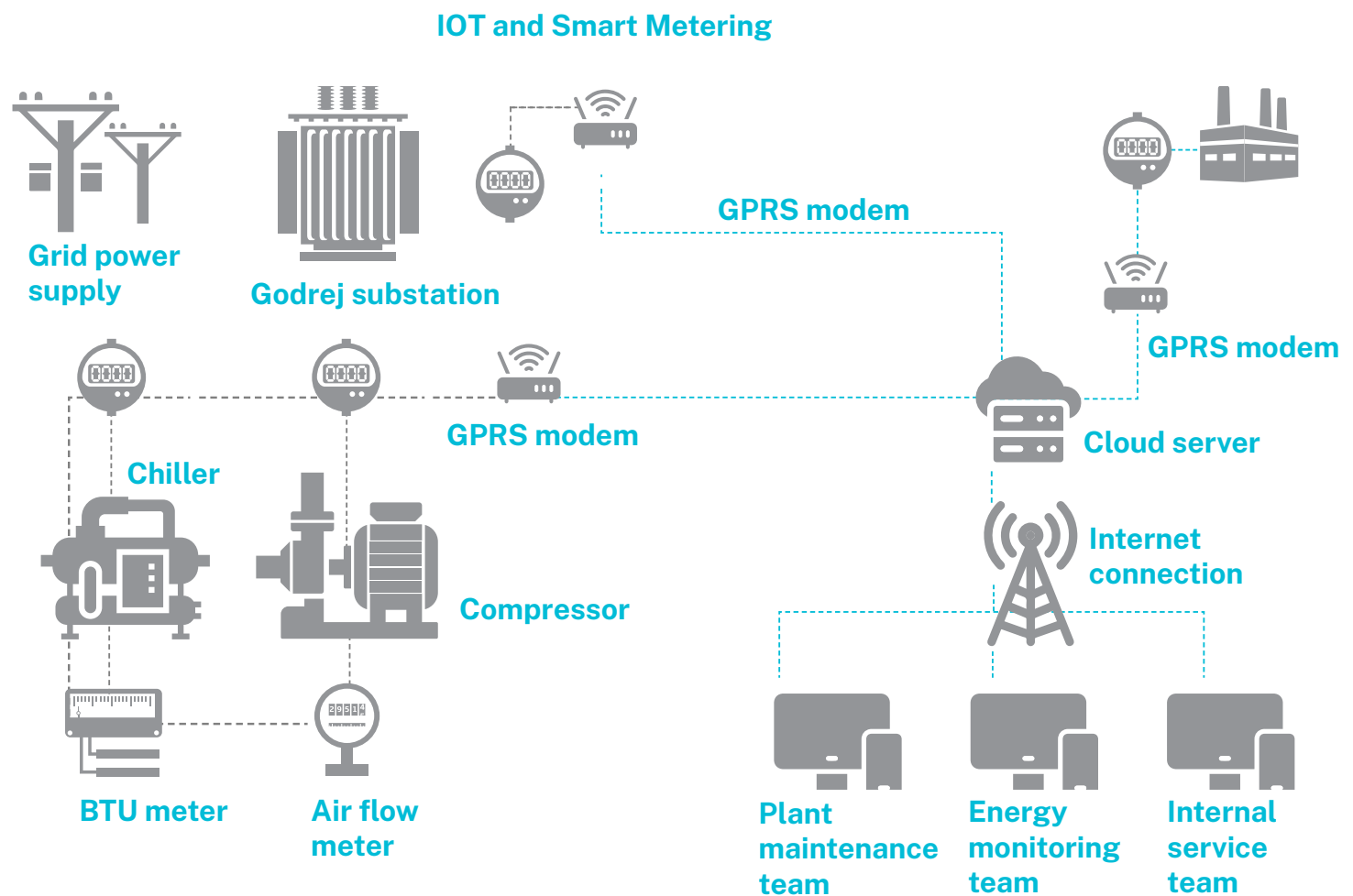
# 1,60,85,901 kwh

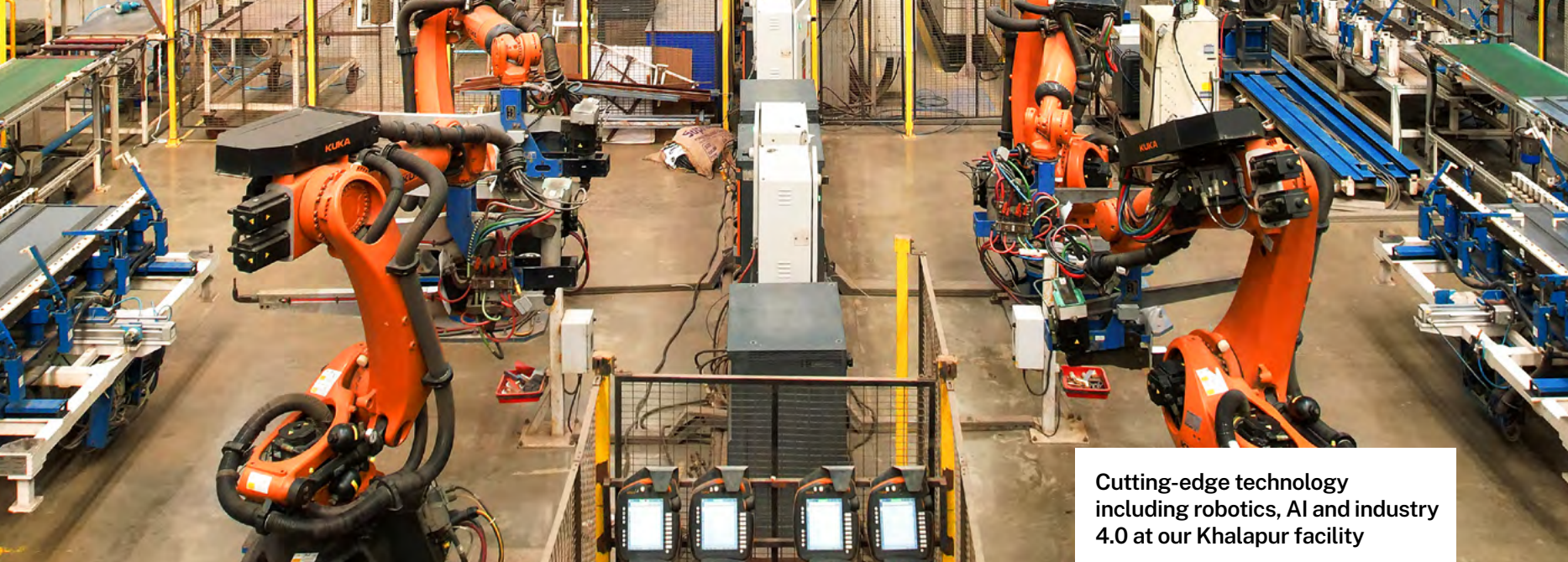
estimated from projects taken in the reporting period FY20-23

## USE OF REAL-TIME ENERGY ANALYTICS TO OPTIMISE ENERGY USE

We are constantly working towards integrating energy efficient practices into our value chains. We believe digital technologies will enable this further, and have been making our processes smarter, more efficient and reliable. We have been leveraging AI and data analytics to

optimise our energy use. Energy flowing into the system is monitored and controlled right from the grid power supply entry feed from across various internal checkpoints to real-time energy needs of individual equipment.





Cutting-edge technology including robotics, AI and industry 4.0 at our Khalapur facility

**PURSuing A GREEN MANUFACTURING MINDSET WITH ARTIFICIAL INTELLIGENCE**

Godrej ControlAiR™ IFC – A Demand Side Management Solution utilizes controlled differential pressure to isolate compressors from demand side fluctuations. The product uses stored reserve energy, hence allowing the compressors to run on a significantly reduced load. This technique also helps in reducing air consumption by pneumatic equipment, leakages, among other elements, ultimately reducing the overall energy consumption. This IoT enabled product is integrated in all our factories and also

installed in over 4000 units globally. It that has already received various national and international accolades as an innovative energy saving solution.

Saves upto **20%** energy of compressed air system



**IMPROVING PROFITABILITY THROUGH ENERGY EFFICIENT PROCESSES**

At our Process Equipment Division (PED), electrodes are one of the most used consumables. Each year electrodes weighing 1,25,719 kgs are used to preheat the electrodes used for manufacturing and for this 2.8 Lakhs electrical units are consumed. Given the high usage and the high consumption of electricity involved, the division was looking for ways to optimise use.

Process improvements were seen as a solution. As per convention, the electrodes used for heating were first baked in baking ovens and then kept in holding ovens for heat retention till the time of use. Instead, it was

decided that the electrodes would be vacuum packaged to reduce process heating and oven utilisation.

Process change led savings:

**280 MWh** energy saved per annum

**₹24,00,000 Lakh** saved annually

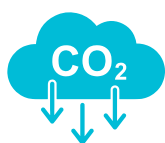
**224 tCO<sub>2</sub>e** annual carbon offset



Reducing our share of emissions with the use of solar panels at our facilities

## Transitioning to renewables: Taking a diversified approach

We are committed to reducing our share of emissions in a scientific manner. We meet 9.4% of its energy requirements from renewable sources and uses several routes for meeting its renewables targets – namely through integration of solar rooftops, Briquettes and by engaging in power purchase agreements (PPAs) and green tariffs.



# 58%

reduction in carbon intensity since 2011

### G&B ROOFTOP SOLAR FOOTPRINT (INSTALLED)

Solar Footprint	FY23
Roof Top (Maharashtra, Punjab, Tamil Nadu  & Uttarakhand)	7.2 MWp
Open Access PPA	4 MWp
<b>Total Solar Installed Capacity</b>	<b>11.2 MWp</b>

### GHG EMISSIONS INTENSITY

	FY20	FY21	FY22	FY23
GHG emissions intensity (tCO <sub>2</sub> e/MVA)	36	29	32	29

### ABSOLUTE GHG EMISSIONS (IN tCO<sub>2</sub>e)

	FY20	FY21	FY22	FY23
Direct emissions (Scope 1)	16,806	12,826	20,315	18,201
Indirect emissions (Scope 2)	83,443	60,975	76,542	81,664
<b>Total GHG emissions</b>	<b>1,00,249</b>	<b>73,801</b>	<b>96,857</b>	<b>99,865</b>

Large number of global alliances in energy use and emissions control

EP100, business ambition for 1.5°C, Global Alliance on Energy Productivity, Net Zero buildings with World Green Building Council, renewable energy demand enhancement





G&B's air conditioners with intelligent and energy-efficient technology

### SIGNIFICANT AIR EMISSIONS

	FY20	FY21	FY22	FY23
SPM (mg/NM <sup>3</sup> )	62.7	67.4	68.7	68.4
NOx (ppm v/v)	37.2	36.2	38.1	27.9
SOx (kg/day)	10.2	15.4	16.2	11.7

G&B is cognisant of the adverse effects on the atmosphere resulting from increased usage of fossil fuels. We regularly monitor our emissions to assess our carbon footprint and devise mitigation measures. Ambient quality monitoring is conducted across all locations and stack emissions are analysed and reported regularly. We ensure that all air pollution parameters are maintained below the statutory limits, indicating efficient management of industrial operations, stringent processes and control for air pollution reduction. Over and above the regulatory norms, G&B sets firm limits for parameters such as SOx, NOx, TPM, SPM, etc. The air conditioning and ventilation systems across all our locations ensure that the Air Quality Index is between 0 to 50.

**1st**  
company in India to introduce refrigerators that are free of CFC, HFC and HCFC\*

\*Chlorofluorocarbon, hydrochlorofluorocarbons

**1st**  
Indian company to produce Air Conditioners with 'Zero' Ozone Depletion Potential (ODP) and minimal Global Warming Potential (GWP)



Rainwater harvesting at Shirwal

## Water Management

Water is a lifeline for all the three bottomlines – people, planet and profit – and this perspective forms the backbone of our water management practices. Water security is of high material significance and determines our three-pronged water sustainability strategy:

- To reduce specific freshwater consumption.
- To achieve zero discharge across locations.
- Become water positive across locations.

We achieved our objective of becoming water positive in 2016-17, years ahead of the target year we had set for ourselves and continues to maintain that position across all our facilities.



Currently, we are **179% water positive**. Additionally, in 2020-21 the company also offset its cumulative fresh water footprint when calculated from the base year of 2010-11 by replenishing more than its withdrawal quantities. We maintain our water positive status by adopting a variety of conservation and low usage techniques, which are:

- Water audit of process and utilities
- Use of low flow water efficient fixtures
- 100% effluent and sewage treatment
- Zero liquid discharge (ZLD) of industrial effluents
- Maximising utilisation of recycled water
- Use of nature-based treatment solutions
- Maximising rainwater harvesting (within and beyond the fence)

All our manufacturing facilities practice zero discharge, leading to minimal impact on ecology and community.

### WATER CONSUMPTION BY SOURCE (M<sup>3</sup>)

	FY20	FY21	FY22	FY23
Municipal / Surface / Procured water	6,29,847	5,65,171	8,44,182	10,17,429
Ground water	4,85,680	4,24,112	5,17,379	5,26,544
Recycled water	8,58,393	6,34,914	7,27,246	8,05,021
<b>Total Water Consumption</b>	<b>11,15,527</b>	<b>9,89,283</b>	<b>13,61,562</b>	<b>15,43,973</b>

## LEVERAGING IOT FOR REAL-TIME GROUNDWATER MANAGEMENT AT VIKHROLI CAMPUS

Over extraction of groundwater and drying up of aquifers is a universal problem in India, and the country is predicted to face high degrees of water stress in the future. We are utilising IoT technology to combat this problem effectively.

Our facility at Pirojshanagar, Mumbai, has a daily water requirement of 3,230 m<sup>3</sup>/day of which 700 m<sup>3</sup>/day is met from groundwater which is extracted from the 16 structures on campus. The extraction takes place with the permission of the Central Ground Water Authority (CGWA) which has strict compliance norms regarding quantities used. Ensuring the sustenance of these groundwater systems is imperative for G&B's business continuity too. To meet these different priorities, G&B has put in place various measures.

- All 16 of the groundwater extraction structures on the Vikhroli campus are fitted with IoT-based digital flow meters with telemetry system for real-time consumption monitoring. Integrated with the cloud network, limits of water extraction for each structure are set based on requirements

at different locations, and in instances of overuse, alerts are triggered.

- Usage reports are generated with periodic monitoring and exceptions of unusual divergences. Further, an extensive setup of rainwater harvesting structures have been established to capture water from rooftops, other open and unobstructed areas and also from runoff.
- The collected water goes through appropriate filtration processes and is then routed through channels for groundwater recharging. Our installed recharge capacity is of 4,25,865 m<sup>3</sup>/year.

**Total wastewater recycled and rainwater harvested over the last decade is equivalent to the water consumed by**

**261.8 mn**  
persons annually

## BEYOND-THE-FENCE INTERVENTIONS TO IMPROVE WATER AVAILABILITY

Ensuring water security not just within our premises but also in regions where we operate is part of our community development priorities. G&B is part of a multi-stakeholder initiative to rejuvenate a community pond at Chunni Kalan village in Mohali, Punjab, which is close to the Godrej Appliances plant at Mohali. Carried out in collaboration with the Chunni Kalan Village Panchayat and Sehgal Foundation, an organisation with expertise in rural development projects, the revival of this water body will benefit 140 families and

make 1.67 Mn litres of usable water available to the village. Earlier the water in the pond had become unusable due to extensive inflow of sewage water and solid waste dumping. The stagnant and dirty water became a breeding ground for mosquitoes. The cleaning of the accumulated silt and waste has made clean water available once again. Through this initiative, G&B has successfully met its sustainability objectives of increasing community access to water, improving water quality and supporting community health.

## Material use

While operations in the manufacturing sector lead to the consumption of resources, as a responsible manufacturer our attempt is to constantly minimise the usage of resources and to shift to sustainable consumption through more widespread adoption of circularity and green materials.

To fulfil the mandate of minimising consumption, we continuously refresh our benchmarks and measures adopted and keep monitoring our materials consumption so that opportunities for optimising use are identified.

### Tracking the consumption of principal raw materials\*

S.No.	Particulars	U.O.M.	FY20	FY21	FY22	FY23
1	Mild Steel	Tonnes	1,83,840	1,44,066	1,69,076	1,78,559
2	Mazak/ Zamak	Tonnes	431	337	544	550
3	Brass Sheets	Tonnes	1,041	830	1,224	1236
4	Aluminium Sheets	Tonnes	1,219	1,458	1,918	2261
5	Foaming Components	Tonnes	13,148	11,344	11,709	13635
6	Copper	Tonnes	5	75	21	1649
7	Paint & Powder	Kgs	2,813	1,707	2,178	2264
8	Aggregates	Tonnes	4,99,103	3,09,552	5,08,144	635394
9	Cement	Tonnes	1,58,879	1,03,034	1,74,900	218554
10	Sand	Tonnes	3,85,585	2,48,071	4,07,524	515746
11	Flyash	Tonnes	21,485	15,350	36,221	39574
12	Plastic Granules	Tonnes	3,216	7,683	6,985	6583

S.No.	Particulars	U.O.M.	FY20	FY21	FY22	FY23
1	Material Intensity	Tonnes/Cr. MVA	631.56	403.73	454.2	461.75

\* Only major UOMs are reported. Principal items reported are items consumed across BUs with common UOM and individually contributing to 10% or more of the total raw material consumed by the BU



Customised prefabricated concrete products from recycled concrete material

## Pioneering green construction materials in India

The built environment accounts for 39% of the gross annual carbon emissions worldwide<sup>5</sup>. A large share of this originates from embodied emissions, which are created when producing construction materials. Godrej Construction has pioneered the manufacturing of sustainable construction materials in India by adopting circularity principles. By recycling concrete debris from construction and demolition (C&D) waste, we replace virgin aggregate use without compromising on quality and durability parameters.

Our plant manufactures concrete blocks, pavers and other customised products like box culverts

Processed more than

# 25,000 MT

concrete debris waste

India generates

## 150 Mn MT

of C&D waste, that accounts for 35 to 40 % of the global C&D waste annually. Every year less than 2% gets recycled and ends up at landfills

Godrej Construction's Pirojshanagar plant can recycle upto

## 300 tonnes

of concrete debris waste per day

<sup>5</sup> WEF, [weforum.org/agenda/2022/09/construction-industry-zero-emissions/](https://weforum.org/agenda/2022/09/construction-industry-zero-emissions/)



## Waste management

### Effluents and solid waste

Our waste management practices are designed to reduce the environmental impact associated with waste generation and disposal. We focus on reduction of waste generation at source, segregation for better management and responsible disposal.

Under the 'Greener India' goal, we had set ambitious targets to reduce the generation of hazardous waste by 50% and ensure zero non-hazardous waste to the landfills by 2020.

We have in place well established processes for monitoring and managing different categories of waste generated in its operations. No significant spills were reported during the reporting period.

We have also set up a municipal solid waste recycling facility in the premises to

manage entire solid waste generation from Pirojshanagar township, Vikhroli, as a step towards a 'Zero waste to landfill' goal under 'Greener India'.

52% 

reduction in generation of hazardous waste

99.6%

non-hazardous waste diverted from landfill

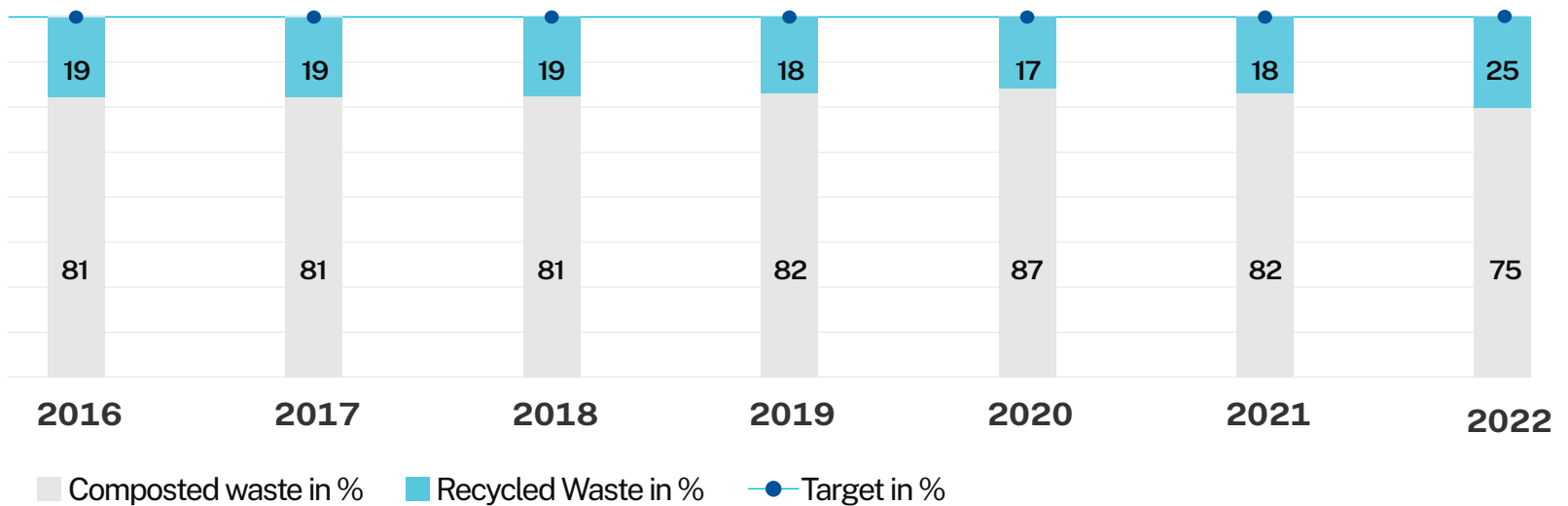
**By 2031-32, G&B plans to**

Reduce Hazardous and Non- Hazardous waste by 25%, and completely phase out the use of EPS and replace with 100% recyclable plastic packaging.



MT of recyclable waste was sent for recycling as per type. By doing this, we have avoided 23,447 MT of garbage dumping in city landfills as shown in the graphic below:

#### Y-o-Y WASTE RECYCLED & COMPOSTED (%)



#### SOME WASTE MANAGEMENT PROJECTS INITIATED DURING THE REPORTING PERIOD

- 1 Installation of filter press at Vikhroli East RMC for sludge management
- 2 Utilisation of RMC sludge for manufacturing of recycled concrete blocks
- 3 Effluent Treatment Plant (ETP) sludge reduction by using nano-chemicals
- 4 Oil Filtration and Reuse
- 5 Forklift battery regeneration
- 6 Re-filtration and reuse of waste hydraulic oil
- 7 Reduction of the used oil cotton gloves
- 8 Composting of Sewage Treatment Plant (STP) sludge
- 9 Scrap reduction by Implementation of trolley for material movement and delivery
- 10 Reduction in paint sludge waste and thinner
- 11 Recycling of wood
- 12 Construction of new scrap yard to improve the waste segregation
- 13 Reduction of the paper waste generation
- 14 Reduction of plastic waste consumption



Waste collectors from Housekeeping team

## PROMOTING CIRCULARITY THROUGH COMPREHENSIVE WASTE MANAGEMENT

Our Pirojshanagar campus runs a municipal solid waste recycling facility which processes all the solid waste generated by the township – covering all our manufacturing activities at the Vikhroli campus, leased premises, schools, shops, community centres, the Godrej Memorial Hospital and residential colonies. Following the 4R-approach, around 10 MT of source segregated municipal garbage is collected everyday through 70 common collection points. Almost 80% of this waste is biodegradable and is composted in the landscaped greens that are located within the township. The remaining 20% waste is meticulously segregated into different categories like paper, cardboard, tissues, plastics (by type), EPS, glass, cloth and other non-recyclables. The recyclables are channelised to specific recyclers and the non-recyclable waste is co-processed as refuse

derived fuel in cement kilns.

The programme employs around 35 persons from the ragpicker community for the collection, segregation and processing work. Other than providing regular sources of income to these people, all employee benefits like coverage under ESIC-PF, regular health check-ups, bank account linkage etc have also been provided.

**Absolute zero waste to landfill since inception in 2014, with close to**  
**23,447 MT**  
**of waste productively utilised.**

### **Social outcome**

**Livelihood generation for members of the ragpicker community, improvement in work and living standards, and financial inclusion.**

## Plastic waste management and extended producer responsibility

We manage our extended responsibility for collection and channelisation of e-waste generated through appointed authorised Producer Responsibility Organisations (PROs) for scientific recycling of the e-waste generated at the end of life of the product. We are registered as a ‘brand owner’ with

the Central Pollution Control Board (CPCB) under the Plastic Waste Management Rules 2016, and amendments thereafter.

As a brand owner, we ensure that we offset the amount of plastic packaging material that has been released into the market by virtue of the sale of our products through





Plastic waste collection at a facility in Vikhroli

appointed Waste Management Agencies (WMAs) across India. Parallely, we have prioritised on reducing the consumption of plastic in packaging material, substituting

non-recyclable plastic material with recyclable type, channelising the waste materials and offsetting the waste at the end of useful life.

Since FY11, waste recycled (diverted from going to landfill) was equivalent to **25,221 standard 40 feet container loads** (Total from FY19 to FY23)

**TOTAL WASTE GENERATED AND DISPOSED**

Type (in MT)	Method of disposal	FY20	FY21	FY22	FY23
Hazardous*	Sent to authorised vendors	1,231	1,033	1,038	1,505
Non-hazardous	Recycling or upcycling (wherever possible)	60,636	50,178	42,436	41,257

	FY20	FY21	FY22	FY23
Plastic waste recycled (MT)	2,261	3,264	3,413	2,226
E-Waste recycled (MT)	14,595	15,729	20,000	30,662

\* Excludes disposal of empty barrels/containers/liners contaminated with hazardous chemicals/waste and used batteries sent to authorised recyclers, as per below break-up, which are sent to authorised vendors for recycling tyres



Golden Jackal spotted at Godrej's mangroves

## Conserving Biodiversity

At G&B, biodiversity management is guided by our core vision, mission and values, environment policy, organisation's beyond compliance initiatives and national and international targets such as UN SDGs. It is a coordinated effort between the wetland, horticulture, environmental engineering departments with involvement of construction, E&E divisions.

We take conscious efforts to involve other BUs, Udayachal schools and Township residents in biodiversity awareness.

Since inception, we have committed ourselves to the scientific management of Pirojshanagar mangroves, the third-largest forest of Mumbai, that serve as lungs (by air quality improvement, carbon sequestration) and kidneys (by filtering and breaking down the pollutants) of the Mumbai metropolitan region. In 2022-23, our mangrove management received global recognition as a 'Global Solution' on the PANORAMA website by the United Nations Environment Programme (UNEP), International Union for Conservation of Nature (IUCN), GIZ, The World Bank Group, Global Environment

Facility (GEF) and other international organisations.

Our three-pronged strategy of research, conservation, awareness is implemented with internal expertise and resources and by engaging non-governmental organisations (NGOs) and community-based organisations (CBOs), academia, government agencies and business sector. In last six years alone, we have sensitised 90,000+ citizens.

With World Wildlife Fund (WWF-India) India, we launched Magical Mangroves campaign in 2020-21 to sensitise residents of the coastal states, that achieved highest outreach of 10500+ citizens across eight Indian in 2022-23, taking the total three-year outreach to 27,500+ citizens.

Additionally, the campaign registered 14.74 Lakhs impressions, 13.12 Lakhs reach and 3,126 engagements on our social media platforms this year. In the last one year, we disseminated hundreds of copies of English and Marathi versions of 'Many Secrets of Mangroves' - India's first storybook on mangroves. This was done through national conferences and local trainings for

fisherfolk, nature guides, forest guards, etc. Our Mangroves mobile app outreach increased to 130 countries in 2023 from 112 countries in 2022. We were invited for an online talk on the Mangroves app by Foundation for Environment Education Denmark for educators from 31 countries across Africa, South, North and Latin America, and Asia.

This session enhanced our international outreach by many folds. This year we also achieved significant milestone of upgrading our app to include/support French and Spanish language/version, making it the only Mangroves app of the world in 13 languages. We also shared the Godrej Mangroves Management initiative at the World Oceans Summit at Singapore. In 2021, we extended the mangrove conservation efforts beyond our campus with an intent to support NGOs, academia, Government agencies, corporates etc. with the announcement of India Mangrove Coalition in collaboration with the

Confederation of Indian Industries and WWF-India. In 2022-23, we upgraded it to 'India Wetland Coalition' (IWC) in consultations with the Ministry of Environment, Forest and Climate Change (MoEF&CC), Confederation of Indian Industry (CII), WWF-India, GIs and Wetlands International. The initiative is contributing to policy dialogues, promotion of nature-based solutions, mangrove restoration and offers a repository of mangrove-related publications through a dedicated website, etc. We facilitated IWC's first state-level workshop, attended by 40 participants from corporates, NGOs, academia and consultancies. The event was addressed by Mr. Sujit Bajpayee, Joint Secretary, MoEF&CC and Mr. Adarsh Reddy, DFO, Mangrove Cell, Maharashtra. The set of recommendations and report of this workshop have been submitted to the MoEF&CC. To understand IWC updates and its resources for wetland conservation, do visit [sustainabledevelopment.in/iwc/](https://sustainabledevelopment.in/iwc/).

## MANGROVE OUTREACH PROGRAM

Financial Year	Outreach
2019-20	7,883
2020-21	18,473
2021-22	18,511
<b>2022-23</b>	<b>23,231</b>

**The Pirojshanagar mangroves is home to**

1,500+ species, with wide species diversity – from plants, birds and animals to amphibians, reptiles and aquatic fauna. The mangroves act as a natural change stabiliser for the Mumbai region, with the biomass holding lakhs of tCO<sub>2</sub>e. Additionally, close to 60,000 tCO<sub>2</sub>e is being sequestered every year in the lush green tree cover .



Preserving Pirojshanagar mangroves for over 7 decades

**INCREASE IN BIODIVERSITY IN PIROJSHAHNAGAR  
(NEW SPECIES INTRODUCED)**

	FY20	FY21	FY22	FY23
Trees	175	177	177	184
Shrubs	289	298	298	311
Palms	28	28	28	28
Ferns	51	51	51	51
Climbers	114	116	116	116
Cactii	166	166	166	166
Succulents	203	203	203	203
Medicinal & Aromatic Plants	87	89	89	89
Grass	-	-	-	2

The Pirojshanagar mangroves are India's first  
**ISO 14001**  
certified mangroves

The Pirojshanagar mangroves  
have sequestered over

11.90 Lakhs tCO<sub>2</sub>e

## PROTECTING ENDANGERED HABITATS, SIGNPOSTING NATURE-INDUSTRY COEXISTENCE

By 1948, just the year after India's independence, we had acquired several hundred acres of land for setting up Industrial Garden Township. The land included a large area of luxuriant mangroves along its eastern boundary, skirting the Thane Creek. Over the years, we have acknowledged the critical role of these mangroves in protecting biodiversity and the overall ecosystem of these wetlands. Issues such as carbon sequestration, land erosion were unknown then. The area was earmarked for conservation, with its habitat fully protected. From 1985, we started scientifically managing these mangroves with a three-pronged strategy of research, conservation and awareness.

This was a foundational step. An integral part of Mumbai, the area is home to 1,500+ species of plants, birds, animals amphibians, reptiles and aquatic fauna. The mangroves act as a natural change stabiliser for the Mumbai metropolitan region, with the biomass holding lakhs of tCO<sub>2</sub>e. Additionally, close to 60,000 tCO<sub>2</sub>e is being sequestered every year in the lush green tree cover of Pirojshanagar mangrove ecosystem. The inherent nature of the mangroves roots create favourable conditions for aquatic life, supporting the breeding of prawns, crabs and fishes, etc, and safeguarding the livelihoods of local fisherfolk. In a bid to create greater awareness about the role that mangroves play against climate change, we have undertaken several initiatives. The Magical Mangroves campaign is part of this initiative and takes the message of mangrove conservation to the masses. The Mangrove Ambassadors created through this programme, started in association with WWF-India in 2020, engages with youth to build awareness and involves them in conservation.

Seven Indian coastal states of Maharashtra, Goa, Gujarat, Andhra Pradesh, Tamil Nadu,

Kerala, Odisha, West Bengal and Karnataka, which make up India's 6,100 kms-long mainland coastline, are being targeted for generating awareness. Volunteers identified by WWF-India are mentored by us to spread the message of conservation of coastal ecosystems in their respective states.

A curated toolkit of presentations, videos, story books and Mangroves app are used as communication tools. So far, over 27,500+ citizens have been sensitised through 300+ webinars.

In the recent years, we have developed the English and Marathi versions of 'Many Secrets of Mangrove's, India's first storybook on mangroves. This 40-page book is conceptualised for 8-12-year-olds, to introduce them to the fascinating world of mangroves. We also run a dedicated website on mangroves ([mangroves.godrej.com](http://mangroves.godrej.com)) with 3,25,000 users from 215 countries. This serves as a repository of mangrove-related information. A mangroves mobile app has been launched that works as a pictorial field guide for easy identification of various mangrove species. Covering 67 mangrove species in English, French, Spanish and 10 Indian languages, the app has proved to be a real boon for people at the grassroots level – the fisherfolk, villagers, forest guards, field staff working with NGOs – who can now use the app to improve their understanding and change their behaviours favouring conservation.

**By 2023, the mangroves app has reached**

**130 countries**

**and is the most downloaded Mangrove app in the world today**



Horticulture garden with over 800 species at the Godrej hillside colony

## Making a green difference

Our Horticulture Management team continues to enhance green cover, conduct wildlife rescues and rehabilitation as well as soil and water conservation.

In addition, it also works at adding to the green cover at our facilities by adopting high density plantation techniques. A 6-hectare plantation at Khalapur with 6,000+ trees has shown healthy growth over the past two years, with the local community's participation in its maintenance.

Our Godrej Appliances plant at Shirwal, Maharashtra, is yet another example of how industry can flourish in close proximity to nature. The campus is dotted with more than 15,000 trees of different varieties, including sandalwood. The foliage is watered through drip irrigation and a hydroponic system has also been installed, showcasing how prudent water conservation practices can coexist with nature's profuseness. The campus also has an open air butterfly park. Our HMS had adopted principle of integrating greenery in landscape designing with focus on Indian and naturalised plant species.

The department ensures safety of campus users with scientific pre-monsoon trimming

of trees. The trees are being mapped through remote-sensing techniques and Global Positioning System (GPS) to understand vegetation features of the campus. The same data is also used for estimation of carbon sequestration by greenery of Pirojshanagar campus and for enhancing Biodiversity Index of the campus by introducing new and locally appropriate species to the existing 1100+ plant species. Practices like mulching with available leaf litter ensures soil moisture conservation, tree survival and financial savings. HMS Department represents us in various city, state and national level competitions, and has won a number of awards and recognitions consistently.

**new and locally appropriate species are being added to the existing**

1,100+

**plant species at our Pirojshanagar campus**



A sprawling garden at the Godrej IT park terrace

## CHAMPIONING THE GREEN BUILDING MOVEMENT IN INDIA

We joined hands with CII and USAID to pioneer the concept of Green Buildings in India. Our Group entities Godrej Construction, Godrej Electricals & Electronics (Green Building Services) have been acting as influencers, models and facilitators for creating awareness around Green Building principles, construction methods and benefits, and easing the path to acceptance.

India's first Platinum-rated Green Building – the CII Sohrabji Godrej Green Business Centre in Hyderabad, has been built by us. It is USGBC LEED\* certified, a globally recognised seal of sustainability. The company has also partnered with the World Green Building Congress (WGBC) to promote the cause of 'Net Zero' in the Asia Pacific Region. We have successfully developed India's first 'Net Zero' building at our Pirojshanagar, Vikhroli facility.

In the last 2 decades, our Green Building Consultancy Services (GBCS) has facilitated Green Building Certification for many projects. over nearly two decades. This has resulted in GBCS facilitating over 600+ Green Buildings adding upto 300+ Mn sq. ft. of space, with energy savings of 6,10,000 MWh/annum, water savings of 1,46,000 KL/annum and carbon emissions savings of 5,18,500 tCO<sub>2</sub>e/annum.

**GBCS has facilitated over  
600+  
green buildings adding upto  
300+ Mn sq. ft. of space**

**GBCS has facilitated over  
6,10,000 MW  
of energy savings per annum**

## CASE STUDY

Net-zero buildings make an immediate impact on improving the environment as they are emissions-free. In FY21, our 'Plant – 13 Annexe Building' became the first building in India to achieve a 'Net Zero Energy Rating' awarded by the Indian Green Building Council (IGBC). The building is self-sustaining, with its energy needs being met by onsite and offsite renewable energy sources. The facility uses 30% less energy than the Energy Conservation Building Code Baseline (ECBC).

\* Leadership in Energy and Environmental Design