

We continue to make environmental sustainability a key part of our manufacturing process. We are constantly working to optimise inputs, reduce emissions, and ensure safety of our products.

Environmental Performance

We are constantly trying to change our business-asusual outlook and have embedded sustainability in our long-term business strategy. We believe in creating a win-win situation where everyone, including our communities, benefit. We have a legacy of environmental responsibility that began from the conservation of mangroves in Mumbai and is now ingrained in all our processes and operations and the initiatives we undertake for community development. Looking back at the efforts we have undertaken to create a meaningful positive environmental impact motivates us to explore even more possibilities to continually improve. The Godrej Group has defined our green goals in our Good & Green sustainability vision. All manufacturing plants at Godrej strive to achieve these goals by the fiscal year 2020. At GCPL, the environmental performance of our plants is as important as our business processes and operations. The performance is guided by the sustainability team at the corporate level and driven by plant heads and personnel at each of our manufacturing locations. Godrej Good & Green is a team that oversees environmental sustainability and corporate social responsibility at GCPL. It has established five

environmental sustainability goals called 'Greener India Targets' to be achieved by fiscal year 2020.

The standards, methodologies, and assumptions used for the purpose of our calculations were obtained from IPCC Guidelines for National Greenhouse Gas Inventories, 2006, and the IPCC AR4 Fourth Assessment Report. Our emissions and data calculations are performed for all the locations in which we have 100 per cent operational control.



Become carbon neutral



Become water positive



Achieve zero waste to landfill



Reduce energy intensity by 30%



Increase renewable energy to at least 30%

We have carved out short-term goals that will help us reach our greener India goals in steps. Extensive discussions are held with all the relevant departments on priorities for the year, and budget requirements and anticipated benefits are discussed. The annual operating plan is cascaded from top to bottom, and the key performance parameters of individuals are aligned with the annual plan. Sustainability goals are a part of the manufacturing head's annual KPIs. The Greener India Governing Council led by the Managing Director of Godrej Industries and the GCPL Board of Directors reviews the environmental progress on a quarterly basis.

Our sustainability monitoring tool records the performance of individual manufacturing units and analyses the data on a periodic basis. Key parameters,

such as production, materials, water and energy consumed, and waste generated, both hazardous and non-hazardous are accounted for and recorded. This tool is also capable of calculating the respective carbon footprint as per the set GHG protocols. In addition to environmental parameters, we also obtain health and safety data through this application. The monthly reports generated are analysed on the various pillars of sustainability. A strategic action plan is devised for underperforming units post discussion with the factory heads for improving our sustainability performance. We regularly share the best practices across the Godrej group so as to be replicated across all our manufacturing sites.

Greener India Goal 2020	Our Efforts	Our Performance as of March 2017*	
Become carbon neutral	Embrace cleaner fuels such as biomass	35% reduction in greenhouse gas emission intensity	
Have a positive water balance	Innovative water management systems and technological improvements	15% reduction in specific water consumption	
Have zero waste to landfill	Judicious and innovative use of materials including re-use and recycling	58% reduction in specific waste to landfill	
Reduce specific energy consumption by 30%	Improvements in processes and increase in efficiency of systems	27% reduction in specific energy consumption	
Increase renewable energy sources by 30%	Improve the energy mix by gradual shifting to renewable energy	25% of total energy consumption from renewable resources	

^{*} The performance is as against the baseline in fiscal year 2010-11

Our Approach

- Enhancing energy efficiency in our operations
- Replacement of fossil fuels with renewable biomass
- Innovation of new products
- Replacing part of grid electricity with solar-based electricity by entering into a power purchase agreement
- Implementation of carbon and water offsetting projects
- Diversion of waste from landfill
- Co-processing in our major manufacturing plants

Compliance

We are compliant with all the relevant environmental laws and regulations in the regions in which we operate. We make it a point to follow all the rules of the land and be a responsible organisation across the globe. A majority of our manufacturing facilities are ISO 14001 and ISO 9001 compliant.

Energy & Emissions

Target for 2020:

30% reduction in specific energy consumption

27%

Reduction in specific energy consumption as of March 2017

We have designed and implemented initiatives and programmes to meet our goals for 2020 and are switching to clean energy sources by utilising renewables such as biomass in boilers, biomass briquettes instead of coal, recovery and utilisation of flue gas heat, procurement of renewable energy, and installation of energy-efficient equipment.

In this fiscal year, we implemented more than 30 initiatives across our manufacturing facilities in India. These initiatives pertain to the use of clean technology, energy efficiency, and renewable energy.

 Installation of a heat exchanger: We installed a heat exchanger for pre-heating the steam generator feed water with waste heat from FADP 3, resulting in annual savings of 1336 GJ

- Installation of energy-efficient vacuum systems to reduce our thermal energy consumption – 3351 GJ of energy
- Installation of a micro-turbine: A micro-turbine of 150 kW was installed. It powers a significant number of auxiliaries in the plant. This project converts pressure loss into power generation. This initiative has helped us save 2037 GJ of energy.

We have also assigned a dedicated budget to implement energy efficiency technologies and projects. These schemes collectively have the potential to substantially cut down our energy consumption and thereby reduce carbon emissions. We estimated the annual carbon savings that would result from our energy efficiency and renewable energy initiatives. The estimates are as follows:

Target for 2020:

30% Increase in renewable energy sources

25%

Of total energy consumption is from renewable sources as of March 2017

Activity type	Details	Estimated annual CO2e savings (metric tonnes CO2e)
Low carbon energy installation	Installation of a biomass boiler: A biomass boiler of 14 tph was installed and commissioned, replacing existing furnace oil-fired boilers	5917
Low carbon energy purchase	Purchased renewable energy through open access	3076
	Installation of an energy-efficient water jet vacuum at Malanpur manufacturing facility.	151
Energy efficiency: Processes	Installed a heat exchanger for pre-heating of steam generator feed water with waste heat from FADP 3 by raising temp of 30°C	60
	Optimisation of steam consumption, installation of energy-efficient LED lighting, optimisation of pumps, and installation of low HP motors	1651
	Total	10,855

G4-DMA

18%

Reduction in energy and emission intensity at Indonesia operations

23%

Reduction in specific energy consumption at Nigeria

Few of our initiatives across our locations

In Indonesia, we installed a new heater for burning gas and diesel, which resulted in 27 per cent reduction of CO2 emissions and a cost saving of 22 per cent.

Replacing the glue type binding machine with stapling machines for the binding of HIT Magic resulted in savings of approximately 17,750 kWh of electricity per year in Indonesia.

In Nigeria, our various efforts have brought about savings in materials and energy as well as waste management. These have been achieved by reducing the fibre wastage through elimination in first combing, and energy savings due to the installation of solar tubes.

Together, our initiatives helped us save close to USD 150,000 for fiscal year 2016-17.



Energy-efficient heater installed at our Susemi manufacturing unit in Indonesia

Our Performance Parameters

Total Energy Consumption (TJ) - India*



Share of Renewable Energy in Energy Mix (%) - India*



Specific Energy Consumption (MJ/tonne) - India*



Energy consumption mix in India

	Fiscal Year 16-17
Natural Gas [TJ]	493.27
HSD [TJ]	0.032
LPG [TJ]	0.504
Furnace oil [TJ]	16.37
Pet Coke [TJ]	62.80
Pitch [TJ]	4
Solar Electricity [MJ]	166
Wood (biomass) [TJ]	70.18
Briquette Energy [TJ]	125.11

Energy consumption across our global locations for fiscal year 2016-17

Country	Total Energy [TJ]	Specific Energy [TJ/t]	Production Output (t)
Indonesia	64.195	0.001106	58,030
South Africa	23.510	0.003316	7,091
Kenya	20.500	0.004711	9,038
Chile	2.962	0.00106	2,795
Bangladesh	10.938	0.008679	1,260
Ghana	4.145	0.002533	1,637
Argentina	5.579	0.000844	6,608
Nigeria	13.729	0.001519	9,036

G4-EN3, G4-EN5

^{*} Operational boundary excludes third-party operations.

Success Story

Energy-Responsive Mechanisms at Malanpur

The Malanpur plant in Madhya Pradesh is our flagship manufacturing facility, representing 60 per cent of our overall energy consumption.

The plant's huge production capacity for soap noodles and finished soap makes it an energy-intensive manufacturing unit. The re-engineering and revamping of certain processes with technological innovations have given an impetus to the Group's energy performance. In the last five years, the plant has achieved a 30 per cent reduction in specific energy consumption. We reduced the amount of energy consumed in our processes by efficiently using energy, eliminating wastage, retrofits, and replacements, and implementing the latest technologies. Our robust internal monitoring and verification system and energy cell evaluate our progress. Our sustainability performance is audited and assured by an independent third-party consultant.

Key initiatives include the installation of a microsteam turbine, a water jet vacuum system, and an oil preheater and the shifting of our oil tanks for better operational efficiency. We also signed a power purchase agreement to purchase solar-based renewable energy for the factory. We started receiving the renewable power from May 2016. Approximately 35 per cent of the plant's energy requirement is now met by renewable energy.



Our flagship manufacturing unit in Malanpur is leading our energy conservation portfolio

Our Accomplishments

- Our production was 156,684 metric tonnes in 2011-12 and 199,148 metric tonnes in 2015-16. Our specific energy consumption has reduced by 30 per cent since 2011
- Besides the business sense in reducing energy consumption, our initiatives have also helped us reduce carbon emissions.
- Along with the efficient use of energy, we are using renewable sources of energy. In addition, we are

- adopting offset measures, such as carbon sequestration through plantation projects, to reduce carbon emissions.
- Our efforts have won us peer appreciation. Over the last several years, the Malanpur plant has been awarded for its energy efficient measures; notable among them is the Efficiency in Energy Usage in Chemicals Sector award at the FICCI Chemicals and Petrochemicals Awards 2015 and the CII GreenCo Gold Rating in 2017.

Target 2020

Become carbon neutral

35%

Reduction in GHG emission intensity



Our annual GHG savings are equivalent to mitigating carbon emissions from consumption of approximately 72,000 barrels of oil*

We have incorporated our carbon goals for 2020 in our business strategy and operations, and we aspire to become carbon neutral by 2020.

We have reduced GHG emissions through various initiatives such, as the use of renewable biomass, power purchase agreements, and energy efficiency.

Among others are initiatives like improvements in the boilers, installation of variable frequency drives (VFDs), and proper maintenance to reduce steam losses. Several units have also installed solar LED panels for street lighting. In addition, we are taking up several initiatives at the supply chain level, including the outbound transport of our finished products from factories to different warehouses, to reduce our Scope 3 GHG emissions.

The Scope 1 (direct) and Scope 2 (indirect) emissions have been estimated as per ISO 14064, and we strive for carbon neutrality by 2020 (baseline taken as fiscal year 2010-11). The emissions result from our energy consumption, and we are therefore looking to improve our share of renewable energy usage to limit the same. We aim to offset total Scope 1 and Scope 2 emissions in order to become carbon neutral by 2020. Our emission intensity has gone down from 0.311 tCO2e per tonne of production (base year) to 0.201 tCO2e per tonne of production, which corresponds to a 35 per cent reduction in emission intensity. Our achievement is in line with our long-term goal and annual target. We also have a robust monitoring mechanism for energy consumption at our manufacturing facilities.

Indian operations	FY15-16	FY16-17
Total emissions (Scope 1+ Scope 2)	78,656 tCO2e	59,979 tCO2e
Specific GHG	0.231 tCO2/ tonne of production	0.201 tCO2e/ tonne of production

Our biogenic emission for Indian operations was 14,012 tonnes during the reporting year. The gases considered for emissions include only CO2 and hydrofluorocarbons.

The total emissions during the reporting year decreased by 24 per cent. This is mainly due to the implementation of emission reduction projects and decrease in production.

Local sourcing too has curtailed our carbon footprint by reducing the travel distance by more than 19,466 km, thus saving significant indirect emissions.

G4-EN15, EN16

^{*} Equivalencies have been calculated based on the specific savings of Co2 in comparison to the baseline. http://www.cea.nic.in/tpeandce.html CDM CO2 Baseline Database

Our Performance Parameters

Total emissions and specific emissions - India

	Total Emissions (tCO2e)			Emissions (tonne ne of production)
	Scope 1	Scope 2	Scope 1	Scope 2
FY11	42299	25550	0.194	0.117
FY12	41525	28717	0.162	0.112
FY13	46242	31364	0.161	0.109
FY14	40233	29102	0.149	0.108
FY15	42047	33045	0.138	0.108
FY16	38783	34701	0.118	0.106
FY17	32400	27578	0.108	0.092

Total emissions and specific emissions - International

	Total Emissions (tCO2e)		Specific Emissions (tonne CO2/tonne of production)
	Scope 1	Scope 2	Scope 1 + Scope 2
Indonesia	1254	9981	0.19
South Africa	0	6112	0.86
Kenya	138	2470	0.27
Chile	62	361	0.15
Bangladesh	529	289	0.65
Ghana	79	462	0.33
Argentina	0	742	0.11
Nigeria	823	414	0.14

G4-EN15, G4-EN16

14%

Reduction in GHG emission intensity at Ghana



Since 2015, we started implementing green initiatives at our Ghana manufacturing facility in Accra, and we have achieved significant reductions in our energy use and emission intensity.

29%

Reduction in GHG emission intensity at Nigeria

In the light of the climate change agenda, the crucial effects of rising GHG emissions and volatility on conventional energy prices, and energy efficient mechanisms present a challenging opportunity. Aligning ourselves with energy efficient strategies, we at GCPL have endorsed the 'Alliance to Save Energy' under the Global Alliance for Energy Productivity.

Energy conservation and efficiency are an integral part of our Good & Green goals, whereby we target a reduction in our specific energy consumption and aim to boost the platform for renewable energy. We have taken up the Greener India goal to reduce specific energy consumption by 30 per cent and increase dependence on renewable energy sources by 30 per cent by 2020.

Water Stewardship

Target 2020

Have a positive water balance

15%

Reduction in specific water consumption in India



Our annual water saving is equivalent to providing water to approximately 2500 people for a year*

Water is an essential shared resource that calls for collective action from corporates and communities alike. With regard to depleting fresh water resources, we have developed a strategy to achieve a positive water balance by 2020.

This goal is achieved through our comprehensive checklists that emphasise on improving productivity and plant utilisation to reduce the specific consumption of water. We are in the process of deploying a rainwater harvesting system in all manufacturing plants. We have setup rain water harvesting systems at our Malanpur, Thana, Katha, and MM Nagar manufacturing plants in India. This will further bring down our dependence on ground and purchased water and help us offset our freshwater demand. Our factories have installed water treatment facilities that treat and process wastewater and water from sewage treatment plants. The treated water is used for landscape development. The specific water consumption has gone up during fiscal year 2014-15 due to expansion activities and the introduction of new products, such as Expert Crème, which has a higher water intensity.

Community Projects

At GCPL, we understand that climate change has the potential to damage the water cycle. In response, for a positive climate action, we conceptualised an integrated watershed management programme for the waterstressed Siddipet district in Telengana state of India, which covers over 3,300 hectares of land, to help restore the ecological balance of the region.

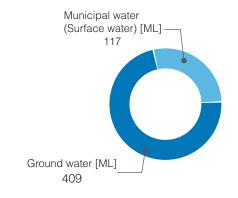
Total Water Withdrawal (kL) - India



Specific Water Withdrwal (L/tonne) - India



Sources of water consumption - India



G4-DMA, G4-EN8

^{*} Equivalencies have been calculated based on the specific savings of water in comparison to the baseline. https://www.kpmg.de/docs/Water_sector_in_India.pdf

64%

Reduction in specific water consumption at Ghana

30%

Reduction in specific water consumption at Johannesburg

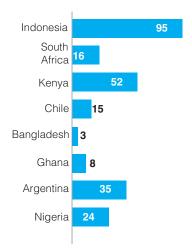
29%

Reduction in specific water consumption at Indonesia



We installed a rainwater harvesting unit at our Indonesia manufacturing facility.

Water consumption across our global locations in ML



We have set up a rainwater harvesting facility in Indonesia along with pipelines and a sump with a submersible pump. This has resulted in the reduction of ground water use since approximately 106 KL of collected rainwater is used per month.

Through these initiatives, we achieved a 29 per cent reduction in specific water consumption in Indonesia.

Waste

Target 2020

Have zero waste to landfill

58%

Reduction in specific waste to landfill



In our manufacturing facilities in Kenya, we implemented a new design of bobbin stand that has resulted in a significant reduction in the waste generated.

As a responsible corporate citizen, we aspire to nullify our waste to landfill, closing the end-of-life loop and finding value in the waste material generated. We strive to achieve our Greener India Goal of zero waste to landfill by 2020.

Waste generated at the manufacturing facilities comprises plastic scrap, iron scrap, MS drums, glass, debris, noodle bags, soap scrap, corrugated boxes, fibre waste, etc. There is tremendous potential in recycled materials, and we are determined to incorporate the 3R (Reduce, Reuse, and Recycle) strategy wherever an opportunity presents itself. We reuse empty soap noodle bags that are received from our manufacturing sites in Jammu. We are also in the process of identifying methods to increase the percentage of recyclable content in packaging material. We are collaborating with Bhabha Atomic Research Centre to develop sustainable materials for packaging. As of 2016-17, 0.15 kg of packaging material is used

per kg of product. Under our zero waste to landfill goal, we have started diverting our waste from landfill to coprocessing units; this has resulted in a significant drop in our waste sent to landfill. In this fiscal, a certified party landfilled 84 tonnes of debris. We monitor the amount of waste that is sent to landfill every month and record it on the sustainability tool. Hazardous waste generated includes ETP sludge, spent catalyst, spent oil, batteries and e-waste, empty chemical containers, etc. All manufacturing sites are compliant with the Hazardous and Other Waste (Management and Transboundary Movement) Amendment Rules, 2016, and Plastic Waste Management Rules, 2016, and the rules laid down by the Pollution Control Boards. We ensure that all waste generated is disposed through right channels and through vendors approved by local governments or those who are experts in their disposal.

In Kenya, we implemented a new design of bobbin stand, which resulted in low wastage due to a single cut.

G4-EN28, G4-DMA

In our factory in Ghana, the manual feeding of PVC roll in the punching machine resulted in the formation of a gap between two bags, which resulted in higher wastage. To overcome this situation, we completely redesigned the process to make it automated. Pneumatic controls were installed to ensure that the gap between the bags was constant, thus reducing the wastage. As a result, we have brought down the PVC wastage from 15 to 9 per cent, and this initiative is scheduled to be implemented in other locations as well.

Waste sent to landfill (tonne) - India



Specific Waste sent to landfill (Kg/tonne) - India



The main contributors to hazardous waste were skimmed oil from ETP and ETP sludge.

The total non-hazardous waste generated in India was 2,524 tonnes. The main contributors were corrugated folding boxes, PVC drums, empty noodle bags, paper waste, and laminate scrap, among others.

Some of the major sources of waste in our locations in India in fiscal year 2016-17 were as follows:

Waste	Quantity
Paper Waste [tonnes]	132
PVC drums/plastics [unit]	181,622
Corrugated folding box [tonnes]	1,003
Empty noodle bags [tonnes]	288
Laminate- Scrap [tonnes]	217
Biomass Ash [tonnes]	785.18

Community Projects

In line with the Swachh Bharat Mission, we have initiated several community waste management projects across India by involving colleges and local municipalities. In addition to taking measures to reduce, reuse, and recycle waste at our manufacturing plants, these community waste management projects aim to divert waste from landfills. Currently, we have a project in Hyderabad in partnership with the local municipalities and one in Mumbai in partnership with 25 colleges where we aim to make college students more aware of the criticality of solid waste management and champions of change. Alltogether, through these projects, we aim to process approximately 10,000 tonnes of waste per annum in an environment friendly manner, which otherwise would end up in landfills.

Classification of waste

Values in tonnes	Hazardous waste	Nonhazardous waste	Landfilled	Recycled	Incinerated
India	336.19	3309.45	143.02	3,201.68	300.94
International	327.81	2,629.54	731.52	1,953.67	272.18

G4-EN23

Product Innovation and Responsibility

At GCPL, we value our customers, and product safety and quality are of vital importance to the legacy that we carry under the Godrej umbrella. Product development and innovation with special focus on green chemistry has enabled us to gain a competitive advantage.

We ensure that all ingredients used in hair and personal care categories are formulated using ingredients in accordance with FDA and BIS regulations, namely IS 4707 Part 1 & 2. These are tested in accordance to requirements as laid out in IS 4011 for product safety. We commercialise these products once they receive a regulatory approval from FDA. We understand the concern with respect to our products in the insecticide range. Household insecticides belong to a highly regulated product category that need adequate regulatory approvals before launch. Toxicity data, including monitoring of human health, are submitted and securitised by regulators before these products get approvals. There were no regulatory compliance issues as far as product safety is concerned. However, there were 131 customer complaints, which have been addressed and resolved appropriately.

We have been working on our naturals platform and have launched Goodknight Neem Activ+ Liquid Vaporiser, Goodknight Neem Fast Card, and Goodknight Neem Activ+ Coil LUP pack.

Our environmentally benign product range includes Ezee, which is free of all formulations of nitrogen and phosphorous, hence making it a eutrophic-free formulation. Among others is our Darling Hair Booth, a one of a kind mobile app and the first in Nigeria and Africa at large. It is a real-time hairdo app for trying out different hairstyles and hair colours virtually. It reiterates our emphasis on uniqueness and innovation.



Our phosphate-free formulation for our pH neutral liquid detergent, Ezee, does not cause any adverse reaction in the ecosystem

G4-PR1, G4-PR2, G4-DMA

Materials

300

Tonnes of annual material saving



We recycled runner components that are generated while moulding the covers of our Goodknight Activ+ LMD machines. This has resulted in reducing the PCTA usage by more than 11.5 tonnes.

Material sustainability is the essence of product stewardship, and it is pertinent to our performance and customer satisfaction. Under the umbrella of our environment conscious efforts, we strongly promote and develop materials that are not energy and water intensive and opt for materials that emit lesser GHGs. We are progressing towards looking at our value chain in a cyclical manner by focusing on lifecycle costs and preferring 100 per cent recyclable and renewable alternatives. The strategy also incorporates the 3R approach (Reduce, Reuse, and Recycle) and collection system through reverse logistics, which has resulted in 300 tonnes of annual material saving. We also reduced our consumption by re-engineering products from CFBs to laminates to rigid plastic. Our material consumption data excludes third-party units where we do not have operational control.

Consumption of materials across the globe

Materials Used	Weight in tonnes (International operations)	Weight in tonnes (Indian Operations)
Total materials	161,726	272,176
Non renewable materials	84,338	114,444
Plastics group	28,066	8,000
Renewable materials	77,338	157,732
Paper group	15,647	24,342

G4-DMA, G4-EN1

Sustainable Packaging Development

17%

Reduction in packaging material of Expert Hair Powder

At GCPL, we continuously focus on optimising the packaging materials by utilising cutting-edge technologies. This helps us in reducing the size of materials and also in optimising sizes. To illustrate this more clearly, the wrapper consumption in soaps have been continuously reduced to the tune of approximately 20 per cent over the last 10 years. We achieved this by upgrading technologies and adapting to those technologies in the most optimised manner.

Over a period of time, we moved from a 10-micron PET/45 gsm paper/20gsm hotmelt adhesive wrapper to the current 8-micron PET/40gsm paper/10gsm hotmelt adhesive wrapper in 'No 1' soaps. This was made possible by innovations that have taken place in paper manufacturing, PET film manufacturing, and the coating industry and the commercial availability of low-gauge materials. The hotmelt coating has gone through several technical improvements, moving from a coat weight of 20 gsm to 15 gsm, to 12 gsm, and is currently at 10gsm. Our dedication to further reduce the coat weight is never ending, and work is still on to achieve the same.

While there are significant improvements in available materials, the manufacturing team has also updated their skill set and adapted to the modern materials to ensure a smooth transition and successfully implement them on wrapping machines.

To illustrate another example, we have also optimised the laminate structure of 'Expert Hair Powder' 3g sachet, resulting in a material reduction of 17 per cent over the previous packaging. This is an on-going process in all categories, and the effort is to optimise material usage without compromising on functional performance.

Currently, we are working on a weight optimisation project for a bottle, which if materialises, has the potential to reduce plastic consumption by 400 tonnes per annum.



We optimised packaging in our Godrej No1 range of products