Driving Environmental Stewardship

Material Topics Covered

- Energy Efficiency and Carbon Emissions
- Air Pollution
- Waste Management
- Water and Effluent Management
- Green Chemistry
- Biodiversity Protection

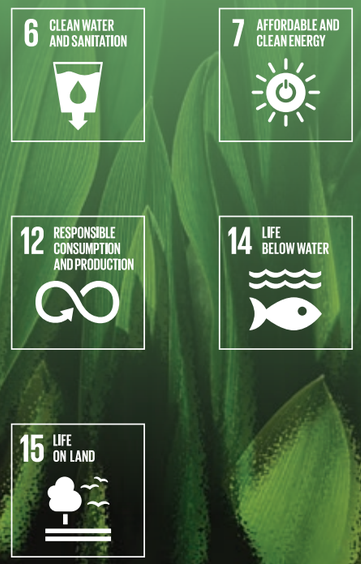
Highlights for 2024-25

1,038,458.5 GJ
Total renewable energy consumption

INR 133.98 Million
Yearly savings due to investments in energy efficiency

8%
Waste reused

Contribution to UN SDGs



At Hikal, we strive to minimise our carbon footprint by embedding sustainability into every aspect of our operations. From advancing green chemistry solutions to reducing resource intensity, conserving energy and water, controlling emissions, and minimising waste, we are committed to driving measurable environmental progress while supporting a healthier planet for future generations.

Energy Efficiency and Carbon Emissions

We have established a comprehensive energy management strategy that focuses on optimising consumption, minimising waste, and increasing renewable energy integration. Through initiatives like solar and wind projects, alongside upgrading boiler burners and enhancing chillers, we are actively lowering our carbon footprint while continuously improving operational efficiency.

Energy Efficiency

Our Corporate-level Energy Conservation Committee (EnCon) spearheaded multiple initiatives to improve energy efficiency across our operations. We streamlined production processes and implemented key upgrades to equipment and machinery to reduce energy wastage and boost operational efficiency. Advanced energy management systems were deployed across sites to monitor and optimise consumption in real time. These concerted efforts resulted in tangible energy savings. Our total energy consumption from both renewable and non-renewable sources was 1,347,981.2 GJ, reflecting a 5.11% decrease from the 2023–24 financial year. Of this, energy derived solely from renewable sources amounted to 1,038,458.5 GJ, marking a 18% increase in absolute renewable energy consumption. The share of renewable energy in overall consumption increased from 62% to 77% compared to the previous fiscal year.

INR 7.84 Million
Yearly investments in energy efficiency and process optimisation measures

37,44,39,222.2 kWh
Total electricity consumption

30,377.49 MT CO_2e
Net emissions reduction

Energy Efficiency Measures

Crop Protection Division

- Replacement of FO boiler burners to improve efficiency
- Installation of a back-pressure turbine for electricity generation from the biofuel boiler
- Use of centrifugal compressor instead of screw compressor for the chilling plant
- Reduction in steam consumption by replacing the steam ejector with a dry vacuum pump
- Replacement of conventional air compressor drains by zero air loss drains
- Reduction in steam consumption by lowering the reaction temperature from 50°C to 35-40°C

Pharmaceutical Division

- Manual control replaced with cascade control system for energy efficiency improvement in BRU units
- Installing Variable Frequency Drives (VFDs) in cooling tower pumps
- Reduction in cooling tower make-up water and effluent treatment costs up to 20 % through utilisation of RO reject water and reactor jacket recovery
- Energy saving initiatives in cooling tower and compressed air systems
- Reduction in steam consumption by utilisation of waste heat and efficiency improvement
- Steam cost reduction by outsourcing steam supply on green fuel

Pune Research and Technology (R&T)

- Installation of the hot water system to replace the indirect hot water system with steam heating
- Installation of VFDs in fume hood exhaust blowers, and controlling fume hood shutter opening to reduce draft draft airflow and energy consumption

Carbon Emissions

At Hikal, we closely monitor emissions across all manufacturing locations, with a strong emphasis on adopting cleaner technologies. Measures such as biofuel boilers, solvent recovery systems, and real-time emission tracking contributed to a reduction of 30,377.49 $MTCO_2e$ in 2024-25. Our Scope 1 emissions totalled 12,664.34 ($MTCO_2e$), while Scope 2 emissions amounted to 45,655.89 $MTCO_2e$. Scope 3 emissions amounted 1,91,158.53 $MTCO_2e$.

Decarbonisation Roadmap

We have formulated a comprehensive decarbonisation strategy in line with our target to reduce Scope 1 and 2 emissions by 30% by 2027-28 and setting baseline emissions for Scopes 1 and 2. This strategy focuses on improving energy efficiency, expanding renewable energy use, and leveraging waste heat recovery. Targeted interventions across our Crop Protection and Pharmaceutical divisions have been initiated to accelerate progress towards this climate commitment.

Phase

Initiation Programme (Completed) — 1

- Baselining for GHG emission (Scope 1 and 2)
- Material Topics Identification
- GHG emssions Reduction Targets (SBTis)
- Deployment of ESG Platform
- Evaluation of ESG Readiness and Performance vs. Peers

Programme Governance (Ongoing) — 2

- Baselining for GHG emission (Scope 3)
- Signatory to SBTi
- Setting Scope 1 and Scope 2 Emissions Target based on Phase 1 Findings
- Design of Decarbonisation Pathway
- Energy Efficiency Audit
- Renewable Energy Integration
- Accounting of Scope 3 Emissions

Actions and Impact (To commence) — 3

- Submission SBTi Targets
- Deployment of Energy-saving Project
- Public Goals (Carbon Neutrality, SBTi, RE100, other)
- Verified Emissions Reductions
- Renewable Energy and Cleantech (PPA / VPPA)

Renewable Energy

We have strengthened our renewable energy commitment by partnering with solar developers through Power Purchase Agreements and implementing a hybrid wind-solar project. Currently, the Mahad, Taloja and Panoli plants are using renewable energy for their operations. Concurrently, we are converting our Low Sulphur Heavy Stock boiler to use biomass briquettes derived from agricultural residues and wood waste. This transition marks a pivotal shift to renewable biomass, strengthening our commitment to sustainable, eco-friendly fuel sources in operations.

2.9 MW
Renewable energy capacity of Panoli unit

3 MW
Renewable energy capacity of Mahad unit

8 MW
Renewable energy capacity of Taloja unit

INR 91.5 Million
Total cost saving*

* On account of renewable energy use in Mahad, Taloja and Panoli plants

Air Pollution

We adopt a technology-driven approach to air emission control through real-time monitoring, ensuring compliance with stringent environmental standards. Ozone-depleting substances are now included in our GHG calculations, improving accuracy and reinforcing our commitment to clean air.

Our Approach to Reduce Air Pollution Includes:

Dual Approach to Air Quality Monitoring

We follow a comprehensive internal and external monitoring strategy to manage air quality. Internally, advanced online instruments continuously track emissions and key air quality parameters. Externally, MoEF-approved laboratories conduct assessments to verify compliance with regulatory requirements.

Emission Control Systems in Operations

We have implemented robust emission control systems for boilers, diesel generators, and scrubbers, including bag houses for boiler stacks to reduce particulate matter. These measures ensure compliance with environmental regulations and uphold high standards of operational performance.

Site-specific MonitoringInitiatives

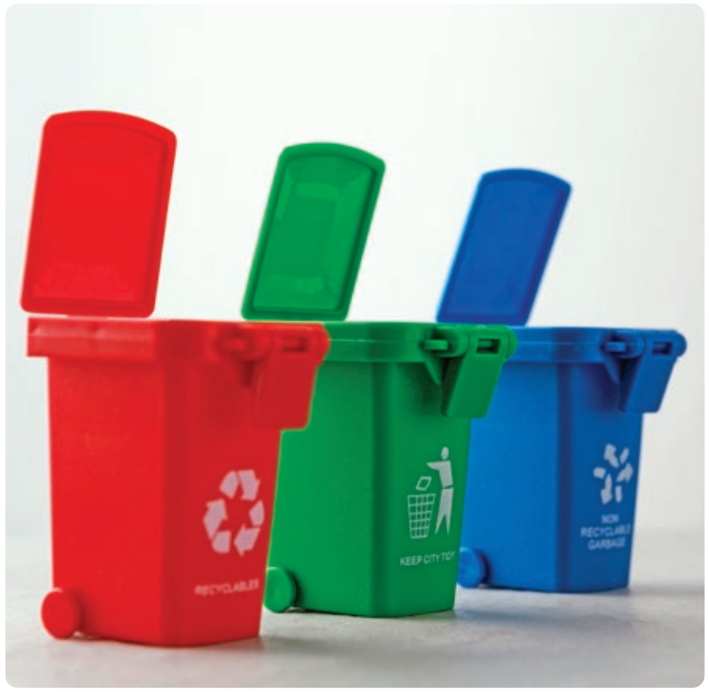
At our Bengaluru pharmaceutical units, Continuous Air Quality Monitoring Systems (CAQMS) provide real-time air quality data. At our Crop Protection units, ambient air is monitored monthly by a MoEF-approved agency, while 24/7 monitoring across sites ensures comprehensive environmental oversight and compliance.

Reducing Diesel Dependency

We have strategically introduced express feeder systems across all industrial units to drastically reduce reliance on diesel generators and curb associated emissions. This initiative ensures a reliable power supply while exemplifying our unwavering commitment to a low-emission, sustainable operational framework.

Waste Management

We implement rigorous procedures for handling hazardous, non-hazardous, e-waste, and biomedical waste, ensuring strict regulatory compliance. Our specialised laboratory pioneers advanced treatability studies, while systematic audits drive continuous optimisation, enhancing resource efficiency and minimising environmental impact throughout our operations.



78%
Waste recycled

8%
Waste reused

Waste Generated

During the reporting year, we generated 2.35 MT of e-waste, 208.62 MT of plastic waste, 0.017 MT of biomedical waste, 6,089.38 MT of other non-hazardous waste, and 52,535.58 MT of hazardous waste. Of the total waste generated, 4,712.2 MT was reused and 41,353.7 MT was recycled. In total, 46,065.9 MT of waste was diverted from landfill, reflecting our ongoing efforts to enhance circularity.

Waste Collection & Disposal

At Hikal, we follow the R3 principles: Reduce, Reuse, Recycle - for comprehensive waste management. Waste is segregated, treated, and disposed of in accordance with regulations. Through our 'Wealth from Waste' initiative, we recover and reuse organic solvents and co-process waste with the cement industry.

A dedicated lab conducts waste treatability studies and has enabled conversion of by-products into intermediates. E-waste and plastic are sent to authorised recyclers. We have shifted from drums to ISO-standard tankers to reduce environmental impact and improve transport efficiency.

As a licensed importer, we comply with EPR norms. Hazardous waste is handled via authorised recyclers and CHW-TSDFs, ensuring safe and compliant disposal.

Water and Effluent Management

572,783 kL
Water footprint

6%
Reduction in freshwater consumption compared to 2023-24

Water plays an essential role in our manufacturing processes, and we are committed to managing it sustainably. Our site sources water through authorised industrial bodies and strictly complies with groundwater usage norms.

We leverage a range of advanced technologies, including Zero Liquid Discharge (ZLD) and steam recovery, to minimise our freshwater dependency and reinforce responsible water stewardship across our operations.

Water Consumption

In 2024-25, we continued to prioritise responsible water use across our operations, with total water consumption amounting to 572,783 kilolitres (kL) and sourced from third-party (Industrial Estate MIDC/GIDC). Our focus on water efficiency and conservation initiatives has been instrumental in driving our progress. This is reflected in our water intensity, which stood at 30.8 kilolitres per revenue from operations (kL/INR Million).

Water Conservation and Recycling Initiatives

- Multi-effect evaporators installed at pharmaceutical sites
- Process water is recycled for washing at Crop Protection sites
- Zero Liquid Discharge (ZLD) facility
- Reverse osmosis system at ETP outlet water
- Optimising processes to minimise water consumption per batch
- Rainwater harvesting
- Reducing the amount of boiler and cooling tower blowdown through a water treatment regimen
- Providing training sessions to raise awareness about water conservation

Zero Liquid Discharge

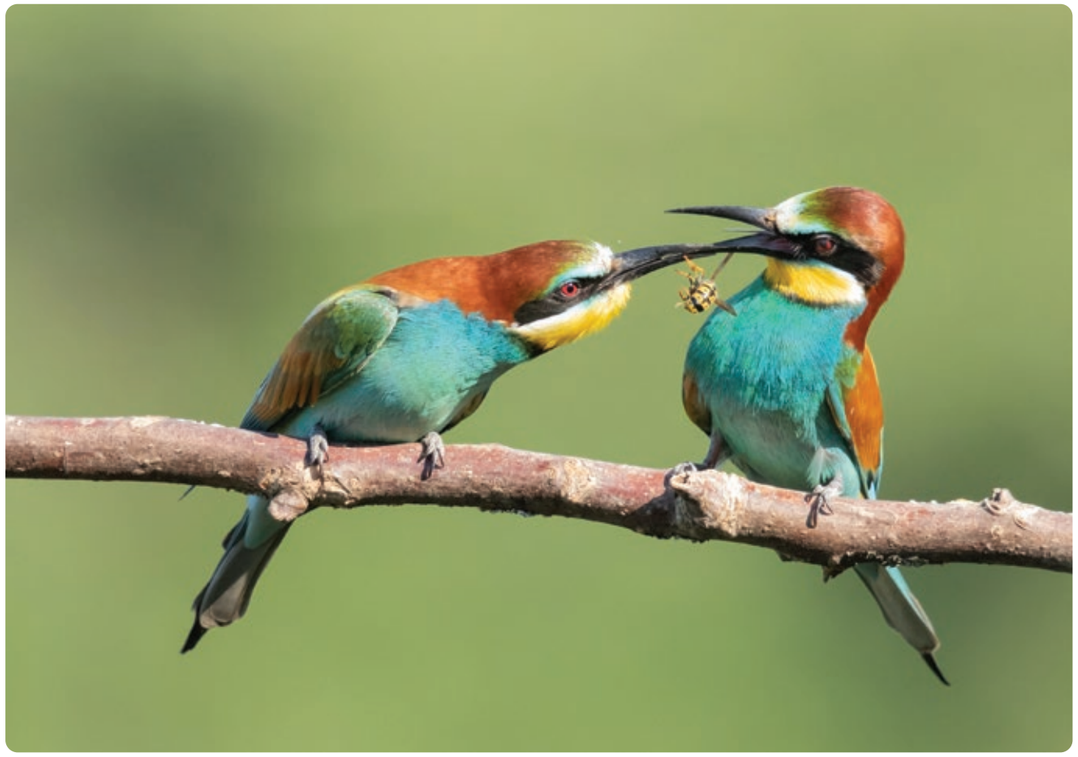
We aim to reduce our water footprint by 2% through initiatives like Zero Liquid Discharge, steam recovery, and advanced effluent treatment. Our Pune R&T site runs a 30 KLD ZLD plant, with other sites use Effluent Treatment Plants (ETPs) and Sewage Treatment Plants (STPs) to maximise reuse. Our Effluent Treatment Plant is equipped with an Online Continuous Emission and Effluent Monitoring system to monitor effluent quality. Mechanical Vapour Recompression systems recover water from condensate, producing pure distillate and concentrated waste, cutting evaporation energy consumption by over 90% and enhancing overall water recycling efficiency.

Green Chemistry

Green chemistry is central to our innovation strategy at Hikal, guiding us to design safer, more efficient, and environmentally responsible processes. Our R&T Centre integrates Green Chemistry Principles to enhance yields, throughput, and effluent treatability, We use tools like Design of Experiments (DoE), and does simulation, and mechanistic analysis for scalable development.

Waste treatability is assessed at lab stage before commercialisation. As the only Indian member of the American Chemical Society's Green Chemistry Pharma Roundtable Institute (ACS GCPRI), we lead in sustainable pharma practices. This has improved our product differentiation, reduced environmental impact, and enhanced supply chain resilience.

We continue to expand our sustainable product portfolio, optimise processes, collaborate with peers, and strengthen our green metrics for greater transparency and accountability.



Biodiversity Protection

At Hikal, we prioritise biodiversity through green belt development, ecological assessments, and stakeholder engagement, ensuring growth aligns with environmental responsibility.

Our manufacturing units are located in designated industrial zones, away from sensitive habitats, with ongoing ecological monitoring in place. Near Bannerghatta National Park, we are in the process to seek a 'No Objection Certificate'. A green belt has also been developed near our chemical facility to support biodiversity.

#PledgeForGreenChange: World Environment Day

World Environment Day at Hikal was celebrated as a week-long affair, reflecting our deep-rooted commitment to sustainability and environmental care. To mark World Environment Week (2025), Hikal employees across all sites united in a spirited celebration of environmental responsibility.

The week began with an oath-taking ceremony, reinforcing our shared commitment to the planet. Through the #PledgeForGreenChange campaign, employees received saplings and pledged to nurture them as 'plant parents', symbolising long-term care for nature.

Tree plantation drives brought life to our premises, while creative contests, ranging from poster-making to plant displays, ignited awareness. Interactive quizzes and plant care workshops further inspired reflection and action. The week was a vivid expression of our belief that environmental stewardship starts with personal accountability.