

Sustainable Environment

Initiatives towards Sustainability

Berger Paints India Limited has a robust environmental policy. We are committed to continually improve environmental performance through initiatives taken across our manufacturing units, offices, depots / warehouses with defined **Environment Monitoring Plan (EMP)**.

All activities are done with Aspect/ Impact studies of the process.

Risk and Hazard studies are carried out before implementation of any project.

Periodic reviews with management ensure rapid and effective deployment.

Continuous efforts are on to minimize the waste and moving towards green energy.

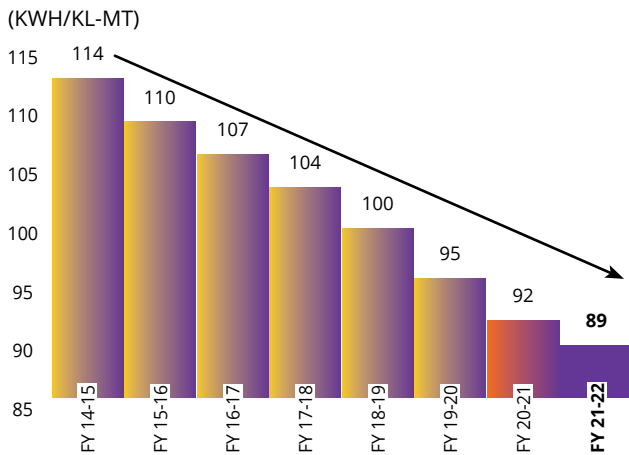
Continuous focus on optimization of resource utilization through recycling and reuse.

Energy Management System (EMS) has been implemented which has helped in better monitoring and management of Electrical consumption in different production centres.

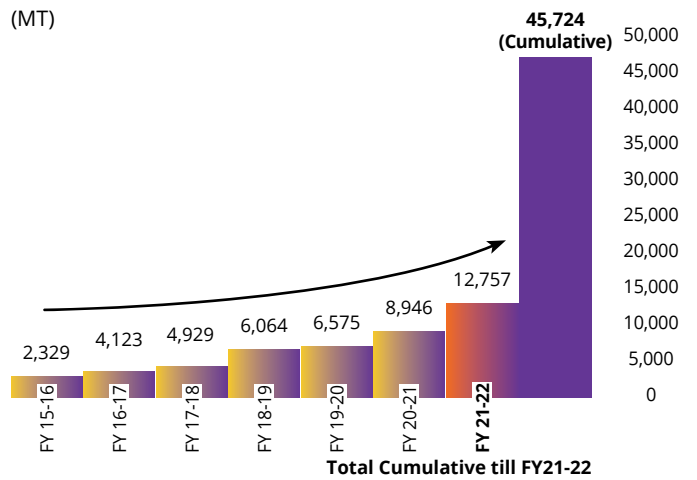


Initiatives towards Sustainability

Trend of Specific Power Consumption



Carbon Foot Print Reduction over the years



Condensate Recovery System for recovering water from steam

By implementing all the Energy Savings initiatives, the Specific Energy Consumption for Paints and Powder Coatings has been reduced by

approximately

3.26%

in FY 21-22 compared to FY 20-21

Approx.

12,757 MT

Carbon foot print reduced in FY 21-22

by adopting all the energy savings measures, coupled with usage of Biofuels

Total solar power generation in FY 2021-22

36,19,378 KWH

which resulted in savings Carbon Footprint reduction in last FY

Rain water conservation is one of the most important alternative for fresh water consumption at the manufacturing units. Collected water is being reused in operations, gardening, toilets, floor washing, etc.

Total rainwater harvesting in FY 2021-22

16,762 KL

At Rishra plant, approx

11,000 KL

of water is being recycled by various initiatives such as Boiler Condensate recovery, ZLD permeate re-use, Cooling tower blow-down reuse, DM plant washing water reuse.

Initiatives towards Sustainability



Plantation at Jejuri

At Pondicherry unit, we have enhanced the green belt by

20%
with plantation of
1000+ trees.

Biofuels being much greener fuel compared to the conventional fossil fuels, contributes to the overall reduction of conventional fuel consumption and thereby reducing approx. 22.38 pounds of CO₂ emission per gallon of conventional fossil fuel like Diesel.

At Jejuri unit, **total of 2700 plants** have been planted by the team which is going to further increase to 3850 nos. plantation under Miyawaki Plantation Technique. Plantation of medicinal species including Eclipta Alba, Karpoora Valli, Alpinia, etc. are done along with native trees and shrubs inside the plant premises.



We are what we repeatedly do, Excellence, then, is not an act but a habit. ~Aristotle

Manufacturing Excellence at Berger aims to adopt the Best-in-Class Manufacturing Practices for a sustainable business growth. It is about putting motion into the wheel for driving the organization towards a Future-Fit model with a firm determination to bring a cultural change and nurturing our employees. Manufacturing Excellence aims at Cost Saving, Productivity Improvement, Batch Cycle Time reduction and various other Quality and EHS improvements with the following objectives –

- To bring down manufacturing cost through various cost saving ideas and KPI linked projects
- To De-bottleneck our current constraints in the manufacturing line
- To promote green manufacturing by 3R concept (Reduce, Recycle, Reuse) and thereby improve Yield by reducing Factory Level Losses
- Lean and smart manufacturing using IOT technology and stepping towards Industry 4.0
- ESG Improvement



Lead Content for decorative paints manufactured is regularly checked and kept within permissible limits.

Many products have been developed with zero heavy metal content (such as lead, mercury and chromium).

Berger Paints India Limited is an ISO 9001: 2015, ISO 14001:2015 and ISO 45001:2018 certified organization which showcases the commitment of management towards sustainability of Quality and EHS excellence.



Initiatives towards Sustainability

MAJOR RECOGNITIONS



Corporate Manufacturing Excellence team has won the “Special Jury” award in CII External Regional Productivity Awards 2022



Berger Paints won Deloitte India's Best Managed Companies 2021 Award.



Our consistent performance and sustainable business growth was recognized with **Top 100 Wealth Creators of 2021** award by Fortune India.



Corporate Engineering and VVN unit won Greentech Energy Conservation Award 2021.



Corporate TQM won Golden Peacock Award in National Quality Competition by IOD (Institute Of Directors)



Berger Paints won Best in Class Carbon Footprint award in the Stars of the Industry Awards -2021 by the World Manufacturing Congress.



Corporate EHS won most prestigious Environment Protection Awards – 2021 by Greentech Foundation as Winner in the Gold Category, competing with all large Public Sector Organizations and large Multi-National Companies

Initiatives towards Sustainability

Working towards a greener environment

We carry out Plantation activities inside as well as outside the Plants along with spreading awareness on Environment Protection amongst our employees and locations nearby our Factories/depot premises.

A pond is maintained at Pondicherry inside the plant premises to promote ecosystem sustenance.



To promote green working environment, our units have inculcated the culture of placing plants inside the Control rooms and offices, Vertical Gardening, shop floors are maintained with low VOC emission so as to sustain the growth of these plants and indicate the healthiness of working area.

Energy Conservation

Upcoming project building infrastructures are built with the concept of providing maximum daylight at shop-floor to reduce the use of lights during day time



To eliminate and reduce the use of conventional fossil fuels, our plants have shifted towards use of alternate Biofuels for the Thermic Fluid Heaters used in the Resin Plants.



Alternate Biofuel Source

Compressed Air Leakage audit and Thermographic audit for electrical supply lines is being conducted at all our plants. This helps to reduce any unwanted wastage of electricity consumption required for generating Compressed Air.

- Energy efficient LED lights for indoor and outdoor lighting have been installed in all the Plants.
- Timer and Photo sensor based automatic control have been set up for external lighting to save electrical energy consumption.
- Energy Efficient Hydrofoil type Agitators have been developed for the Mixing Tanks used for processing Water Base Paints, in place of conventional Anchor type Agitators, resulting in huge savings in electrical energy.

- Rooftop Solar Power Plants have been installed in almost all the Plants.
- Energy efficient Sand Mills are being used for Solvent Base Paints production in place of high power consuming Ball Mills.
- Variable Frequency Drives (VFDs) are being used for all the high power consuming motors of Process and Utility equipment, to reduce the electrical energy consumption.
- Timers installed for all the Batch Processing Equipment.
- Technologies such as MES (Manufacturing Execution System), EMS (Energy Management System) implemented for capturing the various data during processing of the products and monitoring the specific power consumption. All manufacturing facilities put their best efforts to reduce the specific fuel consumption and specific power consumption and track both total and specific consumptions on a daily basis.
- Energy efficient IE2/IE3 motors are being used for all the new Projects.
- Intelligent and State of the art automation is being adopted for new projects which increases reliability and provide scope for further savings of cost and energy.
- At Naltali and Jammu units - Draft automation system put up.
- At Pondicherry and Jejuri - Solar street lights put up.
- Automatic Storage and Retrieval System- At Hindpur, VVN and Jammu Units.

Initiatives towards Sustainability

War on Waste



Washing solvent generated from washing of equipment is being reused in subsequent production batches. Spent solvent is reused for cleaning purpose and after multiple such uses, fresh solvent is recovered in-house from waste solvent through distillation process. The recovered fresh solvent is recycled into paint manufacturing process related activities.

Barrels used for production and storage purposes are re-used - another step towards Carbon Footprint reduction.

Plastic waste from raw material packaging and damaged packaging material is sent to an authorised plastic recycler. Under Plastic Waste management rules as per MOEF guidelines Berger Paints has established EPR Action plan under which 100% Rigid + MLP + Flexible Plastic waste will be collected and co-processed/ recycled through authorised coprocessors.



VOC emissions are monitored regularly and kept to minimum with closed charging operation and Fume Extraction system.

To keep low dust environment in and around the plant, the dust generated due to powder charging are passed through the Dust Extraction System comprising suitable Bag Filters to arrest the Dusts.

Jet Pumps for Equipment cleaning have resulted in huge reduction in the water consumption for cleaning purpose, thereby reduction in the effluent load.

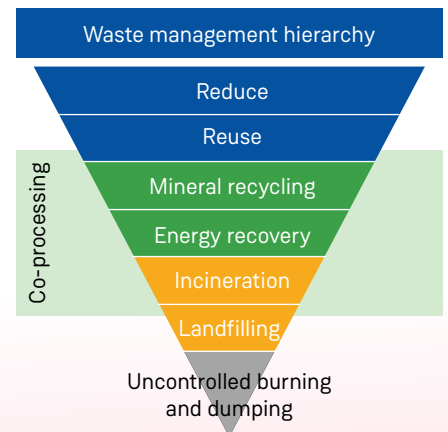
Zero Liquid Discharge (ZLD) system implemented in most of the Plants.



To ensure dust free work environment our Powder Charging operations have shifted towards closed loop Automatic Charging through Pneumatic Powder handling system along with the introduction of bag slitting machine.

Waste powder collected from Dust extraction system is reused and recycled.

Waste generated inside the plant is being collected and recycled through Cement plants where co-processing is done.



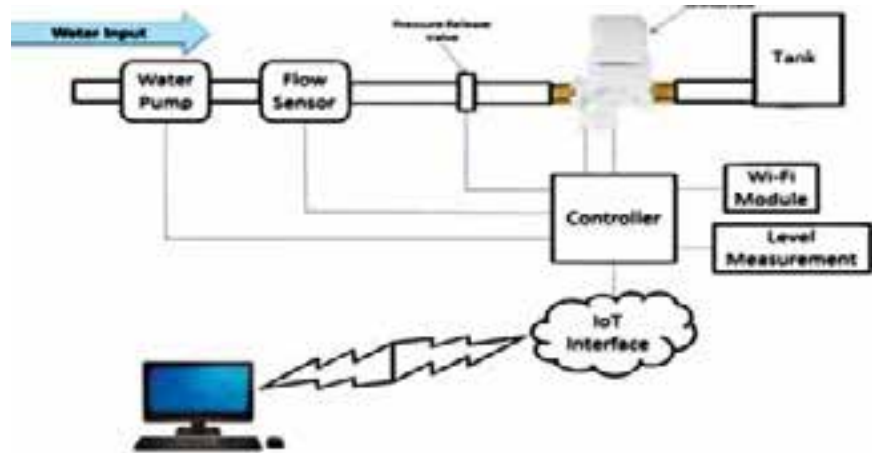
Initiatives towards Sustainability

Water Management

Water is an important and integral commodity of our livelihood. Industries like ourselves which are majorly dependent on Water for manufacturing operations are continuously working towards replenishment of this natural resource by adapting best-in-class technologies for water conservation – reduce, reuse and recycle. As a responsible organization, our goals are also aligned to the UN Sustainable Development Goals and we strongly believe in the motto “Save Water, Save Life”.

With a target to reduce the water consumption and loss, plants have been installed with digital water flow meters for better tracking of daily water consumption.

As per CPCB guidelines, Telemetry System for tracking and updating overall water consumption to the PCB website is done.



OEMS (Online Effluent Management System) as per the guidelines of the CPCB is considered for our upcoming project. This will be monitoring real time effluent quality characteristics such as BOD, COD, TSS, pH, etc. and recording the same. Any undesired increase in these parameters will go as alerts to concerned persons via mobile intimation.



Washing water from mixers and TSDs are collected and stored in vessels at Shop Floor for use in further batches. This reduces the dependency on fresh water consumption from underground or corporation supply.



In FY 21-22 we have conducted Water Audit at our manufacturing units through CGWA certified Water auditors engaged by M/s PHD Chamber of Commerce and Industry. This audit has brought forward deeper insight to our operations where water can be efficiently reused for production/utilities, other activities. These initiatives are being taken forward for implementation which will ensure maximum reuse of water and will help to further reduce fresh water consumption.



Initiatives towards Sustainability



Rain Water Harvesting Pond at Goa Plant Total Storage Capacity - 540 KL

Rain water conservation is one of the most important alternatives for fresh water consumption at the manufacturing units. Collected water is being reused in operations, gardening, toilets, floor washing, etc.

At Berger, we believe ETP (Effluent Treatment Plant) is the heart of our operations and to sustain our operations, ETP is being well maintained so that efficiency of waste water treatment is at the maximum.

The treated effluent parameters are being monitored and untreated

water is not discharged outside the plant. Online monitoring system for discharge of treated water is implemented.



Rain Water Harvesting Pond at Hindupur Plant. Total Storage Capacity - 600 KL



Behavioural changes have been inculcated in staff and employees through education sessions on water conservation and display of posters in and around the plant. Automatic level control system for reducing water wastage and use of effluent treated water in cooling towers is done.

Minimized water wastage by installing automatic urinal flusher with infrared sensor. Domestic wastewater generated is treated through sewage treatment plant and reused for gardening/utility and sanitation purpose.



Modern and compact ETP set-up at Naltali Plant



Efficient domestic water treatment through STP (Sewage Treatment Plant) at VVN

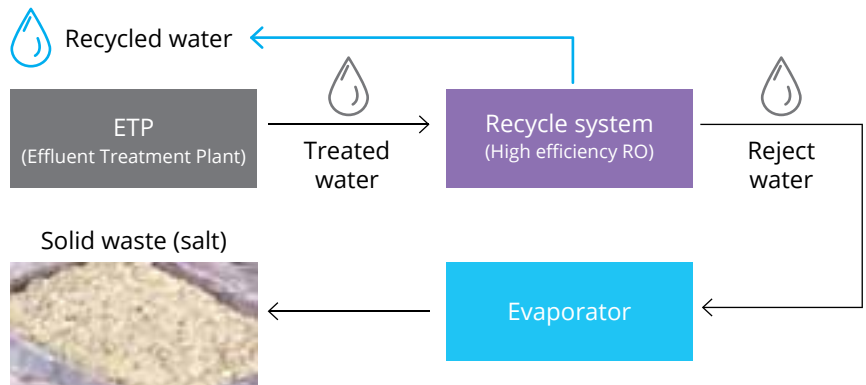


Compact and Modern Sewage Treatment Plant at Jejuri Plant

Initiatives towards Sustainability



We have also installed Zero-Liquid Discharge (ZLD) plants at the units to ensure that treated effluent is reused after treatment through UF-RO units and rejected water is being sent to MEE (Multiple Effect Evaporator) unit for conversion of waste to salt so that no water is discharged out of the plants. Our team is working on modernized technologies to enhance the efficiency of ZLD operations.



Safety and Wellness

For Safe unloading of monomers, 5 Tier Safety system is being followed to ensure each and every step is being monitored and mistake proofing measures are in place through visual identification.

Color coding with identification of monomer for Driver helmet and display board is issued at gate entry



Initiatives towards Sustainability

Color coding of parking place near to specific monomer storage tank at unloading point



The Cooling System for the highly hazardous Styrene Monomer through chilling plants had already been set up in the Units, where it is being used, along with additional equipment like chiller, pumps etc. However, the system was being monitored and controlled manually. To ensure full proof safety of the System, Fully Automatic Chiller Management System has been implemented with the following features:

- Automatic Operation without Human Intervention.
- Automatic fault detection of the Cooling Equipment i.e. Chiller / Pumps / Valves etc.
- Automatic switch over to redundant equipment in case of failure of any equipment.
- Continuous monitoring of process parameters and data logging in DCS (Distributed Control System)
- Audio Visual alarm generation along with notification through SMS to all respective persons along with the security personnel.

Color coded QC approval sticker on the tanker unloading valve



For safe unloading of solvents and other hazardous/flammable raw materials, 3 Tier Safety system is put in place. Additionally, Smart Earth rite relay system automatically ensures No Earthing, No Unloading.

- **Identification** – Visual Management system for tanker and driver



Color coded unloading valve with lock and key and Tank with same color



- **Supervised control by QC personnel** – Approval and identification
- **Supervised control by Security** – Lock on Valve can be opened with Key issued by Security

Safety Mock drills are conducted and GAP is analysed for continual improvement. SMS/Call intimation and Cloud based safety management in connection with detection system installed in all our plants, depots, warehouse and offices.

Initiatives towards Sustainability



Quality Day Celebration-2021

For the plants as well as depots, National Safety Day / week campaigns, World Environment Days are celebrated. World Quality Day celebration is also initiated at all our manufacturing units rekindling the awareness about importance of quality in each employee.

Wellness Initiatives are taken at our Factories and offices in the form of conducting yoga sessions, Training on Behaviour Based Safety (BBS) and others.



To promote Safety Awareness, Safety videos in local languages are being played over digital TV.

SIRE code system of classifying hazardous chemicals according to the level of hazards followed at all units. Health monitoring plan for our employees where periodical checks and emergency preliminary response/ First Aid is available all across our factories/depots and offices. Eye check-up, pulmonary function test, audiometry test, blood examination, Chest X-ray, ECG, etc. is conducted for all the employees.



Promoting the social culture of the locality, traditional painting is done outside Plant premises on wall.

At our depots and offices, electrical panels are being installed with Surge Protectors and Lightning Protectors on Roof Top.



Paintings and display made inside plant premises to promote Water Management



Open Mouth vortex stirrers are converted to closed mouth arrangement to minimize VOC emissions and lead towards safer operations

Initiatives towards Sustainability



As a part of Autonomous maintenance, My Area My Pride projects have been taken up at the processing units to maintain a clean, healthy and proper work environment. CLTI points are marked on the equipment. Abnormality register is also maintained at each process block where entries are made by down the line operators and each action is taken by management on each of the highlighted points.

Early Suppression Fast Release Sprinkler for Self Accelerating and Decomposition Temperature (SADT) capable chemicals with response time within 3-7 seconds.



Foam Bladder Tank assembly and foam monitor in operation

For Hazardous area such as Resin and Solvent based manufacturing, earlier concept of starting of pump based on linear heat sensors or beam detection has been replaced with advanced IR3 Flame detector and Quartzoid Bulb detector.

Initiatives towards Sustainability

Smart Ground Detector system is innovatively developed in-house at Jejuri Plant to ensure that charging of solvents in vortex is only done when earthing clip is connected to the vortex. Until earthing clip is connected properly, SCADA (Supervisory Control And Data Acquisition) command for solvent charging cannot be done.



Conventional Pump seals are replaced with Mechanical seals which ensures no leakage and spillage free dykes.



EHS Gallery at Jammu Plant



Full HD high resolution IP- IR- AI Based cameras are installed inside plant premises for better surveillance and monitoring of operations. AI integrated cameras for Periphery surveillance are already being instituted at plant boundaries. Any unwanted infiltration will be immediately reported to custodian via intimation on mobile with pictures.

COVID 19

Majority of workforce and their families are being double vaccinated. Looking at the Pandemic situation, all our OHCs are equipped with medical grade Oxygen Concentrators and Covid-19 Care KIT.

Daily sanitization of plant premises, office areas and amenity block have been done and continuing as a daily process. SP02 level check of employees are being done regularly at all units.

During the Covid-19 pandemic, our Pondicherry plant had supported 1200 families in and around the locality by providing them 5kg rice to each such economically challenged households.

As a company and one of the largest recruiters in paint manufacturing sector, local employment at the plants is focused upon helping localities to earn their livelihood. At local schools, projects have been taken up for installation of proper sanitation and drinking water facilities.



Also, medical Oxygen supply machines have been supplied to government hospitals during the Second wave to ensure that patients receive proper oxygen supply during their treatment.



All OHC units are equipped with Diphoterine kit which can be used for washing of eyes during any chemical spillage.

Initiatives towards Sustainability

Other Recognitions

Jammu Plant has been declared GOLD AWARD winner of 10th Exceed Environment Award 2021 for outstanding achievement in Environment Preservation



Jammu unit declared as 21st Annual Greentech Award winner under Environment Protection Category.



VVN Plant has been declared PLATINUM AWARD winner of 10th Exceed Environment Award 2021 for outstanding achievement in Environment Preservation.

VVN unit was awarded with Certificate of honour from Vithal Udhoyog Nagar Industrial association for being best industry of the Estate.



VVN unit declared as 21st Annual Greentech Award winner under Pollution Control machine and Equipment Category.



VVN team won Special Jury Award in 9th Edition of Gujarat State Level Quality Control Circle Competition 2022 by presenting Project Varnakram. The team is qualified to participate in 34th QC Competition - Regional Finals.



Naltali unit won Energy Excellence Award in the 14th CII ENCON Awards -2021

Howrah unit won the regional and National rounds at 34th Annual CCQC - 2021 organized by QCFI, Kolkata Chapter and will represent our country in the international summit.



Initiatives towards Sustainability

Other Recognitions

Jejuri unit won prestigious QCFI gold award for winning Case Study competition at 36th CCQC-2021.



Jejuri Unit won GOLD Award in Best Fire Safety Measures Awards -2021 by Apex India Foundation.



Hindupur Unit, VN unit and Pondicherry unit declared as WINNER of 20th Annual Greentech Safety India Award 2021 for outstanding achievements in "Safety Excellence" category



Naltali unit recognized with CII 3R certificate in 2021



Howrah unit achieved 4.5 stars in 14th CII ENCON Awards -2021.