ENVIRONMENT
PERFORMANCE

Earth-conscious

Deploy leading edge technologies in a growing range of models with respect for the planet and people.

Environment Performance: Treading a Greener Path

Toyota Kirloskar Motor has focused on achieving harmony between its manufacturing activities and the environment, based on the concept of 'A plant that optimally utilizes natural resources while operating in harmony with the natural environment.'

In concurrence with Toyota's Environment Action guidelines, TKM has come up with its own set of initiatives towards promoting sustainability at the manufacturing site in India. This section elucidates the activities taken up at the manufacturing site at Bidadi, Bangalore in detail.

Toyota EMS Concept:

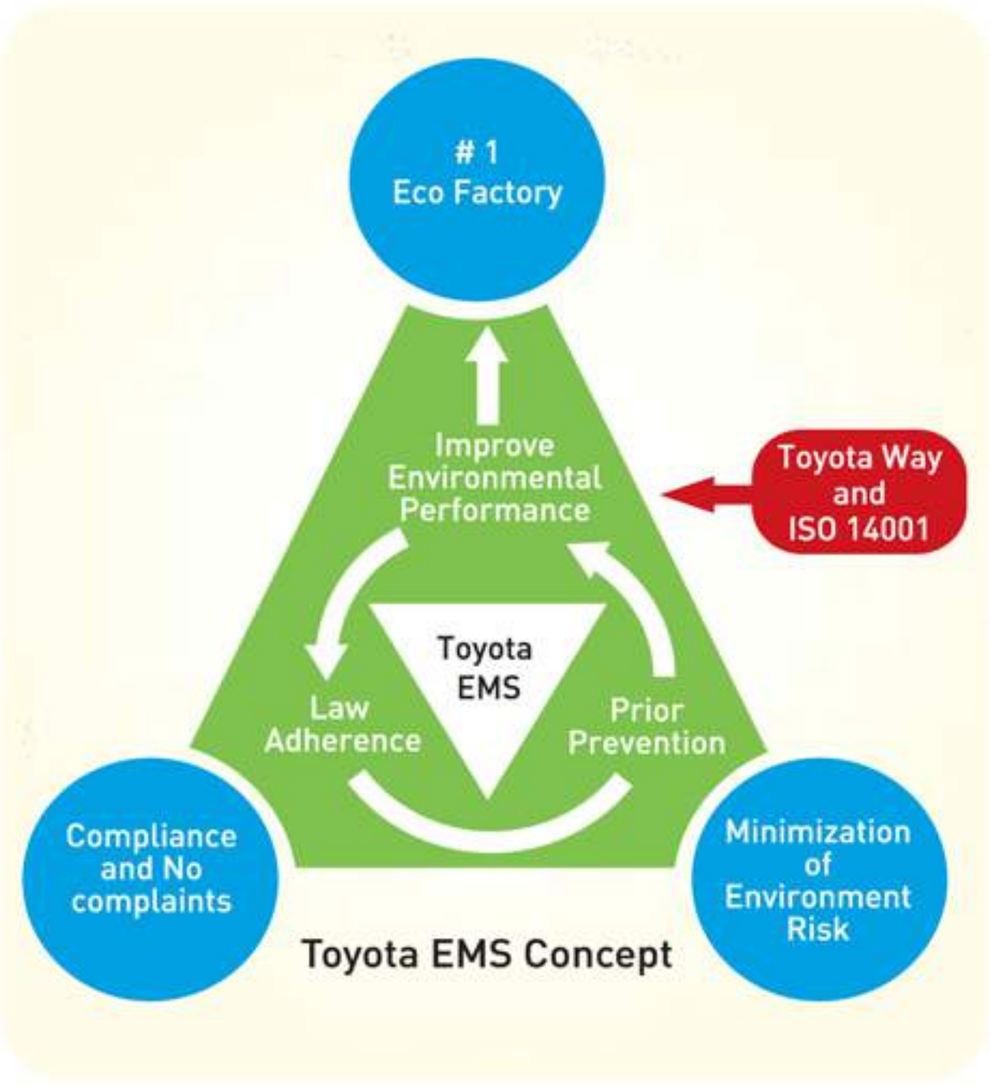
The Toyota EMS (Environment Management System) holds the key to environment management efforts across Toyota affiliates and at TKM alike.

Toyota EMS concept is applied to drive a continuous performance improvement cycle in line with corporate policies and strategies and site specific objectives. The key elements of the EMS system are 'compliance/no complaints' and 'environment risk mitigation'.

The Environment Management System (EMS) has been used effectively in order to achieve the objectives of environment policy. EMS forms the backbone of our commitment towards reducing our carbon footprint and we have been re-certified for ISO 14001:2004.

In a pioneering effort, TKM has been strongly promoting ISO 14001 certification among its suppliers and dealers. The core idea is to promote environment friendly operations among all our stakeholders. In a significant achievement, TKM has been successful in promoting ISO 14001 to 78 percent of its suppliers and more than 84 percent of its dealers in 2009-2010.

The external auditing agency has awarded TKM with zero non-compliance for five successive years for the highest degree of abidance to EMS (ISO 14001:2004).



Toyota EMS Concept

TKM Environment Policy

As a good corporate citizen, we are committed towards the protection of the environment by minimizing impact on environment through pollution prevention, conservation of natural resources and continual improvement.

To support this commitment, our policy is to:

- Proactively promote environmental awareness and knowledge among Team Members through continual education and job specific training.
- Ensure compliance with legal as well as other requirements to which our company subscribes.
- Establish and review environmental objectives and targets annually to ensure better environmental performance through proactive continual improvement activities.
- Establish programs and conserve energy, natural resources, flora, fauna and build a green environment, within and surroundings as a part of our policy.

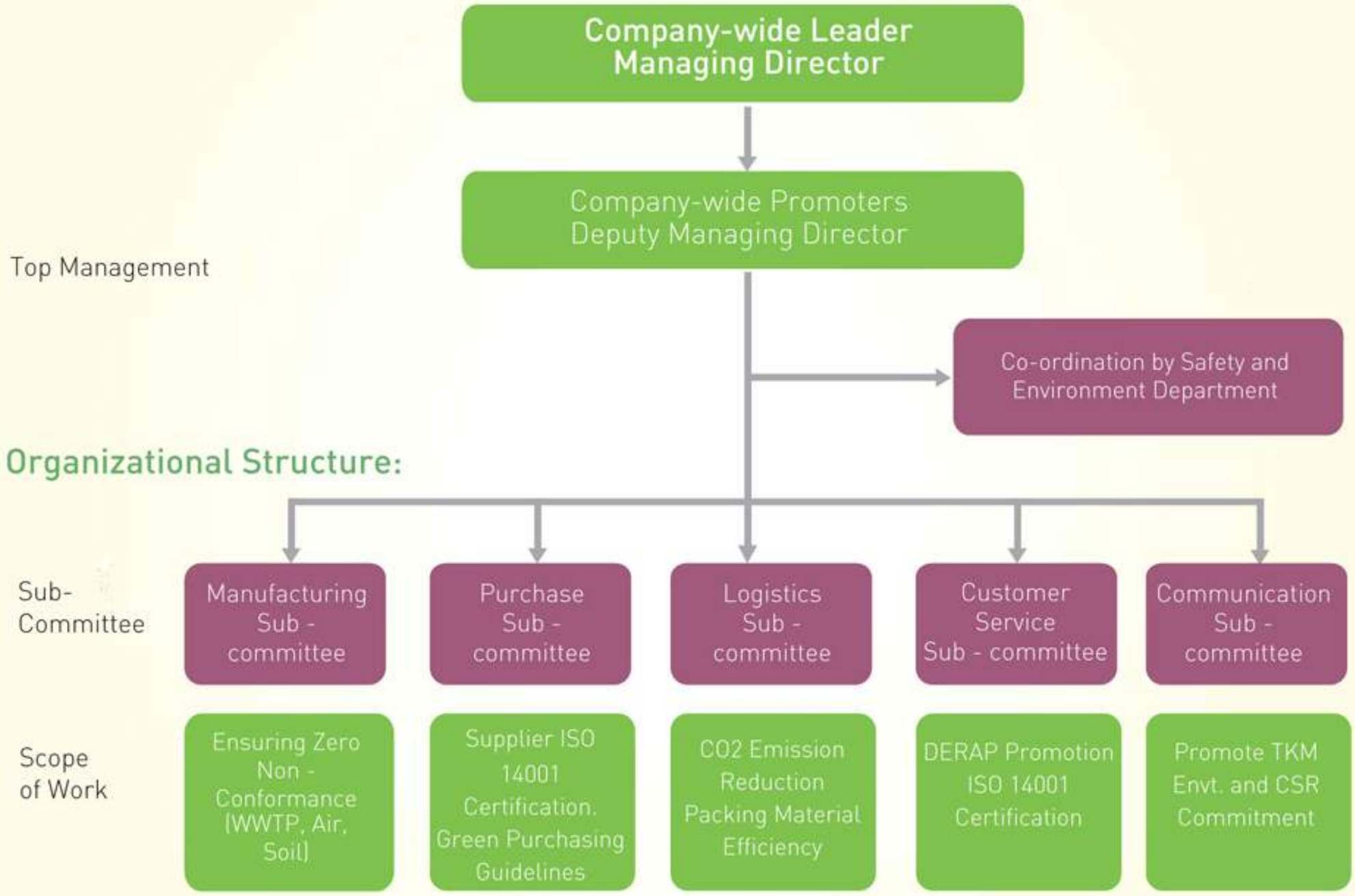
We recognize the importance of continual improvement in environment performance while creating economic growth and maintaining competitive advantage. We are committed to this philosophy and it is our hope that, you, our Team Members, suppliers, customers, dealers and neighborhood share our commitment in preserving a very valuable resource - OUR ENVIRONMENT.

TKM Environment Committee

A strong set of basic principles and values guided by the Toyota Earth Charter leads TKM in its continuous efforts to operate in harmony with nature. TKM's environment initiatives are constantly furthered by the top management, which have made TKM the frontrunner in the region.

TKM's Environment Committee is headed by the Managing Director, and constantly guided by the Deputy Managing Director, division heads and incorporated by individual department heads and department representatives. The Environment Committee comprises representatives from all functions across the organization. A team of environment engineers centrally co-ordinates the progress of environment related activities of the plant along with the environment sub-committees.

Organizational Structure:



TKM Environment Organizational Structure:
Designed to cater support to entire community in terms of Environment protection

Environment Performance Management

With the aim of operating in harmony with nature, TKM aims to utilize resources wisely and reduce waste from its operations. We have been reporting our resource utilization and waste generation data from our site in our annual sustainability publications.

To guide our actions in this direction, the TKM Environment Policy commits us to control pollution and reduce energy at every possible opportunity. We continuously strive to minimize our carbon footprint and improve our environment.

Our periodic internal audits and external audits have strengthened our environment management system. Our environmental performance under various key indicators in the last three years is summarized in the following sections.

Note: The key performance indicators are quantified by units which are usually based on the per unit measurement over the entire year.

TKM Five Year Environment Action Plan

TKM's Environment Committee, in the course of planning and managing the organization's environment performance, has been implementing five-year-plans since inception. These five year environment action plans are intended to serve as the guidelines for all activities from an environment perspective. The table gives details of the various action items and goals, and the performance data for the reporting period.

Action Item	Specific action items & Goals	5yr action plan status - FY2010	
		Target	Actual
Reduce CO_2 emissions in production and logistics activities of each country and region.	**Production:**		
	Energy Reduction	4% Redn.	4% Redn.
	Reduction in electricity consumption. (Purchased+generated) (kwh/veh) 20% based on Current year status	512 kwh/veh	493 kwh/veh
	Reduction in LPG consumption. (kg/veh) 20% based on Current year status	27.84 kg/veh	25.91 kg/veh
	Reduction in energy. (Total of Electricity + LPG in GJ/veh) 20% based on Current year status.	3.22 GJ/veh	3.1 GJ/veh
	Logistics :		
	Reduction in emission of CO_2/unit 15% reduction based on 2006 values	0.55 ton/veh	0.54 ton/veh
Promote the effective use of resources to further contribute to the realization of a recycling based society	**Production:**		
	Increase Yield ratio	69%	71.8%
	Haz Waste reduction	4%	4%
	Reduction in generation of Hazardous waste (kg/veh). 20% based on Current year status Chemical sludge+Phosphate sludge+Paint sludge)	7.6 kgs/veh	7.03 kgs/veh
	Non-Hazardous Waste Reduction	2%	2%
	Reduction in generation of Non Hazardous waste (Miscellaneous solid waste) by 20% based on Current year status	14.41 kgs/veh	25.51 kgs/veh
	Logistics :		
	Reduction of packaging and wrapping materials	100% returnable packaging for all local parts	
Initiatives to promote water conservation	Reduction of water consumption by 10% based on current year status (m^3/veh)	2%	2%
		4.46 m^3/veh	3.9 m^3/veh
Initiative to reduce VOC emissions	VOC reduction	48.5 gm/m^2	41.6 gm/m^2

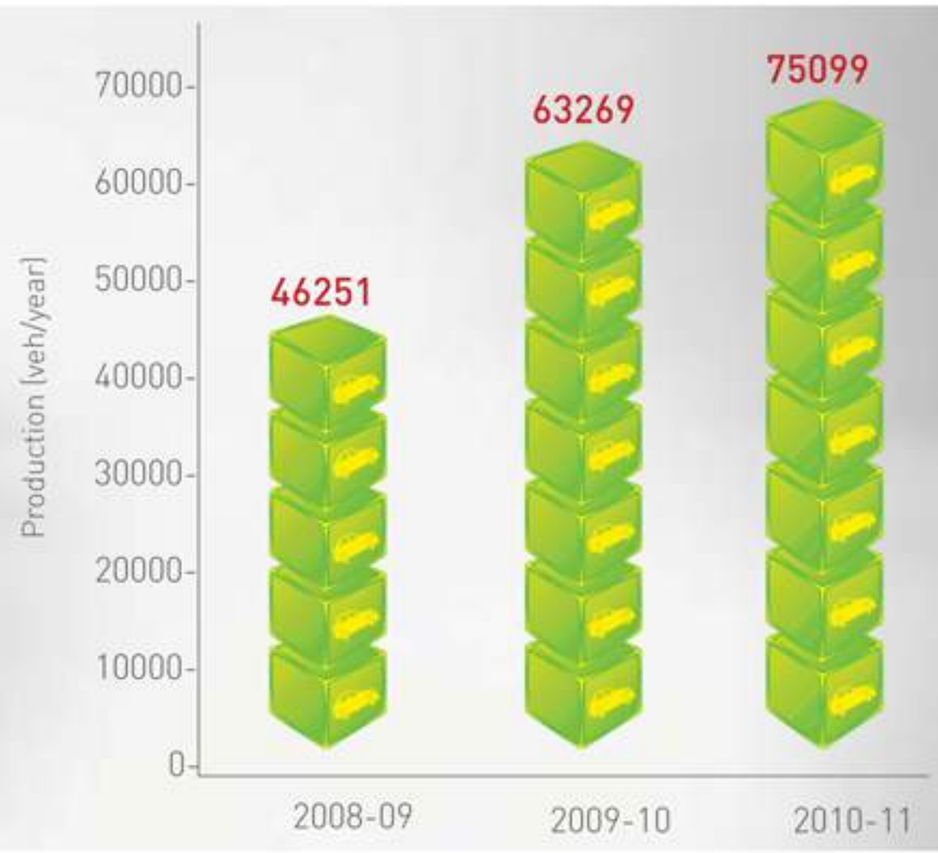
Production Trends and Environment

The market condition for Toyota vehicles in the Indian automobile sector was favorable in 2009-10 and has been positive in 2010-11 also, consistent with the global and local automobile markets.

This has a direct influence on environment performance parameters as they are related to fixed manufacturing demands. During the reporting period, the production volumes showed an upward trend representing an increase in resource consumption in terms of increased energy and resource use and an increase in waste generation.

During the reporting period, the production trends saw a marginal increase due to the addition of the new small car, Etios in the newly commissioned plant. TKM intends to ramp up the production volumes while minimizing environmental impact.

Production Trend (Overall)



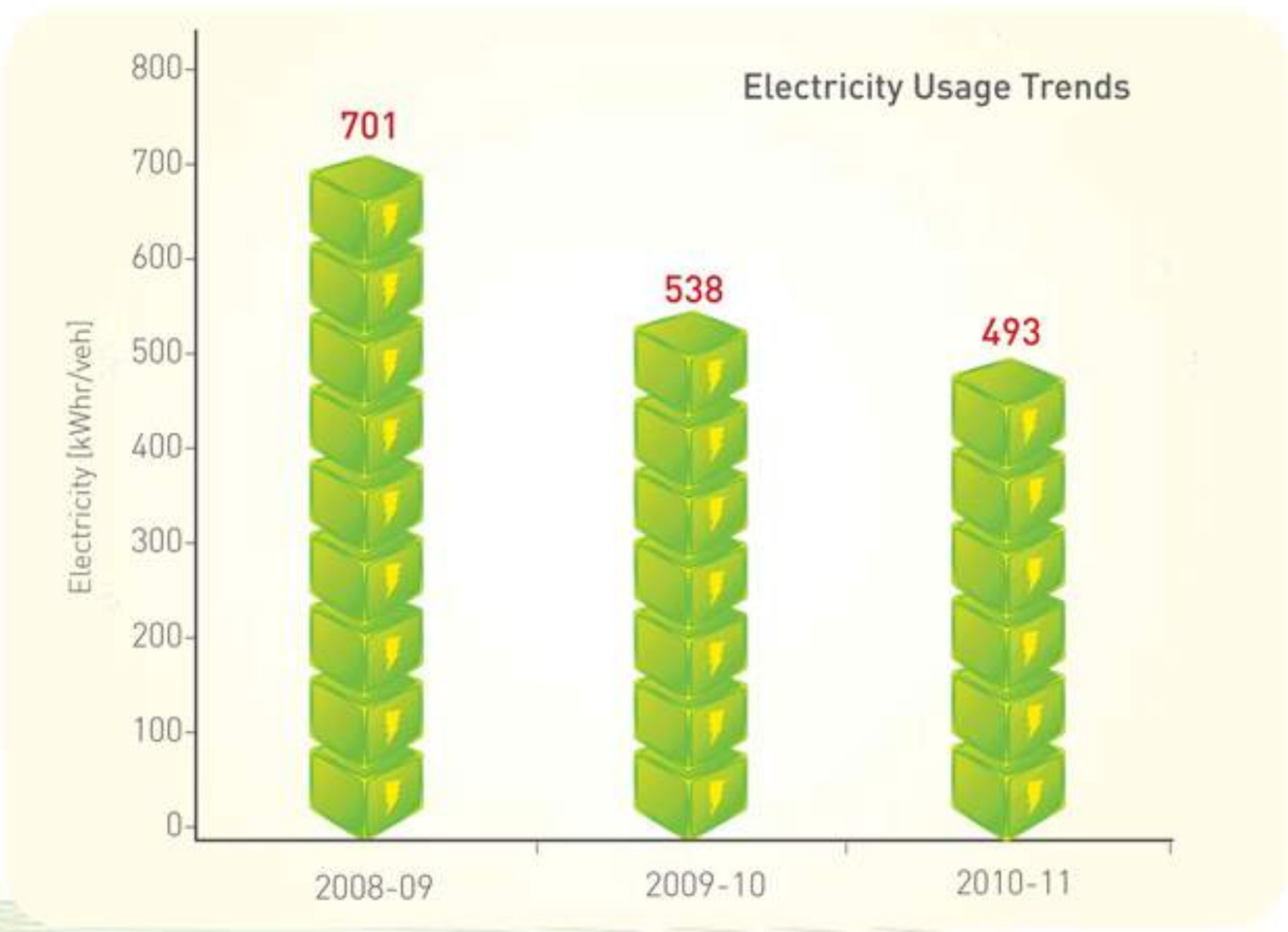
Resource Consumption Efficiency

Energy and resource conservation form the basic responsibility of any corporate aspiring to be sustainable. Balancing the ever increasing consumption of resources and the consequent CO_2 emissions with economic development is a major hurdle towards achieving environmental sustainability. TKM promotes energy conservation activities at the manufacturing plant by embracing the five year action plan which sets the annual reduction targets for all environment parameters.

Managing these factors and studying their effects on the environment to stay eco-friendly is a vital part of our Environment Management System. We carefully track trends and usage statistics in concurrence to the saying 'what gets monitored, gets managed'. We also make every effort to reduce resource and energy consumption and limit waste generation.

Electricity

TKM's electricity consumption in the production area has decreased as compared to last year. By the end of 2010, the average amount of energy required to produce a vehicle decreased by 8.3 percent to 493 kWh per vehicle. In 2010-11, TKM focused on energy saving activities along with optimum plant capacity utilization.



Some of the key kaizens [minor but continuous improvement initiatives] during the reporting period were:

1) Variable frequency drive (VFD) installation for varying load requirements
2) Illumination standardization and optimization
3) Separation of high and low pressure compressed air lines in the plant

During the reporting period, TKM has cut down on its inhouse electricity generation, in this case diesel generators, resulting in a decrease in on-site CO_2 emissions. This is after the onset of the dedicated 220kV power supply provision from the Karnataka Power Transmission Company Limited [KPTCL] grid.

Water

During the reporting period, the specific water consumption for production decreased by 12 percent as compared to the previous year, to reach a minimum of 2.9 m^3 per vehicle. Water usage levels, like those for energy, were affected by the increase in production volume. Considerable efforts were made towards monitoring and standardizing variable and fixed load consumption.

TKM continued to target the elimination of unnecessary water usage through kaizen and by the implementation of best process technology such as membrane bio-reactor (MBR) and reverse osmosis (RO) treatments that allow the recycling of wastewater.

Water Conservation

The process of treated waste water recycling for production processes has been in place at Toyota Kirloskar Motor's Plant I and will be continued in Plant II as well. The second plant will have a water recycling rate of up to 40 percent. The recycling process employs a membrane bio-reactor [MBR] and a reverse osmosis unit.

In a unique effort at the new plant, emphasis is made on segregating the waste streams from the source based on strength of the waste water and to treat them accordingly. This has ensured that there are no fluctuations during treatment and treated waters are well compliant to disposal requirements. We also ensure that water use for operations does not affect water sources adversely.

Water Consumption

Wastewater Treatment Plant

Steel

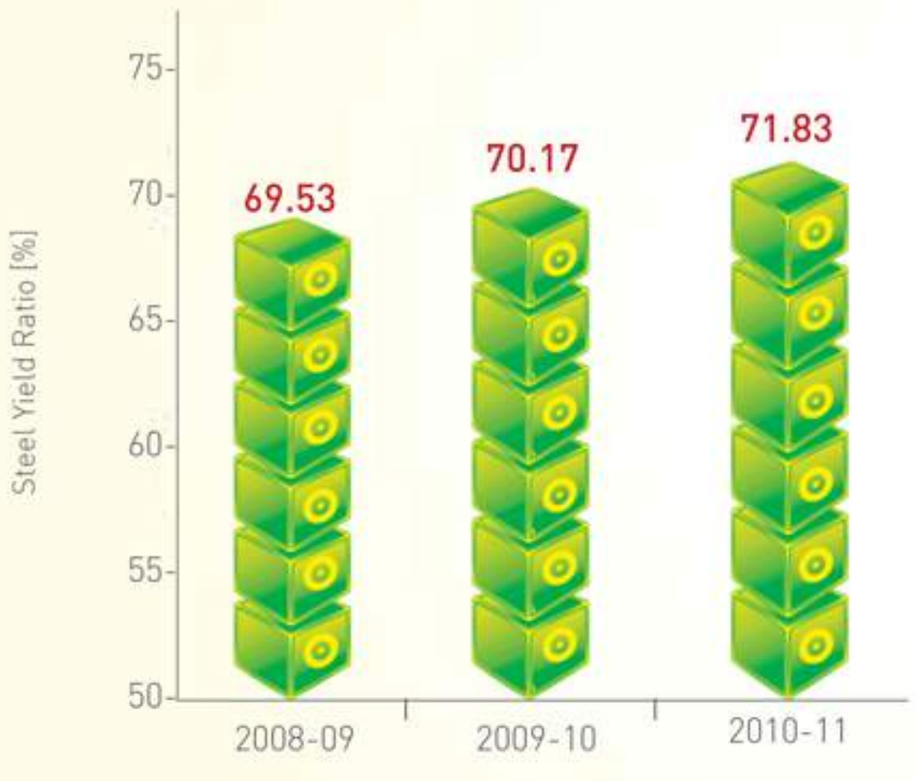
Steel, historically has been the true driver for industrialization across the globe. It forms the major raw material used in the automobile industry. A car's body has to be the epitome of safety, stability, durability and consistency. Steel usage also has an environment impact, particularly with respect to resource consumption and global warming.

Steel Yield Improvement

Steel has been a very substantial raw material for the passenger car automobile industry where it constitutes up to 23 percent of the weight of the final finished product. The use of steel at TKM begins with de-coiling and cutting processes, both of which are carried out by an on-site supplier.

TKM's objective in reducing Steel wastage is to reduce the carbon footprint from steel manufacturing. As a result of an inhouse study on existing utilization patterns and brainstorming sessions with team members, suppliers and the steel manufacturers came up with ideas to increase steel yield ratio. Steel yield refers grossly to the ratio of steel that goes into the making of the automobile to the total steel procured. The team devised a three-tier solution that consists of kaizen or continuous improvement at various levels, namely the TKM's press shop, the steel supplier and non-auto parts suppliers and manufacturers. The changes implemented in these kaizens have led to the reuse of approximately 180 tonnes of steel and a significant reduction of CO_2 emissions every year. We manage material usage by maximizing utilization efficiency and not through the use of recycled materials in products.

Steel Yield Ratio



Liquefied Petroleum Gas (LPG)

Liquefied Petroleum Gas (LPG) serves as the prominent primary energy source for heating in ovens and boilers at TKM. We have been able to sustain a decreasing per unit consumption trend as compared to the last financial year.

Optimization of oven start-up and shut down has been one of the path-breaking improvements that were taken up during the reporting period. Though we do not employ any renewable sources of energy, we have processes and work cultures in place to ensure maximum possible reduction of energy use.

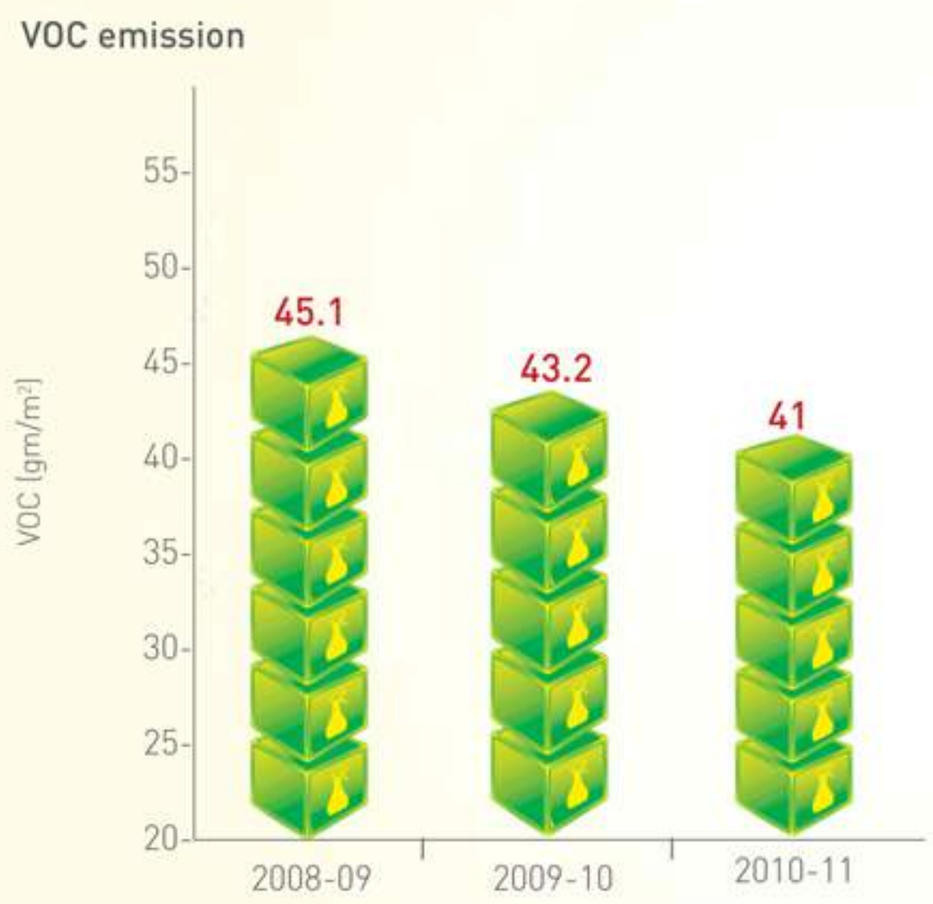
LPG Consumption

LPG Yard

Minimizing Effluents, Emissions and Waste

Emission Reduction: Volatile Organic Compounds:

While there is no mandatory legislation for mitigation of VOC emissions, it has been a part of Toyota's global environment policy to reduce VOC emission from the painting process. With this end in view, we have introduced water-borne paint technology at the new production facility, Plant II. Further, the use of regenerative thermal oxidizers (RTO) ensures destruction of VOCs emitted from painting operations.



Waste Minimization

TKM has resolved not to add to the growing global quantities of waste through reduction and recycling of waste material. We aim to achieve zero hazardous waste to landfill consistent with the Toyota earth charter.

We have been sending hazardous wastes to co-process at the cement plant to realize the philosophy of "zero hazardous waste to landfill". Other initiatives towards hazardous waste reduction include the establishment of a solar drying facility to reduce excess moisture content in hazardous wastes.

There has been an increase in the non-hazardous waste quantity resulting from the introduction of a new production facility and a new model. With the introduction of the Etios, the packing material waste contributed to the increase in non-hazardous waste. However, we would like to draw the reader's attention to the fact that the waste under this category is subjected to complete material recovery and/or recycling.

We strictly comply with the legal requirements restricting trans-boundary movement of hazardous wastes. TKM also has no history of accidental spills or has had any action taken against it for non-compliance with environmental laws and regulations.

Success Stories: Environment Conservation initiatives

TKM has been promoting energy conservation initiatives to continuously improve the environment performance. This section shall elucidate some of the key kaizen [continuous improvement activities], most of which have been initiated by the working group members themselves. Generation of such high value adding kaizens by the grassroot level work groups indicate the high degree of human development among the workforce.

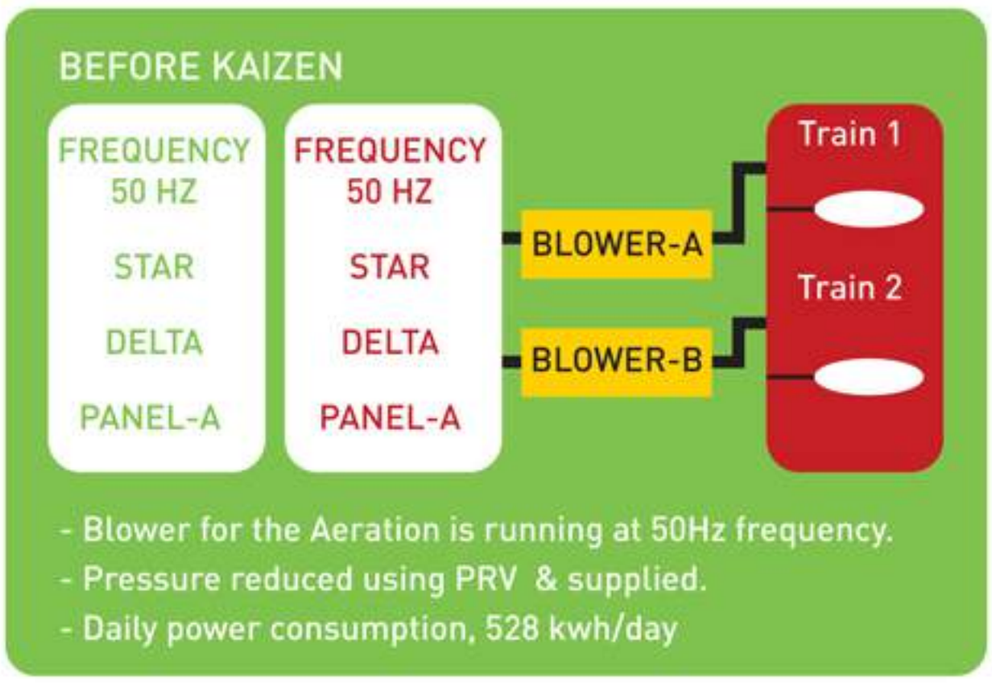
Energy Saving in MBR operation through reduction of blower running pressure

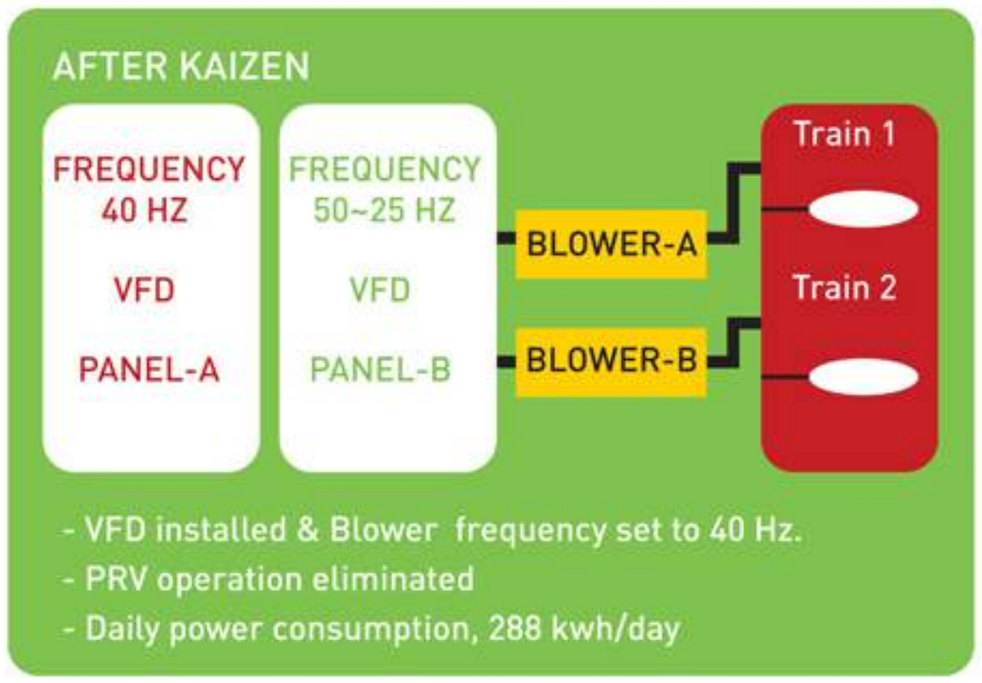
The waste water treatment step involving advanced but energy consuming Membrane Bio reactor [MBR] involves air blowers running 24x7.

There are continuous variations in MBR air pressure requirements which is conventionally fulfilled by Pressure relief valves [PRV], by maintaining the supply pressure.

VFD is installed to supply air at required pressure. This is achieved by setting the frequency of motor using VFD.

Owing to the variable requirements of the wastewater flow and oxygen requirements, the implementation of Variable frequency drives has yielded excellent results in power saving and process control alike.



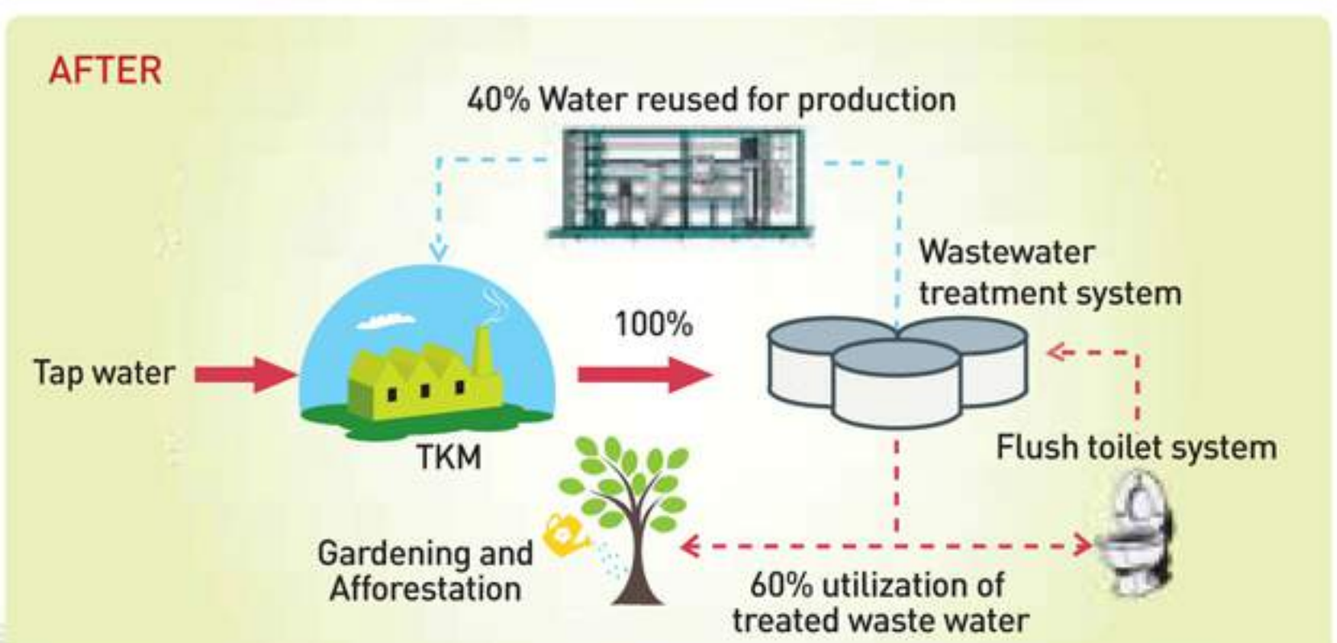


Water Conservation initiative

Toyota Kirloskar Motor, has been continuously promoting water conservation efforts in all processes. Towards this end, many kaizens have been implemented to ensure that TKM adheres to its "Zero Discharge" policy. In order to utilize the treated water effectively, measures like re-use in toilet flushing, irrigating the mass afforestation project and gardening.

As major sustainable plant initiative, we have implemented the MBR [Membrane Bio Reactor] and RO [Reverse Osmosis] in our existing and new plants.

Since the RO treated wastewater meets the quality requirements as that of freshwater, it is being currently being re-used back into the production process. Recycle ratios up to 40% are being taken up, thus reducing the wastewater output to 60% of the original.

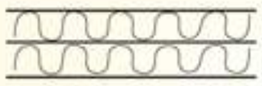


Waste reduction by Reducing the Ply of Packaging material

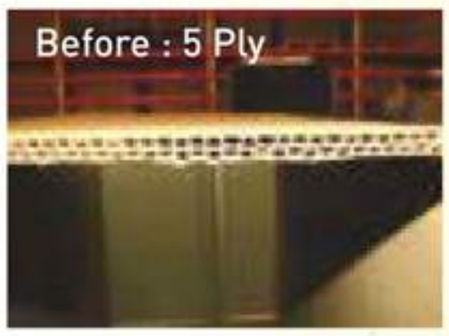
Used packing materials form a major portion of waste in parts logistics activities.

In this kaizen thickness of carton box was reduced while keeping the strength constant. This kaizen involves reduction of excess layers of Kraft paper from 5 ply to 3 ply, while being consistent with strength requirement of the packing material.

This change in packing material specification yielded significant reduction in waste generation quantities with virtually zero investments.



1st layer – Paper Sheet
2nd layer - Flute
3rd layer – Paper Sheet
4th layer - Flute
5th layer – Paper Sheet



1st layer – Paper Sheet
2nd layer - Flute
3rd layer – Paper Sheet

Establishment of Solar Sludge Drying Facility

- Toyota promotes the policy of "Zero Hazardous wastes to Landfills".

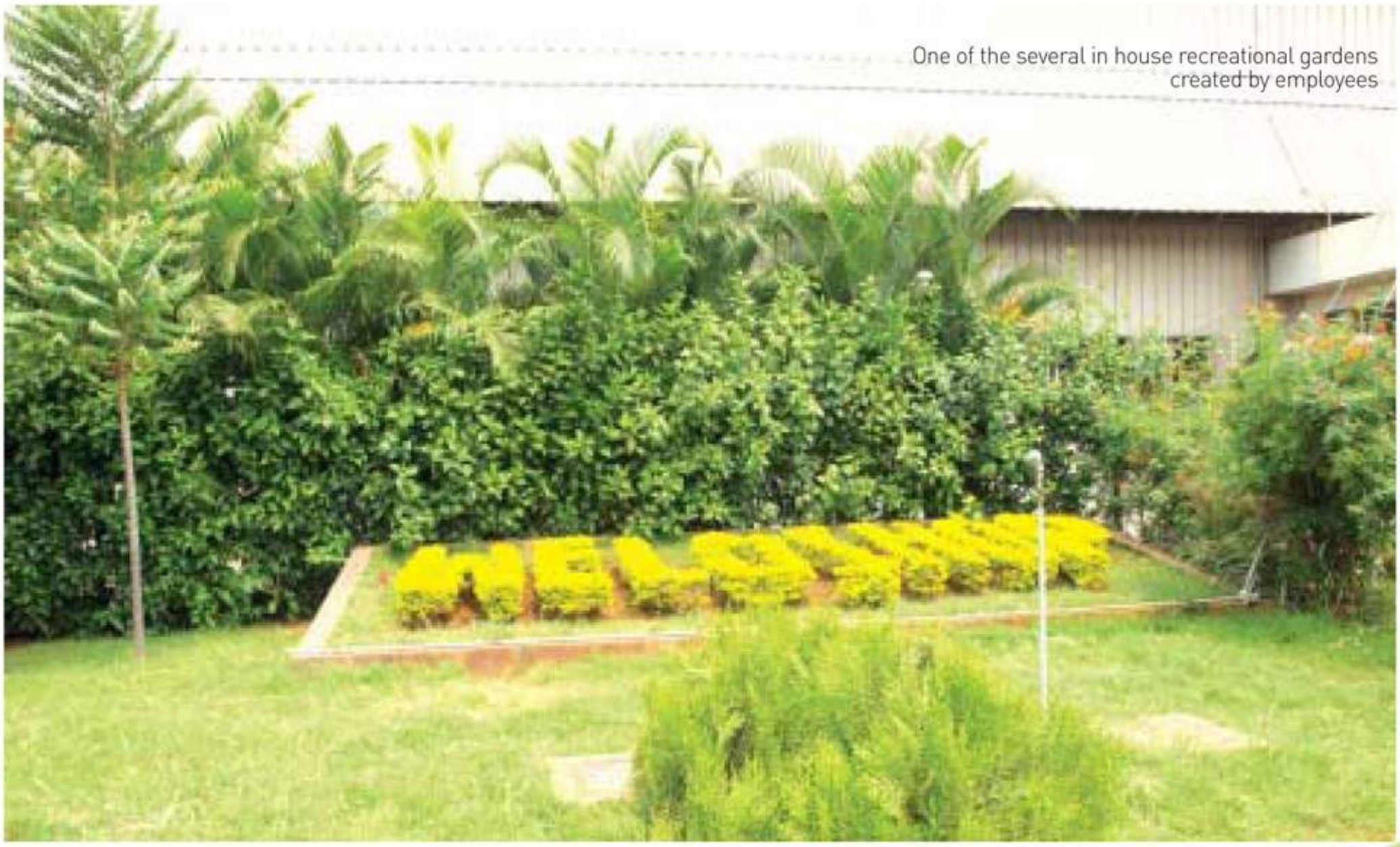
  Towards this initiative, TKM has been disposing its hazardous wastes through an innovative process of "co-processing" at ACC Cement kiln at Wadi, Gulbarga.

- Unwanted excess moisture content in the hazardous waste sludges pose load in terms of higher Haz. Waste volumes and cost of disposal.

Towards reducing this excess residual moisture content, TKM has implemented both source moisture reduction kaizens and establishment of Solar Sludge Drying Facility, which works on the principle of Greenhouse Effect.

This is a zero energy consuming process which is estimated to reduce excess moisture by up to 40%.

Solar Sludge Drying Facility



One of the several in house recreational gardens created by employees

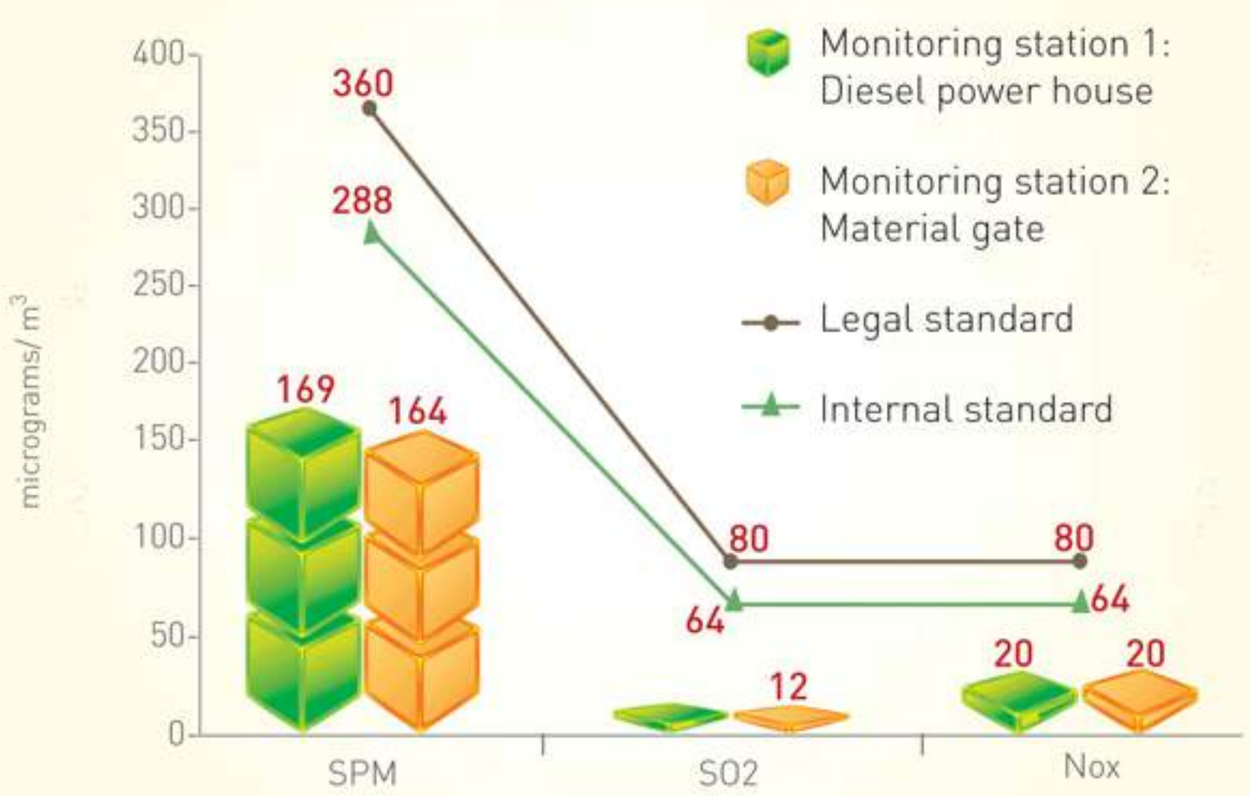
Environment Legal Compliance

While carbon emissions form the largest part of emissions from manufacturing, oxides of nitrogen and sulphur and particulate matter are also considered relevant to environmental performance. The following graph gives data regarding these emissions along with permissible limits.

The TKM plant at Bidadi has been a zero discharge facility. All the pollution levels are well within the limits set by Consent for Operation (CFO) document provided by the regulatory authority [Karnataka State Pollution Control Board]. The CFO covers all aspects of the allowable discharge of effluents under the Water (Prevention and Control of Pollution) Act of 1974 and emissions under the Air (Prevention and Control of Pollution) Act of 1981.

We strictly comply with the legal requirements restricting trans-boundary movement of Hazardous wastes. TKM also has no history of accidental spills or has had any action taken against it for non-compliance with environmental laws and regulations.

Ambient air monitoring data



Environment Day Celebration

Environment conservation awareness promotion through banner display

Environment conservation awareness promotion through placard display

Environment Day commitment to all members by Top Management

Environment Quiz for Team Members

Workplace environment kaizen competition and audit by Management

Emission check campaign

Plant visit by neighboring community school children

Rainwater harvesting awareness seminar involving neighboring industries

Environment awareness street-play to students of neighboring community

Exhibition to create awareness in organic farming, indoor gardening and herbal medicine

No-Paper Day Celebration

A day every month is dedicated towards promoting awareness and minimizing the paper consumption at TKM during the reporting period. This activity has been initiated by the General Administration group which has yielded good results.

Monthly awareness promotion by General Administration group

Commitment campaign

TKM Afforestation

Afforestation activity at Toyota Kirloskar Motor initiated as part of Sustainable Plant initiatives. In the year 2009 TKM initiated the activity with the objective to spark the Eco-Mind concept among team members and all the stakeholders.

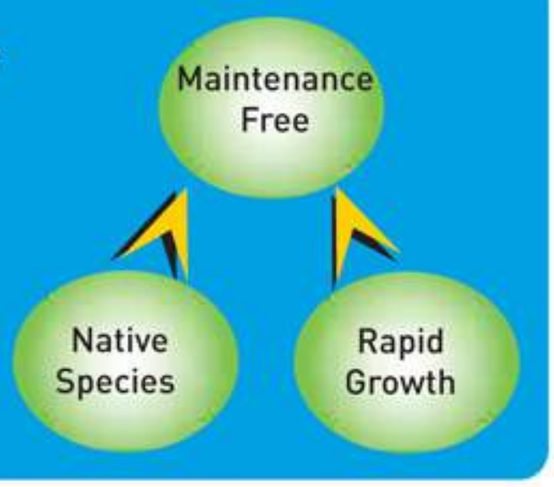
Our aim is to address the challenge, that our forests are facing today and promote a sustainable society through Afforestation efforts.

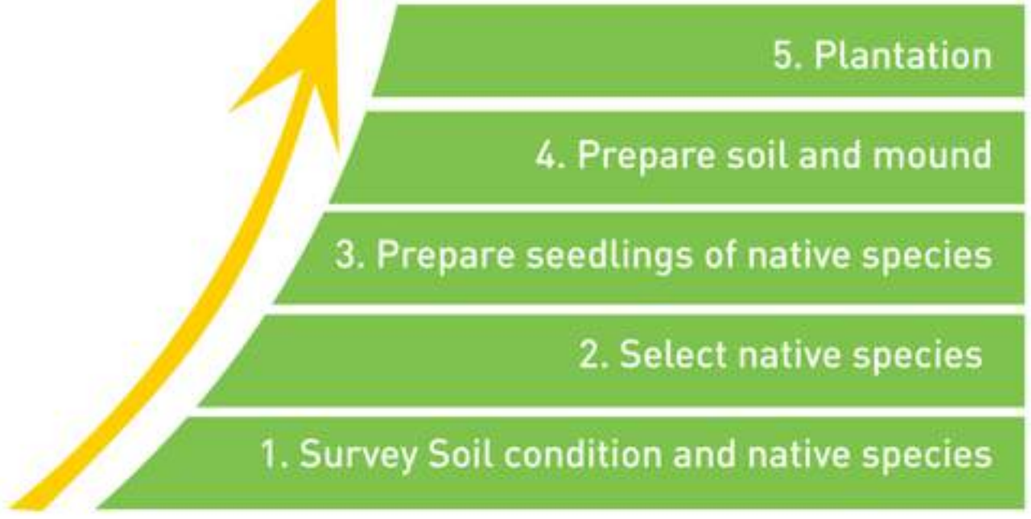
Our Message: Treat Our Existing Ecosystem Sacredly.

The entire initiative is based on the 'Dr. Miyawaki Method' to restore and reconstruct forests based on the concept of "Potential Natural Vegetation". which helps in creating the "perfect forest" by planting with native species so as to create biodiversity and aid food chain and ecology.

Thinking –way

To restore and reconstruct forests based on the concept of Potential Natural Vegetation





Team members involved in the Afforestation Event at TKM

TKM and KSPCB officials at the Afforestation Event at TKM

School children involved in the Afforestation Event at TKM

Top Management at the Afforestation Event at RPMEC (Regional Parts and Manpower Excellence Center), Pune

School children involved in the Afforestation Event at RPMEC, Pune

Afforestation at TKM - Bidadi

Saplings Planted –
1,20,900 nos

Plantation status

21st June 2009

21st June 2011