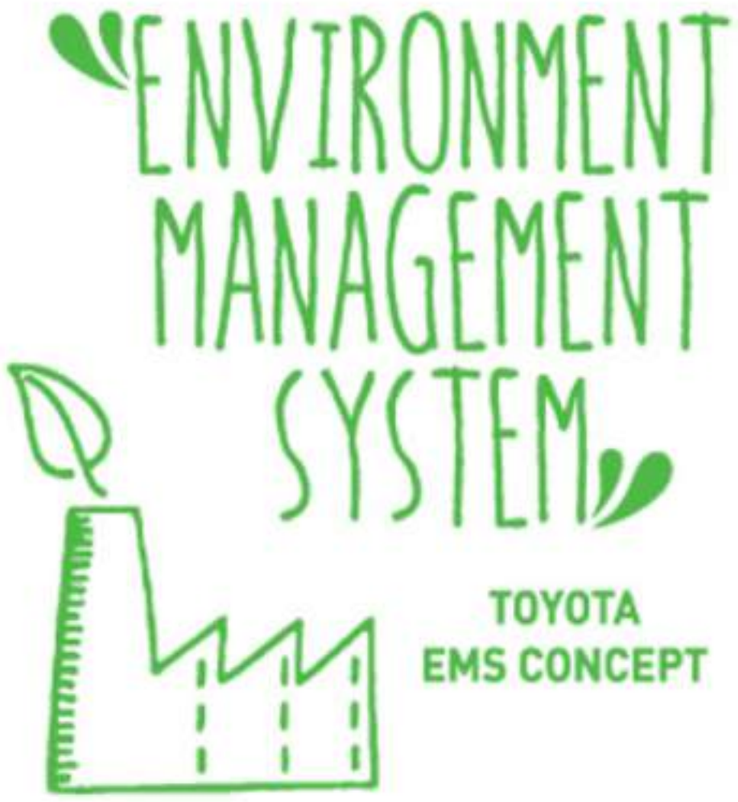
"OUR ENVIRONMENT"

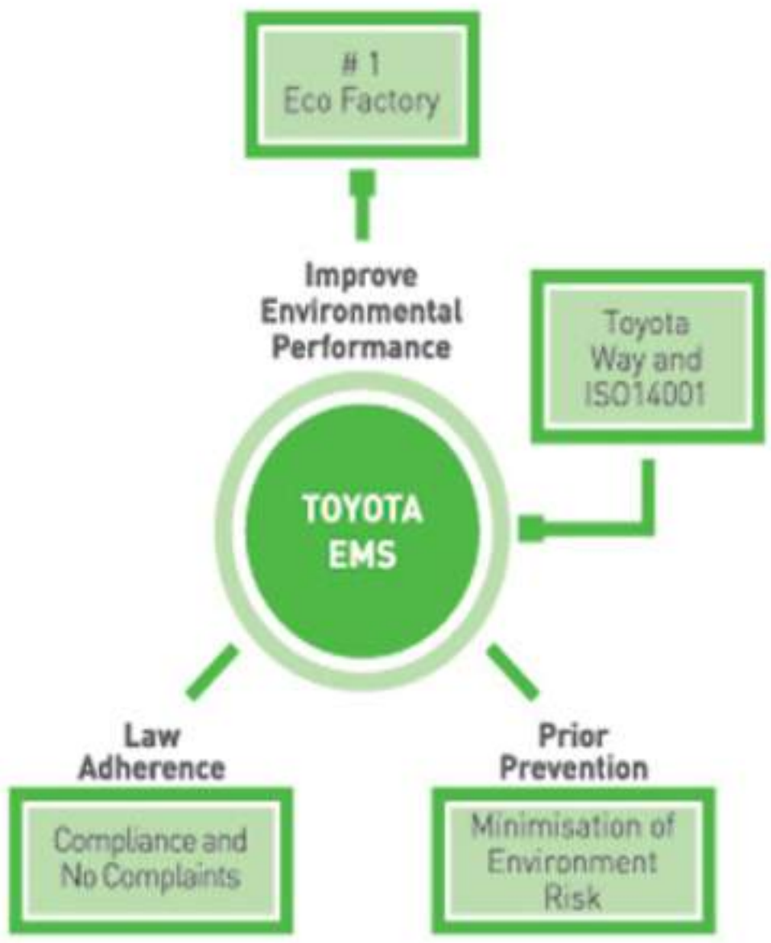


TOYOTA EMS CONCEPT

Toyota has established a Consolidated Environmental Management System (EMS) at all its affiliates including TKM. This Toyota EMS is designed to make Toyota an eco-friendly company and EMS forms the backbone of all the commitments towards reducing environment impact.

The Toyota EMS concept is based on three key pillars

- Ensuring compliance and No complaints
- Minimizing environmental risk
- Achieving best environmental performance



SIMPLICITY IN SUSTAINABILITY - REDUCING IMPACT, IMPROVING PERFORMANCE

Sustainable development provides a practical and flexible approach for achieving concrete, measurable progress across its economic and environmental pillars, while taking full account of the social consequences of greening the growth dynamic of economies. The focus of TKM's economic sustainable strategies is to ensure that natural assets can deliver its full economic potential on a sustainable basis. The TKM philosophy dictates natural assets are not infinitely substitutable and the Company's policies take that into account.

ISO14001 CERTIFICATION

TKM has been certified with ISO14001 since 2001, by the certification agency AJA (Anglo-Japanese American) Registrars, Thailand.

We expanded the scope of ISO14001 certification to the new manufacturing plant located at Bidadi and also to the regional facility located at Pune. The regional facility was awarded with Zero Non-Conformance in 2013 - the first year of system implementation.

Our continuous efforts resulted in successful implementation of ISO14001 system. Environment committee core members are identified and nominated by each functional area to carry out, sustain and promote environment initiatives. Selected members are provided internal auditor training. These trained members are then involved in system implementation and quarterly ISO14001 internal audits, which provide them with the opportunity to implement their learnings and enhance the same. By this combined team efforts both the manufacturing plants including regional facilities have undergone surveillance audit in the year 2013 and were awarded with Zero Non-Conformance.

Document verification by ISO auditor

Genchi confirmation by ISO auditor

TOYOTA GLOBAL EMS

Being a responsible corporate citizen, Toyota has put in considerable efforts from the day of its inception to reduce the negative impact of its operations on the environment. Consistent observation of the global environment concerns and understanding local prevailing conditions of all affiliates along with specific action requirements lead to the formulation of the Toyota Global EMS (Environmental Management System). Setting up of ISO14001 system is the basic requirement for Global EMS. Two years of implementation period is provided after establishment to comply with requirements and get certified with Global-EMS.

During the FY2010 Environment team conducted self assessment based on Global EMS standards. TMAP-EM's expert's team conducted detailed audit and was awarded with 84% conformance. Based on the results and gap analysis, TKM Environment team with the continued support and efforts of all stakeholders, improved and reconfirmed the EMS system and achieved 100% conformance during FY 2012 TMAP-EM audit.

The second manufacturing set-up is being implemented with Global EMS standards and the plan is to get certified by 2015.

TKM has a record of "Zero Major Non-Conformance" for the past 5 years, a result of team work and continuous improvement of the Environment Management System.

TMAP-EM trained four different functional experts from TKM during G-EMS training programme conducted at Philippines

G-EMS training programme conducted at Philippines

ENVIRONMENT POLICY

As a good corporate citizen, Toyota Kirloskar Motor Pvt. Ltd., an automobile manufacturing facility, Sales of automobiles and automobile parts is committed towards protection of the Environment by minimising our impact on the Environment through pollution prevention, conservation of natural resources and continual improvement.

To support this commitment, our policy is to:

1. Proactively promote environmental awareness and knowledge among Team Members through continual education and job specific training
2. Ensure compliance with legal as well as other requirements to which our company subscribes
3. Establish and review environmental objectives and targets annually to ensure better environmental performance through proactive continual improvement activities
4. Establish programmes 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:

The environment committee comprises of representatives from all functions of the organisation. The committee is led by Managing Director as its Chairman, and Deputy Managing Director and Vice President as Environment Directors who are supported by all the division heads and window persons. The Environment team (as secretariat) headed by Environment Management Representative (EMR) comprising of Environment professionals, centrally co-ordinate the progress of environment related activities through all environment sub-committees.

With an intention to enhance the committee performance, centralised ohbeya is established by Environment team. The performance of individual sub committee's are updated every month to Environment director by EMR.

During quarterly Environment Committee meetings, results along with challenges and future actions are explained by each subcommittees to Managing Director and Environment Directors. Directions provided by them are then implemented, to enhance overall environmental performance.

ORGANISATIONAL STRUCTURE

CHAIRMAN
Managing Director

ADVISORS
Vice Chairman and Deputy Managing Director

ENVIRONMENT DIRECTORS
VP and DMD

ENVIRONMENT MANAGEMENT REPRESENTATIVE (EMR)
S and E Department

SUB COMMITTEE	MANUFACTURING SUB - COMMITTEE	PURCHASE SUB-COMMITTEE	LOGISTICS SUB-COMMITTEE	SALES SUB-COMMITTEE	COMMUNICATION SUB-COMMITTEE
SCOPE OF WORK	» Zero Non Compliance / Complaints » Risk Minimisation » Toyota EMS Audit » Environment Performance Improvement » Sustainable Plant	» Continue to promote ISO14001 at suppliers » Maintain 100% elimination of VOC's » CO_2 management at suppliers » Promotion of Environmental activities at suppliers	» CO_2 Emission reduction in logistic process » Packaging Waste Management	» DERAP Compliance » CO_2 emission reduction » Achieve 100% ISO14001 certification	» Internal Environment communication » External Environment communication » Release of Sustainability Report

TKM's 5 YEAR ACTION PLAN

Global Environment Action Plan provided by TMC which includes corporate vision and directions further percolates down to the affiliate specific environment action plans. TKM's environment performance is detailed out in the 5-year Environment Action Plan, through which the annual environment plan is formulated and implemented at the plant level.

TMC 5 YEAR ACTION PLAN

↓

TMAP - EM 5 YEAR ACTION PLAN

↓

TKM 5 YEAR PLAN

↓

TKM ANNUAL ENVIRONMENT MANAGEMENT PLAN

↓

EACH SHOP ENVIRONMENT MANAGEMENT PLAN

SUSTAINABLE PLANT INITIATIVES : At TKM, we keep it simple

Toyota has been promoting initiatives at production sites all over the world aiming to achieve zero waste to landfills. Toyota's philosophy and policies on the environment are based on the Guiding Principles of Toyota. The Toyota Global Vision announced in 2011 stresses the importance of "Respect for the planet."

Based on the above philosophy and policies, TKM is continuously working towards simplifying sustainability by reforming all our operations in line with our mission to "Create an eco-friendly company in harmony with nature and society" through innovative technologies which are continuously integrated into our operations to reduce the environmental impact. Our size and reputation as a leading automobile manufacturer presents us with the responsibility to operate sustainably and use resources efficiently. It also offers us the opportunity to develop sustainable innovations that make every day better for the planet, and for the people we touch— whether that's our suppliers, dealers, customers, or employees.

Action Item	Specific action items and Goals		5yr action plan status – FY 2013		Target	
			Target	Actual	FY 14	FY 15
Promote activities to reduce CO_2 emissions through development / introduction of innovative low CO_2 emitting production technologies, and daily improvement activities	Reduce Electricity consumption (kwh / veh)	Plant-1	475	501	1%	1%
		Plant-2	367	367	1%	1%
	Reduction in LPG consumption. (Kgs/veh	Plant-1	24.41	25.74	1%	1%
		Plant-2	19.87	19.87	1%	1%
	Total Reduction in CO_2 emission (ton/MWH) and Energy (GJ/veh) Electricity – 1kwh = 0.934kgs CO_2 = 0.0036 GJ LPG – 1 kg= 2.82 kg CO_2 = 50.23 GJ	Plant-1	0.512/2.94	0.46 / 2.84	1%	1%
		Plant-2	0.45/2.84	0.45 / 2.84	1%	1%
Promote Effective use of natural resources to further contribute towards realising a recycle based society	Water consumption reduction (m3/veh)	Plant-1	3.86	3.74	1%	1%
		Plant-2	3.40	2.89	1%	1%
	Increase the steel yield ratio (%) by enhancing 5R activity involving all stakeholders	Plant-1	73	73.14	73.51	73.87
		Plant-2	68.76	68.76		
	» Reduce hazardous waste generation » Continue efforts to achieve zero waste to landfill	Plant-1	6.8	4.3	4.23	4.21
		Plant-2	5.14	5.14	5.09	5.04
Promote clean air for a cleaner and greener environment	Reduce VOC emission (gm/m2)	Plant-1	39.4	36.46	36.10	35.73
		Plant-2	16.34	16.34	16.18	16.01

PRODUCTION TREND:

Fiscal year 2013-14 was a slowdown for the automobile industry and TKM declared it as "Year of Kikikan" (Emergency).

The reduction in the production volume was observed due to external factors which affected organisations performance. The non-production hours were utilised for various constructive activities like human development and training, cost reduction, kaizen promotion and implementation

We target at improvising our systems across sectors including Resource Consumption; Energy Usage; Water Consumption; Air emissions; Land and Biodiversity Management; and Waste Management

3S, A UNIQUE AND SIMPLE CONCEPT

TKM expanded its production capacity from 210K to 310K during the year 2012. Influenced by economic crisis, FY 2013-14 we have faced a drastic dip in the auto market. It has become a challenge to overcome these fluctuations for TKM and to minimise the losses. These variations in the market have impacted our profitability due to non utilisation of the manufacturing capacity of the plant. The reduction in the production volume has severely affected fixed cost increase and denting the moral and motivation of team members.

Hence to fight this tough time, we have brought a unique concept called 3S (Smooth, Simple and Slim). Wherein Smooth means making a process free of irregularities such as improving line efficiency, Simple defines reforming present process and abolish unnecessary operation like material consumption optimisation at Shops, Slim represents improving productivity and eliminate muda (Waste in motion, inventory, waiting etc).

The 3S concept was brought into force by utilising the following approach- Communicate, Involve and Reform. We have built a strong communication link through various channels across all the levels of organisation by involving team members and the outcome of these approaches are depicted by reforming the process.

We have designed an exclusive Management system to bring this concept into action. Each problem faced at various areas of production has been broken down to identify their source which in turn has helped us understand the improvement points at every function. On identifying the source of the problem, we have formed a cross functional team that works on it and brings in processes for speedy implementation and also to maximise benefit. All these process are reformed under the guidance and management directions.

Utilising this concept, we have carried out the following activities:

1. Yosedome: Minimise fixed loss through flexible production
2. Gentan – I Management : Optimise consumption in terms of material and energy
3. Productivity Improvement : Optimise manpower

As a result of 3S, we have achieved 30% manufacturing cost reduction and 100% of team member involvement

In the year 2013-14, the activities resulted in 5.3 Kg/vehicle reduction which amounts to lowering of steel consumption by 293 MT/year. This led to a saving of nearly Rs. 12,30,600/. It also led to enhanced adoption of Kaizen and greater synergy between the stakeholders to collectively achieve more.

RESOURCE CONSUMPTION:

Toyota aims at globally "establishing a low-carbon society," "establishing a recycling-based society," and "environmental protection and establishing a society in harmony with nature" to contribute to sustainable growth of society and the planet based on the Fifth Toyota Environmental Action Plan.Toyota globally has a strong commitment towards resource conservation and promotes activities to enhance resource use efficiency at all its affiliates.

Based on the Toyota Motor Corporation's (TMC) guidelines, TKM derives its policies and standards and strives to ensure efficient resource use by manufacturing and delivering high-quality products accompanied by innovation and quality services.

We endeavour to reduce the environmental impact at all stages of vehicle life cycle from development and design, procurement, production and logistics, sales to waste and recycling, and promote environmental management.

Steel:

Steel is an essential raw material for the passenger car automobile industry as it constitutes up to 23 percent of the weight of the final finished product. Steel consumption has an impact on both the business operations and environment as it involves large CO_2 emissions throughout its life cycle, right from mining to its scrapping and re-utilisation.

The objective of reducing steel wastage is to maximise the yield as well as reduce the carbon footprint. We have been driving initiatives for "Steel Yield Improvement" under 3 Tier concepts. With the result of potential kaizens identification and implementation by the previously established special task force, we could further improve the steel yield ratio compared to the previous years.

KPI		2011-12	2012-13	2013-14	
				Target	Actual
Steel yield ratio (%)	Plant-1	72.06	72.89	73.00	73.14
	Plant-2			68.76	68.76

Level	Stakeholder Involved	Major Viewpoint / Focus
Tier – I	Internal Team Members	Optimize steel sheet consumption & source and reuse scrap to make smaller parts
Tier – II	Steel Suppliers	Modify the internal processes to supply steel in line with TKM requirements
Tier – III	Non – Auto Parts Suppliers	Scrap steel sent was reused for non-automotive parts

ENERGY USAGE

Power and LPG consumption Reduction

Fiscal year 2013-14 was a very challenging year for reducing specific energy (LPG and Grid electricity). Reduction due to increase in the fixed loads by having a very low vehicle demand was a tough task. The senior management had directed to retain targets as per the five year action plan despite the low volumes. We realised energy reduction would be successful in this extreme condition only by involving all team members from shop floor people to senior management. We therefore utilised the Environment month (i.e. June 2013) as a platform to initiate the energy saving activities and coined a theme called "Eco thru Eco" (i.e. Economy through Eco initiatives) which was launched and driven by the senior management.

KPI		2011-12	2012-13	2013-14	
				Target	Actual
Electricity (KWhr/ Veh)	Plant-1	489	481	475	501
LPG (Kg/ Veh)		25.07	23.95	24.41	25.74
Electricity (KWhr/ Veh)	Plant-2		371	367	367
LPG (Kg/ Veh)			17.9	19.87	19.87

Major practices to reduce Power and LPG consumption:

- Sequential oven switch off / on
- Oven and Booth temperature optimisation
- Optimise plant capacity utilisation by initiating Kaizen-theme based activities
- Standardisation of electrical equipment usage hours
- Promotion and implementation of Energy Conservation Ideas
- Kaizen competition for team members

ENERGY OHBEYA MANAGEMENT:

As a responsible corporate citizen, we continuously strive to bring down our energy consumption and work towards sustaining it.

Due to sluggish market demand, the impact of low capacity utilisation on energy cost (fixed and variable) and profitability was very high. The strategic energy auditor's group lead by Utility acts as centralised coordinating team where they develop strategies to achieve energy consumption reduction targets and support different divisions in deployment. The strategic team was developed to work towards achieving Environment Director's vision on Energy consumption optimisation.

Utility team has established an Energy Ohbeya, which is platform to visualise energy related abnormalities and kaizen from all the divisions. This is utilised to understand the consumption variations across the company and also various kaizen's suggested for consumption reduction. The energy ohbeya (Visualisation) has been appreciated companywide and many affiliates have benchmarked this activity.

Energy Ohbeya Management has been divided into 3 phases wherein during the phase 1 the target of 3% energy consumption reduction was set. All shops conducted detailed study and identified Kaizens to achieve the reduction target.

During the phase-1 the control on supply and demand management was very weak and also we did not have a strong follow up mechanism to absorb these activities. As a result we were not able to achieve the set target.

Phase 2 was further classified into 4 steps.

Step 1: Visualisation to get clarity: An Energy management tree was established to grasp the weak points in the system. Through this Kaizens from all the shops were consolidated. Depending on the data acquired line wise and machine wise energy requirement were evaluated and an online energy monitoring system was established. This system helped Utility in grasping periodic data from all shops. The shops utilised this portal to communicate queries to Utility.

Step 2: Strategy for Energy Cost Reduction: main focus was on minimising loss of energy through fixed load reduction. As per the study conducted, it was inferred that as capacity decreases, variability increases.

Step 3: Energy Consumption Reduction: this was achieved by machine level evaluation ie;

a. Energy Optimisation

b. Run time Optimisation

c. Fluctuation Reduction

Step 4: Unit Cost Reduction: This is achieved using the 5 R concepts that include Air pressure reduction, Increase in chilled water temperature, Purchase of Green Power and Reduction of freshwater usage.

The reflections of phase 2 were consolidated and as a result it was found that there was no in depth analysis carried out at shop levels.

Result: 1257 Rs/veh savings

Phase 3: As a result of Phase 2, we have categorised equipments into 3 major types ie;

a. Equipment that run during break time and shift handover

b. Equipment utilised during holidays

c. Equipment running all the time such as emergency lights etc.

The energy utilised in these 3 categories is yet to be evaluated. A detailed road map is prepared and activities are designed to achieve the set targets.

HARNESSING RENEWABLE ENERGY THROUGH BIO GASIFIER:

Even during the critical business conditions, TKM never held back in implementing Eco-friendly technologies into its operations. As part of Eco-initiatives we have set-up a Bio-gasifier plant to convert food waste generated at TKM through canteen operations. A non-polluting and renewable source of energy is created in biogas plant. The technology has helped us reduce LPG consumption in canteen and created an opportunity to generate and utilise renewable energy.

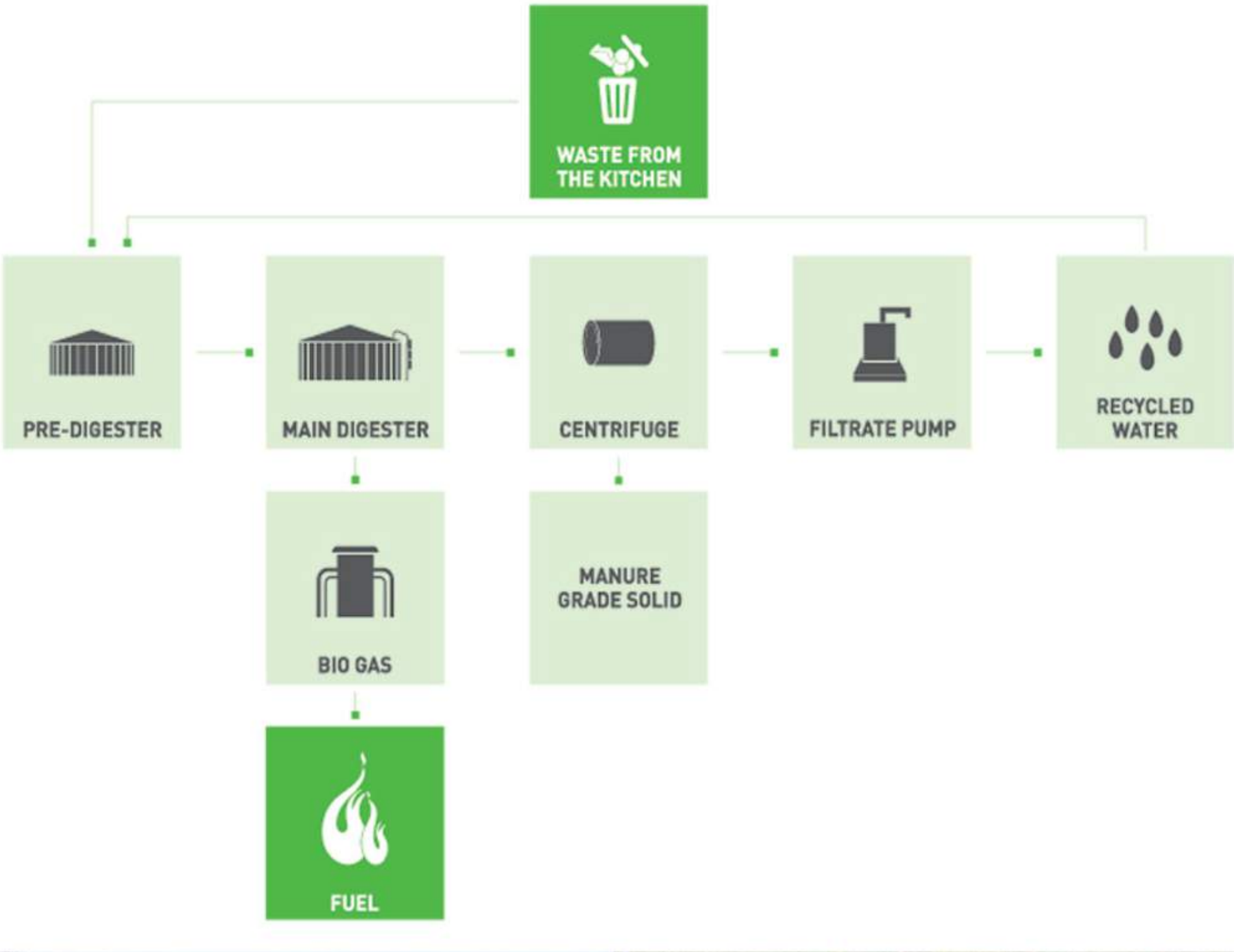
The Bio-methanization technology is adopted at TKM to treat food waste hygienically. The technology comprises of aerobic and anaerobic digestion processes. The biological digestion process is composed of anaerobic bacteria which transforms wet food waste into methane rich Biogas and Bio manure.

Capacity of the Biogas unit: 1.5 tons of food waste/day

Expected generation of Biogas: 100–120 M^3/Day

Reduction in LPG consumption: 40–50 Kg's of LPG/Day

Generation of Manure: 140 Kg/Day



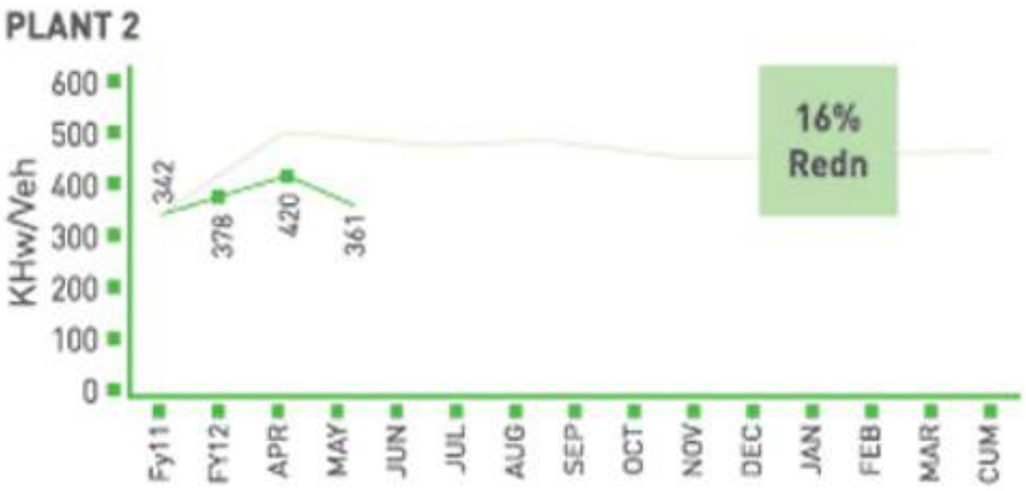
Bio-Gasifier unit setup at TKM

ECO KAIZEN ACTIVITIES: DRIVE

Employees were motivated to exhibit their innovative ideas which help in reducing energy consumption. The main focus was towards implementing YOSEDOME CONCEPT ← Convert Fixed to Variable Load→. The importance of this approach was explained to all the team members whose enthusiastic participation lead to phenomenal results.

We received about 844 Kaizens. 674 of these Kaizens were implemented and as a result we achieved about 12% energy reduction in plant 1 and about 16% energy consumption reduction in Plant 2 compared to May 2013 by simply using our own employees suggestions. Yet another demonstration of how we believe in Simplifying Sustainability.

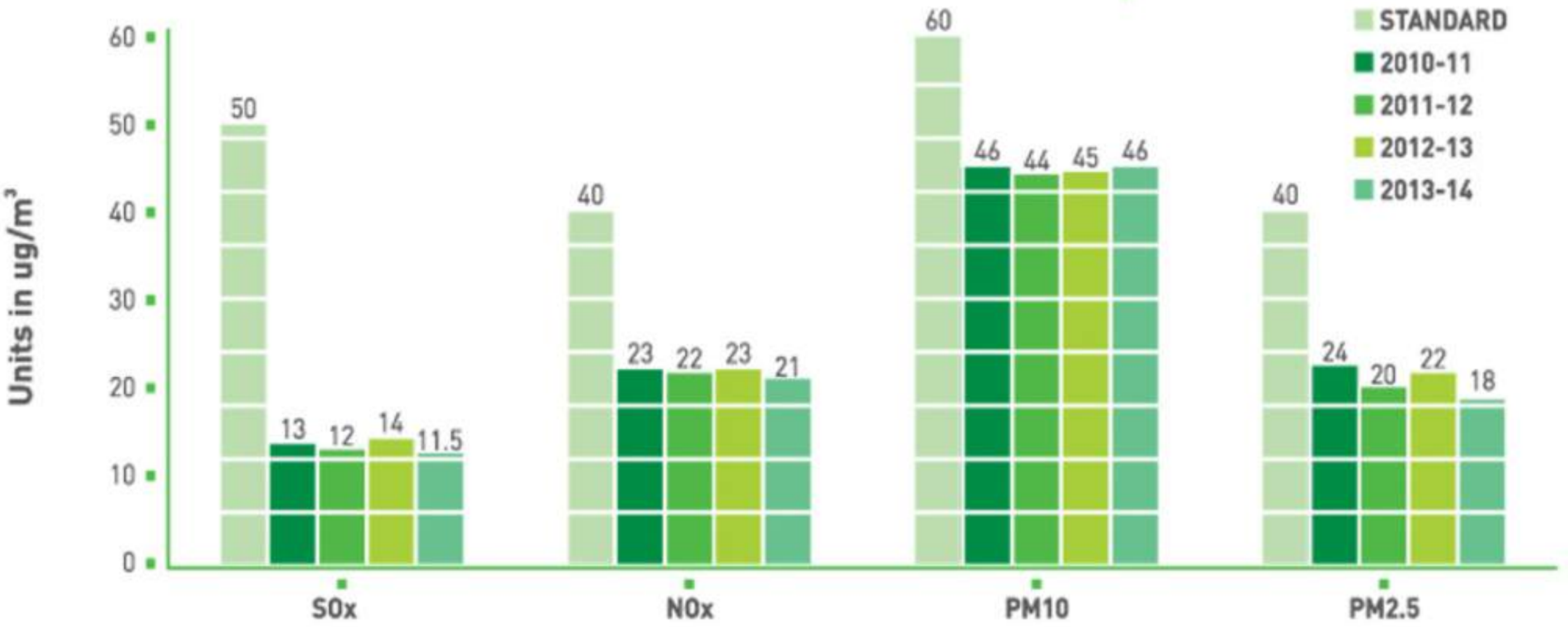
IMPACT ON ENERGY CONSUMPTION




Global body line at Eco-factory

AIR EMISSIONS

The main air emission sources at TKM are emissions from paint booth, paint baking ovens, boilers and welding fumes. LPG is a major fuel used in the ovens, boilers and cooking operations. Stack emissions and ambient air quality are monitored monthly and the results are reported to regulatory authorities on a regular basis.



Ozone depleting substance emission is not monitored at TKM. But since the introduction of Innova, we have been using chillers unit at paint process with R134 and thus the AC fixed in all the cars since 2005 are CFC free. However, the Air conditioners at the office side are still running with CFC AC's. TKM has been working on a plan to replace these phase wise based on the equipment condition.

CO_2 EMISSION

Plant	Parameter	Specific Generation			Absolute Quality			Percentage [%] Reduction Targets	
		2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2014-15	2015-16
Plant 1	Scope 1 (Fuel consumption, company vehicles)	0.07 tCO_2e/ Veh	0.06 tCO_2e/ Veh	0.08 tCO_2e/ Veh	5292 MT	5368 MT	5673 MT	1%	1%
	Scope 2 (Purchased electricity)	0.32 tCO_2e/ Veh	0.33 tCO_2e/ Veh	0.39 tCO_2e/ Veh	24195 MT	31012 MT	27654 MT	1%	1%
Plant 2	Scope 1	#	0.04 tCO_2e/ Veh	0.05 tCO_2e/ Veh	#	3806 MT	4149 MT	1%	1%
	Scope 2	#	0.31 tCO_2e/ Veh	0.34 tCO_2e/ Veh	#	29502 MT	28168 MT	1%	1%

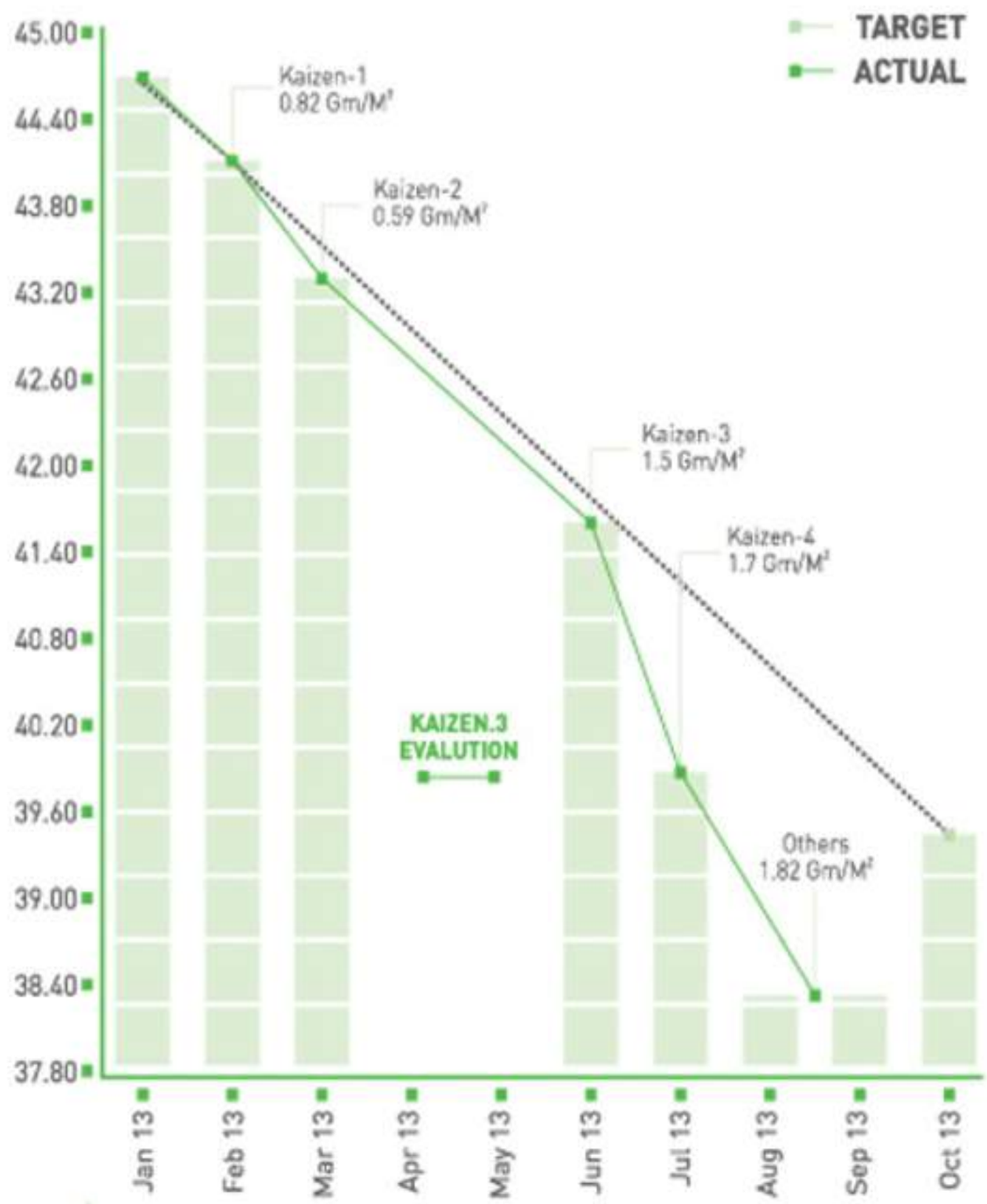
VOC REDUCTION

At TKM, the activity of reducing paint consumption is taken through reducing VOC emission. The Kaizens taken up at a large scale have been recognized and awarded "Gold Medal" by TMC in a Global Competition among all Toyota affiliates. The trigger point to initiate the dozens of Kaizens has come through the sudden increase in the paint consumption post plant expansion. Therefore a team has been created to identify all probable root causes. A special task force comprising members from different functions (i.e. Maintenance, Utility, Production, Environment and Others) led by the Environment Director had identified gaps, change points and came up with all possible solutions after many brain storming sessions.

The detailed cause analysis has been taken up by using 4M method and nearly 129 opportunities were identified involving stakeholders and team members. Executing these Kaizens was thought-provoking and challenging as some activities required us to challenge equipment manufacturers, TPS and essentially to re-engineer the technical specifications. These innovations resulted in reduction of VOC emission from 44.87 gm/m^2 to 38.46 gm/m^2 against the set target of 39.8 gm/m^2 with "Zero Investment" and also further reduced to 36.4 gm/m^2 in the due course of the year. These efforts consolidated TKM's position as No.1 in VOC emission reduction among global Toyota affiliates.

Major practices to Reduce Paint Consumption:

- Optimisation of Bell Cup cleaning
- Optimisation of Robot Pre-spray
- Colour Batching
- Enhance the Robot transfer efficiency
- Clear zone VOC reduction
- Cartridge flushing frequency reduction
- Paint overspray reduction



Overall savings of approximately 23,000 Kg of VOC/year was achieved. Intangible benefits being improvement in the ambient air quality and development of kaizen mind and synergy between the stakeholders to achieve more.

CO_2 EMISSION REDUCTION THROUGH SIMPLIFYING LOGISTICS

Enhancement of Truck load capacity utilisation:

TKM supplies service parts to all Regional parts distribution centres located across the India. The light commercial vehicles (LCV) were used to distribute parts to few parts distribution centres. It was identified that 20% of the capacity of LCV was used based on the load requirement of distribution centres.

With an objective of enhancing the truck utilisation or efficiency of vehicle-detailed study was conducted and arrived at by changing the distribution vehicle and also route standardisation. After the detailed analysis LCVs are currently replaced by smaller vehicles.

The modifications helped in enhancing the truck load capacity utilisation from 20% to 80% along with the distance reduction. This has ultimately resulted in reduction of 10.3 tons of CO_2 emission per year and savings of 0.28 Mn rupees in a year

With an intention of sustaining this kaizen further truck and route efficiency of all the routes are currently being monitored and corrective actions will be taken in the next financial area.

Route Standardisation through Google Plotting:

Earlier distance for all Service Parts Logistics routes operating across India was calculated based on the check sheet provided by transporter through odometer reading of truck.

With an objective of standardising the process for distance confirmation route survey was done jointly by TKM and Logistics for the selected routes at each depot using the Google plotting.

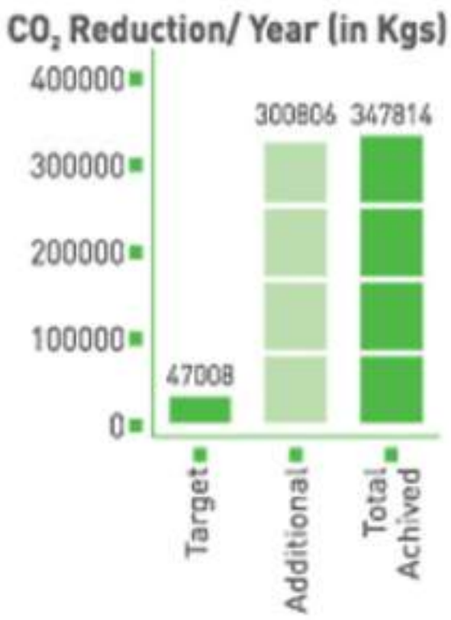
Based on the survey results distance for all the routes was plotted in Google and made a standard visualisation for better monitoring. Keeping survey results as base, only +/- 2% deviation was given as operational confirmation to Transporters. The kaizen implemented with the latest Google plotting technology helped in achieving reduction in distance, transportation cost of about 20.7 Mn/year and CO_2 emission reduction of 726 tons/year.

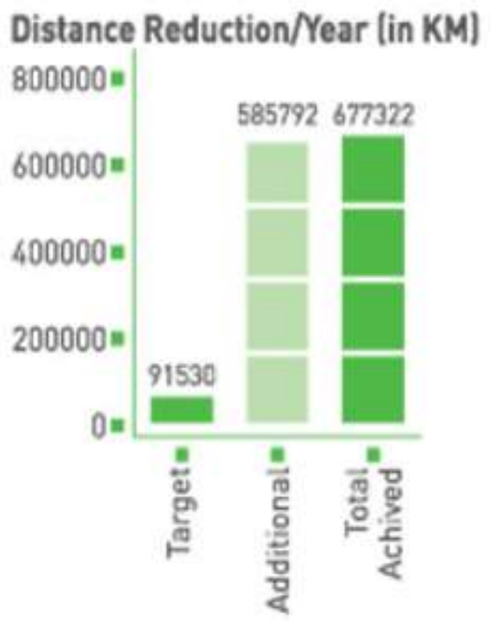
Future plan is to make effective utilisation of enhanced technology like GPS tracking system and to provide real time information to attain cost reduction and CO_2 emission by reducing the distance.

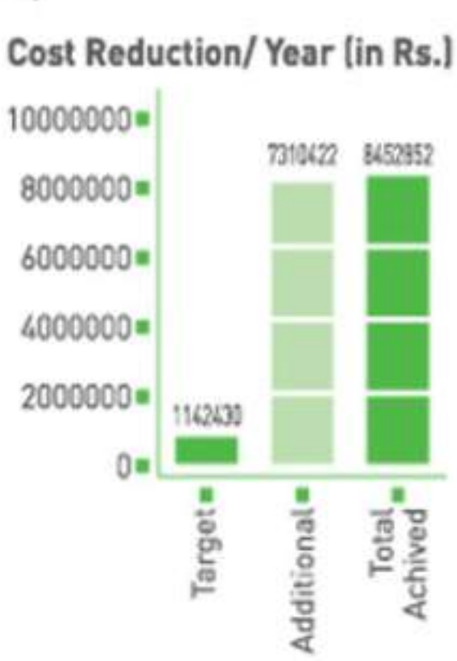
Eco-drive by Employee Commutation team

The commutation team at TKM took up initiatives to reduce CO_2 emission from its operations by implementing various Kaizen's on fuel consumption reduction.

- **Alternate Route usage:** Some vehicles were taking a longer route though there were no pickup points after a certain area. Thus to reduce this, we identified all the connecting routes between different areas of Bangalore and TKM and implemented usage of shorter routes which in turn saved a lot of time and the total travel distance of the vehicle also came down.
- **Route standardisation based on member's availability:** We have been monitoring the capacity utilisation of vehicles. As a result each vehicle had been allotted a particular route based on the number of travelers wherein it would also cover other pickup points on the way to TKM, depending on the seat availability.
- **Muda movement reduction:** It has been observed that, the vehicles were sent to service garages irrespective of the garage service capacity. Many times buses returned without being serviced and this lead to multiple visits to service garages. Based on the study a standard system is established to send vehicles in series depending on the garage service capacity.
- **Cancellation of NICE road usage during empty movement:** (NICE road: 6 lane private tolled expressway that connects the important parts of Bangalore). The NICE road facility is used for commutation to avoid city traffic and also to reduce employee travel time. This has increased the total travel distance resulting in more fuel consumption. Hence to reduce the fuel consumption, the NICE road usage is eliminated during empty vehicle movement.







WATER CONSUMPTION REDUCTION:

TKM receives about 331262 m³ of fresh water from KIADB every year. This water is utilised for both domestic and industrial purposes. In line with the philosophy "Zero Discharge", TKM has been promoting activities to reduce water consumption at the source. It is been possible through 2 distinct strategies.

- Optimisation of consumption through kaizen
- Installation of high end technologies for recycle and reuse

Optimisation of water consumption has been taken up involving the team members for "YOSEDOME" concept wherein lots of Kaizens have come up which eventually contributed to overall reduction in water consumption.

The fine CETP treated water quality is enhanced after the installation of MBR and RO that has in turn improved the quality and quantity of the recycled waste water. All the waste water is treated and utilised in the plant (Industrial, Domestic- Car wash, flushing, Gardening and Afforestation).

The company also proactively promotes re-use and optimal use of water. Furthermore, TKM is already practicing "Rain water harvesting pond" having installed 25000 cubic meter storage capacity.

RAIN WATER HARVESTING POND:

Our manufacturing unit gets its water supply from Karnataka Industrial Area Development Board (KIADB), catered by River Kaveri. The continuously depleting rainfall (failed monsoon) has resulted in severe water scarcity in the region.

As a responsible corporate, TKM has been continuously working towards reducing fresh water consumption in its operation. MBR and RO technologies are set up at both the manufacturing plants for recycling and reuse of waste water. 60% of total recycled water is used back in the production.

In continuation to the efforts of reducing fresh water consumption in production process we have built a rain water harvesting facility in our premises. The harvesting structure is built in the area of 14500 m² and which has got a water storage capacity of 25000 m³. Total surface run-off and roof top water will be collected in this tank. The collected water is processed and reused in the production.

Being a major industry in the locality, the effort has positively impacted in reducing the industry's water requirement, as it can be utilised to serve the domestic purpose of local community.

Our ultimate aim is to achieve Zero Freshwater (River Water) consumption at our 2nd manufacturing plant.

The Rain Water Harvesting tank was inaugurated by Managing Director and the Environment Director of the organisation.

KPI		2011-12	2012-13	2013-14	
				Target	Actual
Water (m3/ Veh)	Plant-1	4.9	4.72	3.86	3.74
	Plant-2		3.73	3.40	2.89

Efforts to reduce water consumption:

- UF process elimination in WWTP
- DI - RO process elimination in paint shop
- Dormitory - STP process elimination
- RO reject water usage for toilet flushing
- PSF backwash water usage
- Establishment of water and waste water Ohbeya to enhance the water management

TKM has been able to recycle over 60% of the total wastewater whilst reducing its freshwater consumption over 60%

Rainwater harvesting pond


Fauna at TKM


Flora at TKM


Fauna at TKM

BIODIVERSITY SURVEY AT TKM:

The combination of a diversity of life forms and their interactions with each other and with the rest of the environment has made Earth a uniquely habitable place for humans. Biodiversity sustains human livelihoods and life itself.

TKM is continuously putting efforts in identifying the environmental dimension of sustainability concerns on non-living natural systems such as land, air, and water. We also realise that it is our prime responsibility to understand the similar concerns associated with living natural systems ie our Biodiversity as a whole.

With the said intention we engaged with Biodiversity experts in the region to conduct a biodiversity survey inside the plant and our neighbourhood (up to 10 KM radius). Biodiversity survey was conducted by experts during major climatological seasons of the region.

The objective of biodiversity survey is to

- Understand the current biodiversity composition of the site and neighbourhood
- Compare the survey results with biodiversity history of the site to understand impact of our operations on the biodiversity
- Develop a conservation plan and implement the same to enhance biodiversity

Visual walk through survey of the area was carried out initially to identify and understand the existing physical and biological environments, which include the core zone (432 acres) of the TKM and the buffer zone (area of 10 km radius from the core zone). Preliminary scientific information was collected in the form of published papers, reports, books, state flora, etc.

The line transect method was adopted by experts to estimate the native species availability, distribution pattern and its relative abundance. Our intention is to keep this enumeration and obtained data as a baseline so as to compare the same with the future strategic surveys in order to conserve the native ecosystem. We also conducted survey in the similar habitats outside TKM and data comparison was done to determine the impact of our operations if any.

During the survey 133 (apart from species introduced as part of green belt development) plant species were found inside TKM. These plants belonged to 105 genera and 36 families. 173 species were found in the buffer area during the survey. The 173 species belonged to 136 genera and 51 families. Out of 133 species, 69 species found have medicinal properties. Due to continuous improvement in the floral composition of the TKM, more than 35 bird species were recorded during the biodiversity survey.

TKM is situated in the Bidadi Industrial Area, which has been earmarked by the Government as an industrial area development project. No natural biodiversity habitats are affected by the location of the Manufacturing facility.

GREENBELT DEVELOPMENT:

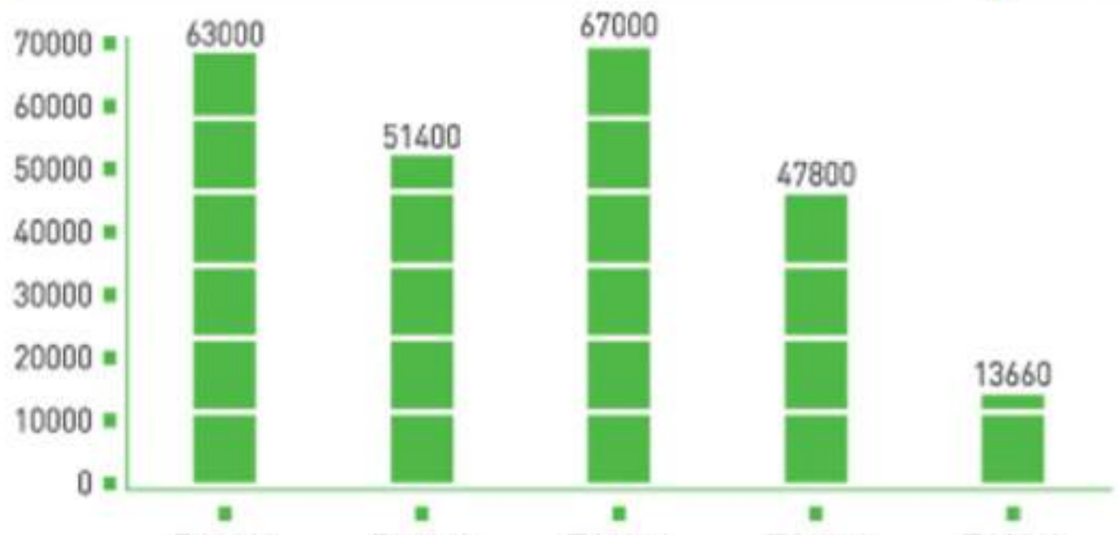
Keeping it simple, keeping it green

Afforestation activity initiated as part of Sustainable Plant initiatives in the year 2009 with the objective to spark the Eco-awareness among team members and all the stakeholders. It is an effort to create visual delight for our employees and TKM visitors and also to create a carbon sink.

TKM has reserved 33.33% (144 acres) of total land area (432 acres) to develop greenbelt inside the premises. We have planted 243,000 saplings covering about 12% (51 acres) of green belt area.

We are continuously engaging with forest experts and ecologists from universities and government departments to enhance the species composition inside and outside TKM. Group of TKM's green belt development team visited botanical gardens at GKVK (Gandhi Krishi Vignana Kendra) and Lal Bagh to identify various species, understand growth characteristics and suitability to grow inside industrial greenbelt area. Based on the study and experts advice more than 100 native species have been planted inside TKM.

The TKM's greenbelt development plan aims at overall improvement in the local ecosystem. By understanding the need of biodiversity conservation and in consultation with Forest experts we have made different concepts to establish conservation parks inside TKM. With respect to this, our plan is to develop Rare and Endangered plants, Timber yielding tree species, Medicinal and Aromatic plants, Edible fruit yielding plants and others.



Native trees planted inside greenbelt area

WASTE MANAGEMENT

SIMPLE IDEAS, SUSTAINABLE RESULTS

SPECIAL DRIVE: REDUCTION OF FOOD WASTE AT TKM

In accordance with UNEP theme "THINK-EAT-SAVE", TKM took up the initiative of promoting awareness among team members on 'FOOD SHORTAGE IN THE NATION and ITS IMPACT'.

Special initiatives to trigger awareness on food crisis at nation and global were initiated during entire month

- Placard displays at all the canteen outlets
- Video displays on food crisis
- Sharing world facts about food shortage
- Taking commitment from all the TKM members for not wasting the food in dining halls
- Messages by Top-Management

All TKM members were educated on "Avoid Food Waste – Take how much you need" and how the food wastage reduction solves many issues such as hunger, poverty, child mortality and many more issues that affect developing countries like India.

To spread awareness among members various campaigns were also organised.

The consolidated efforts in educating all the members resulted in reduction of food waste from 24 tons to 14 tons per month.

Placard display at canteen outlet


Food waste reduction commitment campaign

HAZARDOUS WASTE REDUCTION:

TKM complies with the legal requirements restricting trans-boundary movement of hazardous wastes. We do not treat any waste inside the plant but send it to authorised vendors situated within Karnataka.TKM has no history of accidental spills and did not have any significant oil spills in the reporting period.

KPI		2011-12	2012-13	2013-14	
				Target	Actual
Hazardous waste (kg/veh)	Plant-1	6.01	4.65	6.8	4.3
	Plant-2		5.55	5.14	5.14

We always aim at Zero hazardous waste to landfill in line with our Toyota Earth Charter. The different categories of hazardous waste generated at TKM along with the disposal practices are mentioned.

Category	Waste description	Mode of Disposal
Non-hazardous waste	Paper, Plastic, Cotton, Glass, Wood, Steel, Dust	Recycling
Hazardous waste	Paint sludge, Oil and Paint contaminated residues, Waste oil, Sealer waste	Incineration
	Chemical sludge and Phosphate sludge	Co-processing
	Used oil, Spent solvents	Reprocessing
	Paint Containers	Recycling
E-Waste	Bulbs, computer hardware etc.	
Bio-sludge	Bio-sludge	Composting

TO REDUCE / IMPROVE PACKAGING MATERIAL:

TKM has 129 suppliers who supply nearly 800 to 1000 parts per vehicle of various sizes to the manufacturing line. These parts have to be delivered in an immaculately packed condition to ensure best quality vehicle to customer. Unpacking of parts generates huge waste and ultimately has enormous impact on the environment. TKM has adopted 3R concept to reduce packaging material reduction. We have achieved 100% returnable packing for our all local parts through continuous initiatives by involving suppliers and purchase function.

At our service parts division, we could achieve 118 MT of packaging material reduction by doing innovative design changes in packaging, enhancing returnable boxes and pallets and modification of packing material. One of the unique projects was taken up by conducting a packaging vendors meet at TKM. As the packing industry in India falls in the unorganised sector, this meet was utilised to educate and provoke a thought to look for quality, compliance and kaizen.

We could reduce 65.96 MT of our export parts packaging material against an internal target of 10.56 MT by increasing export parts quantity in a consignment