

A world map with green continents and white oceans. A purple rectangular box with a white border is centered over the map, containing the text "Welcome to Green Co Forum".

Welcome  
to  
Green Co Forum



# Respect for Planet

**A Toyota Philosophy**

## TOYOTA KIRLOSKAR MOTOR

(A Joint venture between *Toyota Motor Corp., Japan* & *Kirloskar Group, India*)



### Basic Information:

- 1. Incorporation : October 1997 Area - 432 Acres
- 2. Location : Bidadi - Bangalore , Ramanagar District
- 3. Employees : 6400 Members Average Age - 29 Years
- 4. No of Dealers : 342 (As on Dec 2015)
- 5. No of Suppliers : 142 (Core Suppliers)



**Total Area - 432 Acres**



- TTID
- JOAI
- ASAI India
- SUPREME
- BUNDI
- WHEELS INDIA
- JOHNSON CONTROL




\*TTTI – Toyota Technical Training Institute  
\*\*NMEC – National Manpower Excellence Center  
(Service training center & Parts warehouse)

## Toyota Kirloskar Motor : Product profile

### Product manufactured

Plant 1		Plant 2			Camry Building
					
<b>INNOVA</b>	<b>FORTUNER</b>	<b>COROLLA</b>	<b>ETIOS</b>	<b>LIVA</b>	<b>CAMRY</b> (Regular & Hybrid)

### Product Imported & Marketed

	
<b>PRADO</b>	<b>LAND CRUISER</b>
	<b>PRIUS</b>

### Products Exported

	
	
	
<b>INNOVA</b>	<b>NR Gasoline Engine</b>
<b>LIVA</b>	
<b>ETIOS</b>	

Parts Export to Indonesia, Brazil, Argentina, Philippines, South Africa

**9500 Hybrid Vehicles sold in India**



# Outline of Toyota – Our Aspiration

To create happy customers through good Product/Service

★ Become Most Admired & Respected Company in India



**We aim @ “ Zero defect & Zero effect ” thro’ Lean & Green Manufacturing practices**

# Outline of Toyota - Strength



- ❖ Engaging the talent & Passion of people
- ❖ Challenging goals
- ❖ Rewarded with a smile
- ❖ Exceed expectations
- ❖ Constant innovation
- ❖ Commitment to quality
- ❖ Safety & most responsible ways of moving people
- ❖ ENRICHING LIVES
- ❖ Future of Mobility
- ❖ **Respect for the Planet**



# Environment Management

India business is recognized as prioritized area



**Mr. Akio Toyoda**  
President

## Growth in Asia/developing countries

- ✓ “Asia and developing countries are key to future Toyota growth”
- ✓ “Establish a comprehensive car sales model from India”

**Toyota has huge expectations**

## Sustainability Policy



## TKM Vision & Mission

### VISION

BECOME THE MOST ADMIRER AND RESPECTED COMPANY IN INDIA BY FOLLOWING THE TOYOTA WAY

### Mission

CREATE AN ECO-FRIENDLY COMPANY IN HARMONY WITH NATURE AND SOCIETY



# TOYOTA GLOBAL CHALLENGES - 2050

**CHALLENGE 1**

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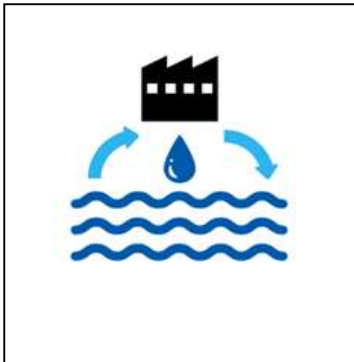
New Vehicle  
Zero CO<sub>2</sub>  
Emissions Challenge



**CHALLENGE 4**

---

Challenge of  
Minimizing and  
Optimizing  
Water Usage



**CHALLENGE 2**

---

Life Cycle  
Zero CO<sub>2</sub>  
Emissions Challenge



**CHALLENGE 5**

---

Challenge of  
Establishing a  
Recycling-based  
Society and Systems



**CHALLENGE 3**

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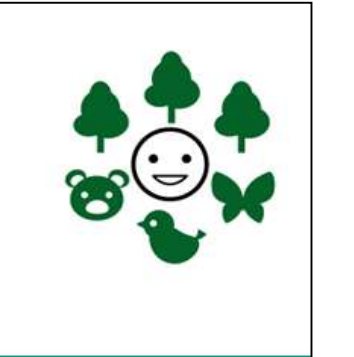
Plant Zero CO<sub>2</sub>  
Emissions Challenge



**CHALLENGE 6**

---

Challenge of  
Establishing a  
Future Society  
in Harmony  
with Nature

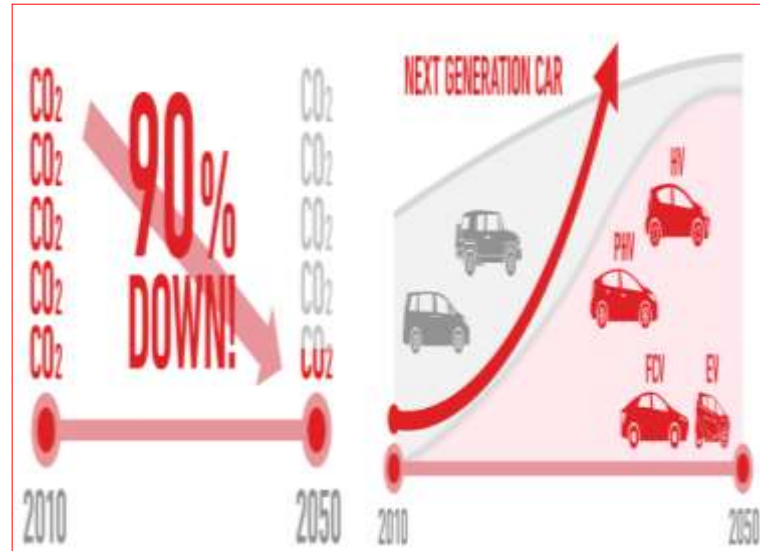


# TOYOTA GLOBAL CHALLENGES - 2050

## CHALLENGE 1

New Vehicle  
Zero CO<sub>2</sub>  
Emissions Challenge

CO<sub>2</sub> 0



- \* Mileage improvement of engine driven vehicles
- \* Promote development of next-generation vehicles with low CO<sub>2</sub> emissions - HV, PHV, FCV, Electric vehicles

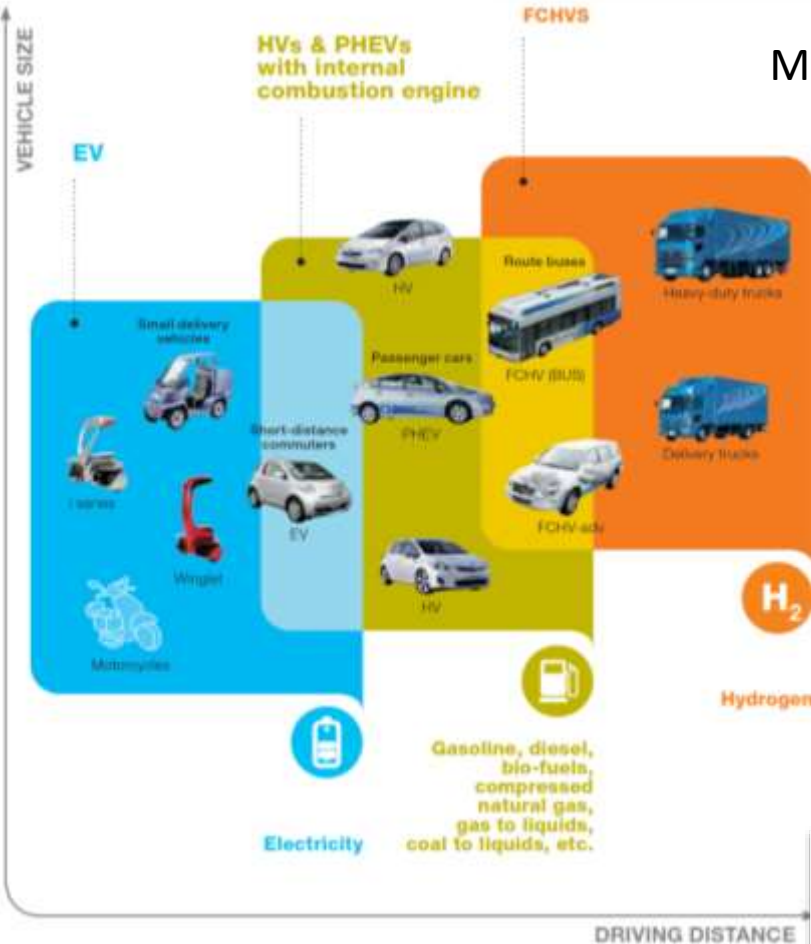
# Toyota Global Initiatives



## Toyota's Vision of Sustainable Mobility

" Without focusing on environmental, energy and safety measures there can be no future for motor vehicles."

-Katsuaki Watanabe,  
Vice-Chairman, Ex-President, Toyota Motor Corporation



Moving towards greener tomorrow - Toyota Prius in India



Third Generation Prius launched in India in Dec 2010

With over 2.5 Million units sold Globally,  
Prius is the World's Largest Selling Hybrid



# Toyota Global Initiatives

## Product Technologies: Initiatives for Reducing Size and Weight of Vehicles

【 Six methods by which the world's most compact vehicle was achieved 】



Reverse placement of differential gear



Centered take-off gearbox



Placement of ultra-thin fuel tank under floor



Slimmed backs of car seats



Compact air conditioning unit



Asymmetric installment panel



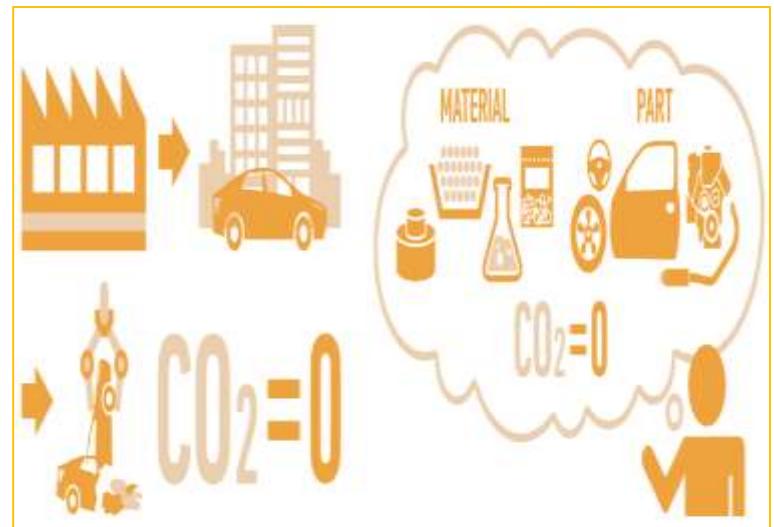
Size and weight reduction is crucial to energy conservation and lower CO<sub>2</sub> emissions

**TOYOTA**

# TOYOTA GLOBAL CHALLENGES - 2050

## CHALLENGE 2

Life Cycle  
Zero CO<sub>2</sub>  
Emissions Challenge



**\* Adopt more recycling and biological materials for vehicle production**

**\* Promote environmental friendly designs by choosing appropriate materials**

# Cradle to cradle approach

## Concept of Car-to-car Recycling

Recycling Improvement design/  
development of Ecological Plastic

**Development/  
Design**



**Production/  
Logistics**

Reduction of materials discarded

Increasing use of returnable shipping containers



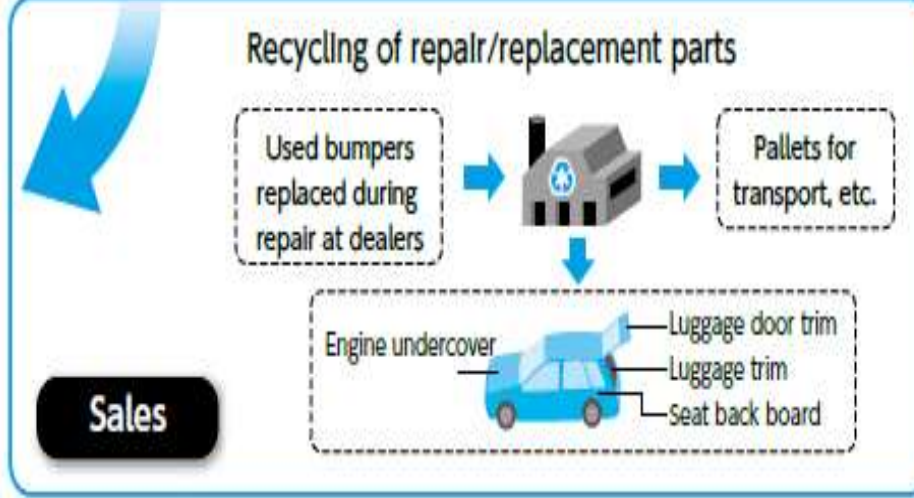
Recycling from end-of-life vehicles

**Waste**



Recycling of repair/replacement parts

**Sales**



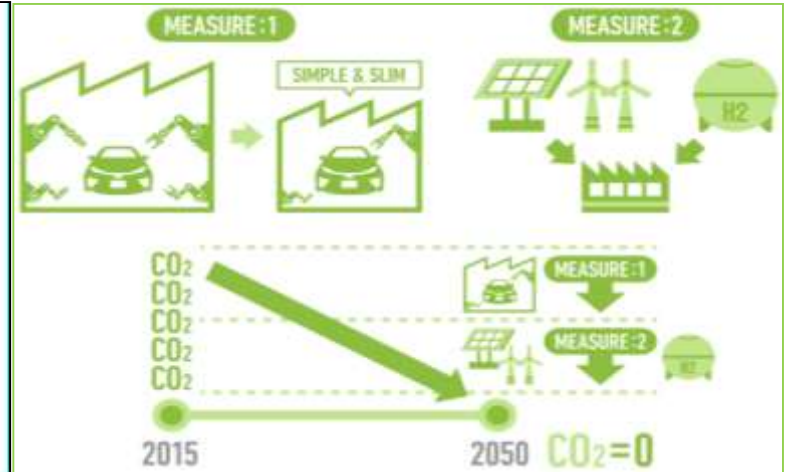


# TOYOTA GLOBAL CHALLENGES - 2050

## CHALLENGE 3

Plant Zero CO<sub>2</sub>  
Emissions Challenge

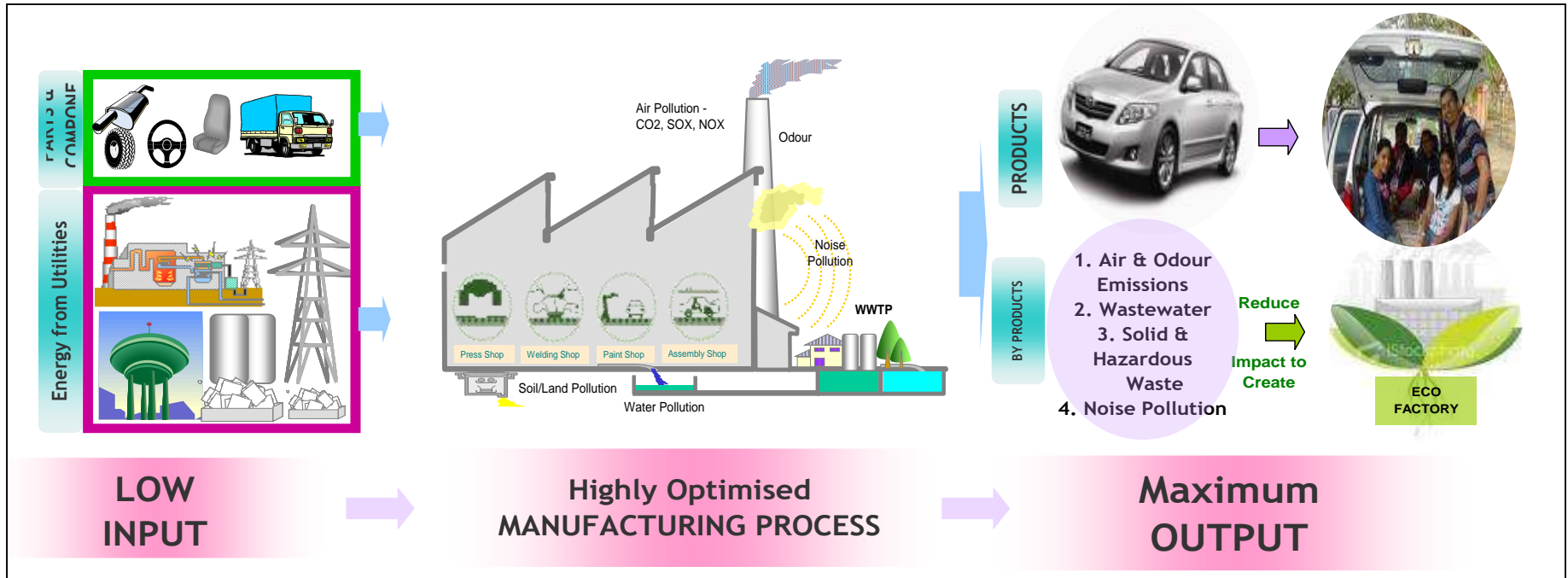
CO<sub>2</sub> 0



- \* Improvement of manufacturing technology
- \* Switching to different forms of energy

# Pursuing Eco-Friendly Technology

## The Eco Factory Concept



Energy efficient Servo Press  
(Energy Saving : 40%)



Water Borne Paint & 3 Wet  
Painting Technology  
(VOC reduction - 50%)



Advanced Waste Water Treatment Plant (RO & MBR)  
(Recycling ratio - 65%)

# TKM – Environment Management System

Steps

TMAP Guidelines for Five yr Action Plan

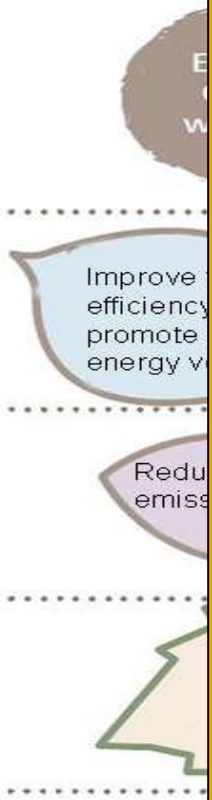
TKM Five Year Action Plan

Yearly Environment Action Plan

Environment Management Program

Management review (Quarterly)

Toyota E



4. ENVIRONMENT MANAGEMENT PROGRAM

5. MANAGEMENT REVIEW (QUARTERLY)



TOP Management on Genchi to Observe Kaizens



Review of Environment Activities by Management



# Eco-Mind Activities

## Objective:

To Contribute towards Sustainable Society through building ECO-CONCIOUS MIND among TOYOTA MEMBERS

## Concept



ECO CITIZENS

## Environment Month Celebration

One Special Theme each year on Key Env. issues

### Activities Taken Up

Awareness programs, Kaizen competitions, 3R promotion.

Special activity for involving Family Member

School Children & community awareness program.

ECO CSR - Clean & Green Village Campaign

### International Env. commemorative Days

World Environment Day: 5<sup>th</sup> June

Ozone Layer Protection Day: 16<sup>th</sup> Sept

Climate Action Day: 23<sup>rd</sup> Oct

World Water Day: 22<sup>nd</sup> March

Drive



Contribution to Company & Society

Perform



Kaizen

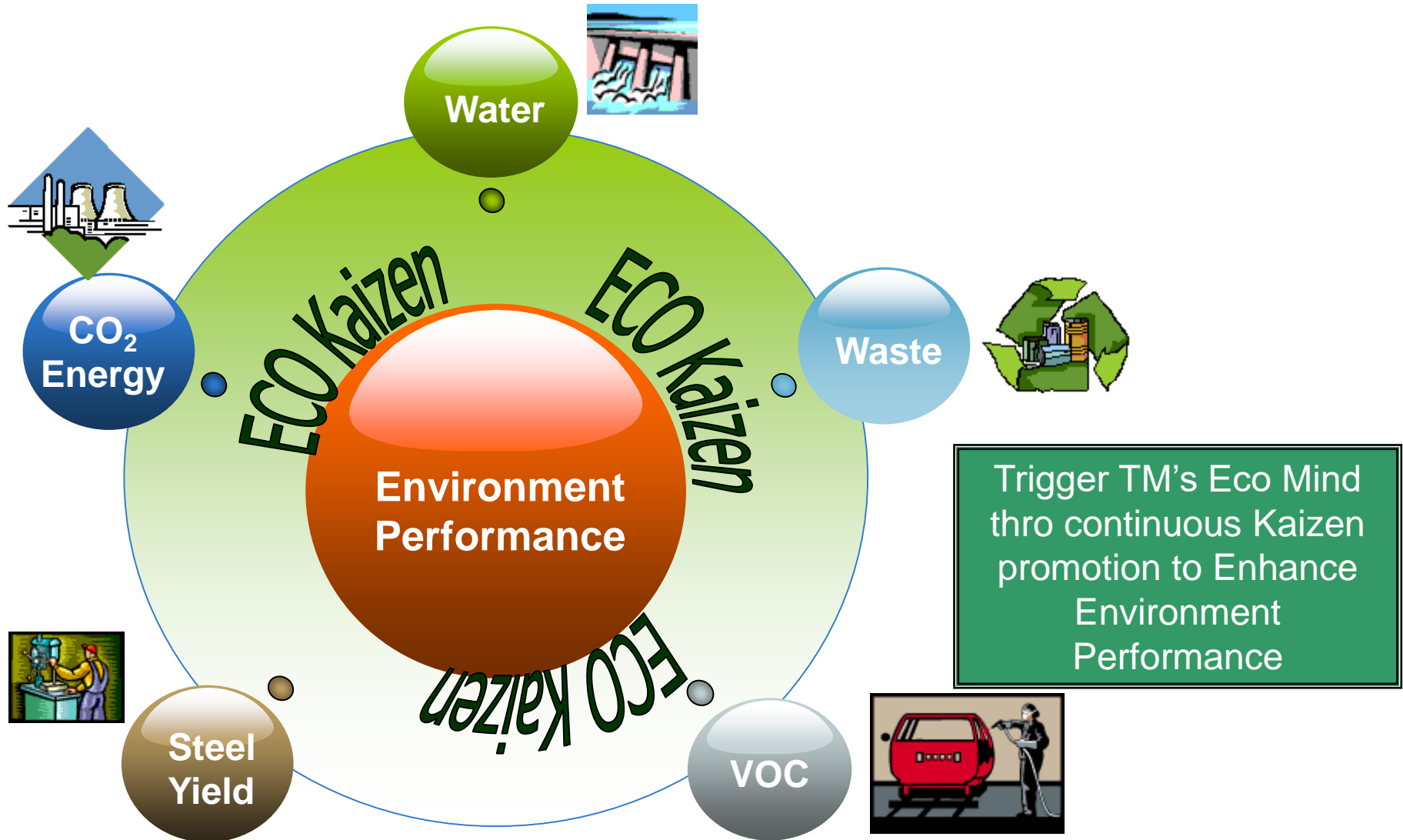
Learn



Training

# ECO KAIZEN CONCEPT

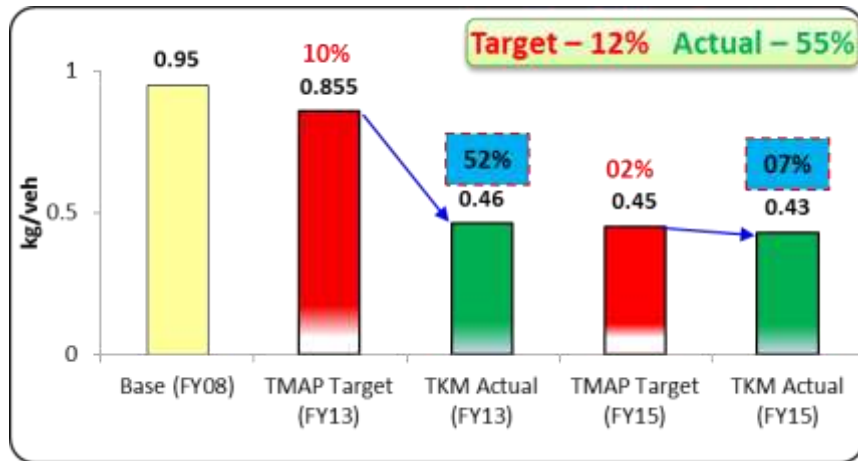
**Objective: To Execute Continuous Kaizen Activities in Key Areas to improve the Overall Environment Performance of TKM**



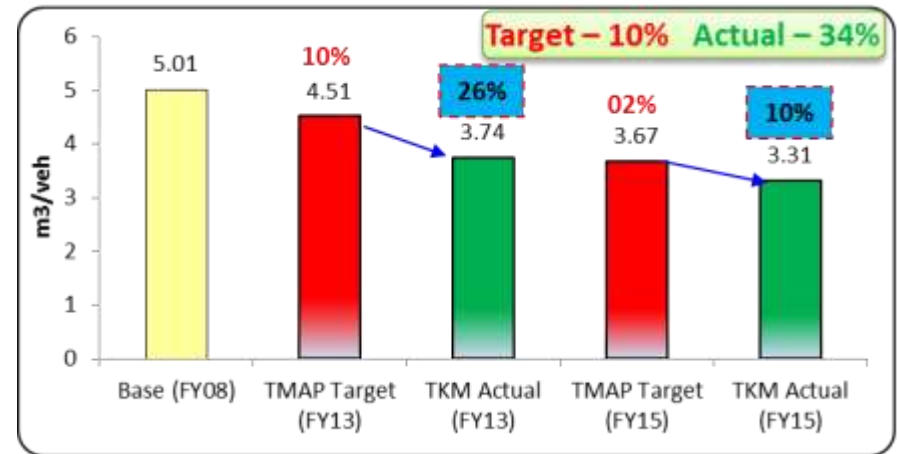
# TKM 05<sup>th</sup> Five-year Action Plan

## Plant Performance (Resource Conservation)

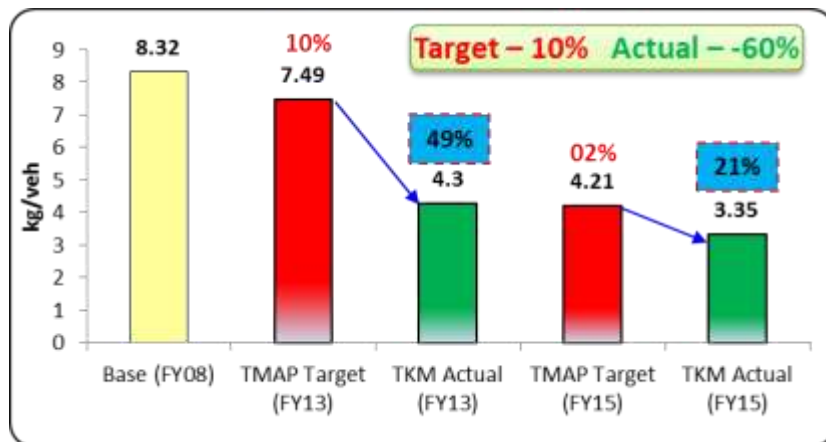
### CO<sub>2</sub> Emission



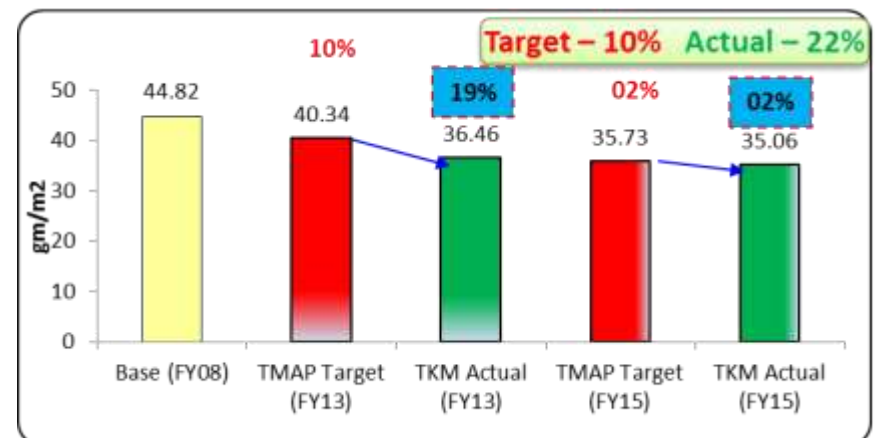
### Water Cons.



### Waste Generation.

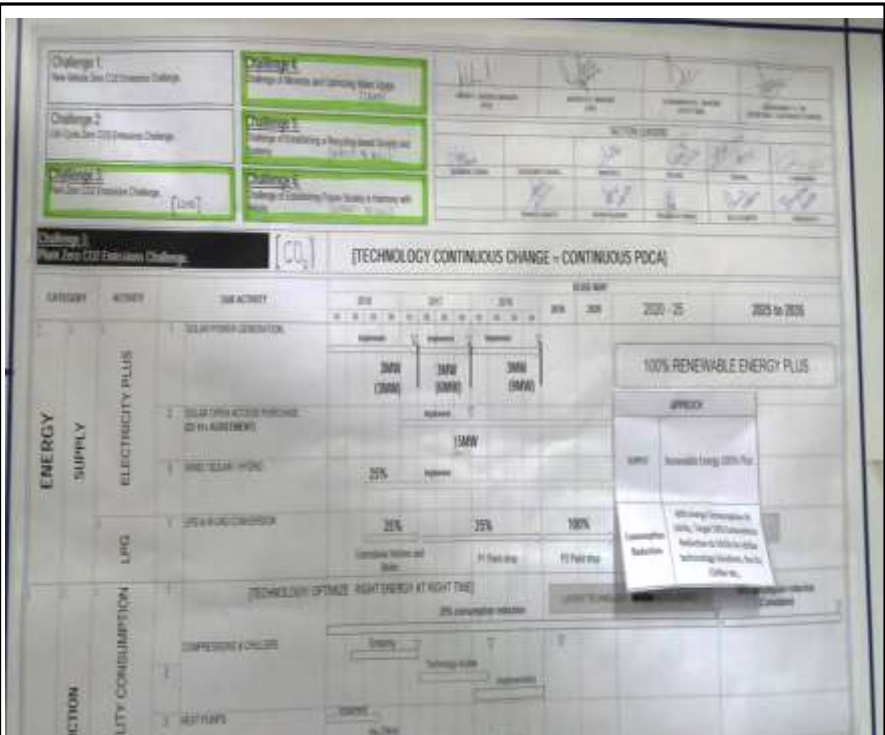


### VOC Emission





# ROAD MAP : TOWARDS ZERO CO2 by 2050



Visualization to monitor & control the project progress

## Technology Partners :



## CHALLENGE 3 : PLANT CO2 ZERO

SOLAR



3MW (9MW by 2018)

LPG TO RLNG



For P1 Centralized Kitchen

RWH ENHANCE



Enhancement of 9000m3

HEAT PUMP



@ both P1 & P2  
LPG

SMART AC



104 Nos Replacement

CFL TO LED



40000 Nos Replacement

## CHALLENGE 4 : OPTIMIZE WATER USAGE: FY 2016~17

WATER FLOW REDUCTION



30% reduction

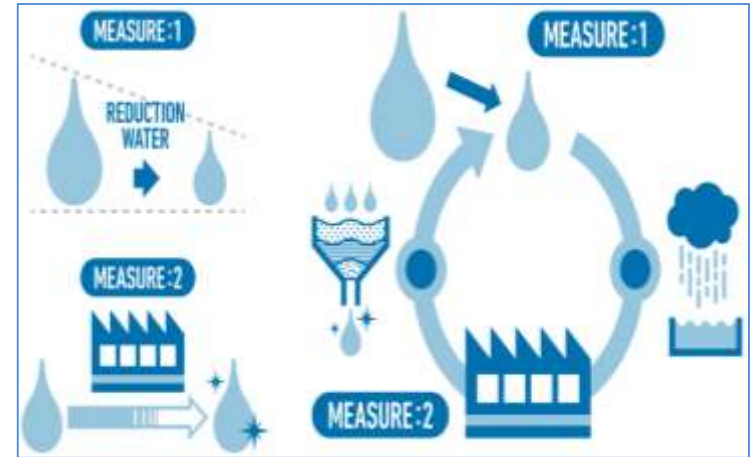
PERCEPTION FOR GREEN BUILDING



# TOYOTA GLOBAL CHALLENGES - 2050

## CHALLENGE 4

Challenge of  
Minimizing and  
Optimizing  
Water Usage



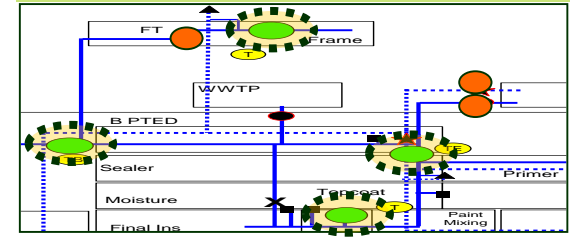
- \* Comprehensive reduction of amount of water used
- \* Comprehensive water purification and returning it to earth

# WATER Conservation:

## Approach towards Water Neutrality

### 1. Specific consumption :

### Per vehicle consumption



### Water Leakage Reduction

### 2. Enhanced Recycling:



### Installation of MBR & RO Plant

**60% of Treated Water is being recycled back to the Process**

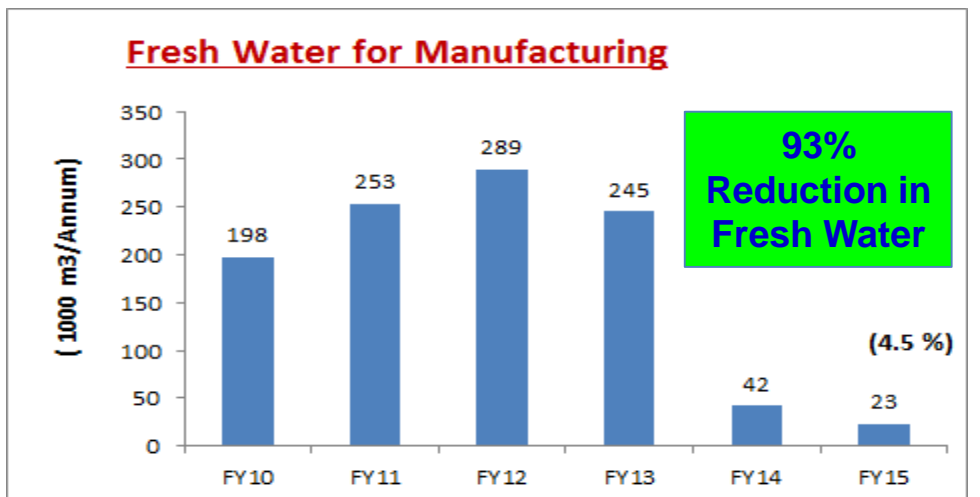
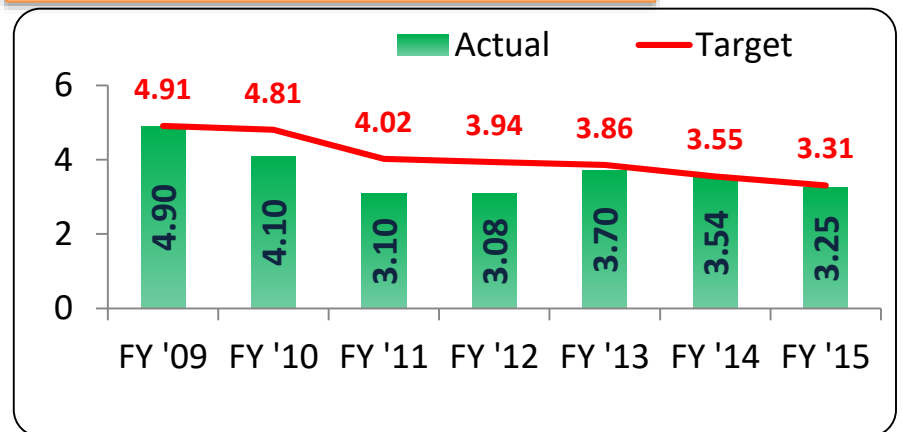
**Zero Freshwater (River Water) being used at Plant # 2**

### 3. Rainwater Reuse:



- 1. Storage Capacity : 25,000m<sup>3</sup>
- 2. Qty of Rain water harvested : 70,000m<sup>3</sup> / annum

### 1. Specific Water consumption:

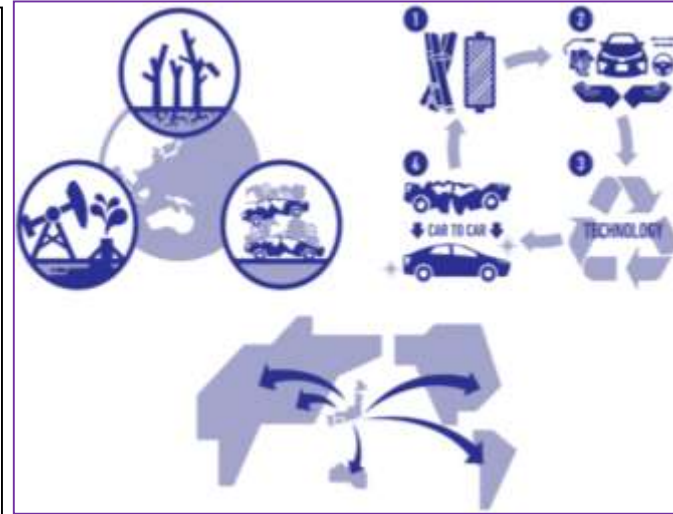




# TOYOTA GLOBAL CHALLENGES - 2050

## CHALLENGE 5

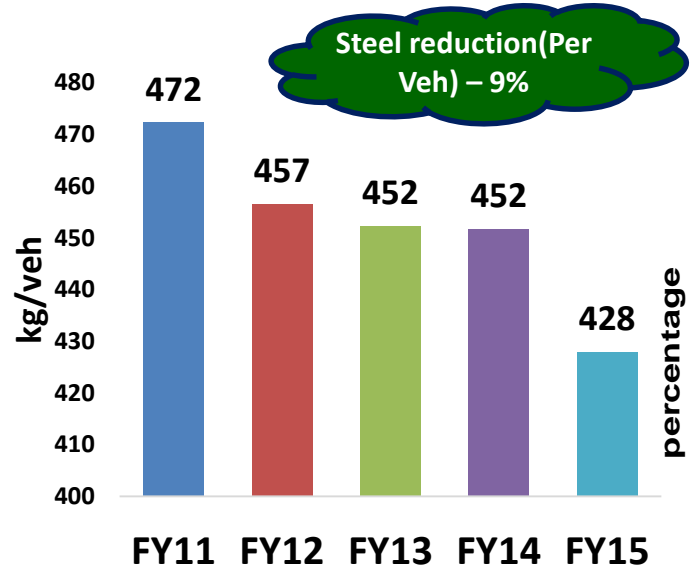
Challenge of  
Establishing a  
Recycling-based  
Society and Systems



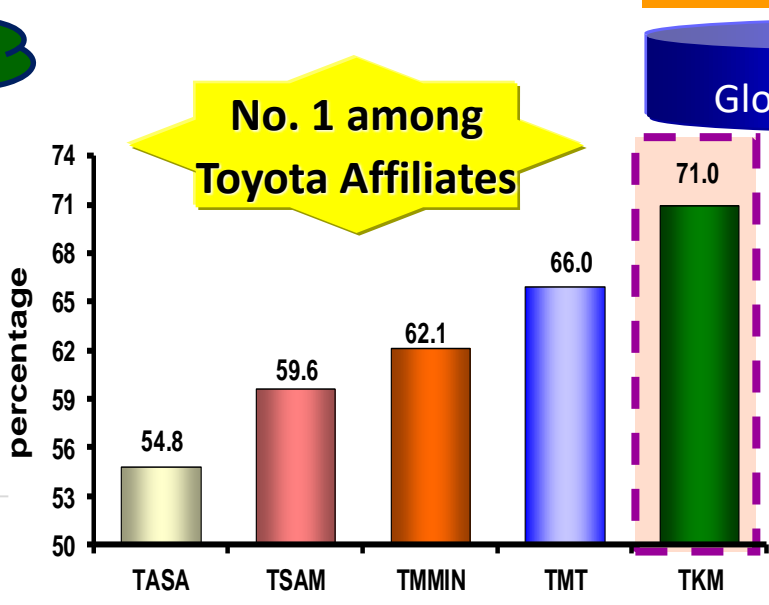
- \* Making vehicles from end of-life vehicles and Utilization of eco-friendly materials
- \* Development of recycling technology

# Steel Yield Improvement Activity

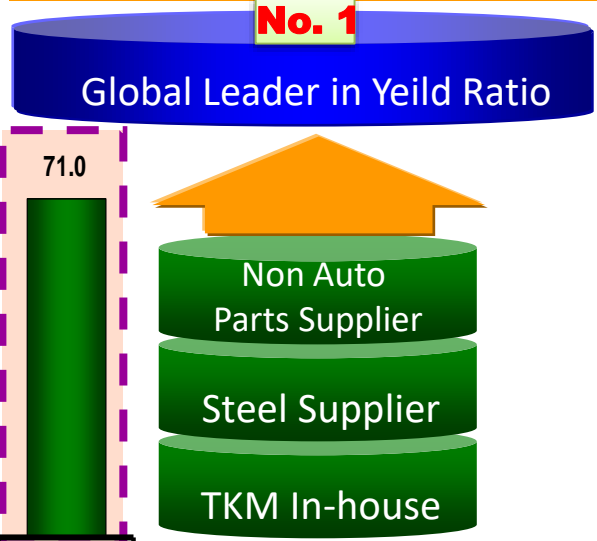
## Consumption of Steel



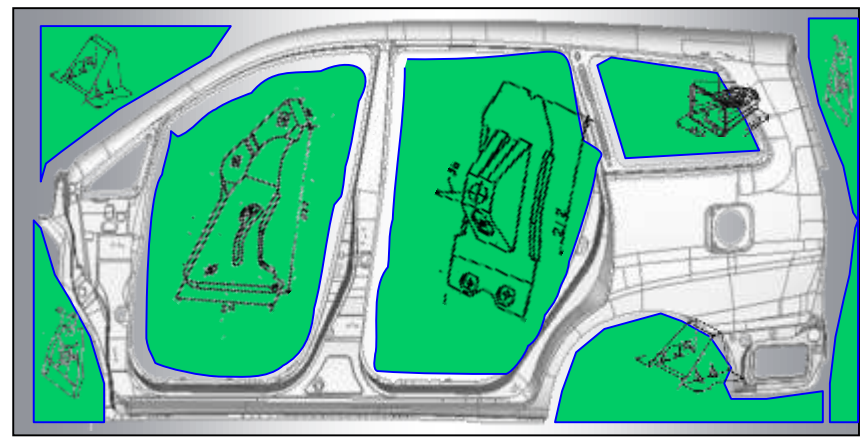
## Yield Ratio (%)



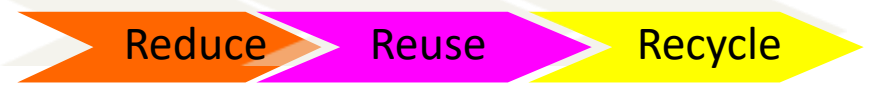
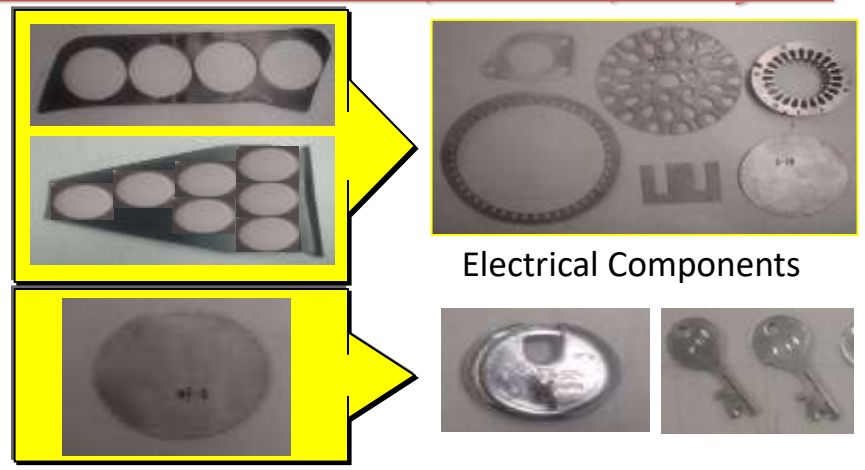
## A Three Tier Activity



## Inhouse Reduce & Reuse



## Outhouse Reduce, Reuse, Recycle



# WASTE MANAGEMENT

Waste Generation : Production

Target: Enhance waste segregation @ source

Segregation : Line Side Bins

Storage : Shop Intermediate Dolly

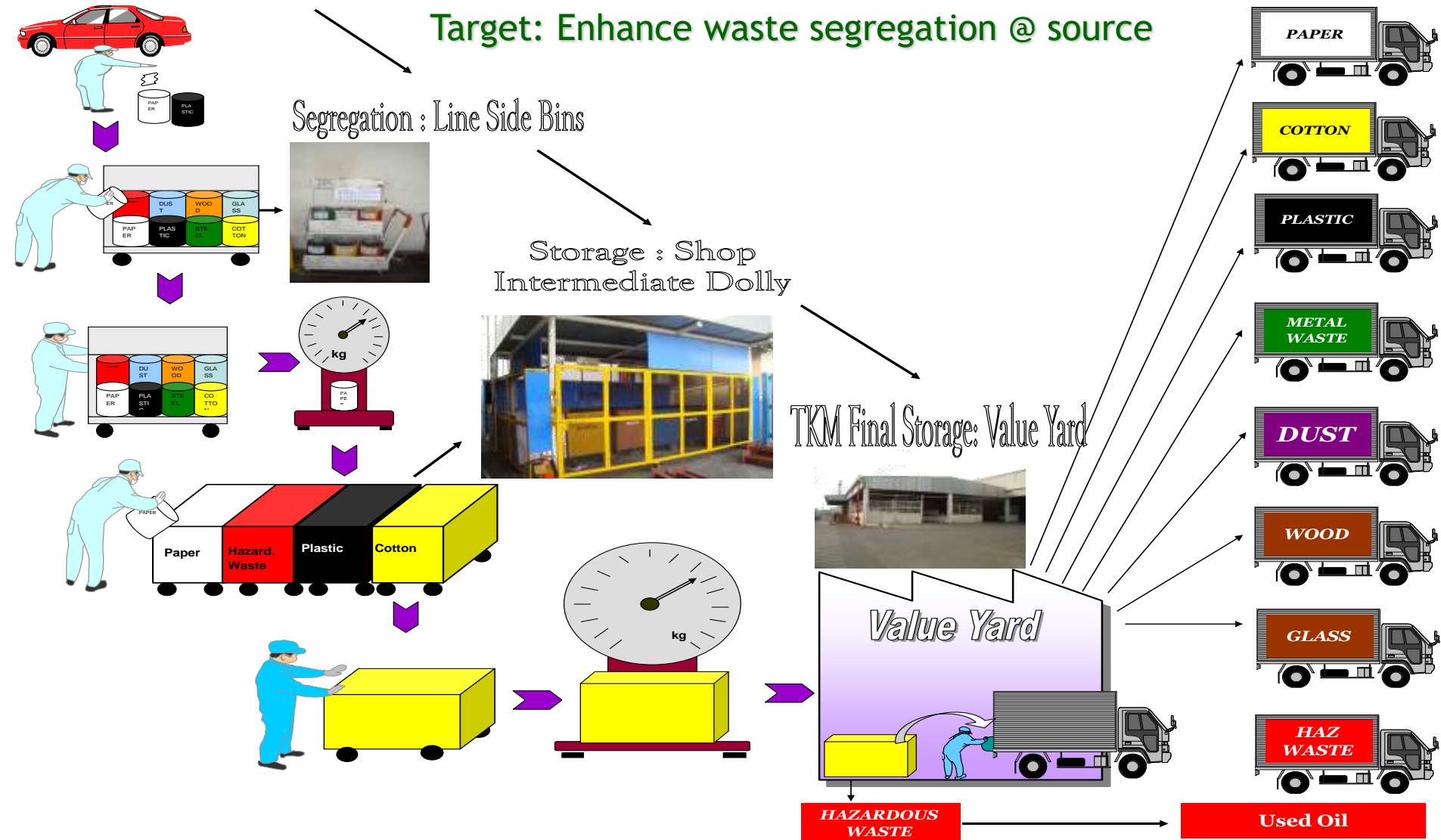
TKM Final Storage: Value Yard

Value Yard

HAZARDOUS WASTE

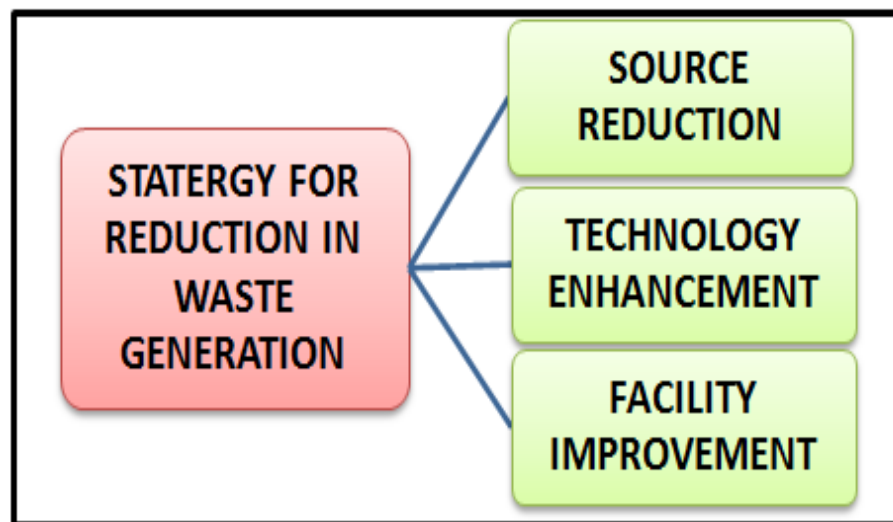
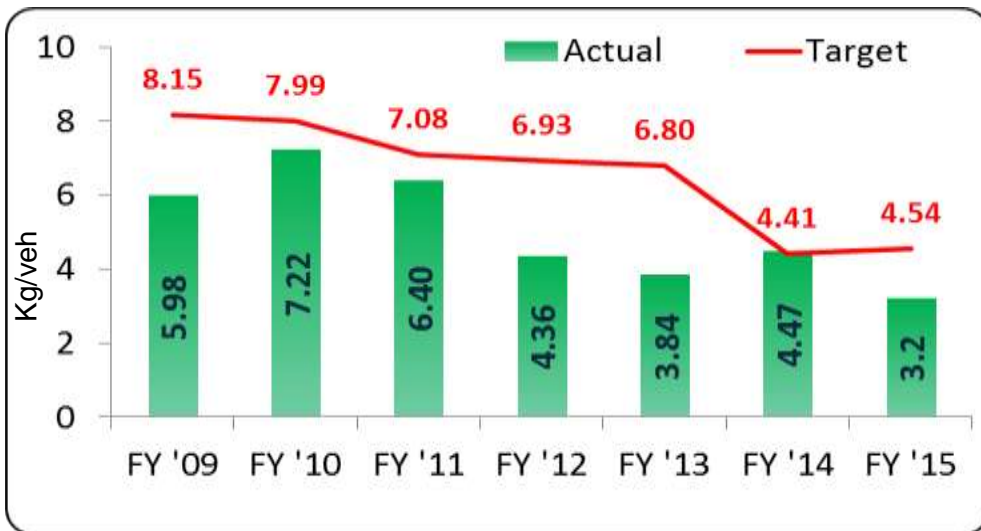
Used Oil

Recycleability of waste - 96% (2015)





# Hazardous Waste Reduction (Paint, Phosphate & Chemical):



## SOURCE REDUCTION AND TECHNOLOGY ENHANCEMENT

### 1. DECANTER



REDUCTION IN SLUDGE GENERATION= 8%

### 2. FILTER PRESS



REDUCTION IN SLUDGE GENERATION= 14%

### 3. CHEMICALS REVISION



REDUCTION IN SLUDGE GENERATION= 8%

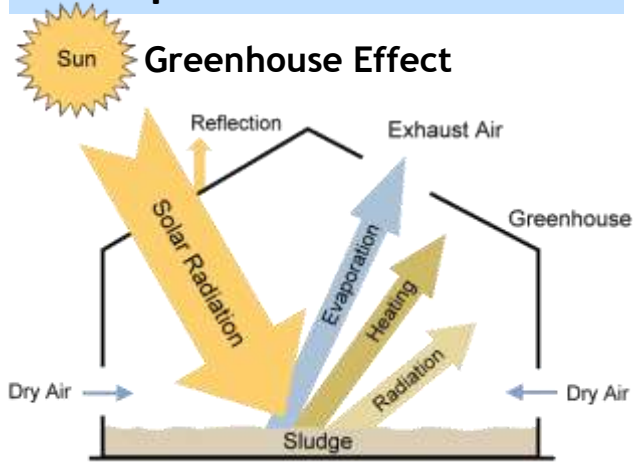
# Hazardous Waste Reduction (Chemical Sludge):

## CENTRALIZED SLUDGE YARD

**Purpose:** To reduce moisture content in the Hazardous Sludge by **SOLAR DRYING**

**Ultimate Goal:** Realize Vision of Zero Hazardous Waste to Landfill

### Concept:

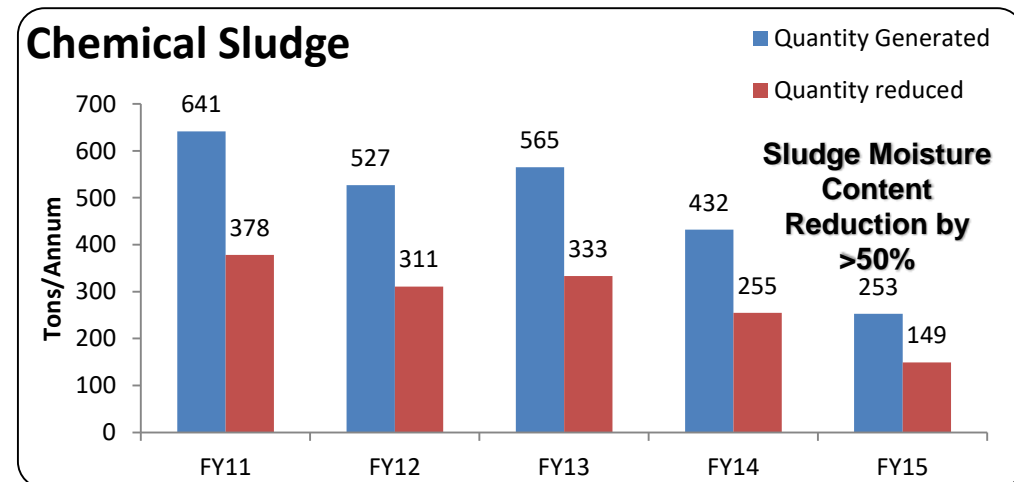


### Concept of Sludge Drying Yard:



- Utilizes Greenhouse effect to trap heat & dry the sludge sent to ACC

### Benefits



### Overall Benefits:

- 1427 tones of Sludge reduced
- 136 tones of Logistics CO2 emission reduced
- Redn. In Sludge Disposal cost [11 Million]
- Redn. In Logistics Cost [10 Million]

# Sustainable Logistics

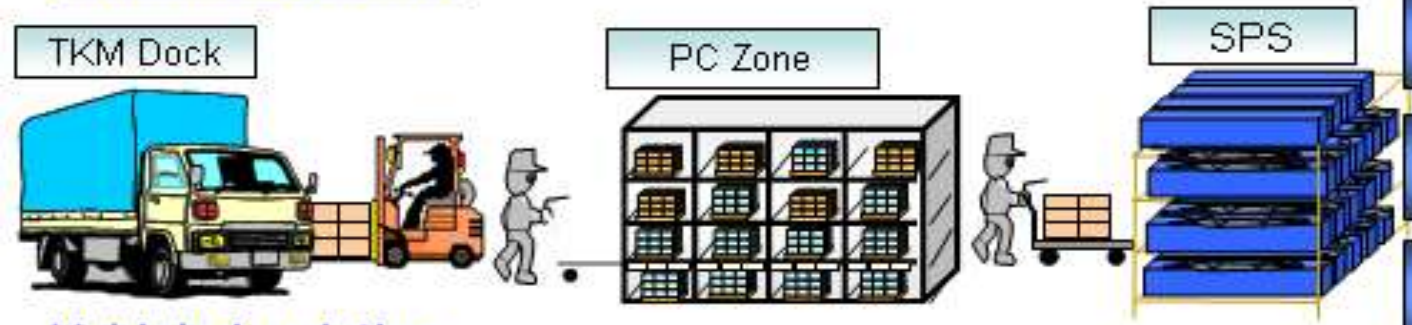
## Logistics CO2 Management

### Types of Logistics

#### External Logistics



#### Internal Logistics



#### Vehicle Logistics



### Activities Implemented

01. Distance reduction

02. Fuel Efficiency

03. Loading Efficiency optimization

04. Mixed logistics

05. Milk run

06. Driving skill enhancement

07. Periodic Maintenance

08. Alternate Fuel

**Logistics CO2 reduction – 458 tons/Annum (2015)**



# Sustainable Logistics:

## EXTERNAL LOGISTICS IMPROVEMENTS

**BEFORE**

**AFTER**

Use of Disposable Packing    Use of Returnable Packing



### Benefits:

1. Increase in the Cycle Time by 12
2. Saving of 19 trees per month [1140 kgs]

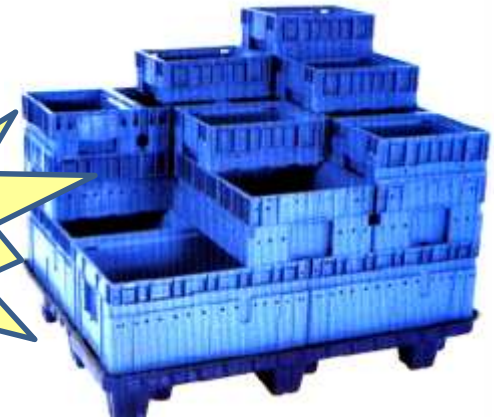
## 100% Returnable packing Material

## INHOUSE LOGISTICS IMPROVEMENTS

### PACKAGING REDUCTION ACTIVITY:

Re-usable  
Plastic Bins:

100%  
RETURNABLE  
PACKAGINGS



Packing Material  
reduction –  
93 tons/annum  
(2015)



# SOCIETY IN HARMONY WITH NATURE

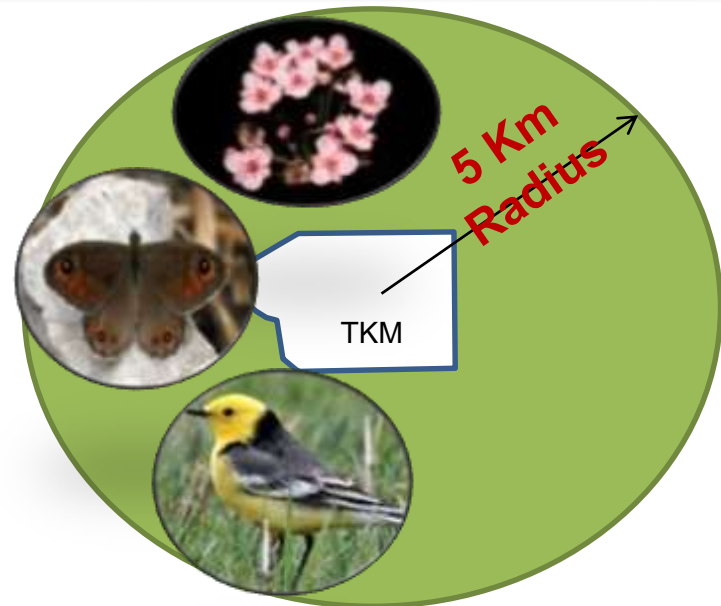
## 1. Sustainable Plant Activities

### a. Greenbelt Development



Total Saplings Planted: **2,50,240**  
Area of plantation – 60 Acres

### b. Biodiversity Study



#### Survey of Flora & Fauna - IN & AROUND TKM

Identification of Impact on Biodiversity & Prepare long term plan

**Carbon absorption—  
3000 tons/annum  
(Present)**



# Sustainable Plant Activities ... contd

## c. Harnessing Renewable Energy thro' Bio Gasifier:

Food Waste from Canteen

Convert to Gas @  
Biogas Plant

Gas Utilize @ TTTI  
Kitchen



- 1.5 Tons of Food Waste/Day
- Reduction of 50 Kg of LPG/day (Full Capacity)

## d. Vermi compost



1 Ton of Bio  
sludge

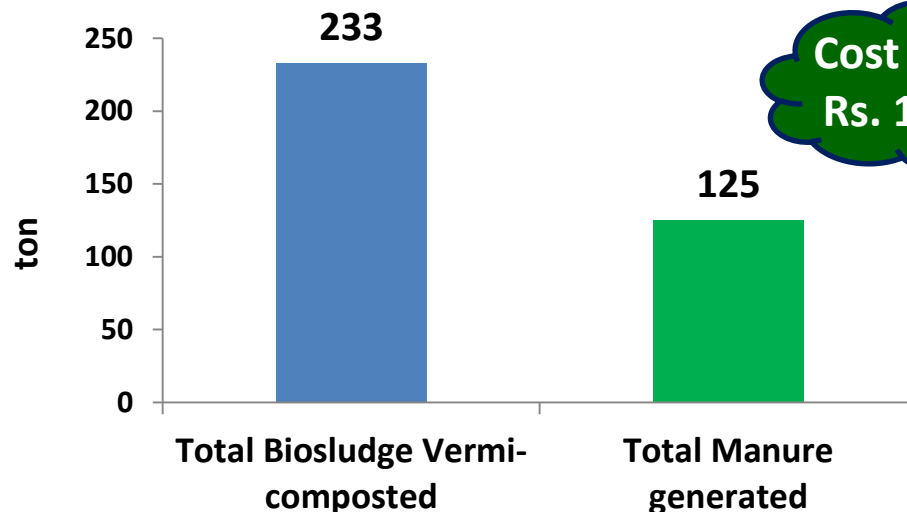


10 KG Earth  
worm added



Ready to use  
Manure ( 35<sup>th</sup>  
Day)

### Vermi-composting of Biosludge (FY-16)



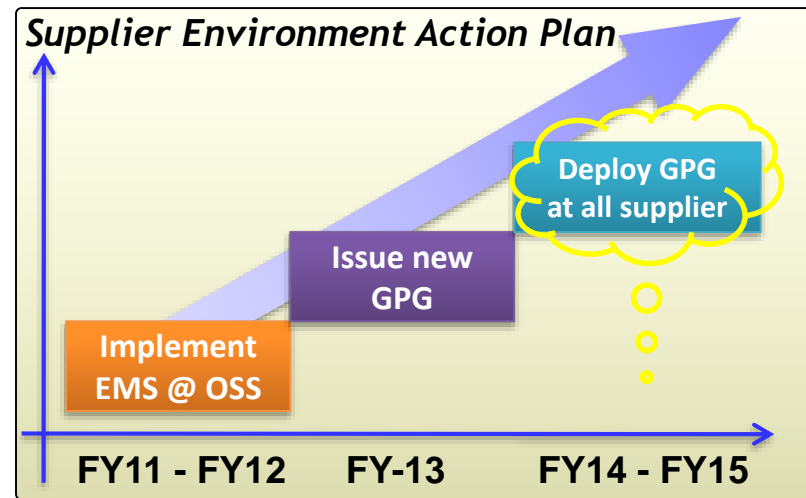
Vermi-compost used in-house & for CSR activity (plantation)

A world map with a yellow horizontal band across the middle. The map is stylized with green landmasses and white oceans. A network of thin, curved lines connects various points across the globe, suggesting a global supply chain or network. The text "Promotion across the Supply Chain" is overlaid on the yellow band in a bold, dark blue font.

# Promotion across the Supply Chain

# Promotion at Supply Chain

## 1. Promotion at Supplier:



### New Green Purchasing Guidelines 2013



### Key Points



- Suppliers ISO 14001
- Parts & Accessories supplier
- Ensure 100% Acquisition ( 2015)



- Mandatory SOC 10 (Pb, Cd,Hg,Cr6+)
- Implement from 755A project



- Compliance to Law & Regulation
- Enhance Environmental Performance



- Co2 Reduction in Plant
- Co2 Reduction in Logistics

### Acquisition of ISO 14001 Certification

#### ISO 14001 Certification Status



100% certification of all existing suppliers

### Elimination of SOC

10 SOC already 100% completed

1. Lead (Pb)
2. Mercury (Hg)
3. Cadmium (Cd)
4. Hexavalent Chromium (Cr<sup>6+</sup>)
5. Asbestos
6. Polybrominated Biphenyles

7. Polybrominated Diphenyl Ethers
8. Decabromo Diphenyl Ether
9. Hexabromocyclododecane
10. Perfluorooctane Sulfonates
11. Dimethyl Fumerate

## CO<sub>2</sub> Kaizen Festival for Suppliers:



- Training
- Kaizen Essence Sharing
- Yokoten

Kaizen Sharing @ Gemba



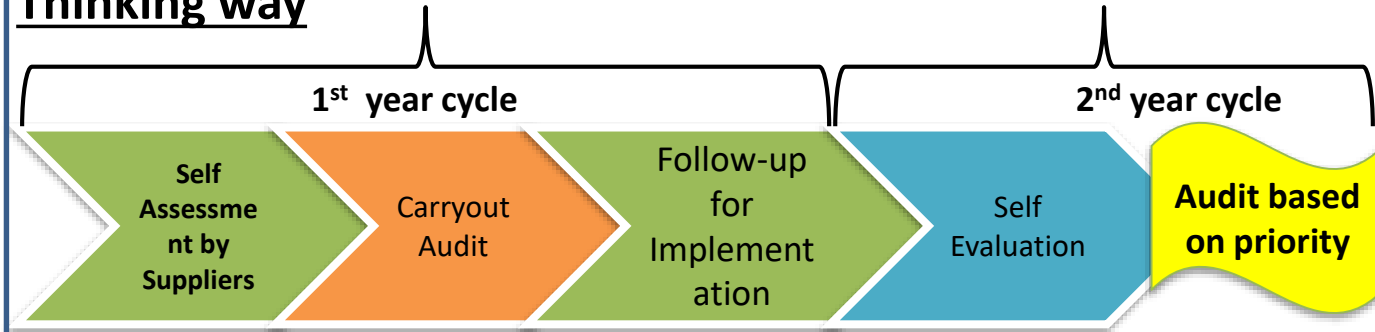
# Promotion at Supply Chain

## Environmental Initiatives related to Supplier Business

### Activity

Karnataka Suppliers Assessment on Environmental Management System

### Thinking way



Stage wise completion of supplier EMS compliance

### Assessment Status

Completed assessment of 48 suppliers (In Karnataka)

### Current Status

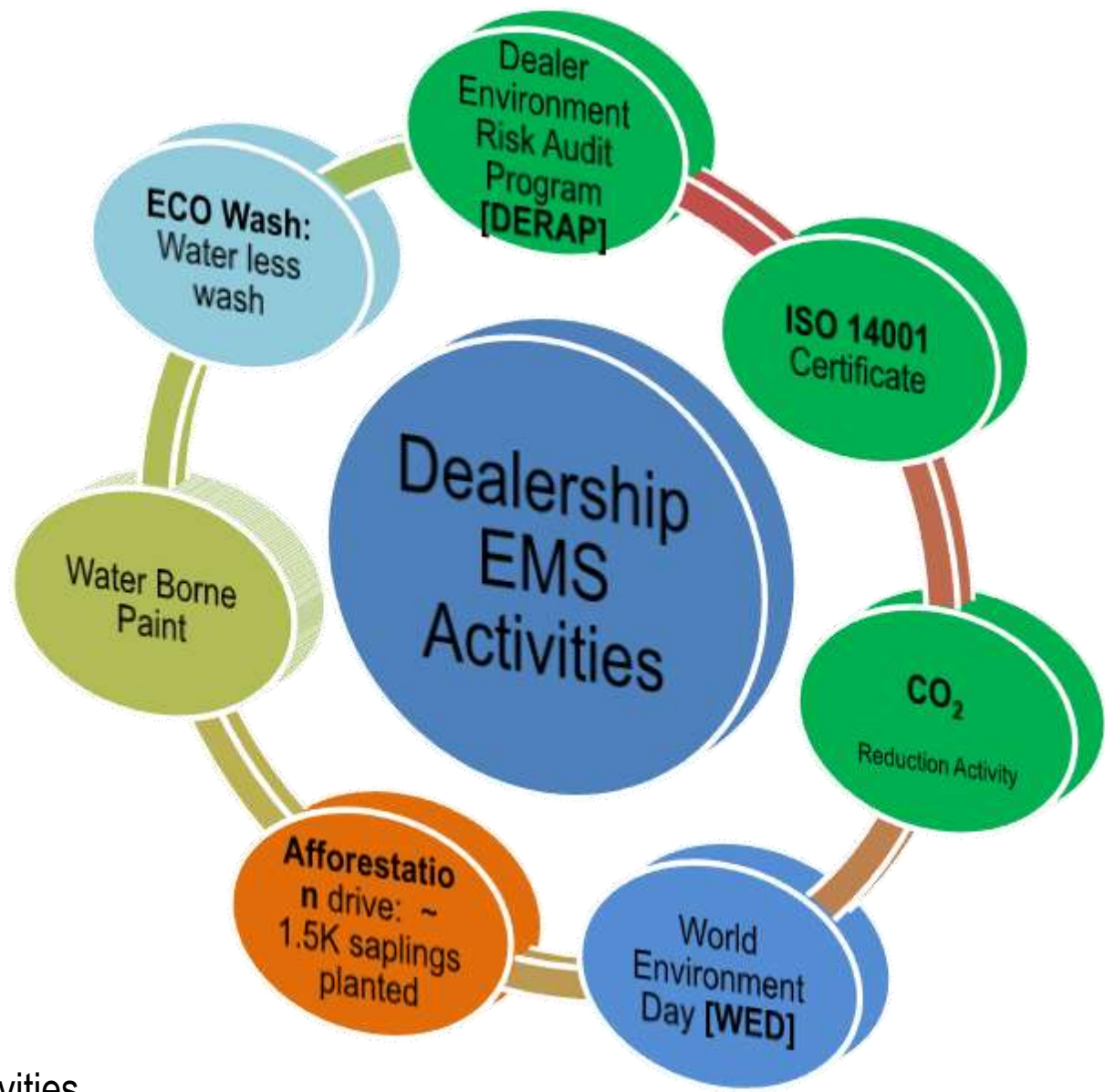
- Major legal abnormalities were closed
- Recurrence prevention activity is in progress

Self Assessment  
Every Year

A world map with green continents and white oceans, overlaid with a purple rectangular box containing white text. The map shows latitude and longitude lines.

# Promotion at Dealerships

# Making Our Dealership Eco Friendly



★ Focused activities

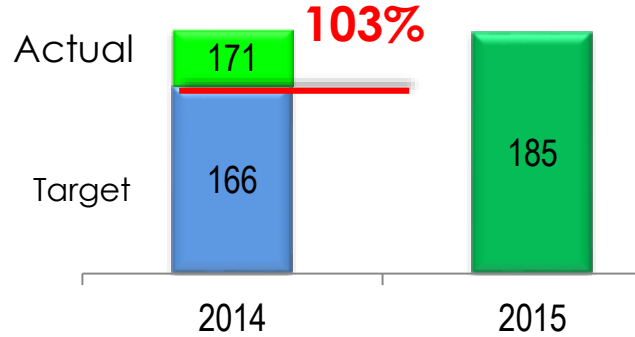
# Making Our Dealership Eco Friendly

## Approach



## DERAP

### DERAP

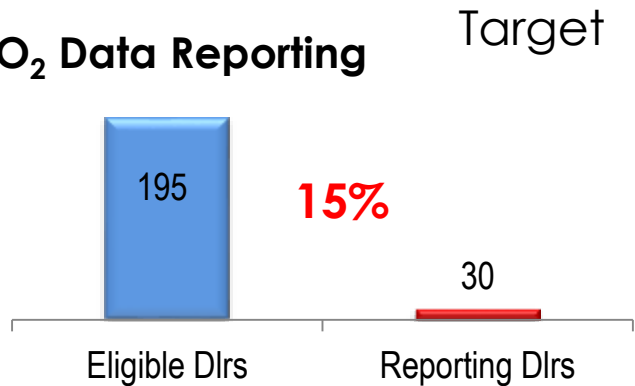


Target is 95% of eligible Dealers

No	DERAP Evaluation
1	Organisation availability with E C Member
2	Safety & Environment Policy Display
3	HazMat Management (Focus Area)
4	Availability of ETP
5	Availability of HFC / CFC recovery machine

## CO2 Mgmt.

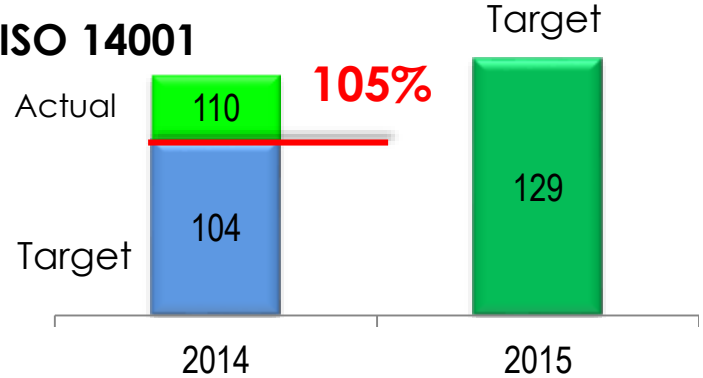
### CO<sub>2</sub> Data Reporting



15%

## ISO 14001

### ISO 14001



Target is 70% of eligible Dealers



# Community Engagement for Environment

## Background:

Drive TKM eco spirit to society to enhance the Eco-awareness

## Purpose:

- To trigger the Eco-social responsibility of members
- Community development
- Enhance Toyota Brand Image

Awarded team member families to motivate to take up more eco-initiatives

## TM's Voluntary CSR (Best Corporate Citizen Award )

Promotion of Environment education, cyclothon, Waterless Car wash



•Spreading Eco-awareness among neighborhood

•Eco-competitions to children  
•Plantation drive

...CYCLES, SAVE EARTH'





# Community Engagement for Environment

## Promotion at Community

Theme: Clean & Green Villages (CSR)

Saplings Planted	: 16000 No.s
Bags distributed	: 22750 No.s
Places	: 38 villages near TKM



## Theme: Voluntary Eco-CSR Activities by Team Members

Purpose: Spread TKM's ECO SPIRIT among Local Community

Teams	: 600 + Teams
Saplings	: 12000 No.s



PE Div.:Kengeri & nandi hills  
Plastic Awareness



PCLD: Ramanagara  
Cleanup & plantation



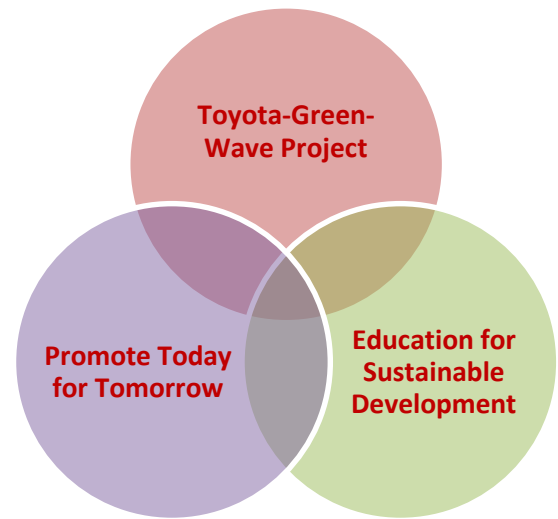
Assembly P2: Rampura  
Plantation

# HARMONY WITH NATURE TASKFORCE

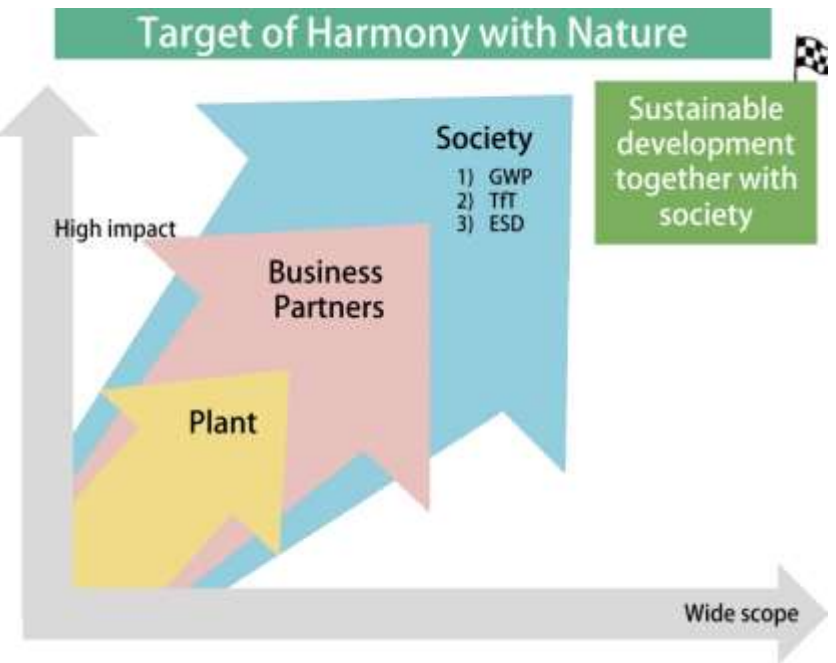
## 6<sup>th</sup> challenge of Toyota Vision 2050

“ Establishing a Future  
Society in Harmony with  
Nature”

A society full of Nature, living creatures and lively children



Taskforce for JOINT  
implementation of  
Environment Conservation  
involving Business Partners  
& Society

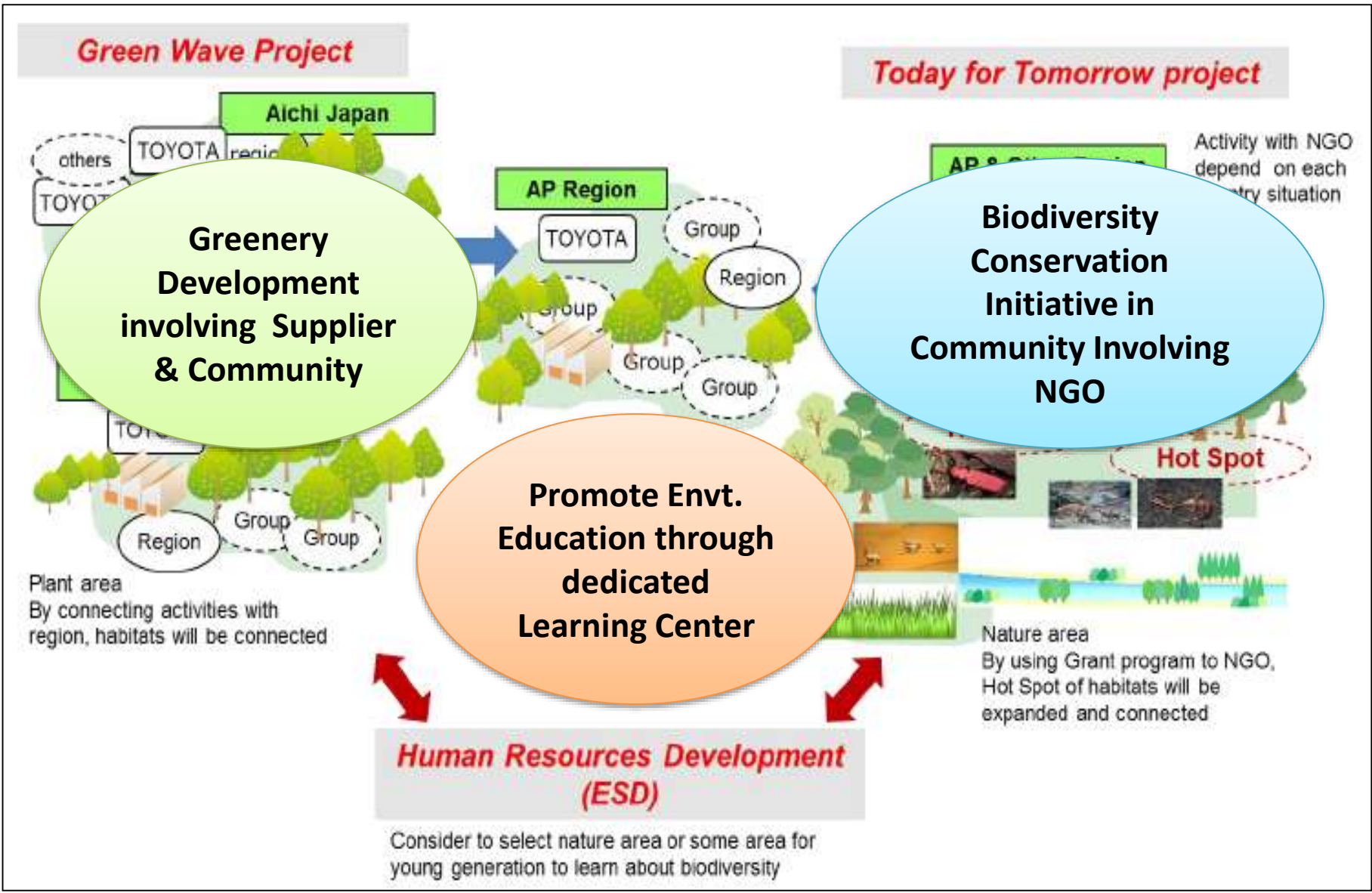


## Expectation by TMC

1. Affiliates to establish Companywide Taskforce.
2. Develop Roadmap & Action Plan
3. Identify & Partner with NGO's



# HARMONY WITH NATURE TASKFORCE

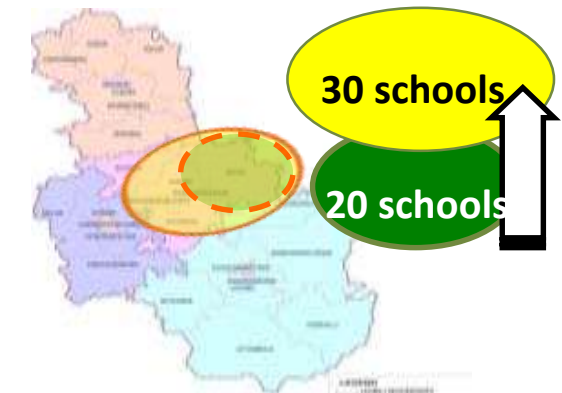
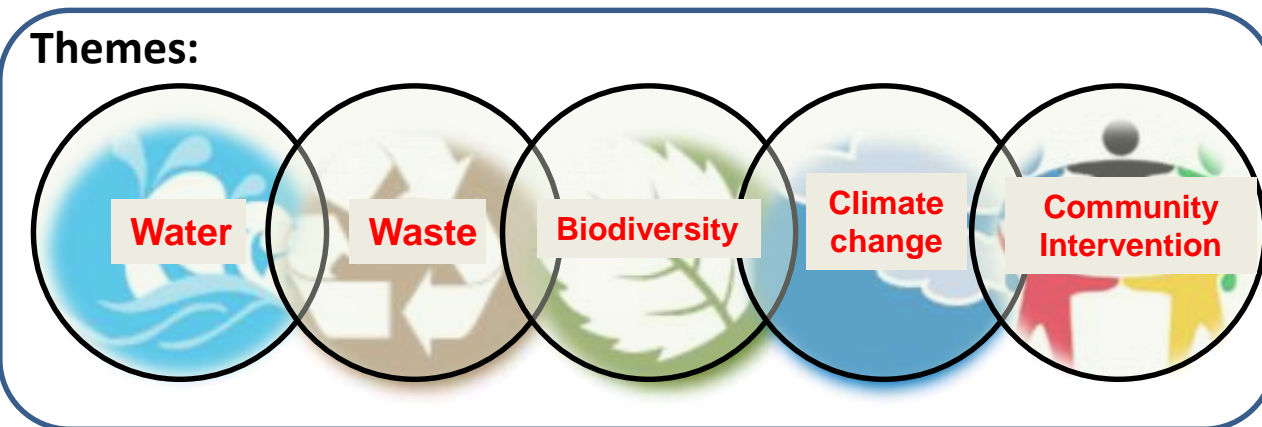


# GREEN ME CAMPAIGN

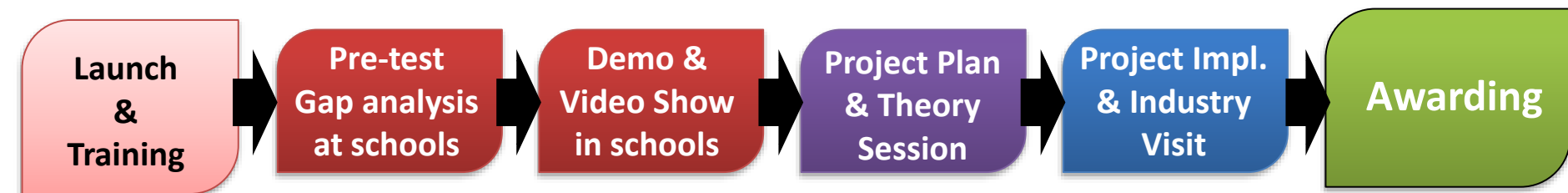
## Green Me Campaign

Curriculum plugged in Environment Education program for Government School children

Green Me fosters eco conscious attitude among students, teachers, principals & community.



## Activity Process



# GREEN ME CAMPAIGN

a. Launch



b. Teacher Training



c. Demonstrations



## Activities planned

Classroom Sessions on our 5 themes

Demos / experiments

Campaign's @ community by students

School Video Shows

Strengthening of School Cabinet by involving in audits & group discussion

Industry visits

Conducting competitions across all the schools

e. Community Campaign





# GREEN ME CAMPAIGN



## f. KPI Based Evaluation System

## g. Next milestones

School Name	Star Rating
GHPS Rayaradoddi	☆☆
GHPS Vijayanagara	☆
GHPS Basavanapura	☆
GHPS Kootgal	☆☆
GHPS Aralalusandra	☆

- Implementation of projects : Jan & Feb 2017
- Competitions at Schools : Feb 2017
- Evaluation of Schools / Post test : Feb 2017
- Awarding ceremony : March 2017

## h. Green Me Project in Media

### Facebook



### Print Media

**ಹಾಲನೆ...**  
 ರಾಮನಗರ ತಾಲೂಕು  
 ಮಹಾನಗರ ಪಾಲಿಕೆ  
 ವಿಜ್ಞಾನಿಗಳಲ್ಲಿ  
 ಪುಸ್ತಕ ಅರ್ಪಣೆ  
 ಜಾಗೃತಿ ಮುಕ್ತ  
 ಟೆಲಿಯೋಟಾ  
 ಕಲೋಪಕರಣ  
 ಮೋಟಾರ್  
 ಕಂಪನಿ ಗ್ರೀನ್ ಮಿ  
 ಆಭಿಯಾನಕ್ಕೆ ಬಿಡುಬಿಡು  
 ಕುಮಾರನಾಥಮು  
 ಬಿಲನೇ ನೀಡಿದರು.



### Print Media

**ಗ್ರೀನ್ ಮಿ ಅಭಿಯಾನದ ಮೂಲಕ ಪರಿಷರ ಸಂಬಂಧಿ ಜಾಗೃತಿ ಹೊಂದಿರುವ ಟೆಲಿಯೋಟಾ ಕಲೋಪಕರಣ ಮೋಟಾರ್**

# ECOZONE PROJECT

**Purpose: Contribute towards developing Eco-citizens of the**

- By fostering “Sense of Responsibility” towards Environment
- Inculcate **Eco-Attitude by Experiential Education** at Outdoor learning center

## PROJECT DETAILS:

Establishing ECOZONE in 25 acres of land inside Manufacturing facility at Bidadi, Expe...ea  
to commission by FY 2017



## TARGET GROUPS:

**School Children:**



**Education**

**University Students**



**Research & Project**

**Local Community:**



**Awareness**

**NGO's:**



**Conservation Studies**

**Supply chain:**



**Benchmarking**

# Awards & Recognitions - CII-ITC SUSTAINABILITY AWARDS



2010



2011



2012



2013



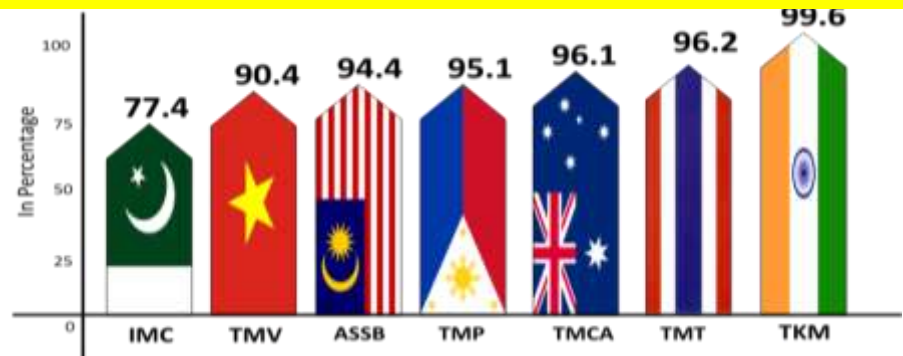
2014



2015

**Environment Management and Sustainable supply chain Award**

## "Asia Pacific Toyota plants – TKM No.1 EMS



Mr. A Tachibana, MD-TKM, receiving award from Mr. Hiroyuki Fukui (Chief Executive Officer of AMENA)



- **Zero -CO2, Fresh Water, Hazardous waste to landfill**
- **GHG inventorisation – from Cradle to cradle**
- **Sustainable supply chain**  
(Inline with ISO 26000)
- **Harmony with Nature**
  - Today for tomorrow
  - Green wave
  - Environment sustainable development



Toyota believes in **Inclusively Working** with our business partners for a **Sustainable Future of our planet.**





*Journey Has Just  
Begun . . .*

*Thank you !*