

# **JK TYRE & INDUSTRIES LTD**

## **CHENNAI TYRE PLANT**



**ZERO WASTE TO LANDFILL**



# JK Tyre – Business Overview



Late Lala  
Juggilal Singhania



Late Lala  
Kamlapat Singhania

- Established tyre business in 1977, JK Tyre is amongst the leading tyre manufacturer in India
- Presence across product verticals starting from 2.1 kg / tyre to 3.5 ton / tyre.
- Ranked as the **22<sup>nd</sup> largest tyre manufacturing company** globally
- Annual capacity of 32mn Tyres with 12 manufacturing plants globally
- World's No.1 in Minimum Usage of Water.**
- 1st Indian tyre company to have verified Carbon Footprint as per IS-14064**
- Among the **Most energy efficient tyre companies in the world (9.81Gj/Ton)**
- Renewable Energy -40%**





# JK Tyre – Chennai Tyre Plant



**Chennai Tyre Plant in Tamil Nadu** is the 6<sup>th</sup> manufacturing plant of JK Tyre which went on stream on 05<sup>th</sup> February 2012 presently produces 45 Lakhs Passenger Car Radial (PCR) tyres and 12 Lakhs Truck / Bus Radial (TBR) tyres per annum.

## Salient Features of Chennai Tyre Plant

- ❖ Location Selection – Automobile Hub
- ❖ Most technologically advanced plant
- ❖ Equipment Selection for high Energy Efficiency
- ❖ Environment friendly technology considered during Plant Inception itself
- ❖ Water Positive Plant (1.29 Index)
- ❖ Renewable Energy – 49%
- ❖ **Zero Liquid Discharge Plant**
- ❖ Usage of Maximum Day lights
- ❖ Highly optimized WIP material flow
- ❖ Modular designs for seamless expansion
- ❖ Young Workforce

## Major Products – Chennai Tyre Plant



Passenger Car Radials



Jeep Radials



Truck Bus Radials



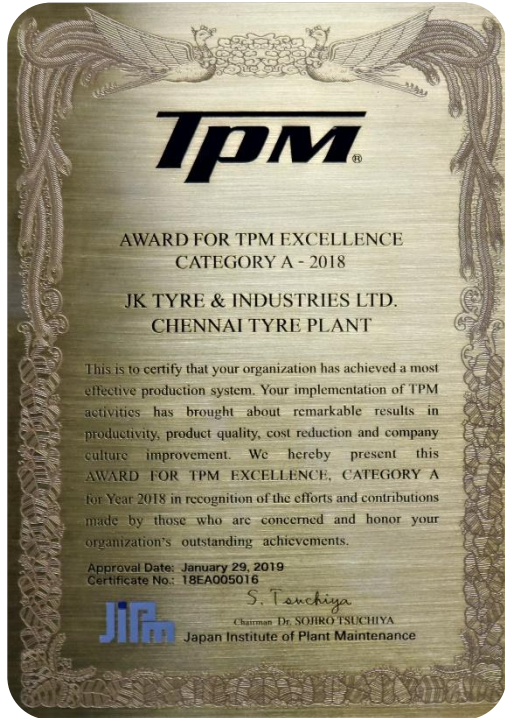
Light Truck Radials



SUV Radials



# Awards and Accolades Received - 2018-19



**TPM Excellence Award - JIPM**



**Excellence in Energy Management by Clean Energy Ministerial**



**Green Manufacturing Times of India Group**



**National Energy Leader by CII**



**Future Ready Manufacturing by CII**



**GreenCo - Platinum by CII (Version 3)**



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## Mission Statement on Sustainable Growth

Being cognizant of the need of sustainable growth and dwindling stock of natural capital, we commit ourselves to the attainment of the following Ten - Natural Capital Commandments.

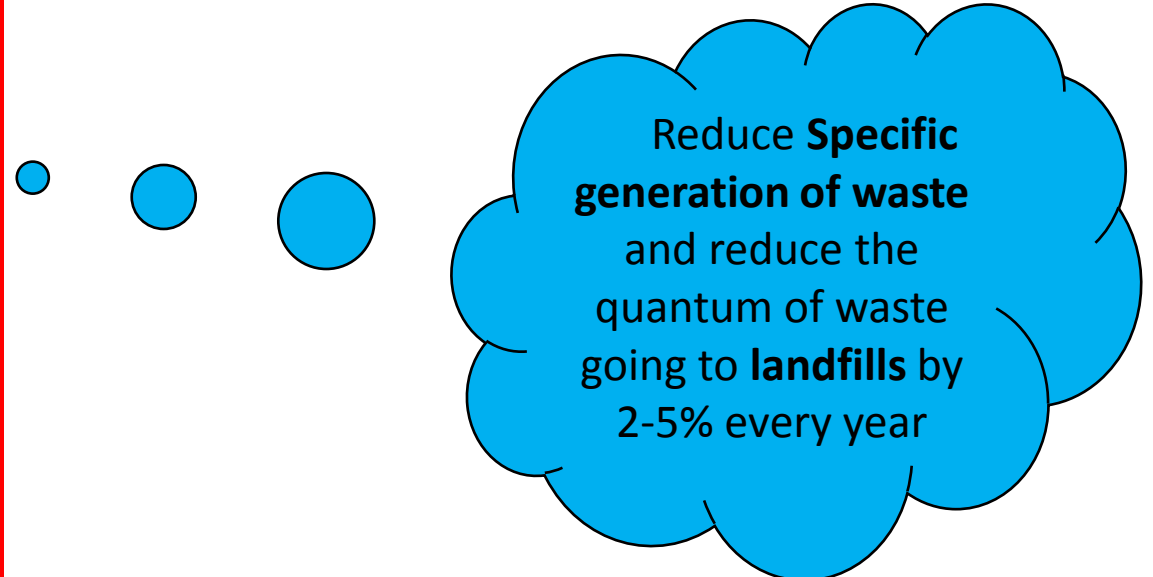
1. Reduce specific consumption of energy and water by 2-5% every year over next ten years.
2. Reduce specific generation of waste and reduce the quantum of waste going to land fills by 2-5% every year over next ten years.
3. Increase use of renewable, including renewable energy by 2-5% every year in place of non-renewable over next ten years.
4. Reduce specific green house gas emissions and other process emissions by 2-5% every year over next ten years and explore opportunities through Clean Development Mechanism (CDM) & other Carbon Exchange Programs.
5. Increase use of recyclables and enhance recyclables of resources embedded in the product by 2-5% every year over next ten years.
6. Increase the share of harvested rainwater in the overall annual use of water by 2-5% every year over next ten years.
7. Incorporate life cycle assessment criteria for evaluating new and alternative technologies & products.
8. Strive to adopt green purchase policy and incorporate latest clean technologies.
9. Take lead in promoting and managing product stewardship program, by forging partnerships with businesses and communities.
10. Reduce depletion of natural capital, which is directly attributable to company's activities, products and services by 2-5% every year over next ten years.

We also commit to demonstrate attainment of these commandments in our pursuit to certifications such as IATF 16949, ISO 9001, ISO 14001, ISO 45001, SA 8000, ISO 50001, ISO 27001, Green Buildings, Eco Labels Sustainability reporting and the like.

Authorised and Approved by  
Arun K. Bajoria

Director & President (International Operations)

01.01.2019





# Inventorization of Hazardous and Non Hazardous Waste



## Last 3 Year Inventorization details

Hazardous Wastes:		Unit	2015-16	2016-17	2017-18	2018-19	Generation	Recycle /Reuse	Disposal
A	Used Oil	KL / KT	0.456	0.317	0.316	0.290	Mixer	Recycled	Sent to authorized recycler for reuse
B	ETP Sludge	Tons	15.37	21.31	27.93	13.48	ETP Operation	Co processed	Sent to TNPCB authorized vendor
Non-Hazardous Wastes		Unit	2015-16	2016-17	2017-18	2018-19			
A	Metal scrap	Tons	456.93	277.59	147.15	157.56	Maintenance Activity	Reused to make MS parts	Sent to authorized recycler for reuse
B	Rubber	Tons	421.05	365.9	300.22	218.34	Process	Reused for Rubber Parts	
C	Paper	Tons	228.79	307.36	315.08	319.33	Office	Reused for making cardboard & paper bags.	
D	E-Wastes	Tons	0.18	0.45	0	0	IT &EEI	Recycled	Sent to authorized vendor for recycling.
E	Food	Tons	10.36	9.37	9.1	7.2	Canteen	Used as Manure	Used in Horticulture
F	Polythene	Tons	167.24	224.53	255.58	297.71	Process	Reused for making Tarpaulin and Poly ropes	Sent to authorized recycler for reuse



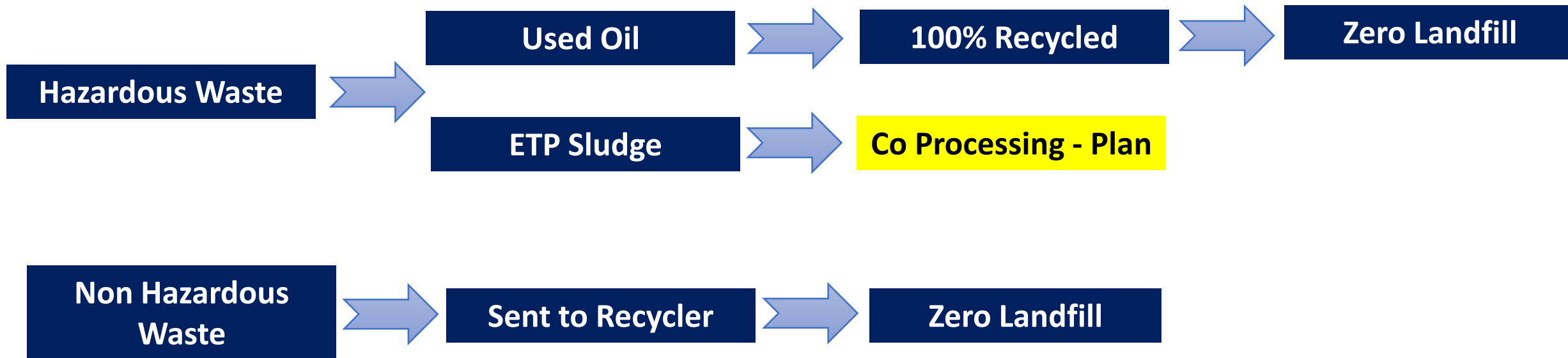
# Waste Management



Hazardous Wastes	Generation	Treatment after ELC	Recycle/Reuse	Disposal
Used Oil	Mixer	1. Sent to hazardous waste storage area	Recycled	Sent to authorized recycler for reuse.
ETP Sludge	ETP Operation	2. Quantity Entered in log 3. Kept in identified location.	Co Processed	Sent to TNPCB authorized vendor
Non-Hazardous Wastes	Generation	Treatment	Recycle/Reuse	Disposal
Metal scrap	Maintenance Activity	1.Sent to scrap yard area. 2.Kept in identified location.	Reused to make MS parts.	Sent to authorized recycler for reuse.
Rubber	Process Activities		Reused for Rubber Parts	
Cardboard & Paper	Office Work		Reused for making cardboard & paper bags.	
e-Wastes	IT & EEI	1. Sent to IT dept. 2. Item noted in log & kept in a separate container.	Recycled	Sent to TNPCB authorized vendor for recycling.
Battery		Kept in identified location	Recycled	Buy Back Policy. Sent back to Battery Manufacturer
Food Waste	Canteen	Quantity Entered in log Kept in identified location	Used as Manure	Used for Horticulture
Polythene	Process	1. Sent to scrap yard area 2. Quantity Entered in log.3. Kept in identified location.	Reused for making Tarpaulin and Poly ropes	Sent to authorized recycler for reuse.



# Waste Management

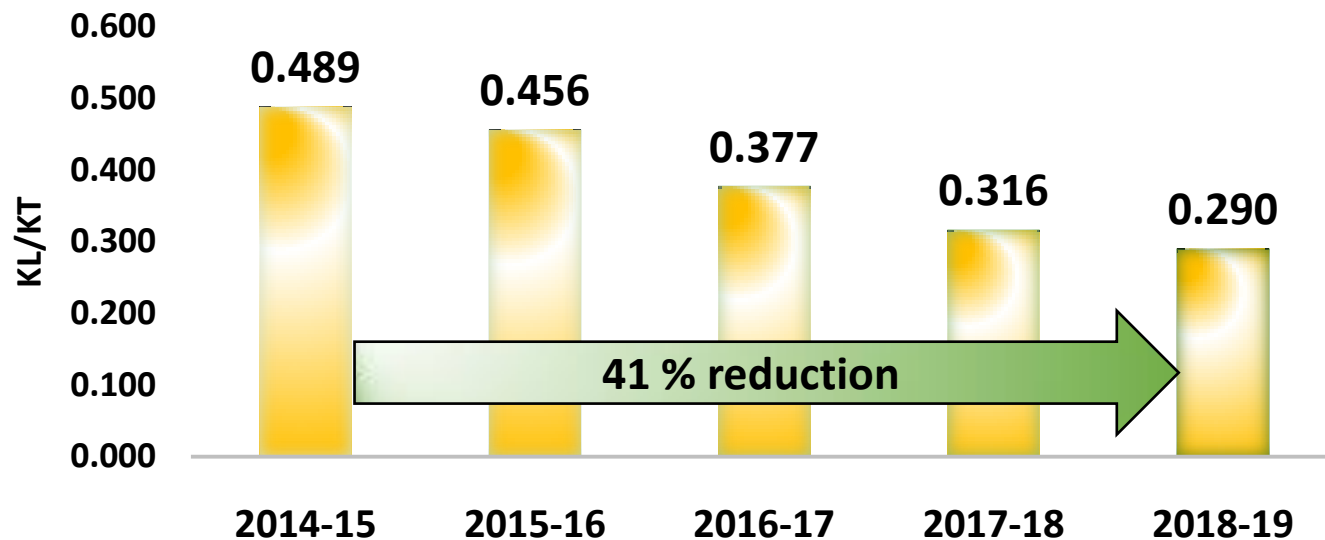


Non-Hazardous Wastes	Recycle/Reuse
Metal scrap	Reused to make MS parts.
Rubber	Reused for Rubber Parts like Mats, Toys etc
Cardboard & Paper	Reused for making cardboard & paper bags.
e-Wastes	Sent to Authorized recycler
Battery	Buy Back Policy. Sent back to Battery Manufacturer
Food Waste	Used as Manure
Polythene	Reused for making Tarpaulin and Poly ropes





## USED OIL



### Implementation of Oil Management Program:

- ✓ Increasing drain intervals of oil in gearboxes
- ✓ Increasing the life of oil being used in the system
- ✓ Reduce used oil generation
- ✓ Improves the life of machine parts

➤ Recycled Quantity : 12740 Liters

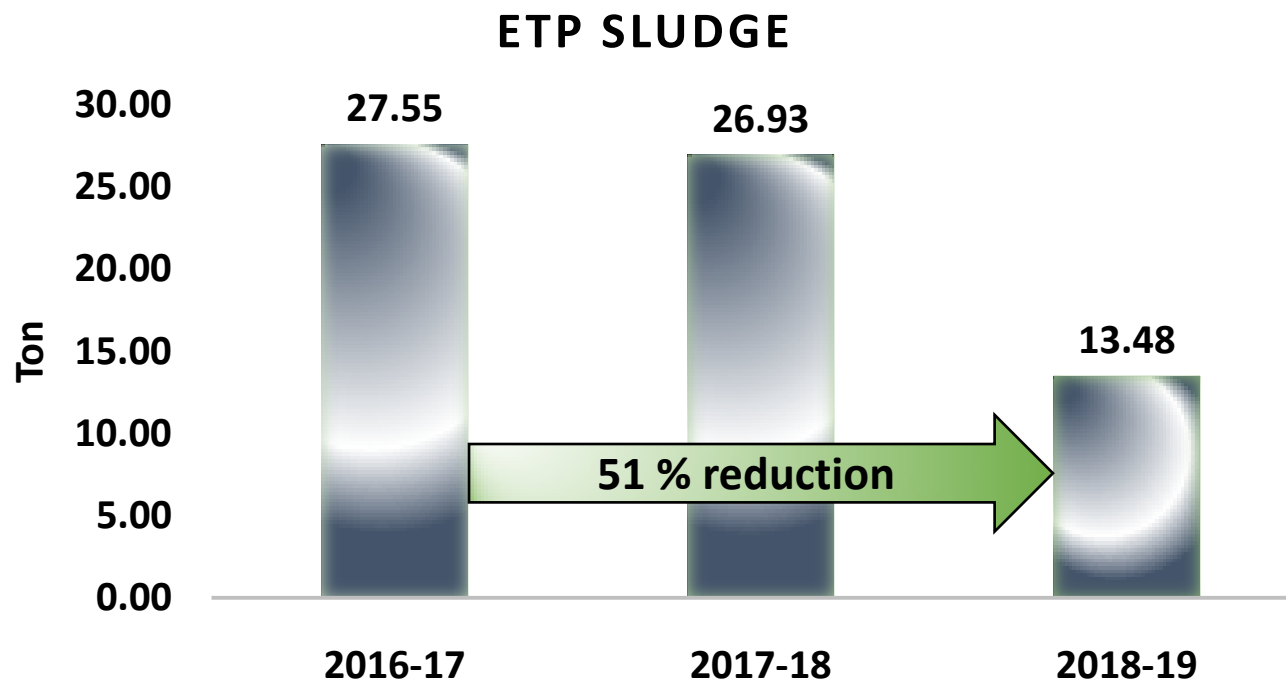
➤ Life of oil extended by : 1 year

\*(6 machines oil life is extended by 1.5 years and still running...)

➤ Cost saved by preventing oil change : Rs.73000/-



# Waste Management



Installation of double stage RO to eliminate DM Effluent - 15 KLD reduced



UF reject reused as service water – 30 KLD Reduced

## Projects done to reduce Sludge generation:

- Reduction of chemical in ETP pre treatment to reduce sludge generation.
- Reduction of Effluent generation in process (Raw water treatment) to reduce input to ETP.
- Reuse of cooling tower blow down to reduce Effluent input to ETP.
- Installation of Double stage RO & stop DM plant to reduce DM Effluent generation to ETP.
- Installation of RO stage 3 in ETP to reduce MEE operation & salt generation.

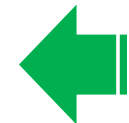
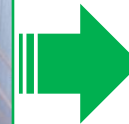
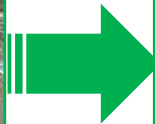
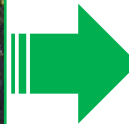


# Waste Management



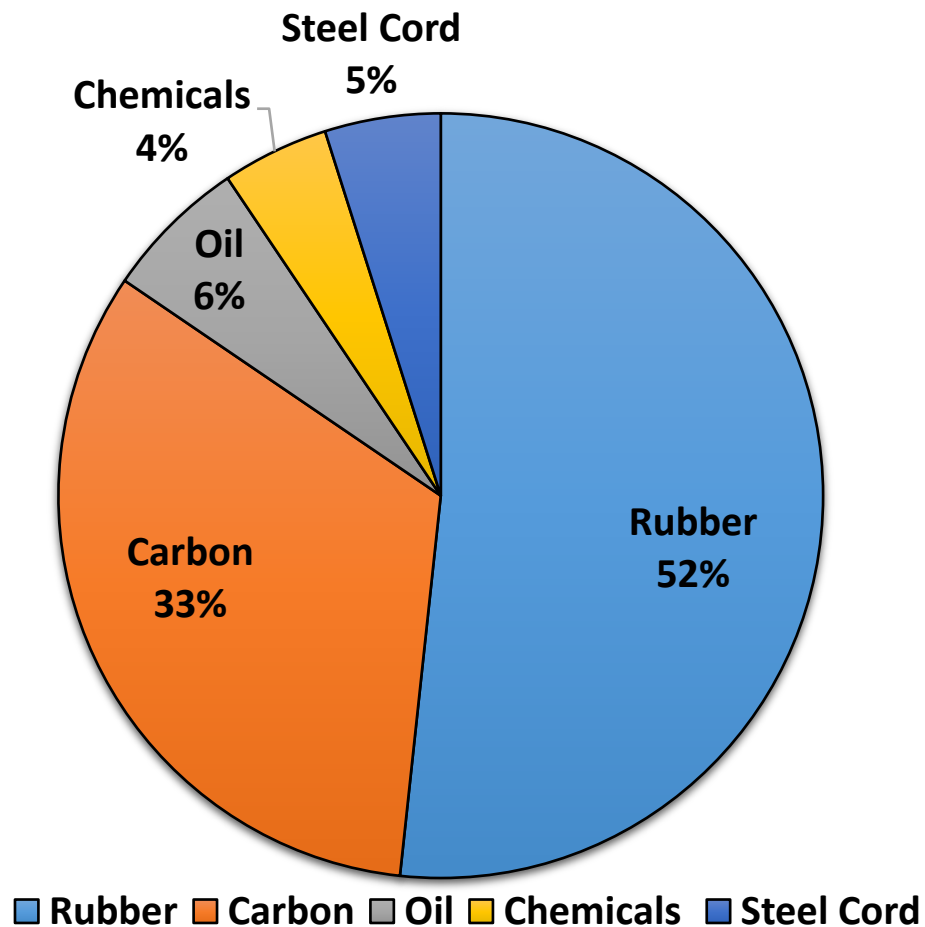
**Uniqueness: Pioneer in using Vegetation waste in FBC Boiler as Energy Source**

**Garden waste been crushed as required size by using shredder machine and Blend with coal in the fuel handling system and feeding to the boiler.**





# Waste Management



S.No	Raw Material	Green Procurement Guideline
1	Rubber	100% - Recyclable Packaging Material – Good pack, Open Truck
2	Carbon) + Silica	100% - Jumbo bags – To improve Logistics Efficiency
3	Process Oil	100% - Low PCA Oil (Env Friendly )& Receiving in Tankers in place of barrels (Logistics Efficiency)
4	Steel Cord	100% - Reusable Packaging Material



## Natural Rubber & Synthetic Rubber:

S.No	Raw Material	Before	After	% Reduction
1	Natural Rubber	Wooden Pallets	Loose packing in Trucks and stored directly in Metal Gandola	<b>100%</b>
2	Synthetic Rubber	Wooden Pallets	Reusable Bins like Good pack or GPS	<b>100%</b>



Eliminated Wooden Pallets



NR stored in Metal Gandola



SR stored in Good packs – Reusable bins



## Steel Tyre Cord and Bead Wire:

S.No	Raw Material	Before	After	% Reduction
1	Bead Wire	Wooden Pallets	Reusable Packaging Material	<b>100 %</b>
2	Steel Tyre Cord			



Bead Wire



Steel Tyre Cord

### ➤ 3R (Reduce, Reuse and Recycle):-

We are receiving bead wire in steel pallets in place of wooden packing. **We have eliminated 82.4 MT of wood per year (20 kgs of wood X 4120 MT of bead wire).** We are returning the cartons & spools of steel tyre cord to the vendor. **We have eliminated 264 MT of wood per year (20 kgs of wood X 13195 MT of STC)**





# Waste Management



Racks made from scrap steel



Ramps & supports made from scrap steel



**Operations/Maintenance Activities:**  
For operations, there is a strong policy of conservation, reusing, recycling, and composting everything



## Food Digester



**100 % Food Waste generated is converted into Manures**

2015-16	2016-17	2017-18	2018-19	% Reduction
10.36	9.37	9.1	7.2	31%

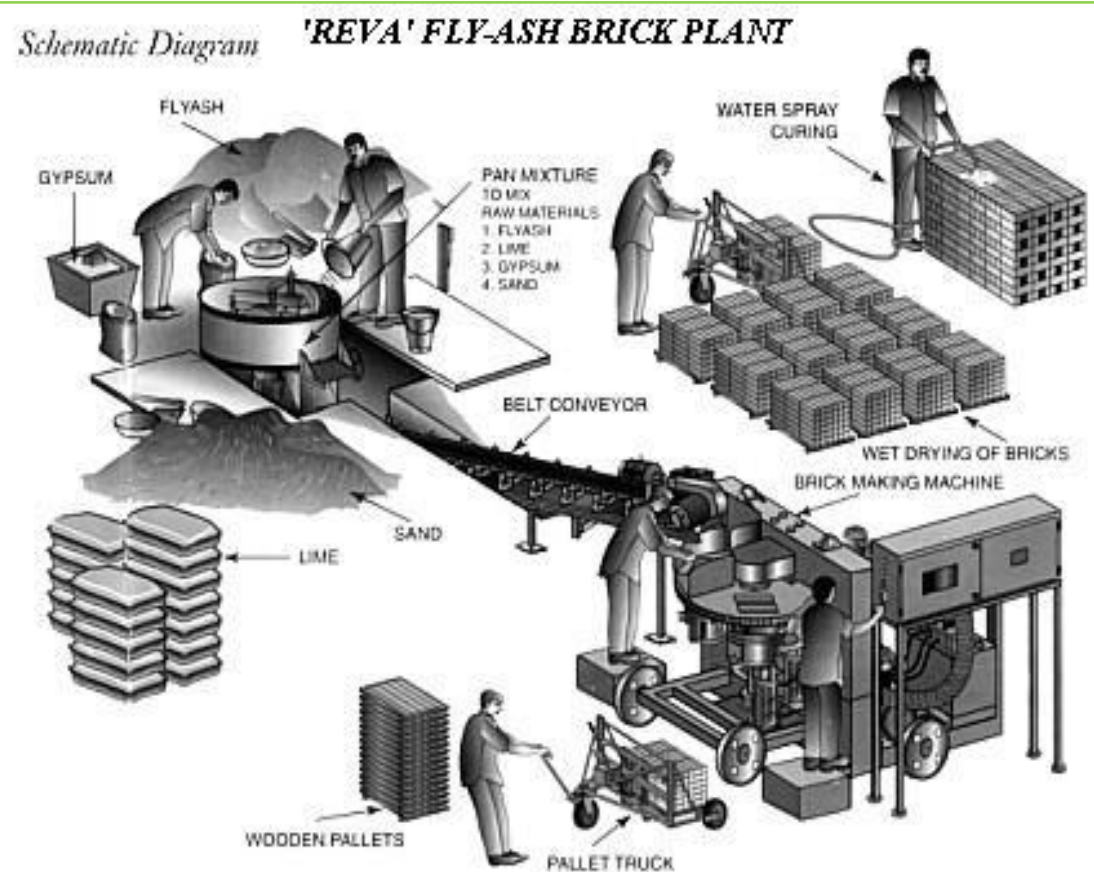




## Alternate use of Boiler Fly Ash as Raw Material in Brick Manufacturing Process (TNPCC Approved Agency)

- **Disposal:** 100% Fly Ash Generated is Disposed to Fly Ash Brick Vendor through Closed container Vehicle
- **Green Environment:** Fly Ash Bricks are Environment Friendly

Year	2015-16	2016-17	2017-18	2018-19
Generation (MT)	1375.86	1609.98	1540.58	1655.19
Specific	0.0187	0.0186	0.0185	0.0181



100 % Fly Ash disposed to Recycler

Fly Ash Brick



## BIO MEDICAL WASTE DETAILS

Year	2015			2016			2017			2018		
Category	Yellow	Red	Blue	Yellow	Red	Blue	Yellow	Red	Blue	Yellow	Red	Blue
Quantity (in KG)	1.2	0.5	0.8	3.1	2.8	3.3	3.1	2.7	3.2	0.46	0.4	0.41



**Disposed to  
Authorized  
Recycler**

### Yellow Bin:

Pathological Waste  
Solid Plaster of Paris & Dressing  
Contaminated Sanitary Linen and  
Bandages  
Microbiological Waste

### Blue Bin:

All kinds of broken Glasses and  
Ampoules  
All kinds of Sharps like Scalpels etc  
Clinical and Pathological Slides  
Glass Vacutainers

### Red Bin:

Urine bags  
IV Tubes  
Gloves  
Dialysis Kit  
Aprons  
Syringes (without needle)



*Thank You!*