

Driving sustainability through landfill-free waste management

December 2025



## **Agenda**



1 Global waste management crisis

Understanding zero landfill

The zero waste hierarchy

Automotive waste streams-challenges & strategies

Motherson best practices and ambitions

**Expectations from supplier partners** 

6

#### Poll



1. Does your region have any local regulatory requirements on zero waste to landfill?



2. Do you currently track the total waste generated at your facility?



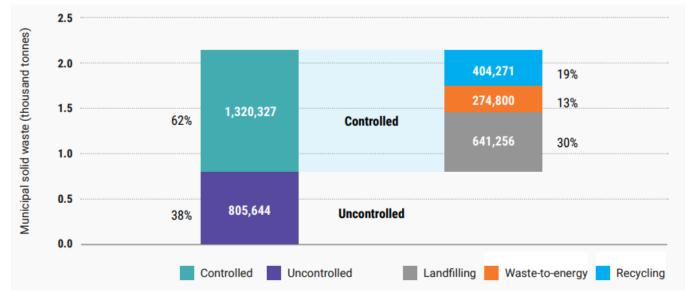
3. Do you know where your disposed waste ends (landfill/ recycling/ incineration)?

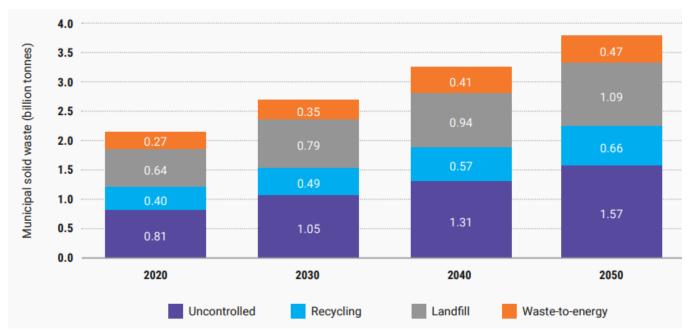
Yes	74%
No	3%
Not aware	24%

39 responses

#### Global waste crisis

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- Every year across the globe more than two billion tonnes of solid waste is generated
- This is projected to rise to ~3.7 billion tonnes by 2050
- 38% of the generated waste is uncontrolled (not collected in an organized manner and dumped or burned in the open)
- 30% of the waste generated ends up in landfills
- Collaborative approaches between governments, businesses, and communities are critical to overcome the waste management crisis



# Zero waste to landfill

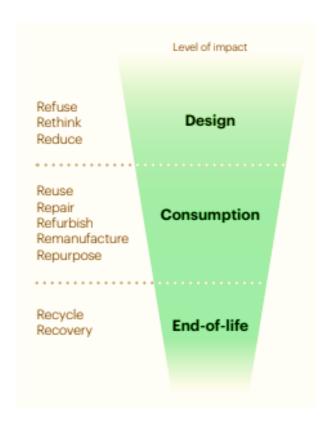


- A waste management approach aimed at diverting nearly all waste generated by an organization away from landfill sites
- Zero waste to landfill Zero waste generation
- Waste is minimized at the source and diverted through reuse, recycling and recovery strategies
- Emphasizes circular economy principles, where materials are kept in use for as long as possible, and the environmental footprint is minimized
- Adoption of Zero waste to landfill (ZWTL) program is key to achieving long term sustainability goals



### The Zero Waste Hierarchy





	Producers	Waste management sector	Consumers	Government
Refuse			<b>(</b>	<b>⊘</b>
Rethink	<b>&gt;</b>		<b>(</b>	<b>Ø</b>
Reduce	<b>Ø</b>		<b>&gt;</b>	
Reuse	<b>Ø</b>		<b>&gt;</b>	
Repair			<b>&gt;</b>	
Refurbish	<b>Ø</b>		<b>(</b>	
Remanufacture	<b>Ø</b>			$\bigcirc$
Repurpose	<b>Ø</b>			<b>⊘</b>
Recycle	<b>Ø</b>			
Recovery		$\bigcirc$		

Role of different stakeholders in controlling the generation and management of solid waste

- The Zero Waste Hierarchy provides a clear roadmap for managing materials responsibly.
- It prioritises preventing waste, reusing resources, and maximising recycling and recovery to achieve zero landfill

#### Non-hazardous waste

# Hazardous waste

#### **Metal scrap**

Steel, aluminum, copper, and other metal components

# Plastics, Rubbers and Composites

Bumpers, dashboards, interior trims, tires, hoses, belts, and composite parts

# Packaging materials

Cardboard, wood pallets, plastic wrapping

#### E -waste

Batteries, Sensors, infotainment systems, control units

# Fluids and Chemical

Engine oil, coolant, brake fluid, paints

# **Automotive Waste Streams**

### Challenges to zero landfill



#### Limited recycling Infrastructure

- Insufficient local processing facilities
- Weak or volatile markets for recycled materials

#### **Complex waste streams**

- Automotive waste streams are mixed, contaminated, or technically difficult to recycle (mixed plastics, composite materials etc)
- Requires expensive separation technologies or lack viable end markets

# Supply chain complexity

- Inconsistent regulations across region
- Poor tracking of waste streams
- Limited reverse logistics

#### High cost of alternatives

 Technologies required to eliminate landfill disposal are often costly:

> Waste-to-energy systems Advanced material separation Chemical recycling Thermal treatment

## **Key strategies for landfill free waste management**





**Source reduction:** Lean manufacturing techniques, IoT-enabled predictive maintenance, and process redesigns help minimize waste generation at its origin



Waste tracking systems: Digital audits, source segregation protocols, and continuous improvement loops identify landfill diversion opportunities



**Supply chain integration :** Contractual zero-landfill mandates, reusable packaging systems, and partnerships for recycling extend efforts across tiers, creating scalable infrastructure



**Training and awareness:** Comprehensive training initiatives, incentive programs for waste reduction ideas support to build zero waste culture



## **Marelli Motherson Automotive Lighting**

**Best Practices and Initiatives** 



## **Best practice 1- Preparation of Inbound Packaging BOM**



			Polybag			Carton Box				Wooden Pallet						
Item Code	Item Desc.	иом	Micron	Sing (in sh)	σ	Polybag (Kgs) Monthly Size Inward/K	Sizo	Ply/GSM	Parts/Box	Wt./Box	Carton Box	Size	Woight	Parts/	Wooden Pallet	
JT		▼ ▼	▼ ▼				J12€	TIY/USIVI F		Mon's Inwa		Size Weigh		Pallet	Monthly Inward ▼	
		KGS	120	16*16	30	0.03	45	16*12*09	2 PLY	30	0.700	1050.00	1000*1200*130	15	1000	675.00











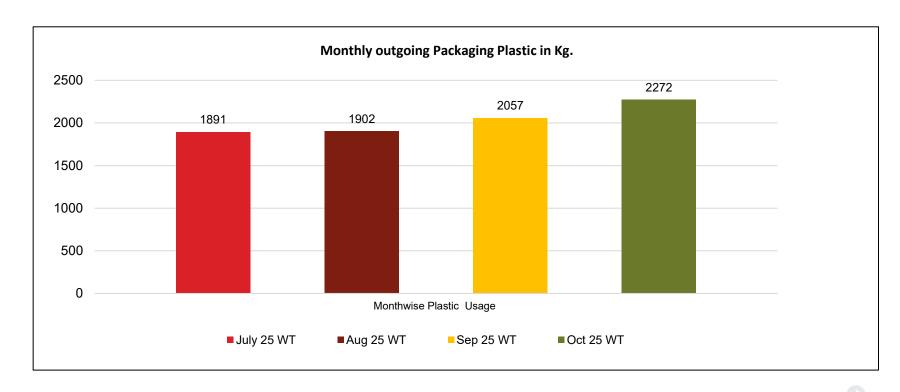
## **Best practice 2- Preparation of Outbound Packaging BOM**



Parts	ltm Desc	иом	Micron	Pallet	Striping clip nos	Stretch Film kg Per box	Poly Bag	Bubble Bag	Tissue Paper		Wrapping usage KG	ESD BAG SIZE ESD BAG QTY	ESD BAG Rate
▼	_	-	~	~	~	▼	-	~	_	₩	~	▼ ▼	~
			55 Mic	-	-	-	-	-	-	-	0.008		-

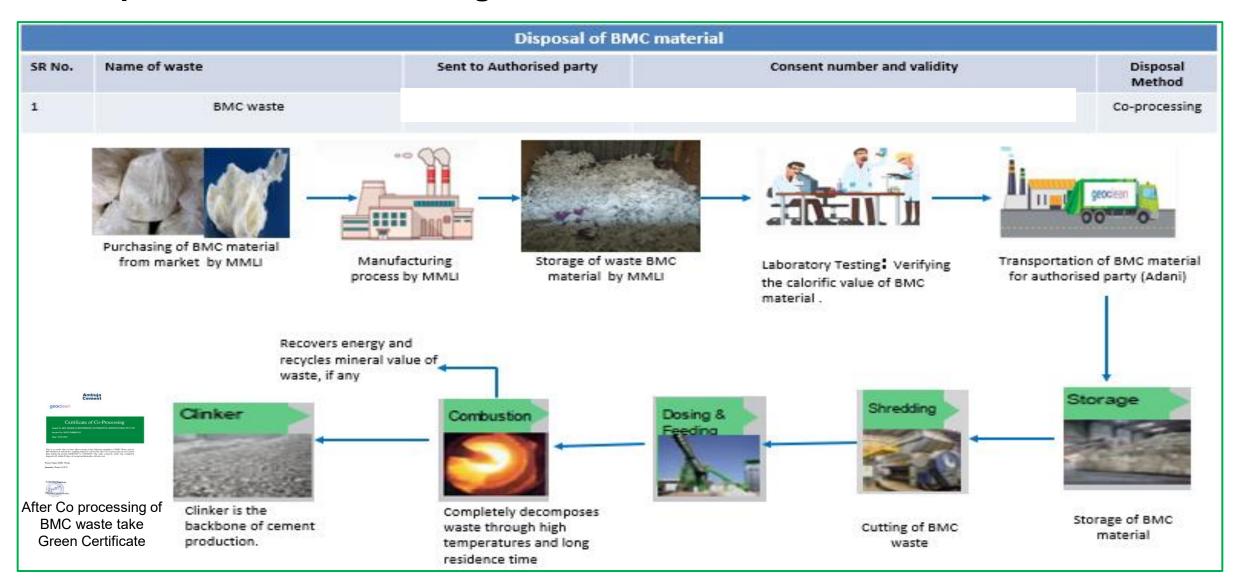
#### **Outer packaging**





### **Best practice 3- Waste Management Flow**





## **Best practice 4- Auditing the Supplier waste disposal process**



#### Audit Report

anotherson	WASTE HANDLING VENDOR AUDIT	INFORMATION CHECKLIST
SN	ELEMENTS	
	Name of Company.	Calana Fakananiana
	Address of Company	
	Type of organization	
1	Company Coordinator name.	
	Coordinator Contact no.	
	Coordinator Email id	
	Date of Audited.	07.03.2023
	Compliance with statutory requirements	REMARK / BRIEF
9.2	Fire NOC	No basic fire system is there (Fire extinguisher) Take the
3.2	I HE NOO	Fire NOC gov agency.
9.4	Approved factory lay out	Not approved from Gov agency.
10	WASTE STORAGE AND HANDLING	
10.1	Waste handling Flow chart	Available in soft,Not yet displayed.
10.3	Waste Containers: Check that waste is stored properly and labelled containers.	Stored properly labelling is not there.
11	SEGREGATION AND RECYCLING	
11.1	Recycling Program: Check if there is a recycling program in place for recyclable materials	Not yet in documented.
12	HAZARDOUS WASTE MANAGEMENT	
12.1	Hazardous Waste Storage: Check if hazardous waste is stored securely and in compliance with regulations.	No Hazardous waste storage defined
12.2	Manifests and Records: Verify that proper manifests and records are maintained for hazardous waste disposal.	No record found to Disposal of HZ waste to MEPL.
13	NON HAZARDOUS WASTE DISPOSAL	
13.3	Compliance with Regulations: Ensure that waste disposal follows all applicable environmental regulations.	Hazardous waste return not yet submitted evidence.
14	WASTE REDUCTION AND MINIMIZATION	
14.3	Waste Audits: Verify if waste audits are conducted periodically to identify areas for improvement.	Not conducted.

#### Communication to Supplier

	_1)
	:Ili.motherson.com'; O Hinge, Avinash (MMLI)
	oservation points regarding vendor waste handling. In action plan addressing these observations, In action item .
Thanks & Regards	
Rahul Sapkal	

#### Response from Supplier

	Compliance with statutory requirements	REMARK / BRIEF	Action plan
9.2	Fire NOC	No basic fire system is there (Fire extinguisher) Take the Fire NOC gov agency.	To be addressed on a priority basis.
9.4	Approved factory lay out	Not approved from Gov agency.	NA
10	WASTE STORAGE AND HANDLING		
10.1	Waste handling Flow chart	Available in soft, Not yet displayed.	Will be displayed within one week.
10.3	Waste Containers: Check that waste is stored properly and labelled containers.	Stored properly labelling is not there.	Labels will be applied within one week.
11	SEGREGATION AND RECYCLING		
11.1	Recycling Program: Check if there is a recycling program in place for recyclable materials	Not yet in documented.	Dismantled items will be segregated and sent to recyclers; documentation will follow.
12	HAZARDOUS WASTE MANAGEMENT		
12.1	Hazardous Waste Storage: Check if hazardous waste is stored securely and in compliance with regulations.	No Hazardous waste storage defined	Storage definition and arrangement will be completed within 2 month
12.2	Manifests and Records: Verify that proper manifests and records are maintained for hazardous waste disposal.	No record found to Disposal of HZ waste to MEPL.	No current stock; will send to MEPL when available.
13	NON HAZARDOUS WASTE DISPOSAL		
13.3	Compliance with Regulations: Ensure that waste disposal follows all applicable environmental regulations.	Hazardous waste return not yet submitted evidence.	Included in e-waste annual return; no separate requirement for hazardous waste return.
14	WASTE REDUCTION AND MINIMIZATION		
1/1 2	Waste Audits: Verify if waste audits are conducted periodically to	Net senducted	

## **Best practice 5- Waste Disposal and Treatment method**



Waste	Type of waste	Authorised agency as per SPCB	CTO copy	Method of disposal	Final treatment	Assurance from agency
Scrap engg. Plastic	Non hazardous  Naaz / Gauri  Re-grinding & Granulation  Reuse by MMLI and recycle External supplier		Reuse by MMLI and recycled by External supplier	Certificate		
Packaging plastic	Non hazardous	Naaz		Re-grinding & Granulation	Recycled by External Supplier	Certificate
Papers	Non hazardous	Naaz		Reprocess and recycle	Recycled by External Supplier	Certificate
Wood	Non hazardous	Naaz	POF	Recycling-using for furniture	Recycled by External Supplier	Certificate
Carton	Non hazardous	Naaz	NAAZ CTO	Compress	Recycled by External Supplier	Certificate
Metal	Non hazardous	Naaz		Cutting & send to foundry for making metal bar	Recycled by External Supplier	Certificate
E WASTE	Non hazardous	Sahara	SAHARA CTO	Dismantle- Hazardous – MEPL PCB/other waste – cutting Copper –External recycle	Recycled by External Supplier	Certificate after 45 days of disposition
Air tins/Chemical Drums	Hazardous	Naaz		Washing, Cleaning and reconditioning	Recycled by External Supplier	Certificate
ВМС	Non Hazardous	Ambuja Cement	Microsoft Edge PDF Document	Coprocessing in kiln	Recycled by External Supplier	Certificate

## **Best practice 6- Waste Reduction Ideas 5R**

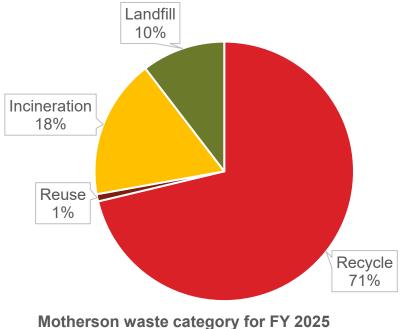


5 R Recycle Method	Waste reduction Idea	Before photos	After Photos
1R Refuse	Eliminate Plastic packaging Polybag		
2R Reduce	Plastic polybag Size Reduction- before 9*13 inch / After 5*10 inch	polybag 9*13 inch	polybag 5*10 inch
3R Reuse	Carton outer box Reuse For PCB Parts storage / Wooden Pallet Reuse For SPD dispatches		KT MMLI
4R Recover	Recover Child parts form rejected Finished Goods		
5R Recycle	Recycled at supplier end Plastic/Polybags to granule		

#### **Motherson Ambitions**

- Recycle 100% of indefinitely recyclable materials by 2026
- Eliminate non-recyclable packaging wherever technically feasible by **2027**
- Eliminate single use plastics by 2028
- Zero landfill by 2030



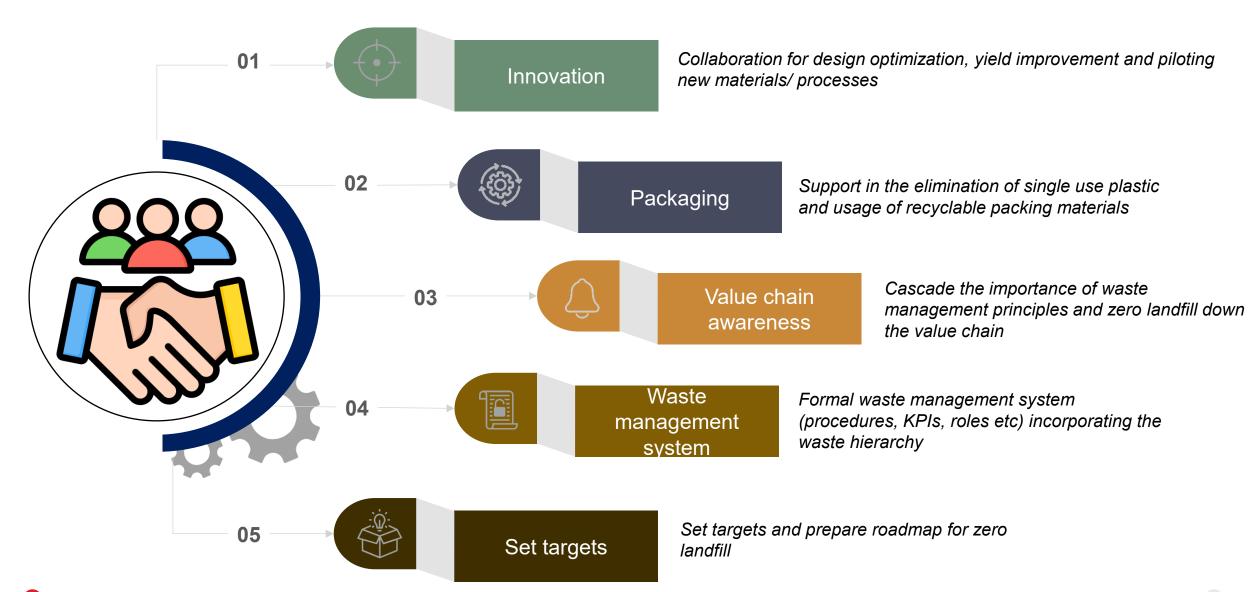




**Achieved in FY 2025** 

## Supplier expectations for landfill free waste management





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The responsibility lies with us all

# Useful links

Motherson Group Supplier Portal

Motherson Group Sustainability Portal

Motherson Group Sustainability report FY2024-25



# Thank you.

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