“Zero Waste To Landfill Roadmap Preparation” – Tata Power Experience

04.06.2026

CE-02/ALL/IP/26-06/01



TATA POWER

TATA

India's largest vertically-integrated power company

Generation

~26.3 GW
Total Capacity
(Operational + Under construction)

~17.5 GW
Clean & Green Energy
(Including 9.6 GW Under Construction)

~8.9 GW
Thermal energy generation
(Installed capacity)

Transmission

5,562 Ckm
Operational Transmission lines

1,841 Ckm
Transmission lines under construction

Distribution

13.1 Mn
Customers in Distribution

New-age Energy Solutions

~4.9 GW
Integrated cell & module manufacturing capacity

2.8 GW
MoU signed for Pumped Hydro Project (PSP)

5,804
Public EV charging points energized across 706 cities and towns

New-age Energy Solutions



Generation



Renewables



Transmission & Distribution

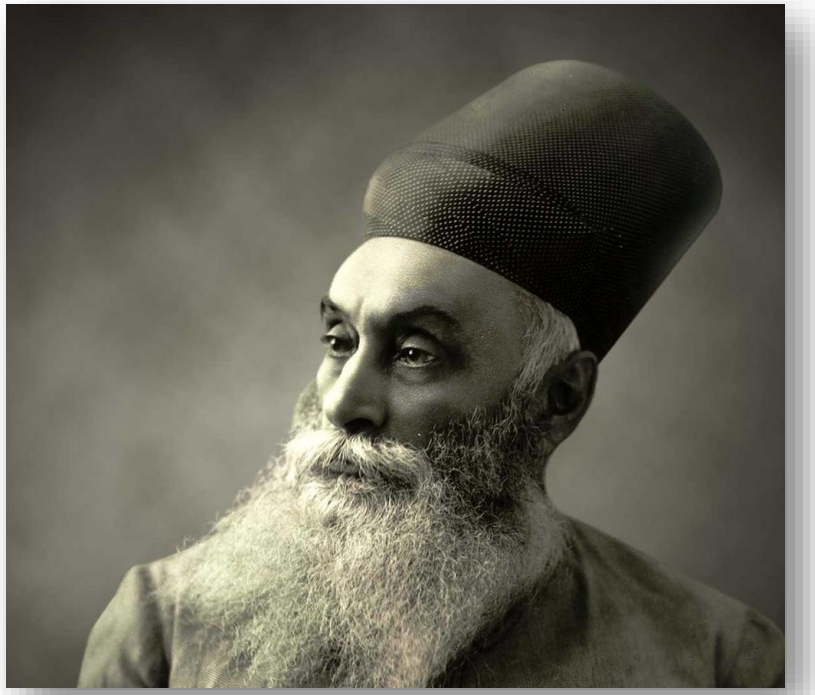




At Tata Power, **Zero Waste to Landfill is not just a waste-management initiative; it is a strategic sustainability commitment rooted in Tata values, embedded in governance, and aligned with our decarbonisation and circular economy journey.**

Tata Philosophy and Tata Code of Conduct

Leadership that Inspires



Jamsetji Tata, *Founder, Tata Group Chairman (1868 – 1904)*

*"**Clean**, **cheap** and **abundant** power is one the basic ingredients for the economic progress of a city, state or country"*

The environment

4. In the production and sale of our products and services, we strive for environmental sustainability and comply with all applicable laws and regulations.
5. We seek to prevent the wasteful use of natural resources and are committed to improving the environment, particularly with regard to the emission of greenhouse gases, consumption of water and energy, and the management of waste and hazardous materials. We shall endeavour to offset the effect of climate change in our activities.

"For Tata Power, **Zero Waste to Landfill** is a natural extension of the Tata Code of Conduct.

It is how we translate responsibility into action — by conserving resources, minimising waste, and returning value to society through circularity."

Evolution of Waste Regulations

Phase	Period	Characteristics	
Foundation	1986–2000	Basic pollution control laws	• Shift from generic to waste to specific regulation • Transition from disposal to lifecycle management • Emergence of Extended Producer Responsibility (EPR) • Integration of informal sector • Increasing regulatory granularity • Inclusion of emerging waste streams • Stronger compliance & enforcement mechanisms • Decentralization of responsibility • From pollution control to resource efficiency • Alignment with global frameworks
Sectoral Expansion	2000–2010	Municipal + hazardous + battery	
Modernization	2011–2016	Plastic, e-waste, comprehensive overhaul	
Circular Economy Phase	2016–present	EPR, digital compliance, recycling economy	
Advanced Sustainability	2022–present	PV waste, microplastics, lifecycle regulation	

India's waste regulation has evolved from **end-of-pipe control to lifecycle governance to circular economy framework**, with increasing emphasis on **producer responsibility, digital monitoring, and resource recovery**.

Tata Power Approach to Zero Waste to Landfill

Governance-led commitment



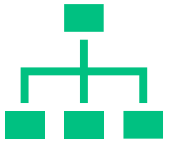
Waste prevention first — the 4R mindset



Full waste-stream visibility and disciplined management



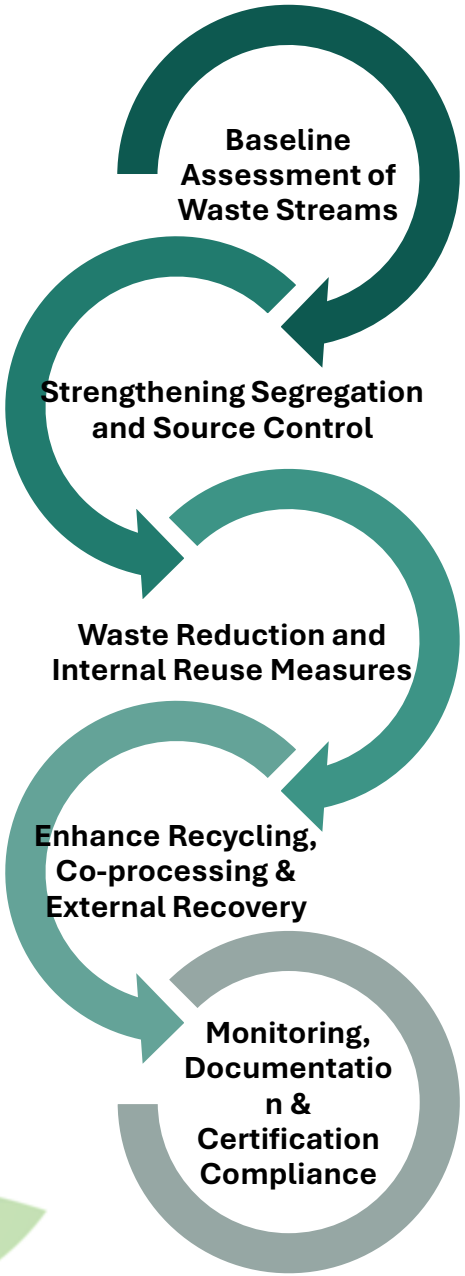
Cluster-specific circularity actions



Circular economy beyond operations



Zero waste to landfill by 2030: Roadmap preparation through FICCI

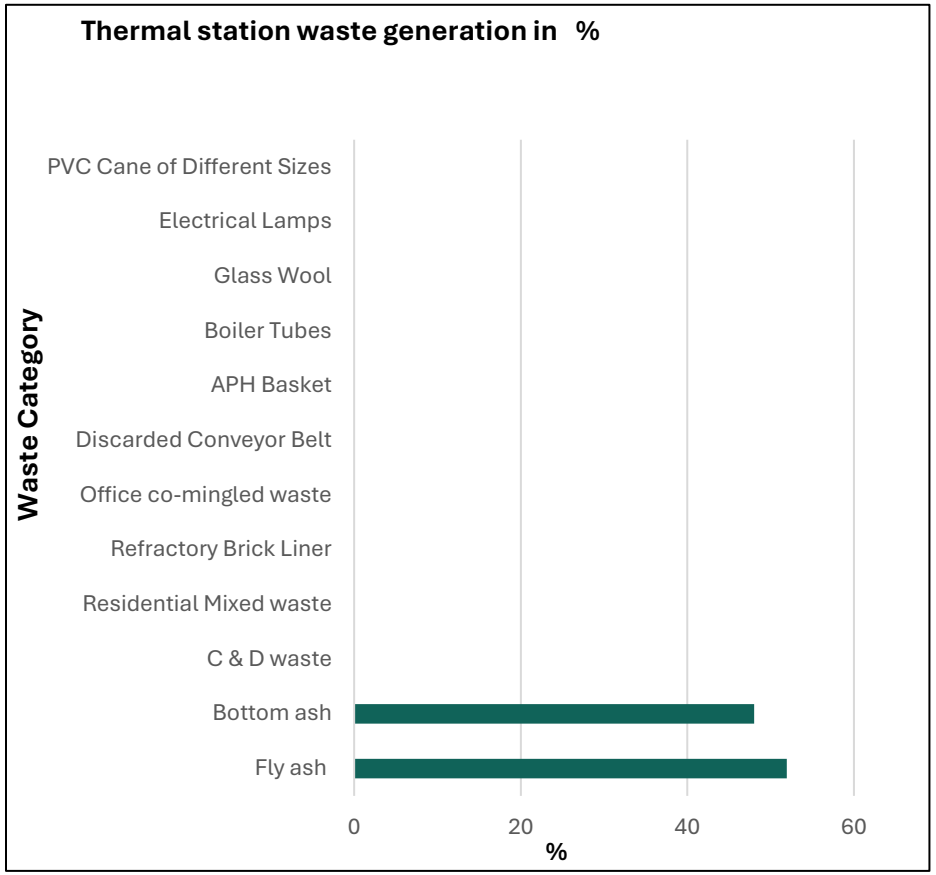


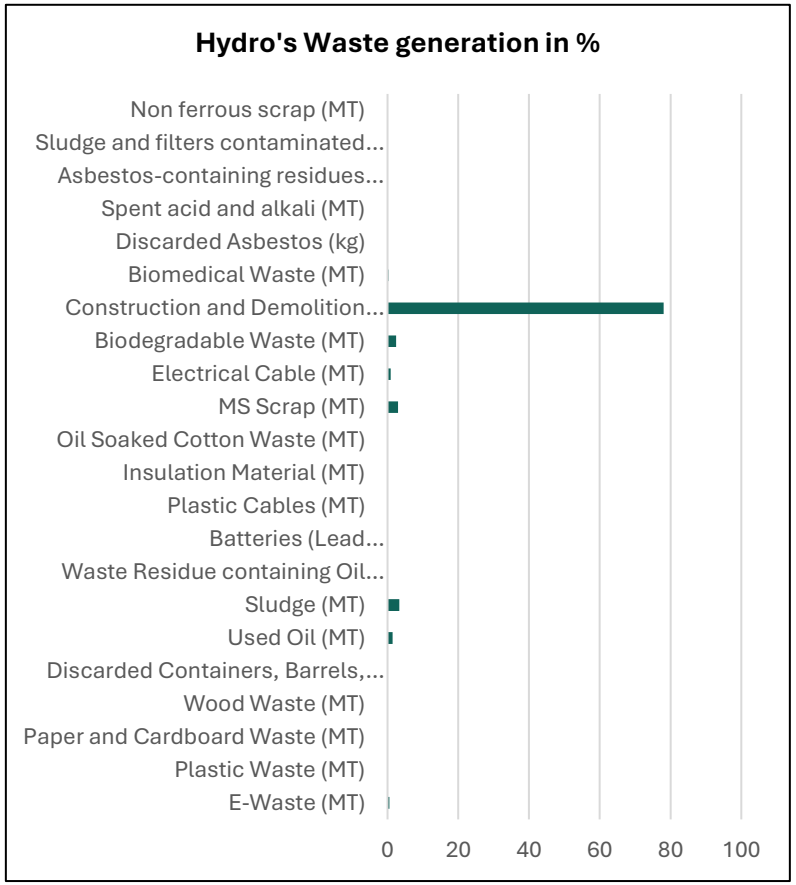
Generation: A Zero Waste to Landfill (ZWTL) roadmap has been successfully deployed for PPGCL.

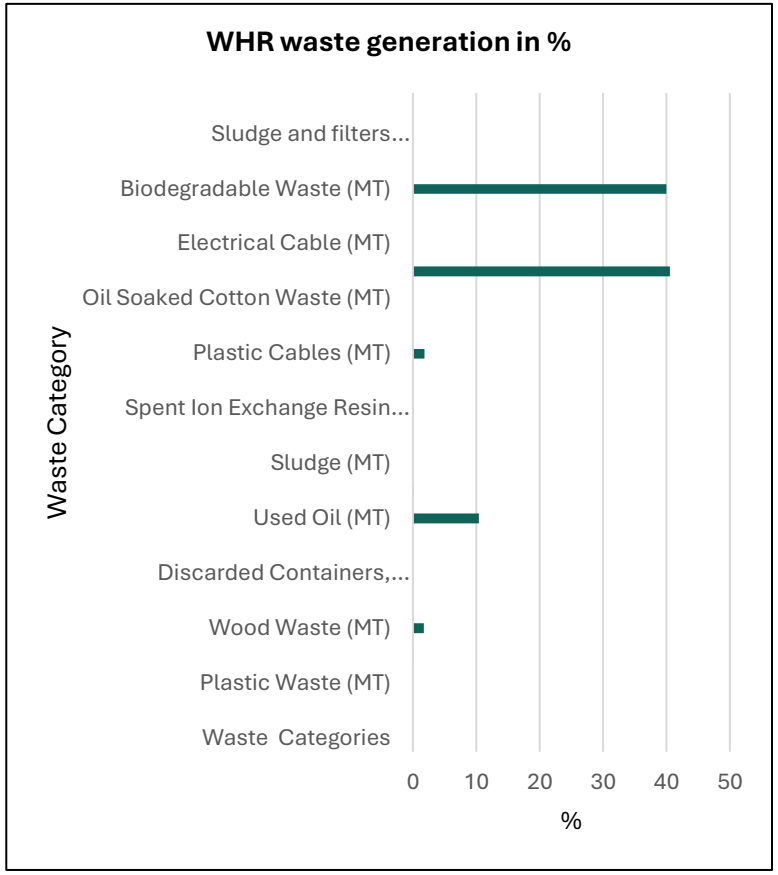
Renewables: The Zero Waste to Landfill (ZWTL) roadmap for TPSL Manufacturing has been finalized, and the recommended initiatives have been implemented.

T & D: The Zero Waste to Landfill (ZWTL) roadmap has been finalized for TPDDL, and the implementation of the recommended actions has been initiated.

Category-wise Waste Inventory: Generation (Thermal, Hydro & WHR)





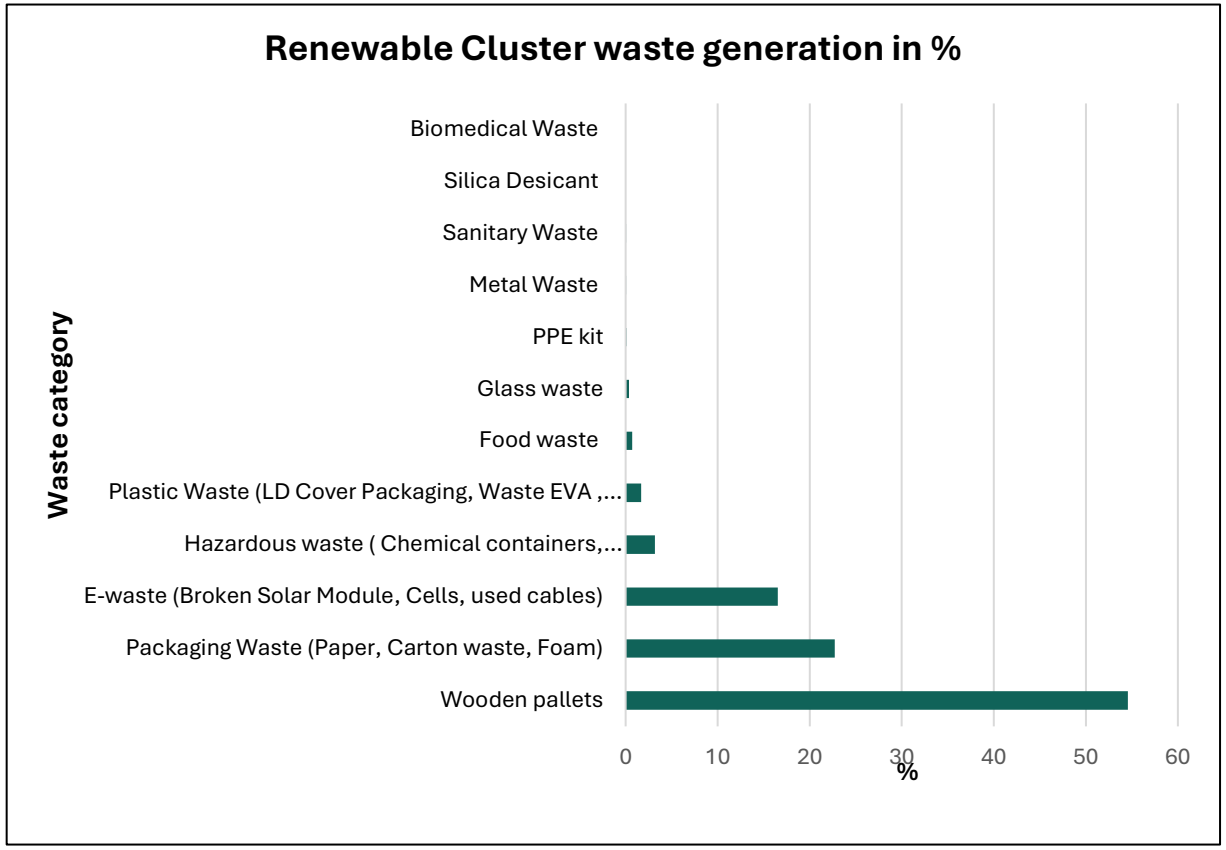


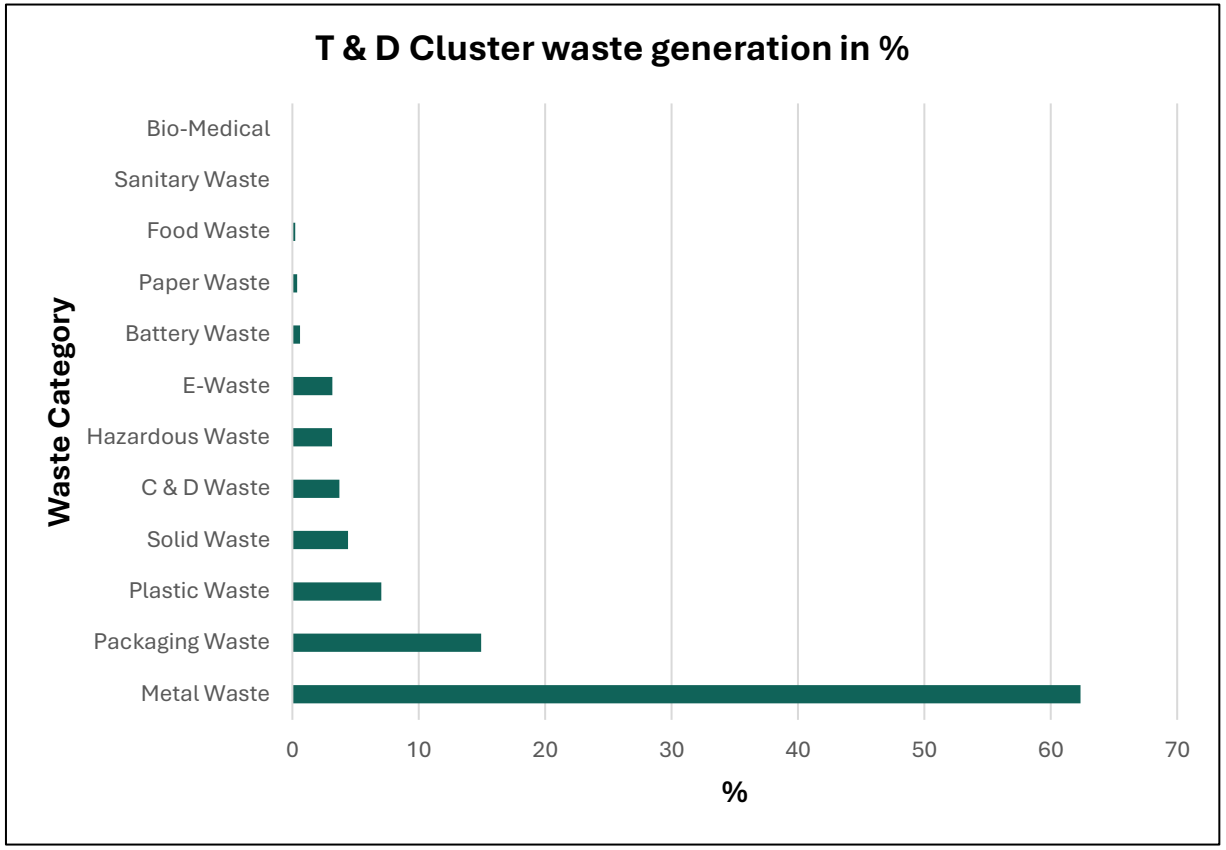
Based on the data from the thermal power station, it was observed that **fly ash accounts for approximately 52%** of the total ash generation, while **bottom ash contributes 48%**, followed by minor quantities of other waste streams.

Based on the data from hydro locations, it was observed that **biodegradable waste constitutes approximately 78%** of the total waste generated.

At the WHR facility, **biodegradable waste accounts for approximately 40%** of the total waste generated, followed by electrical cables as the next significant waste contributor.

Category-wise Waste Inventory: RE, T&D





Based on the yearly data reviewed, it was observed that the renewable manufacturing plant generates the highest proportion of wooden pallet waste, contributing approximately **55%**, followed by **packaging waste at 23%** and **e-waste at 17%** of the total waste stream.

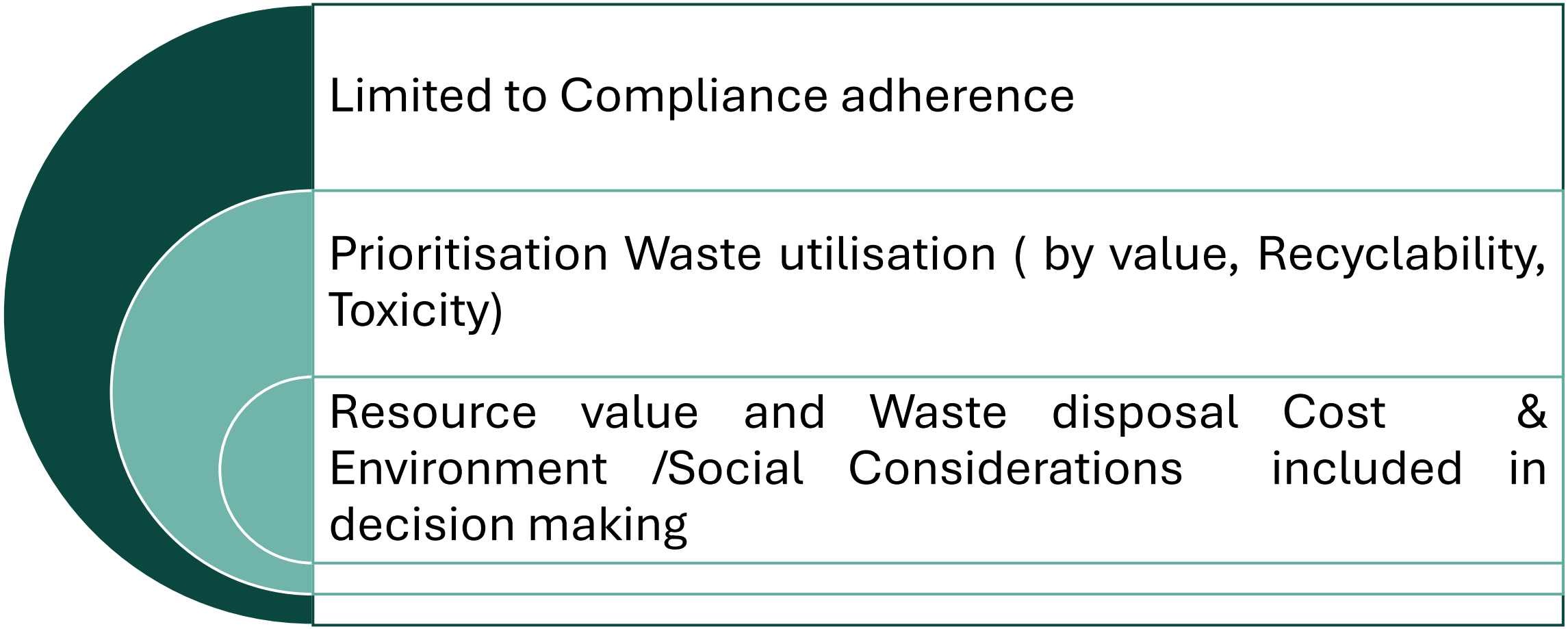
Based on the data received for the T&D cluster, it was observed that **metal waste accounts for approximately 62%** of the total waste generated, followed by **packaging waste at 15% and plastic waste at 7%.**

Going Ahead

- Employee and contractor behavioral change & engagement
- Resource Optimization
- 100% source segregation across all operations
- Reliable waste data tracking, reporting & governance system
- Strong recycling & resource recovery ecosystem development
- Circular economy integration in procurement and operations



Learnings


Limited to Compliance adherence
Prioritisation Waste utilisation (by value, Recyclability, Toxicity)
Resource value and Waste disposal Cost & Environment /Social Considerations included in decision making

Thank you

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#sustainable is attainable

