



Turning Delhi's Waste Crisis to Clean Energy

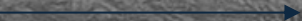
A Waste-to-Energy Proposal to Transform the City

Abhijith Sivaprasadan

The Problem: Delhi's Mounting Waste



Biodegradable waste



Non-biodegradable waste without segregation



Waste Segregation

Major part of Municipal Solid Waste is burned in open landfills



Overburdened Landfills in Delhi

- Bhalswa (1994)
- Ghazipur (1984)
- Okhla (1996)

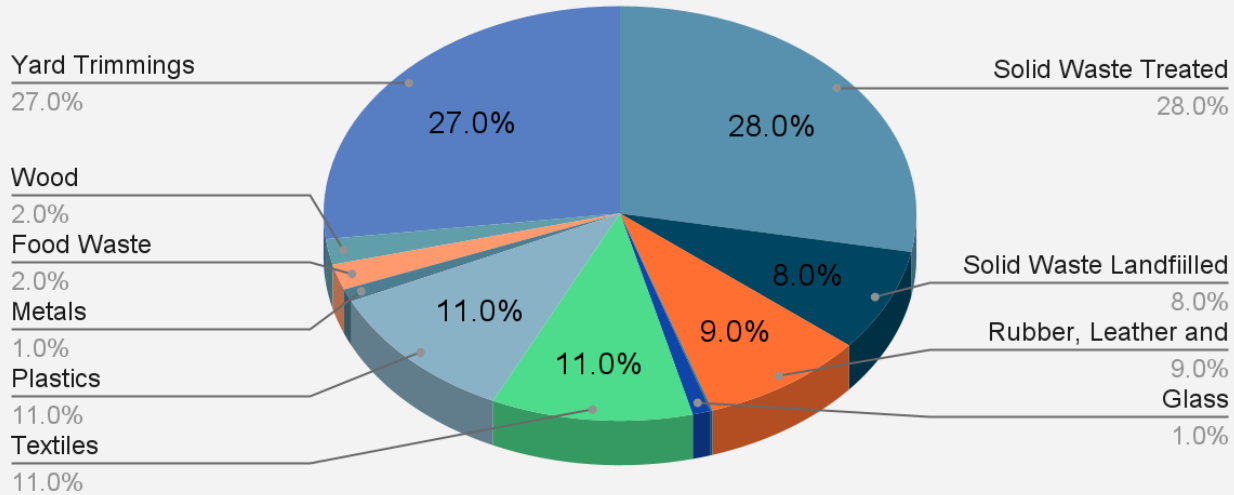
~6000 tonnes out of 1100 ton MSW unprocessed and left in open landfills every day

How to systematically contain the MSW and process the rest of MSW in Delhi?

MSW Composition

MSW Composition, South Delhi

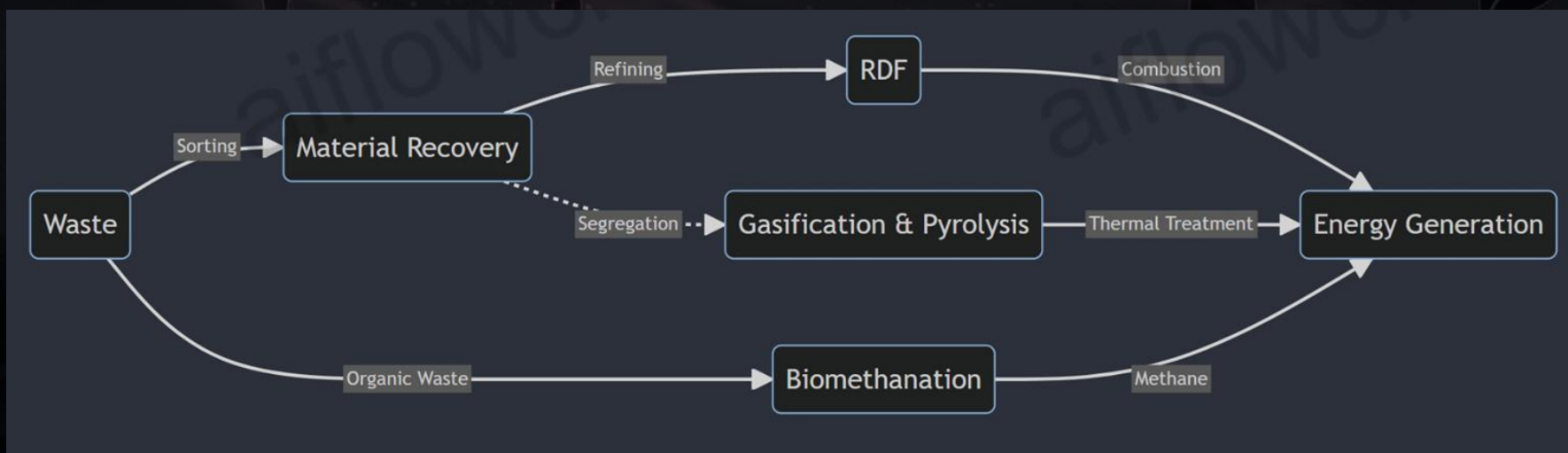
2017



State	Solid Waste Generated (TPD)	Collected (TPD)	Treated (TPD)	Landfilled (TPD)
Delhi	10990	10990	5193.57	5533

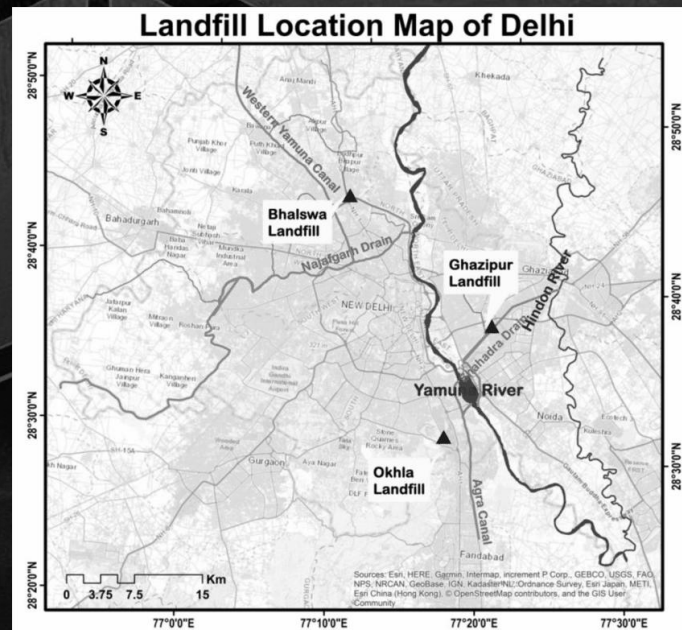
Waste-to-Energy: A Multi-Faceted Solution

- **Waste To Energy (WTE):** Not just burning garbage, but advanced technologies to produce valuable energy.
- **Immediate Imperative:** Biomethanation (anaerobic digestion) to tackle organic waste and landfill methane.
- **Material Recovery and RDF:** Initial step toward cleaner combustion.
- **Long-term cleaner WTE** (gasification, pyrolysis) as segregation improves.



A Roadmap for Delhi

- Mandatory Source Segregation: The absolute necessity, policy + enforcement
- Decentralized Waste Processing: Reducing transport, involving communities
- Phased Technology Introduction: Match tech to the reality of Delhi's MSW situation
- Legacy clean-up: There is a need for landfill remediation plans



Waste-to-Energy Potential

Waste to Energy (WTE) Initiatives in Delhi

- **Landfill Diversion:** Achieve 50% waste stream divergence from landfills within five years.
- **Energy Generation:** A WTE plant could generate enough electricity to power 8000 households.
- **Job Creation:** Integrated waste management could create thousands of jobs in plant operation, waste collection, and materials sorting.
- **Source Segregation:** Increase in segregation rates to 60-70% within three years.
- **Decentralized Processing:** Network of smaller biomethanation plants and neighborhood composting centers could reduce waste transportation and increase community involvement.

Benefits Beyond Energy

- Job creation in WTE and waste management
- Waste pickers integration into safer system
- Net reduction in pollution
- Reclaiming valuable land from landfills
- Delhi as a model for sustainable cities

