

EAST DELHI MUNICIPAL CORPORATION



एक कदम स्वच्छता की ओर

Presentation GMI Biogas Subcommittee Meeting

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India's Current Situation

- India with geographical area of 2.4% of world's land area serves home to more than 1.21 billion people.
- Total emissions from solid waste disposal on land in India are 15065 Gg CO₂ equivalent for year 2014. (Second Biennial Report to UNFCCC, 2018)

Total waste generated (metric ton/day)	100% door to door collection	100% source segregation	Waste processed
	Percent	Percent	Percent
147,084	93.74	67.76	57

Source: State-wise status of implementation of various components under Swachh Bharat Mission- August 2019

India At a Glance

- Greenhouse Gas (GHG) emissions from solid waste disposal (SWD) are expected to increase from 13.75 MtCO₂-eq in 2011 to 22.77 MtCO₂-eq in 2031 and to 39.71 MtCO₂-eq in 2051.
- NDCs commitment to UNFCCC – 33-35% lower emission intensity compared to 2005 levels



Emission Reduction Trajectories- EDMC- MSW Management

- To develop a work plan to reduce short-lived climate pollutants from SWM Sector.
- With support from CCAC waste initiative, the Study was implemented by TERI and Abt Associates.
- The jurisdiction of EDMC operates across ~126 sq km.
- Population of about 4.5 million and a density 35718 /sq km.
- The current level of GHG emission from MSW management has been about 5,53,117 Tonnes (T) of CO₂ eq in 2017.
- The Annual growth in the quantity of waste has been 7%.
- Food waste- the major contributor (62.5%).

Alternative Scenarios for SLCPs Reduction

Alternate Scenario	Composting (TPD)	Anaerobic digestion (TPD)	Waste Combustion (TPD)	Recycling (TPD)	Landfill	Transport
Low expectation	200 (2019)	0	1300 (2019)	0	A new site from 2019 till 2050, having flaring and LFG utilisation facility, but with no high BTU energy source.	Nil
Medium expectation	300 (2019)	100 (2022)	1900 (2020)	0	A new site from 2019 till 2055, having flaring and LFG utilisation facility, but with high BTU energy source.	Diversion of private fleet to CNG
SLCP's reduction	400 (2020)	250 (2022)	1300 (2019)	0	A new landfill site shall be operationalized after closure of Ghazipur in 2018, which shall be operational till 2055	Complete fleet shall be converted to CNG fuel.
SLCP's reduction-High expectation	400 (2020)	800 (2022)	1300 (2019)	0	A new landfill site shall be operationalized from 2018 – 2055 have flaring and LFG utilisation facility, but with project utilising high-BTU LFG as an energy source.	Complete fleet shall be converted to CNG fuel.

Improving Waste Management Practices and Reducing Methane Emissions – EDMC, New Delhi, India



- Partnered with U.S. EPA and CCAC's Waste Initiative to prepare SLCP Mitigation work plan - analyzing the environmental benefits of a planned waste treatment facility using the Waste Initiative's tool, SWEET
- Analysis suggests the project could yield 5190 – 7720 GgCO₂e in avoided landfill methane emissions over 20 years
- The current level of GHG emission from MSW management has been about 553 GgCO₂ eq in 2017.
- The annual growth rate in the quantity of waste has been 7% with food waste being the major contributor (62%).
- Further, engaged CCACs Indian implementer TERI to audit waste management systems and help improvise our services.

Challenges

- Lack of waste quantification and characterisation studies in cities.
- Inappropriate contract arrangements between stakeholders – ranging from ULBs – plant managers- energy consumers.
- Lack of advanced Indigenous technologies and skilled manpower to successfully operate Bio-methanation plants.
- Inadequate Standard operating procedures and Maintenance Manuals specific to the plant.

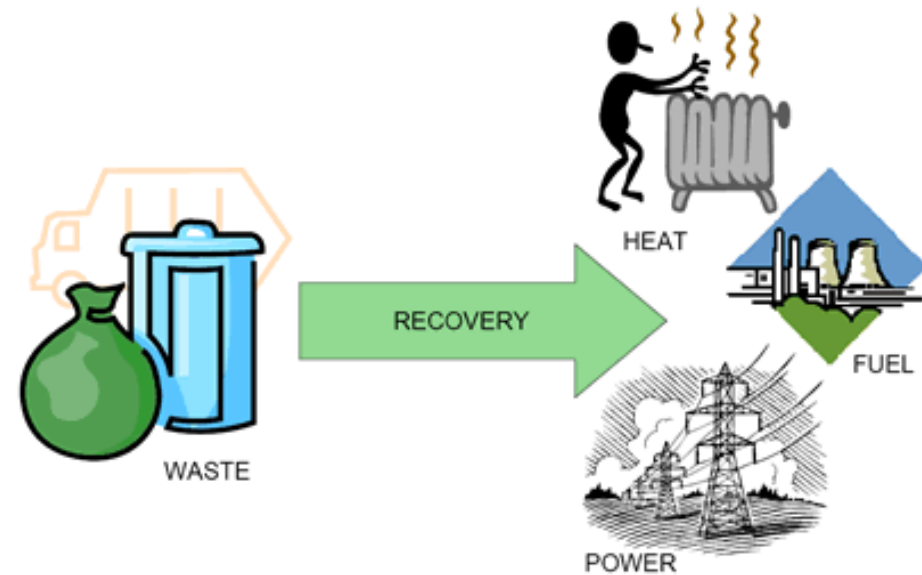
Medium and Large Scale Bio-methanation Plants in India

City	Developer	Installed Capacity (TPD)	Output
Pune	Nobel Exchange	300	Bio-CNG: 4 TPD Manure: 7.5 TPD
Bengaluru	Nobel Exchange	250	Manure: 25 TPD
Solapur	Organic Recyclers	400	Electricity: 3 MW Manure: 60 TPD
Chennai	Ramky	30	Electricity: 0.26 MW Manure: 3 TPD

Source: Indian Council for Research on International Economic, 2018

Opportunities

- India produces nearly 58.76 million tons of MSW annually which is expected to rise to 165 million tons by 2030.
- The tremendous amount of waste has a potential of generating:
 - 20-25 million tons recycled or re-used new resources
 - 439 MW of power from combustible wastes/RDF
 - **1.3 million cubic meter of biogas per day or 72 MW of electricity from biogas**
 - 5.4 million metric tons of compost



Source: <https://www.reuters.com/brandfeatures/venture-capital/article?id=44655>

Activities undertaken – In sync with SLCP reduction work plan

- Reducing climate impacts by installing waste processing facilities and targeting zero waste to landfill
 - 10 number of 1 TPD decentralised compost units (committed from June 2019)
 - 2 number of 5 TPD decentralised bio-methanation units (committed from December 2019)
 - 1 number of 1200 TPD bio-methanation plant (expected from December 2020)
 - 1 number 100 TPD bio-methanation plant especially for organic waste released from dairy farms within the city. (expected from May 2020)
 - Having new 16 LMVs on compressed natural gas fuel (committed from October 2019)
 - Utilizing Electrical / Cleaner fuel in all automobiles

