Partnership & Cooperation models for foreign companies – Investment Opportunities & PPP models in MSWM sector

Presented by

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REEL - Business Segments




- Industrial Waste
- Municipal Solid Waste
- Biomedical Waste
- E-waste

Waste Management


Water & Waste Water

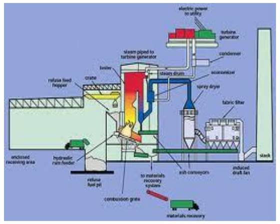
- Water Treatment Plants
- Sewage Treatment Plants
- Common Effluent Treatment Plants
- Lake Restorations

Integrated Environmental Services

- Recycling
- Facility Management Services
- Consultancy and R&D


Clean Energy

- Waste to Energy
- Solar
- Wind
- Biomass
- Hydro



REEL Waste Management Snapshot

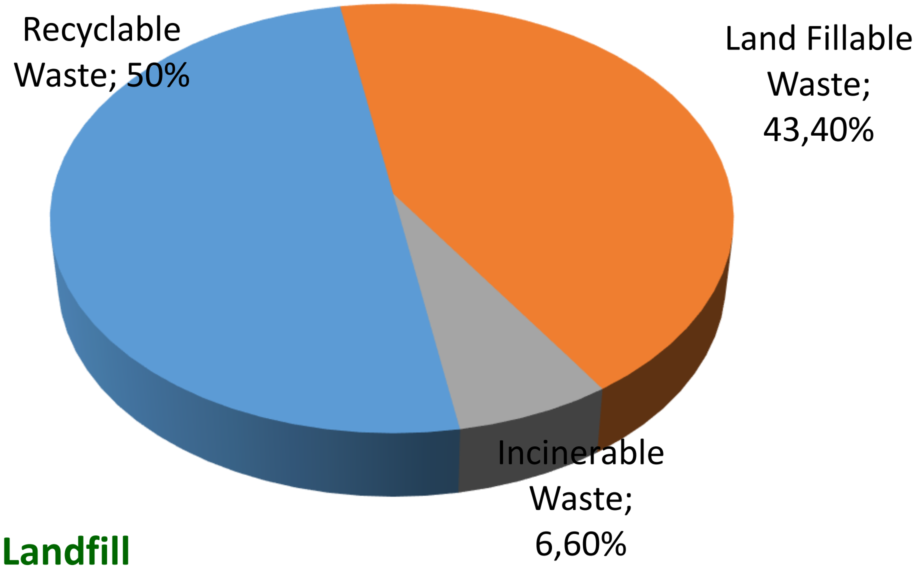
Industrial Waste	Municipal Waste	Bio Medical Waste	E-waste
13 Facilities in India and 2 in ME	13 Cities	16 Cities	2 Cities
1 mn tons annual	Over 10,000 tons per day	260,000 Beds 15,000 HEC	Hyderabad, Bangalore
60 % Market Share	>50 % Market Share	~ 35 % Market Share	Largest licensed capacity at Hyd
15 Yrs of Operations	9 Yrs of Operations	16 Yrs of Operations	3 Yrs of Operation

Waste Management- Market Opportunity

- 1.0 mn out of 7 mn TPA of hazardous waste is scientifically managed at TSDFs???
- 10,000 out of 200,000 TPD of MSW is scientifically managed???
- 700,000 beds are catered to out of 1.3 mn beds in India
- Industrial clusters to lead demand for Integrated Environment services
    - ✓ 50 new Integrated ZLD centers are expected to be tendered out in next 3 years
- Recycling market is still in infancy with no large player

Environment Market opportunity is huge – driven by increased compliance & growth in population / urbanization / industrialization

Industrial Waste Management – Market Dynamics



Landfill

Source: MoEF, UK Trade and Investment Sector Briefing

- India is estimated to generate 7.2 Million Tons of Hazardous Waste per annum.
- 12 States contribute to 90% of the waste generated in India
- Most states have Industrial Waste Management Facilities operated by Private sector
- Very well outlined guidelines and proven technology adoption
- Waste characteristics are well defined

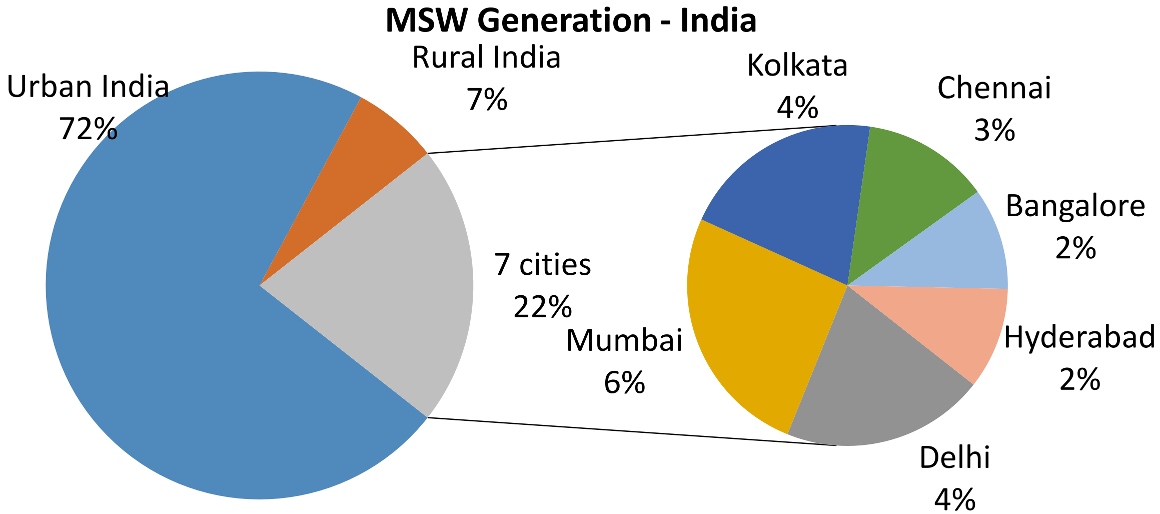
Bio Medical Waste – Market Dynamics

- Only 1.3 Beds for every 1000 Population while the global average is 3.3 Beds/ 1000 population as per WHO
- 700,000 beds are catered to out of 1.3 mn beds in India
- More than 100 operating facilities across the country
- Reasonable compliance levels in cities and large towns, however technological improvements are required
- A success factor because of the Polluter Pay Principle
- The untreated waste is generated in far and remote places where the viability for a facility is difficult

Source: CPCB, MoEF

MSW - Market Dynamics

- Between 2001 and 2011, number of metropolitan cities (with population in excess of 1 million) has increased from 35 to 53. Similarly, between 2001 and 2011, MSW generation in India has increased from **120,000 TPD to ~200,000 TPD**.



The existing systems and practices to manage MSW in India are limited. Compliance to MSW Rules, 2000 is very poor.

Municipal Solid Waste Sector –at a glance

Current waste management practices are quite primitive

- D2D/ Primary Collection is unhygienic and unorganised
- Secondary Collection is from open points, uncovered bins and partly organised
- Transfer Station – Almost non-existent, whatever operational are primitive
- Tertiary Transport – Partial (Hyd, Chennai), unhygenic, uncovered and open trucks, small volume trucks
- Predominantly open dumping/unscientific disposal

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MSW The Problem

The Problem

- 0.35 Kgs/ head-day
- Low Heat Value
- High percentage of inerts and dust/ sand
- unwillingness to pay
- **"L1" wins - low price still matters – problematic**
- Unrealistic Expectation from "High Tech" Solutions
- Too many stake holders???

MSW The Opportunity

The Opportunity

- 200,000 TPD of waste, growing approx – 73 Mn T of Waste
- Infancy < 5% being scientifically managed
- Consultants, Equipment Providers, Technology Providers, Service Providers, Monitoring …
- Estimated @ > US$ 10 Bn / Annum at current costs

MSW The Solution

- **Robust** Public Private Partnership
- Willingness to Pay
    - State Govt with Central Govt Support
    - Swatch Bharat Program and others
- Technology
    - **Opt for commercialized & Proven Start-of-the-Art as appropriate in most cases**
    - Compost v/s Chemical Fertilizer
    - Incentivising RDF usage
    - Power Tariff for W2E
- Monitoring

Agriculture ministry boost to organic fertilisers

Till date, organic fertilisers were sidelined due to govt policy to subsidies use of chemical fertiliser under fertiliser subsidy scheme

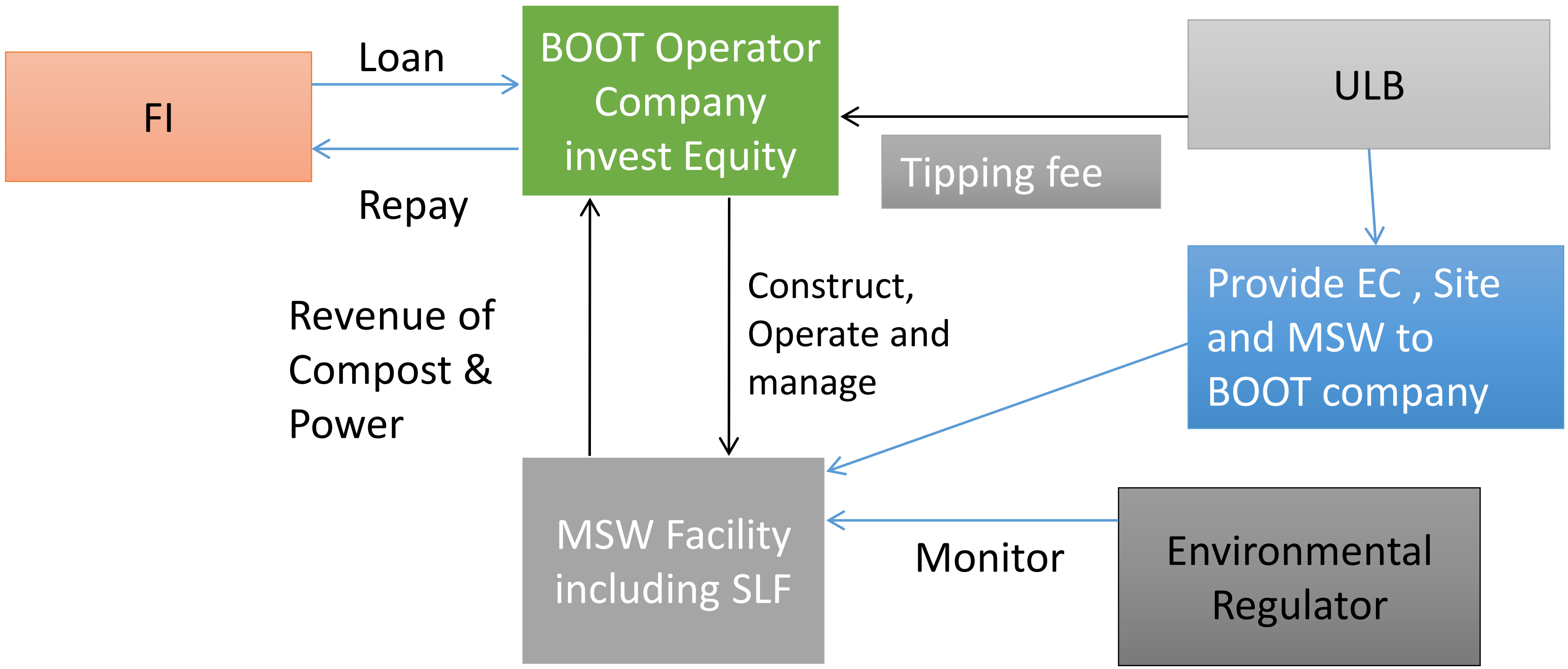
Anindita Dey | Mumbai December 09, 2014 Last Updated at 17:46 IST

The ministry of agriculture has decided to promote use of organic fertiliser in the country by including it in various central schemes meant for use of fertiliser in the agricultural sector.

It is a big boost for the sector which till date is sidelined due to the policy of the government to subsidies use of chemical fertiliser under the fertiliser subsidy scheme.

Various programmes chosen to include organic fertiliser are National Mission for Sustainable Agriculture (NMSA), Mission for Integrated Development of Horticulture (MIDH), Rashtriya Krishi Vikas Yojana (RKVY) and Network Project on Organic Farming under Indian Council for Agricultural Research (ICAR).

Working Model for a PPP project



Ingredients for success of PPP

- Clarity
- Trust
- Leadership
- Risk Sharing
  - Govt Roles and Risks
  - Pvt Roles and Risks
  - Consultants – Success Fee???

PPP – Solid Waste Management

Areas of Focus

- Street Sweeping
- Primary Collection – D2D
- Secondary Collection
- Transfer Station Management
- Treatment and Disposal

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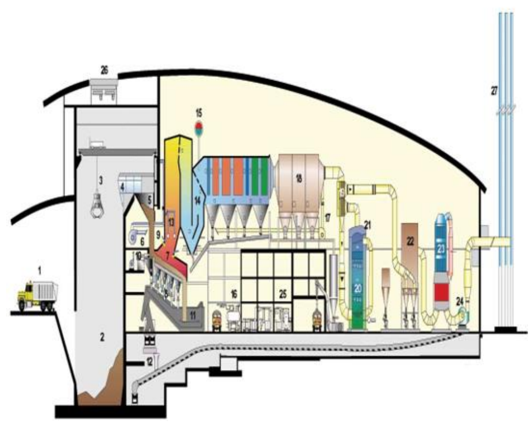
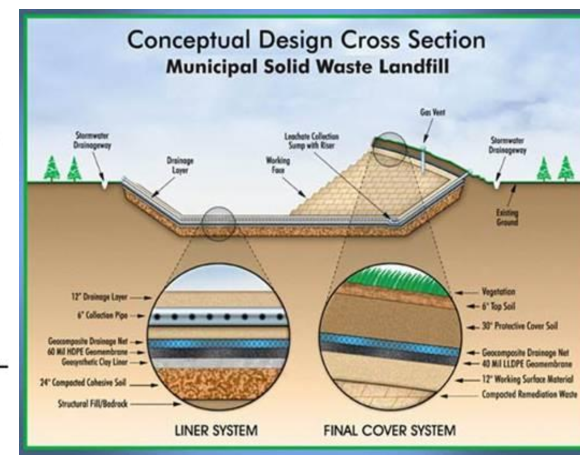
PPP – Solid Waste Management

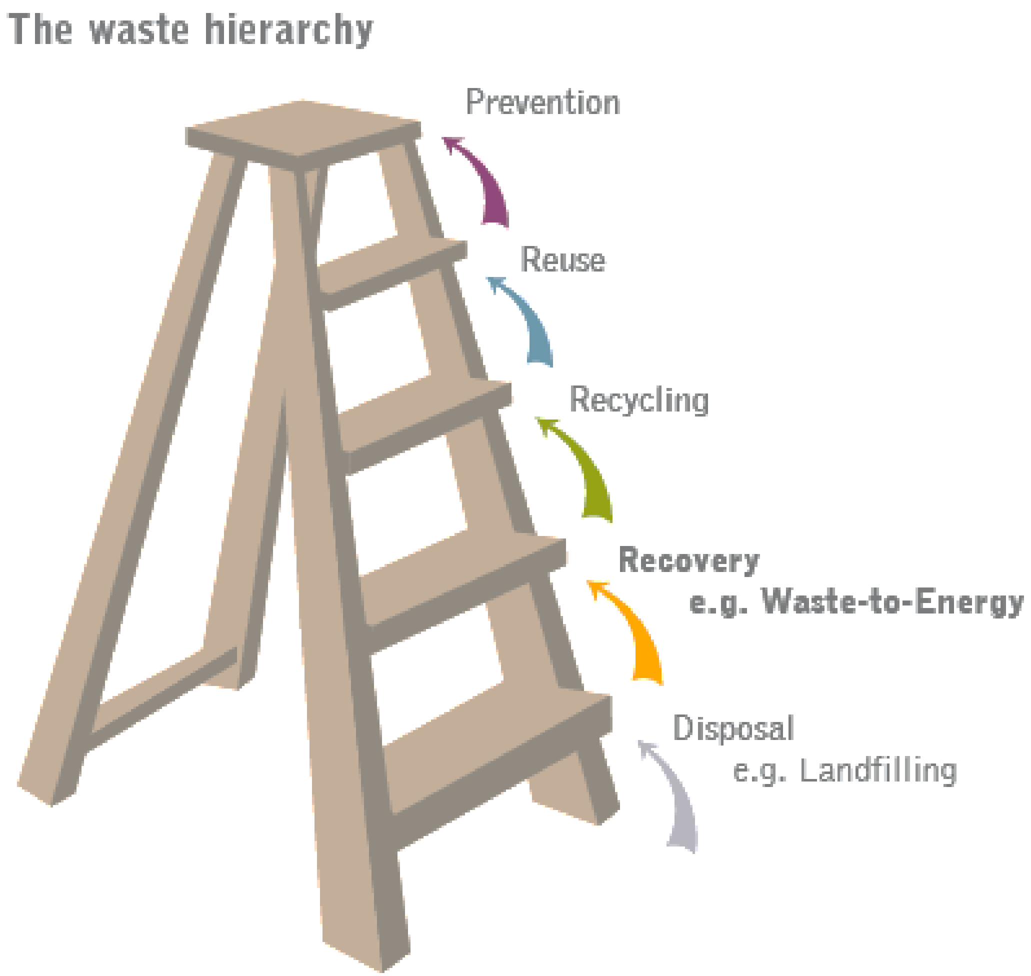
Treatment Options

- Segregation & Recycling
  - Source Segregation
  - MRF Facilities
- Organic Waste Processing
  - Aerobic Processes
  - Anaerobic Processes
  - Thermal Processes
  - Landfill
  - Leachate Treatment





Hierarchy - Getting Our Priorities Right



Waste Management in India - Way Forward

- Solid waste management is a service to be provided under PPP
- MSW segment offers significant market opportunities across the value chain of MSW management
- Investment requirement for the sector is huge, private sector will play an important role in meeting the financial requirement.
- “ True” PPP spirit must reflect in the Tender criteria and concession agreements
- PPP with right leadership and State Govt’s involvement with Central Govt support will create appropriate solution and business opportunities in the sector

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THANK YOU