Solid waste management: International trends and best practices

Suneel Pandey
Director, Green Growth & Resource Efficiency
6th June 2016, Vigyan Bhawan
Sources of waste generation

- Wastes from core activities (passenger and freight movement – packaging, plastic and paper waste, food waste, human excreta)
- Wastes from non-core activities (institutional waste, repair and maintenance related waste)
- The former category is matter of concern for IR as it is generated in much diffused waste
Estimated generation of waste

- The Indian Railways, through its 9116 trains and 1.6 crore passengers, generates around 300,000 litres (60,000 gallons) of human waste from the 'open-discharge' toilets and 8960 tonnes of solid waste across its terminal buildings all over the nation.
Commitment of Indian Railways

- Indian Railways has a commitment to provide hygienic environment to passengers and to keep station premises/tracks clean
Issues of concern

- Vending at stations to be regulated
- Multi-layered plastics need to be addressed
- No. of waste bins required at railway stations need to be estimated based on waste generation and desired segregation
- Bins design and colour coding needs to be uniform pan India
MSW recycling trends in Europe

Source: EU
MSW processing in select countries

Barti 2014
Status of waste processing

- Waste processing: 15%
- Recyling: 8%
- Other: 1%
- MBT: 3%
- Landfill: 5%
- Integrated/mixed facilities: 9%
- AD, biogas and biofuel: 4%
- Gasification: 11%
- Combustion (with energy recovery): 44%

Source: http://acucom.net
From Linear to Circular economy

Adapted from Sempels and Hoffmann (2013)
Inexpensive litter bins
In-vessel composting

Facility in Thailand
Pavement Blocks and Kerbstones
TERI Enhanced Acidification & Methanation (TEAM) process
Landfill with energy recovery

http://www.youtube.com/watch?v=00M4EsPKYhE
Thank you