



Embassy
of the Republic of Poland
in New Delhi



Innovation & Technology for Smart Sustainable Waste Solutions



The European Scenario

Waste Generation



2.2 billion tonnes of waste is generated in the EU every year



Top 5 waste generating economic activities

- Construction (37.5%)
- Mining & Quarrying (23.4%)
- Waste/Water service (10.8%)
- Manufacturing (10.6 %)
- Households (9.4 %)



4.4 % of the total waste produced in the EU is classified as hazardous waste

Waste Management



More than a half (**59.1 %**) of the waste gets treated in the EU

- recycling (39.9 %)
- backfilling (12.7 %)
- energy recovery (6.5 %)



The remaining **40.9 %**:

- Landfilled (32.2 %)
- Incinerated without energy recovery (0.5 %)
- disposed of otherwise (8.2 %)

The Waste Framework Directive

EU's Waste Targets



Recycle 55% of household waste by 2025, 60% by 2030 and 65% by 2035



Recycle 70% of all packaging – including plastic, paper, aluminium and other materials



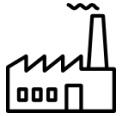
Implement a 10% cap on landfill by 2035



Implement stricter and more consistent methods to calculate progress made towards recycling

The Polish Scenario

Waste Generation



115 Million Tonnes of Industrial Waste generated



The main sources of industrial waste:

- Mining and Quarrying (**53.3%**)
- Manufacturing (**18.6%**)
- Electricity, gas stream and supply (**11.6%**)



13.4 Million Tonnes of Municipal Waste generated



11.6 million tonnes of waste collected from households

Waste Management

4.1% Increase in the amount of industrial & municipal wastewater treated in wastewater treatment plants compared to the previous year



The predominant ways of treating waste that was generated in 2022 were recovery (**48.4%**) and landfilling (**41.7%**)

Municipal waste was managed through:

- recovery (61.1%), including:
 - recycling (26.7%),
 - composting (14.2%)
 - incineration with energy recovery (20.2%)
- disposal (38.9%), including:
 - incineration without energy recovery (0.8%)
 - landfilling (38.1%).

Key Legislative Framework/Laws Concerning Waste

EU WASTE LAWS

Waste Framework Directive

Batteries and accumulators

End of life vehicles

Landfill waste

Mining waste

Packaging waste

Sewage sludge

Ships & Waste Shipments

Electrical-electronic Equipment
Waste

POLISH WASTE LAWS

National Waste Management Plan (2022):

Food Waste, Batteries and Accumulators, Packaging and Packaging Waste, End of Life Tyres, Hazardous Waste, Municipal Sewage Sludge, Waste Oils, Waste from Construction, Renovation and Demolition, End of Life Vehicles, Waste in Marine Environment, Waste Electrical and Electronic Equipment

The Environmental Protection Act (2001)

Act on waste (2013)

Act on the management of packaging & packaging waste (2021)

Act on the prevention of food waste (2019)

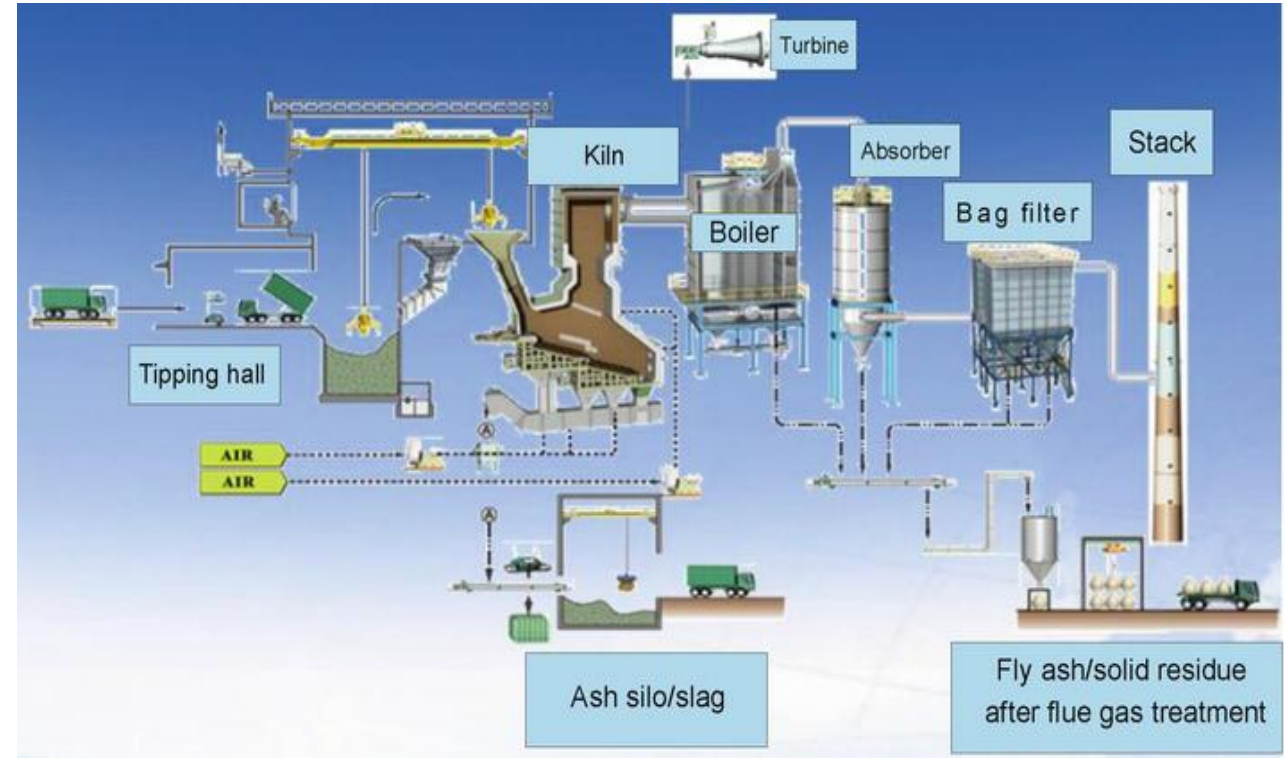
Regulation on recycling fee rate (2019)

Regulation on separate collection of municipal waste (2021)

Recent Developments in E-Waste and Metal Recycling



Case 1: Waste to Energy Plant in Krakow, Poland



Case 2: Anaerobic Fermentation Technology



Source: Hitachi Zosen Inova (HZI)

Case 3: Reducing Methane Emissions at a Landfill Site in the Southern Poland



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Thank You