

SOLID WASTE MANAGEMENT & EFFLUENT TREATMENT

Solid waste is the unwanted or useless solid materials generated from human activities in residential, industrial or commercial areas. It may be categorised in three ways. According to its:

- origin (domestic, industrial, commercial, construction or institutional)
- contents (organic material, glass, metal, plastic paper etc)
- hazard potential (toxic, non-toxin, flammable, radioactive, infectious etc).



Source of waste in Railways

- **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**
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Railways had taken up a pilot project for disposal of municipal solid waste (MSW) generated at railway terminals in an environment friendly manner , including conversion of waste to energy . Pilot plants have been set up at Jaipur and New Delhi Railway Stations which convert bio-degradable waste to energy through bio-methanation process. Energy generated from these plants would be utilized for suitable services at/ near Railway Station.

Bio-degradable waste to energy bio-methanation plants have also been set up at Mumbai

Central Station / WR, Coaching depots at Puri and Bhubaneswar in ECoR, Liluah Workshop /

ER, Mysore Workshop / SWR, NWR HQ Jaipur and RWF Bangalore .

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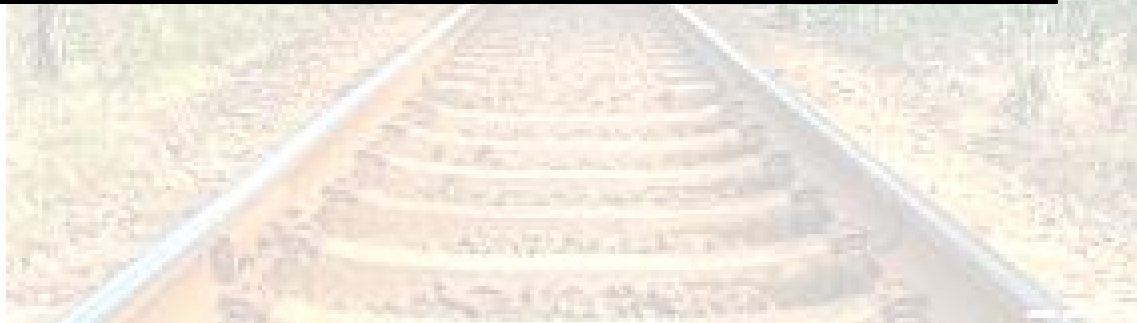
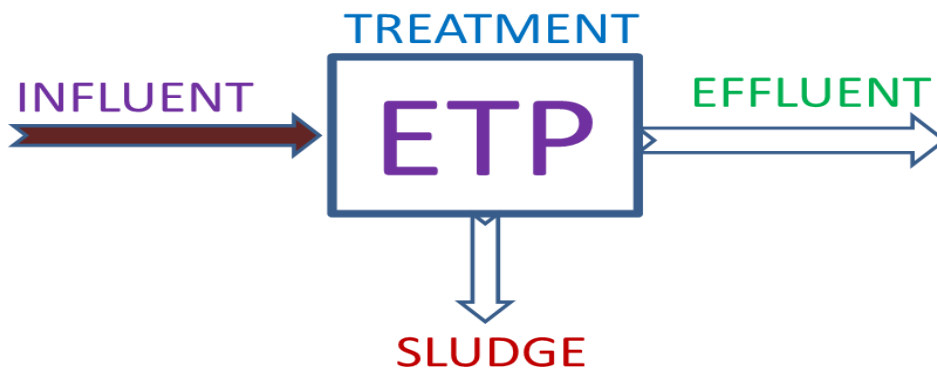
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ECoR has commissioned a Waste to Energy Plant based on Polycrack technology at Mancheshwar Workshop.

Effluent Treatment

ETP (Effluent Treatment Plant) is a process design for treating the industrial waste water for its reuse or safe disposal to the environment.

- Influent: Untreated industrial waste water.
- Effluent: Treated industrial waste water.
- Sludge: Solid part separated from waste water by ETP.



Need of ETP

- To **clean industry effluent** and recycle it for further use.
- To **reduce the usage of fresh/potable** water in Industries.
- To **cut expenditure** on water procurement.
- To **meet the Standards** for emission or discharge of environmental pollutants from various Industries set by the Government and **avoid hefty penalties**.
- To **safeguard environment** against pollution and contribute in sustainable development.



Flow chart for ETP

