Project Title

WASTE MANAGEMENT

Problem Statement

Rapid urbanization and industrial growth have increased the volume and complexity of solid waste in urban and rural areas. Poor segregation at source, inefficient collection, limited recycling facilities, and reliance on open dumping and unscientific landfilling lead to serious environmental pollution and public health risks. Low awareness, inadequate infrastructure, and weak enforcement of waste management rules further worsen the problem, making current systems unsustainable and harmful to communities.

Project Team - Robotics & Mech



TEAM 2 - BEYOND BOUNDARIES

Team Members

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SDG 11 – Sustainable Cities and Communities

SDG Goals

SDG 12 – Responsible Consumption and Production

Solution

An effective waste management system involves organized handling of waste from generation to safe disposal using sustainable and scientific methods. The solution promotes source segregation into biodegradable, recyclable, and hazardous categories to improve processing efficiency. By applying the 3R principle—Reduce, Reuse, and Recycle—waste generation can be minimized while conserving natural resources. Organic waste can be treated through composting and vermicomposting to produce nutrient-rich manure and reduce landfill dependency. Recyclable materials such as paper, plastic, metal, and glass should be processed to save energy and raw materials. Waste-to-energy technologies, including biogas production and controlled incineration, help reduce waste volume while generating power. Scientific landfilling ensures safe disposal of residual waste, and hazardous or biomedical waste requires specialized treatment.



