



India's First Dry-Fermentation MSW Plant | Maharashtra | 28 Nov 2025

Why in News?

Nagpur is set to host India's first dry-fermentation **Municipal Solid Waste (MSW)** processing plant, which will convert organic waste into biogas and compost **without using water**.

Key Points

- The **dry-fermentation plant** is being developed in **Bhandewadi (Nagpur)**, where construction is in final stages and trial operations are expected soon.
- The initiative is supported by **Nagpur Municipal Corporation (NMC)** and aims to improve decentralised waste management under the **Swachh Bharat Mission 2.0** framework.
- **Features:**
 - Unlike conventional **wet-fermentation**, this system treats **high-solid biodegradable waste** (such as kitchen and market waste) using **minimal water**, making it suitable for Indian cities facing water scarcity.
 - Designed as a **zero-liquid-discharge (ZLD)** facility, the project is expected to significantly reduce the environmental load on existing dumpsites.

Dry-Fermentation Technology

- A **biological process** where microorganisms break down **solid-rich organic waste** (25–40% solids) in the **absence of oxygen** to produce **biogas** (mainly methane).
- It requires **very little water**, unlike wet anaerobic digestion and is ideal for **municipal solid waste, agricultural residue, and food waste** with high lignocellulosic content.
- The technology offers significant advantages such as **lower operational costs, a faster digestion cycle, suitability for decentralised plants, reduced slurry handling, and a higher methane yield per tonne**.
- It is widely used in **Germany, Austria, and Italy**; now being adopted in India for the first time.