GUJARAT INSTITUTION TURNS WASTE INTO BIOGAS, COOKS 500+ MEALS DAILY

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Demonstrating how efficient waste management can enable energy self-reliance and sustainability, an educational institution in Gandhinagar prepares 500+ meals daily using two biogas plants, eliminating LPG dependence.

In a compelling example of innovation under the Swachh Bharat Mission-Urban 2.0, an educational institution in Gandhinagar, Gujarat, has demonstrated how scientific waste management can drive energy self-reliance and sustainability.

The Shrimati Manekba Vinay Vihar Educational Complex, located near Adalaj and managed by the Vasumati Charitable Trust, has eliminated its dependence on conventional LPG by transitioning to a biogas-based cooking system. The campus now prepares meals daily for over 500 individuals - including approximately 250 hostel students served twice a day and 15 staff families residing on campus.

The institution operates two biogas plants with a combined capacity of 90 cubic metres per day. These plants utilise dung from 222 cows housed in the trust's cowshed, along with kitchen waste and agricultural residue from nearby fields. The biogas generated meets the institution's entire cooking fuel requirement, negating the need for LPG cylinders entirely.

"We have become self-reliant in cooking gas under Gujarat government's Institutional Biogas Plant Scheme. The cows provide sufficient dung, and the slurry produced after gas generation is used as manure in our fields, enabling fully organic farming. Without this plant, we would require around 30 LPG cylinders every month", said officials.

Biogas, produced through the anaerobic decomposition of organic waste, is among the most viable, economical and environmentally friendly cooking fuels available. The by-product slurry, that is rich in nitrogen, serves as an effective organic fertiliser, reducing dependence on chemical inputs, lowering costs and maintaining soil fertility. This delivers dual benefit from a single initiative.

The Gujarat Energy Development Agency (GEDA) provides financial assistance for biogas plants with capacities ranging from 25 to 85 cubic metres. Non-profit institutions are eligible for up to 75% subsidy, making the transition financially accessible for a wide range of organisations.

Over the past five years, approximately 193 institutional biogas plants have been established across Gujarat. Gujarat continues to advance alternative energy and sustainable development, reducing pollution, achieving energy self-sufficiency and enabling the scientific disposal of organic waste from gaushalas and educational institutions alike.

In line with the objectives of Swachh Bharat Mission-Urban 2.0, such initiatives reflect how cities and institutions are emerging as frontrunners in the journey towards sustainability. By adopting innovative, circular approaches to waste management, they are not only reducing environmental impact but also unlocking the value of waste as a resource. From generating clean energy to promoting organic practices, these efforts highlight a scalable pathway for urban India, where scientific waste management, community participation, and forward-looking policies together pave the way for cleaner, greener, and more self-reliant cities.

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