



DAILY EDITORIAL ANALYSIS

TOPIC

CAN GOBARDHAN FUEL EFFICIENCY?

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Context

- The GOBARDhan scheme approved to strengthen India's domestic bioenergy production also raises questions about the **challenges of converting India's abundant organic waste** into a reliable **source of domestic energy**.

Background

- India currently meets nearly **50 per cent** of its natural gas requirement through **imports**, making energy security a strategic priority.
- Recent geopolitical developments and disruptions along the **Strait of Hormuz**, a route that carries nearly **55 to 60 per cent of India's Liquefied Natural Gas (LNG)** imports, underscoring the importance of strengthening domestic energy production.
- Hence, the Union Cabinet approved **GOBARDhan**, the National Circular Bioenergy Scheme.

Galvanizing Organic Bio-Agro Resources Dhan (GOBARDhan)

- GOBARDhan was originally launched under the **Swachh Bharat Mission (Grameen) in 2018** as an integral component of **Solid and Liquid Waste Management (SWM)**.
 - ♦ It aims to convert bio-waste – animal waste, kitchen leftovers, crop residue and market waste – into biogas and bio-slurry, thereby ensuring cleanliness in villages and improving rural life.
 - ♦ Earlier, the **Compressed Biogas (CBG) ecosystem** was spread across four different ministries.
- **In 2026**, to ensure better coordination, the government has consolidated the entire scheme under the **Ministry of Petroleum and Natural Gas**.
- **Implementation Period:** FY 2026-27 to FY 2035-36.
- **Total Outlay:** 23,731 crore.
- **Expected Outcomes Over a Decade:**
 - ♦ Reduced import dependence will save over **40,000 crore in forex**.
 - ♦ Clean, homegrown gas will displace **10 MMT** of fossil fuel use.
 - ♦ This industry will add more than **75,000 crore** to **national GDP**.
 - ♦ Diverting waste from landfills will **cut more than 40 MT of CO₂ emissions**.
 - ♦ Production of **250 MMT of organic fertiliser**.

Six Growth Engines under GOBARDhan

- **Assured CBG Offtake:** GOBARDhan establishes a dedicated CBG Offtake Assurance framework to provide a reliable and predictable market for producers. Procurement by City Gas Distribution (CGD) entities will support achievement of the notified CBG Obligation trajectory:
 - ♦ **3%** in FY 2026-27
 - ♦ **4%** in FY 2027-28
 - ♦ **5%** from FY 2028-29 onwards in CNG (Transport) and PNG (Domestic) segments.
- **Stable CBG Pricing Framework:** GOBARDhan introduces a government-backed administered price of **2,110 per Metric Million British Thermal Unit (MMBTU)**, equivalent to **105 per kilogram of CBG**, ensuring stable and remunerative pricing.
- **Capital Assistance:** Eligible greenfield CBG projects will receive capital assistance of up to **2 crore per tonne per day (TPD)** of installed CBG capacity.
- **Development of Pipeline Infrastructure:** The scheme supports both cluster-based and standalone pipeline infrastructure connecting CBG plants with trunk pipelines and **city gas distribution networks**.
- **Credit Guarantee Support:** The mechanism will provide credit guarantee coverage of up to 85 per cent on eligible loans for such projects.

- **CBG Ecosystem Challenge Fund:** GOBARdhan establishes a dedicated CBG Ecosystem Challenge Fund to accelerate district-level implementation and strengthen local value chains across the CBG ecosystem.

Key Issues to Examine

- **Fragmented feedstock supply:** Agricultural residues and cattle dung are dispersed across numerous small farms, making aggregation difficult and increasing procurement costs.
- **Seasonal availability and storage:** Crop residues are generated during specific harvesting periods, requiring storage infrastructure to ensure a continuous supply throughout the year.
- **High transportation costs:** Biomass has relatively low energy density, making long-distance transportation expensive and potentially reducing plant profitability.
- **Regional disparities:** Areas with established dairy cooperatives, organised agricultural networks and better mechanisation may attract more investment than regions with fragmented landholdings and weaker logistics.
- **Plant viability:** Biogas and CBG plants require reliable feedstock supplies, suitable technology and regular maintenance.
- **Financial challenges:** High initial investment, operating costs and uncertain market returns can affect project viability.

Significance of GOBARdhan

- **Energy security:** Domestic biogas and CBG production can reduce dependence on imported fossil fuels.
- **Environmental benefits:** Proper treatment of organic waste can reduce uncontrolled waste decomposition and associated pollution.
- **Rural economy:** Waste-to-energy plants can create local employment and provide additional income opportunities for farmers.
- **Agriculture:** Digestate, the material left after anaerobic digestion, can be used as an organic soil amendment.
- **Circular economy:** The scheme links waste management, clean energy and resource recovery.

Way Forward

- **Improve local collection and segregation** systems for organic waste.
- **Strengthen financial support**, technology access and maintenance capacity.
- **Establish reliable purchase arrangements** and transport infrastructure for biogas and CBG.
- **Promote coordination** among local bodies, farmers, cooperatives and private operators.
- **Monitor plant performance**, energy output and environmental outcomes rather than relying only on the number of plants established.

Daily Mains Practice Question

- [Q] Examine the role of the GOBARdhan scheme in enhancing India's energy security, managing organic waste and strengthening rural livelihoods. Discuss the challenges associated with its implementation.

Source: BL

