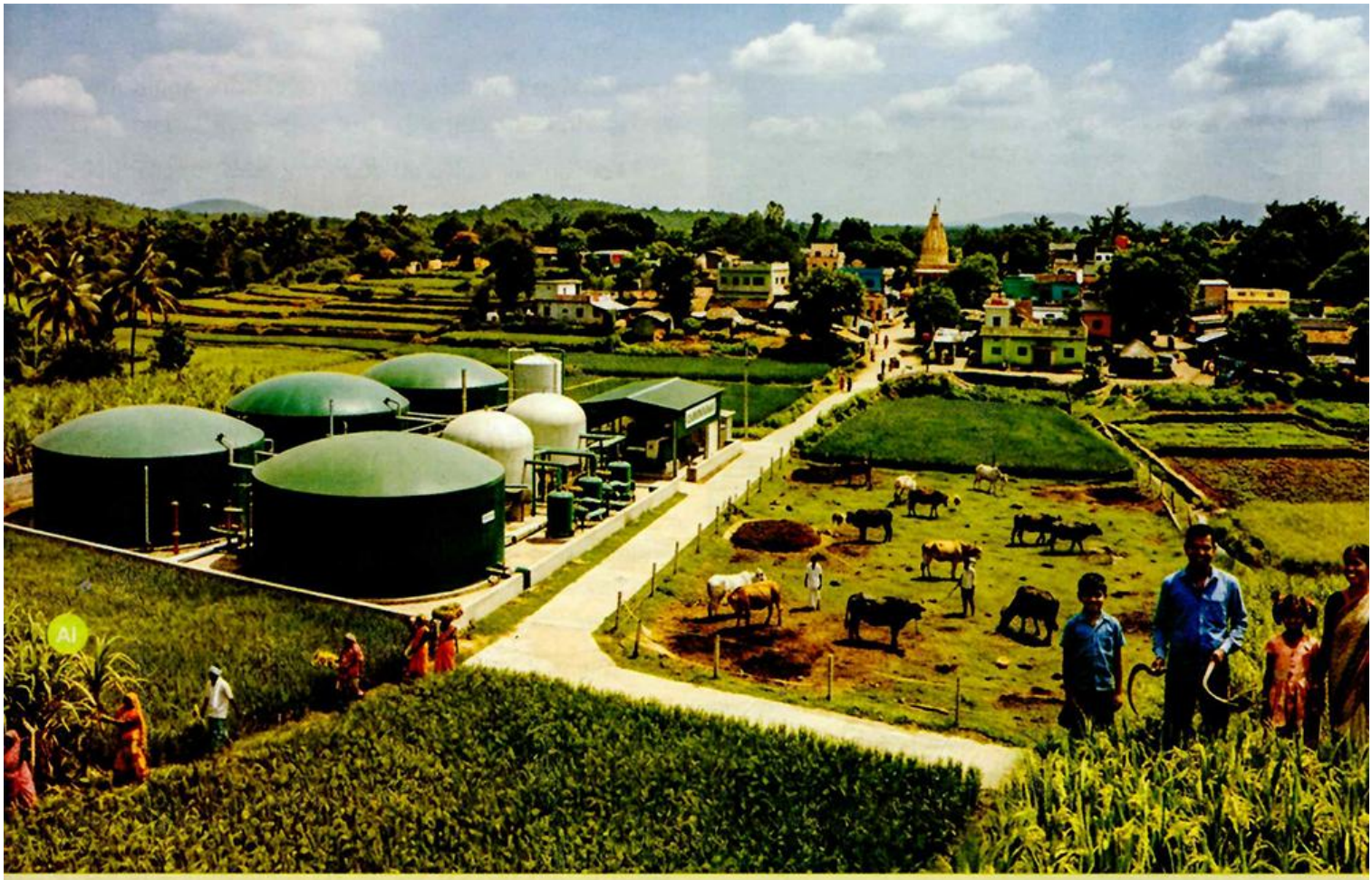


GOBARdhan: Waste to Clean Energy

Turning Organic Resources into Energy, Income and Rural Enterprise

What is often seen as waste in rural India – cattle dung, crop residues, agricultural and other organic waste can become a source of energy, income and enterprise when linked to technology and organised markets. This is the larger opportunity behind GOBARdhan – National Circular Bioenergy Scheme, approved by the Union Cabinet on 6 August 2026 with an outlay of ₹23,731 crore. To be implemented from 2026-27 to 2035-36, the scheme aims to increase domestic Compressed Biogas (CBG) production nearly tenfold and build a wider circular bioeconomy.

GOBARdhan–National Circular Bioenergy Scheme approved by the Union Cabinet on 6 August 2026 with an outlay of ₹23,731 crore.The initiative comes at a time when India's energy demand is rising and natural gas has an important role in transport, households, industry and commerce. Producing renewable gas from locally available organic resources can therefore serve two purposes at once: strengthen energy security and create new economic opportunities in rural areas. GOBARdhan seeks to bring these two possibilities together.

From Waste Management to a Circular Economy

The idea behind GOBARdhan has been evolving since 2018, when the Galvanizing Organic Bio-Agro

Kurukshetra Editorial Desk



Resources Dhan initiative was launched under the Swachh Bharat Mission (Grameen). Its initial focus was to convert cattle dung, kitchen waste, crop residues and other organic waste into biogas and bio-slurry, linking sanitation with energy and productive use of waste.

The approach has since expanded. SATAT, Market Development Assistance for organic fertilisers, the Biomass Aggregation Machinery Scheme, the Development of Pipeline Infrastructure Scheme and Central Financial Assistance under the National Bioenergy Programme have helped create the foundation for a larger CBG ecosystem. Government information released in August 2026 indicated that more than 200 CBG plants had become operational.

The scale of the emerging sector is reflected in the GOBARdhan Unified Registration Portal. As of 6 August 2026, 1,908 CBG/Bio-CNG plants had been registered, of which 217 were operational and 339 were under construction.

The new national framework seeks to bring greater coherence to this expanding sector. Earlier, different aspects of CBG development were addressed through various Ministries and Departments. Bringing the scheme under an integrated framework of the Ministry of Petroleum and Natural Gas is intended to strengthen coordination across policy, investment, infrastructure, production and markets.

Why CBG Matters

CBG is produced by purifying and compressing biogas generated through the decomposition of organic matter. After purification, its properties are comparable to natural gas, allowing it to serve existing applications and gas infrastructure.

For an agricultural economy, this opens up a significant opportunity. Cattle dung, crop residues, dairy waste, sugar-industry press mud and other organic materials can become feedstock for CBG plants. Instead of being discarded or left underutilised, these materials can enter an organised supply chain, creating an additional source of income for farmers, livestock owners and local suppliers.

The process also produces more than gas. Fermented Organic Manure (FOM), Liquid Fermented Organic Manure (LFOM) and other organic products can be used in agriculture. Thus, the same resource can generate both energy and manure.

This is the essence of the circular bioeconomy: a waste stream from one activity becomes an input for another, creating value instead of disposal costs.

Six Pillars of the New CBG Framework

GOBARdhan goes beyond supporting the construction of CBG plants. Its framework addresses several links in the value chain—from assured demand and pricing to finance, infrastructure and local ecosystem development.

Assured market: One of the key concerns for CBG producers is certainty about demand. The scheme provides for assured procurement through City Gas Distribution entities. The CBG Obligation for CNG (Transport) and PNG (Domestic) is proposed at 3 per cent in 2026-27, 4 per cent in 2027-28 and 5 per cent from 2028-29 onwards. A clearer demand outlook can improve the viability of new projects and encourage investment.

Stable pricing: An administered price of ₹2,110 per MMBTU has been fixed for CBG. With a minimum ten-year perspective, the arrangement is intended to provide producers greater revenue certainty. The procurement price received by producers is distinct from the price paid by consumers, with an affordability support mechanism aimed at keeping CBG accessible.

Capital assistance: New CBG plants can receive capital assistance of up to ₹2 crore per TPD of installed capacity. Support extends beyond the main plant to important assets related to feedstock aggregation, organic manure processing and value addition. Brownfield capacity expansion projects are also covered.

Such support can lower initial investment requirements and facilitate participation by private enterprises, MSMEs, cooperatives and rural entrepreneurs.

Pipeline connectivity: Production must be matched by efficient access to markets. The scheme provides support for cluster-based and standalone pipeline infrastructure connecting CBG plants with trunk pipelines and City Gas Distribution networks. Better connectivity can reduce transportation and evacuation costs while improving market access.

Credit guarantee: Access to finance can be a major constraint, particularly for smaller enterprises. A Credit Guarantee mechanism seeks to reduce lender risk for eligible MSME-based projects. This can improve access to institutional credit and reduce dependence on collateral, opening space for new entrepreneurs, including women and first-time project developers.

Local CBG Ecosystem Challenge Fund: CBG plants depend on the availability of reliable local feedstock. The Challenge Fund will support activities such as feedstock mapping, aggregation infrastructure, district-level planning, technology adoption, process improvement, organic-manure value addition and capacity building. The emphasis is therefore not only on building plants but also on building the ecosystem around them.

When Villages Become Part of the Energy Value Chain

The economic impact of a CBG plant can extend well beyond the plant itself. Regular operations require a dependable supply of feedstock, creating demand for collection, sorting, transportation and aggregation.

For farmers and livestock owners, cattle dung and agricultural residues can acquire a direct economic value. Rural youth can find opportunities in logistics, equipment handling, plant operations, maintenance and related services. Cooperatives, Farmer Producer Organisations, Self-Help Groups and rural enterprises can participate in aggregation, transportation and marketing of organic manure.

This changes the way waste is viewed. Agricultural residue lying in a field is no longer simply a disposal problem if it can become feedstock for a local energy enterprise. Similarly, cattle dung can move from being a farm by-product to becoming an input in an organised value chain.

Government assessments have linked GOBARdhan with the potential for a substantial increase in domestic CBG production, reduced fossil-fuel use, employment generation and greater production of organic manure. Its significance therefore extends across energy, agriculture, waste management and rural enterprise.

Beyond Clean Energy

The benefits of scientific organic-waste management go beyond energy production. Poorly managed animal waste, crop residues and other organic waste can contribute to local environmental problems. Controlled conversion of these materials into biogas provides a productive alternative while supporting cleaner surroundings.

The manure generated from CBG plants adds another dimension. The Government is promoting organic fertilisers through Market Development Assistance. As of 4 March 2026, 120 CBG/Biogas plants had been registered on the Integrated Fertilizer Management System portal, while 44 MoUs had been signed between Fertilizer Marketing Companies and CBG operators. Between February 2025 and January 2026, 24 Fertilizer Marketing Companies conducted 15,690 farmer meetings and awareness camps.

The emerging model is therefore broader than renewable fuel. It connects waste, energy and agriculture within one value chain.

Models Taking Shape on the Ground

The potential of GOBARdhan is already visible in different parts of the country. Projects vary in scale and feedstock, but they demonstrate how local resources can be converted into useful products.

Community Biogas in Kamrup Metro, Assam

At Hatibagara Gram Panchayat in Assam's Kamrup Metro district, cluster-based biogas plants were established for 18 families. Cattle dung from around 75 animals was used to produce about 18 cubic metres of gas a day, enough to operate 18 burners. The system helped participating families save on cooking fuel while producing nutrient-rich slurry for agriculture.

The model illustrates how even a relatively small livestock base can support a decentralised energy solution when resources are organised at the community level.

A CBG Plant at Adarsh Gaushala, Gwalior

At Adarsh Gaushala in Laltipara, Gwalior, Madhya Pradesh, a 100 TPD cattle-dung-based CBG plant has



been established. The project uses dung from a gaushala housing more than 10,000 cattle along with vegetable and fruit waste collected from markets and households.

Designed to process around 100 tonnes of cattle dung daily, the plant is expected to produce about 2 tonnes of CBG and 10–15 tonnes of dry bio-manure a day. It brings together livestock management, organic waste processing and clean fuel production in one integrated model.

Urban Organic Waste to CBG in Kochi

At Brahmapuram in Kochi, Kerala, a Bharat Petroleum Corporation Limited CBG plant demonstrates how urban biodegradable waste can become an energy resource. Commissioned in February 2026, the plant can process 150 tonnes of source-segregated organic municipal waste each day and is designed to produce about 5.6 tonnes of CBG and 28 tonnes of organic manure daily.

The example also highlights the wider applicability of the GOBARdhan approach. Organic waste is not only a rural resource; cities too can convert their biodegradable waste into fuel and manure through organised systems.

From Farmer to Feedstock Supplier-and Entrepreneur

One of the most significant possibilities offered by GOBARdhan is the shift in the role of the farmer. Farmers need not remain only consumers of energy. They can become participants in the energy value chain by supplying cattle dung and agricultural residues.

Local institutions will be important in making this transition work. Gram Panchayats can contribute to feedstock mapping, community mobilisation and coordination around land and local facilities. Farmer Producer Organisations, cooperatives, Self-Help Groups and rural entrepreneurs can take up collection, aggregation, transportation and marketing activities.

At the same time, CBG plants require reliable feedstock, efficient collection systems, skilled manpower, regular maintenance and stable market linkages. These requirements make the local ecosystem as important as the plant itself. GOBARdhan's focus on district-level planning and ecosystem development recognises this reality.

Linking Energy Security with Rural Self-Reliance

For a country with growing energy requirements, converting domestic organic resources into renewable gas has wider significance. CBG can serve existing applications of natural gas and contribute to increasing the share of domestically produced renewable gas. In turn, this can help reduce dependence on imported fossil fuels.

Its rural economic potential is equally important. A farmer can become a feedstock supplier; a young person can find work in logistics or plant operations; an entrepreneur can establish a CBG unit; and agriculture can gain access to locally produced organic manure.

The underlying shift is therefore straightforward: resources that were once treated mainly as waste can acquire economic value.

The Road Ahead

GOBARdhan has created a national framework for expanding the CBG ecosystem. The next challenge is implementation at scale.

Reliable feedstock, participation of farmers and local communities, timely finance, technical support, efficient infrastructure, market access and professional plant management will determine how effectively the framework translates into outcomes on the ground.

India's villages already possess a large and diverse organic resource base. The task is to organise these resources, connect them to markets and build viable local value chains around them.

If agricultural residues can generate energy, livestock waste can produce fuel, the same process can yield organic manure and the entire chain can create local employment, the benefits will cut across sectors. Sanitation, energy security, agriculture, entrepreneurship and environmental management can reinforce one another rather than operate in isolation.

That is the larger promise of GOBARdhan. It is not simply about converting waste into energy. It is about converting waste into a resource, a resource into economic value and that value into opportunities for rural communities.

As the CBG ecosystem expands, villages can increasingly become participants—and potentially producers—in India's clean-energy transition. In doing so, GOBARdhan can give practical shape to the idea of waste-to-wealth while creating a stronger link between energy security and rural prosperity. ❑

