BIOGAS PLANTS

Sci-BGM

Scale-Independent Biogas Modules

One plant, many homes.
Scaled to a city.

Low-cost biogas plants built from standard modules: one serves a whole apartment block, many together feed a city's gas pipeline, and one large plant handles bulk waste.



As tested in our pilot plant

> 90 %	Up to 99 %	0.05 – 100	~ 40 %
Methane, straight from the reactor	CH_4 with minimal scrubbing, to IS 16087	Tonnes of waste a day: one building to a city	Lower cost to build (estimate)

THE CHALLENGE

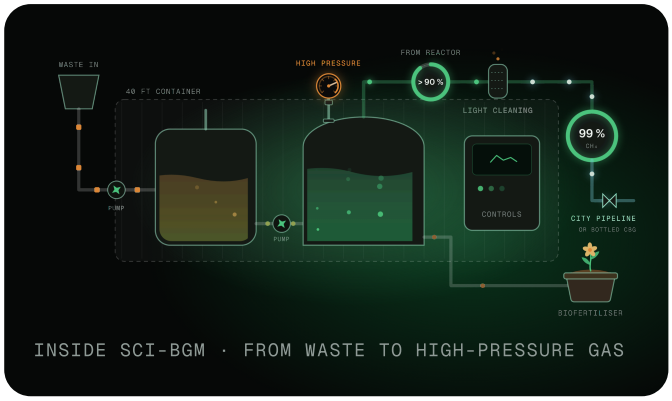
Conventional biogas plants produce low-pressure gas at only 50 – 65 % methane, which needs costly scrubbing and compression. Small plants are often odorous and unreliable, and conventional compressed biogas (CBG) costs around ₹ 60 – 100+ per kg (estimate).

OUR APPROACH

Sci-BGM uses one high-purity, high-pressure module at every scale. A single plant serves a whole apartment block; many plants feed the city gas pipeline (PNG); clustered modules form centralised plants that upgrade and bottle CBG — adding capacity in phases.

HOW IT WORKS

1. **Collect**
   Waste from every flat, market or facility feeds the plant.
2. **Digest**
   Organics are broken down over roughly 2 – 3 days.
3. **Transfer**
   Pumps move the stream into a sealed, pressure-rated reactor.
4. **Pressurise**
   Gas builds pressure and leaves at over 90 % methane.
5. **Deliver**
   Gas goes to homes, the city gas pipeline or CBG cylinders; leftover sludge becomes biofertiliser.



INSIDE SCI-BGM · FROM WASTE TO HIGH-PRESSURE GAS

KEY FEATURES

- Sealed, pressure-rated reactor design
- High-pressure gas, ready for the city gas pipeline (PNG)
- Over 90 % CH_4 from the reactor; up to 99 % with minimal scrubbing
- One plant for a whole building; clusters reach 10 – 100 tonnes a day (TPD)
- Phased expansion without disrupting operation
- Containerised or skid-mounted; installed in under a week
- PLC/SCADA with VEDA monitoring; negligible H_2S, odourless operation
- 50 – 60 % smaller footprint (estimate)

FULL COST OF GAS, LCOE (₹/KG)

Tonnes / day	Mixed organic	Food waste	Dairy sludge	Press mud	Napier grass	Maize silage
1	124.2	43.2	131.4	115.3	92.2	108.4
5	94.8	32.7	97.0	92.6	76.0	96.8
10	86.6	29.8	87.5	86.4	71.5	93.6
20	81.5	28.0	81.6	82.4	68.7	91.6
40	76.9	26.3	76.2	78.9	66.2	89.8

ESYLYS LCOE model (10.25 % interest, 20 years, 330 days a year, methane yields of Indian plants (CSE); no subsidy). Government CBG price (GOBARdhan, from Sep 2026): ₹ 98 per kg.

BUILT FOR

Apartment blocks · Gated communities · Hotels & hospitals · Campuses · Markets · Municipal waste · City gas (PNG) networks

Let's discuss your project.

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