



RAJ PROCESS
EQUIPMENTS AND SYSTEMS PVT. LTD.

Compressed BIO-GAS (CBG)



**Cost effective
practical solution**



**High calorific
value than CNG**



**Sulphur rich
fertilizer bproduct**



**Low opex
solution**



Bio-CNG



World-Class Equipment With Best -In-Class Technology

RAJ Process Equipment & System Pvt. Ltd., established in 2003, is a rapidly growing engineering company specializing in process equipment & systems. We offer design, engineering, manufacturing, & export services, including turnkey projects. Our expertise includes Distillery, Dehydration Technology, Evaporators, Condensate Polishing Units, Spray Dryers, Rotary Dryers, Granulation Plants, Powder Handling Systems, & more. We have a reputation for delivering optimal solutions to various industries across Asia and beyond. Our focus on Technology, Service, and Customer Satisfaction drives our Success.

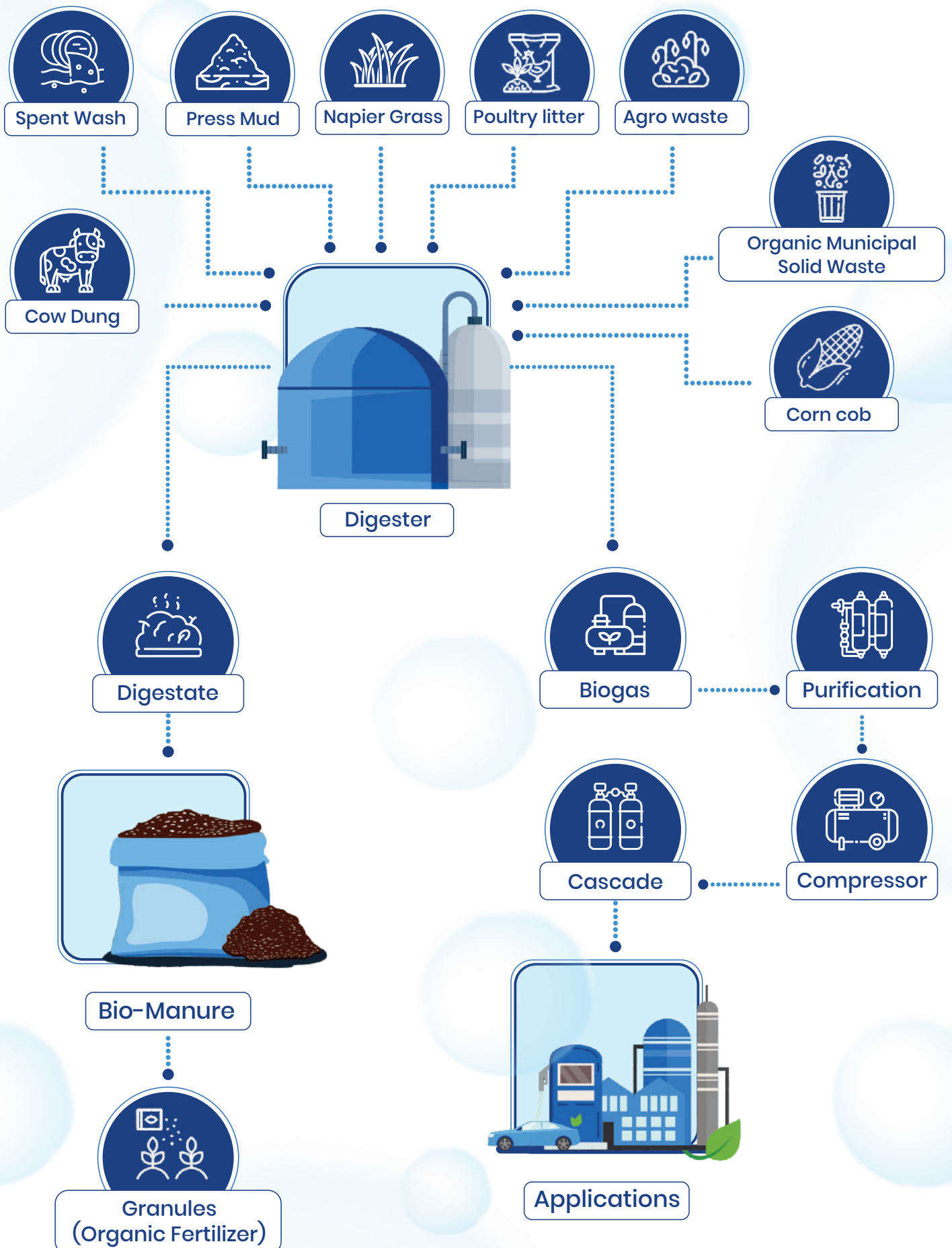
Compressed Bio-Gas (CBG)

The world is rapidly moving towards sustainable and renewable sources of energy, and compressed biogas (CBG) seems to be the fuel of the future. CBG is a clean and green energy source produced from the effluents such as Spent wash, press mud, Napier grass and decomposition of organic waste.

The process of producing CBG involves the collection of organic waste and the conversion of this waste into biogas through anaerobic digestion. This biogas is then compressed to increase its density and stored for future use. Overall, the adoption of CBG as a fuel of the future is a step in the right direction towards a cleaner, greener, and more sustainable future.

Feedstock	Feedstock Requirement	CBG Production
Agriculture residue	20-25 kg	1 kg
Press mud	25-30 kg	
Sewage sludge	20-30 kg	
Bagasse	20-25 kg	
Municipal solid waste	25-35 kg	
Cow dung	50-70 kg	
Chicken litter	25-35 kg	
Forest residue	20-25 kg	
Napier grass	18-20 kg	

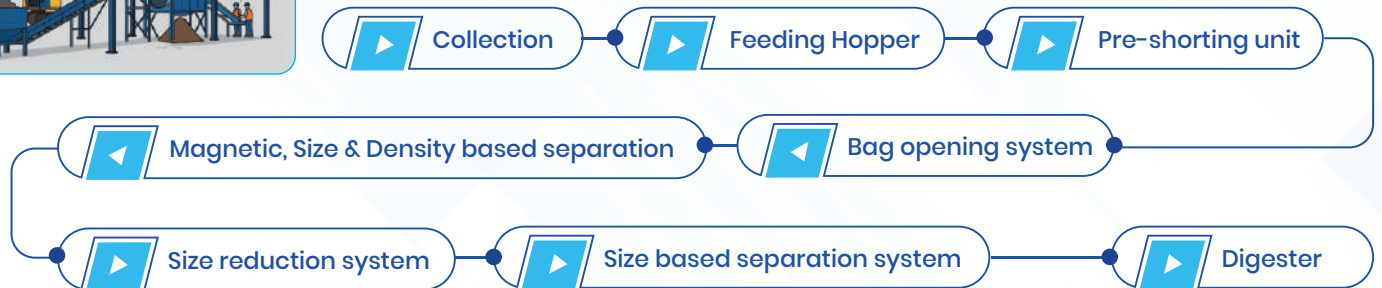
Process Flow Diagram Of Compressed Bio-Gas Unit



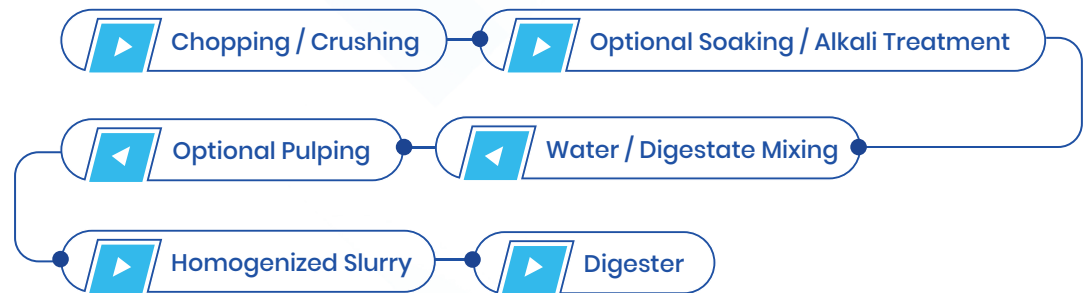
Pretreatment



MSW



Napier Grass, Paddy Straw, Corn Cob (All Agricultural waste)



Pressmud, Poultry litter, Cow dung



Spentwash and other Industrial Effluent



Biogas Generation

Continuous Stirred Tank Reactor (CSTR) Bio-Digester

CSTR is an advanced and widely used technology for biogas production through anaerobic digestion. This method involves breaking down organic waste in a controlled, oxygen-free environment to produce biogas, primarily composed of methane, which can be utilized for energy generation.

- Patented Raj MudX Bio-Digester
- Continuous operation (feeding and discharge)
- Constant mechanical mixing / stirring
- Suitable for a wide variety of feedstocks
- Controlled process conditions (temperature, mixing, retention time, pH etc.)
- High biogas / methane yield & efficient waste breakdown
- Relatively simple operation and low maintenance



Biogas Upgradation

Our biogas upgrading system cleans and improves raw biogas to produce high-quality CBG. First, the gas passes through a caustic-based H₂S remover, which safely takes out foul-smelling and corrosive gases to protect equipment. Next, the gas is cooled and washed with chilled water to naturally remove carbon dioxide, increasing the purity of the biogas. After cleaning, the gas is dried, polished, and compressed to CBG, which is similar to CNG and can be used for vehicles or industry. The entire process is clean, efficient, and designed to give consistent, high-purity CBG from any organic waste or industrial effluent source.



- Efficient removal of H₂S using a caustic-based scrubber to protect equipment and eliminate foul odors.
- Natural CO₂ removal through cooling and chilled water washing to enhance biogas purity.
- Comprehensive gas drying, polishing, and compression to produce high-quality CBG.
- CBG produced is similar to CNG and ready for use in vehicles or industrial applications.
- Designed to handle biogas from any organic waste and effluent source

Compression and Cascade Filling

Our Compression and Cascade Filling system ensures that purified biogas is safely and efficiently converted into CBG ready for vehicles or storage. The upgraded gas is compressed to high pressure using reliable compressors designed for continuous operation. Once compressed, the gas is store in a cascade of cylinders that automatically manage pressure levels, allowing fast and smooth filling of CBG cylinders or dispensers. This setup maximizes storage capacity, reduces waiting time during filling, and guarantees consistent pressure delivery for all applications.



Co - Product



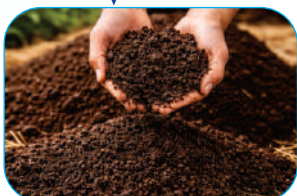
Digestate



Decanter



Paddle/Spray Drying



Organic FOM, LFOM

CBG TEST Report





Test Report THN25-04279.001-A
ULR No: TC68422600013097F

Issue Date: 09-May-2025
 Customer Name: VNP DISTILLERIES AND SUGARS PRIVATE LIMITED
 Customer Address: Survey no.42,43,53,Village: Konankeri Taluk: shinggaon Haven 581193 INDIA

Customer Provided Information	Lab Provided Information
Product Description: Compressed Biogas	SGS Order Number: --
Customer Reference: --	Discipline: CHEMICAL
Customer ID: CBG GAS SAMPLE	Group: Petroleum and Products
Sample Source: As Supplied	Sub Group: CBG
Source Location: HAVERI	Sampled By: SGS
Source ID: --	Received: 09-May-2025
Vessel: --	Analysed: 09-May-2025
Sample Type: As submitted	Completed: 09-May-2025
Sampled: 09-May-2025	
Client Comments1: TIME : 14.25PM	
Client Comments2: PRESSURE : 04BAR	
Client Comments3: SOURCE : GAS DRYER OUTLET	
Quantity: 2 LTR*2	

NABL Accredited Tests	Method	Result	Unit
Composition of Natural Gas Samples Using Two Packed Columns by GC			
Oxygen	IS 15130 (Part 3): 2021	0.440	% mol
Nitrogen		1.243	% mol
Carbon Dioxide		0.441	% mol
Methane		97.906	% mol

Methane 97.906 % mol

Authorised Signatory

 Vijay Sankpal
 Assistant Manager

End of Test Report
 202505091901547HN_U0015638543

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/In/Service/Terms> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms. A document this. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not constitute services to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The laboratory shall be responsible for all the information provided in the report, except when information and instruction for specific scope of testing is provided by the customer.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 7 days (in case of perishable items) and 30 days for all other samples from the date of issue of report. The samples from the regulatory bodies are to be retained as specified. This document cannot be reproduced, except in full, without prior written approval of the company.

Statement of conformity is based on comparison of measurement result(s) with the applicable limit(s) according to the specification in the respective standard or as shared by the customer. Measurement Uncertainty is not taken into account unless otherwise requested in writing.

Page 1 of 1

SGS India Private Limited

Natural Resources - Laboratory Testing Oil, Gas & Chemicals SGS HOUSE, A-77, WAQLE INDUSTRIAL ESTATE, ROAD NO 16, NEAR PASSPORT OFFICE, THANE WEST, 400604. E: oclabo.thane@sgs.com INDIA T: +91 22 61517842

www.sgs.com

Member of the SGS Group (SIP 5A)

Infrastructure That We Have

We are one of the leading process equipment manufacturer from India. We have supplied our products and Services in India as well as in abroad. Our company is Certified with ISO 9001-2015, ISO14001:2015, BS OHSAS 18001:2007, ASME 'U' Stamp, 'S' Stamp, National Board 'R' Stamp.



Corporate Office

Sadanand Business Center, Sr.No. 140/1, 14th Floor,
Baner, Pune - 411 045 Maharashtra, India



Unit I

Plot No. 166 & 167, Sector No.7. PCNTDA Bhosari,
Pune - 411 026 (India)



Unit II

Sr. No. 373, Village Kharabwadi, Chakan,
Tal - Khed, Dist - Pune (India)



Unit III

Plot No. -14, SEZ, Village - Nimgaon, Tal - Khed,
Dist - Pune - 410505 (India)



Unit IV

Gat No. 530, Alp Ahire, Tal - Khandala,
Dist - Satara - 412802 (India)



Unit V

Gat No. 118/2, R, A/P- Wasuli, Tal - Khed,
Dist - Pune - 410501 (India)



Our Clients

