

GAS PURIFICATION · BIOGAS UPGRADING

# Purification Plant (CH<sub>4</sub> · CO<sub>2</sub>)

Dual-plant adsorption technology for methane enrichment of biogas and high-value carbon dioxide recovery for commercial use.

## 2-in-1

BIOMETHANE + CO<sub>2</sub>  
RECOVERY

## CH<sub>4</sub>

PIPELINE-GRADE  
ENRICHMENT

## CO<sub>2</sub>

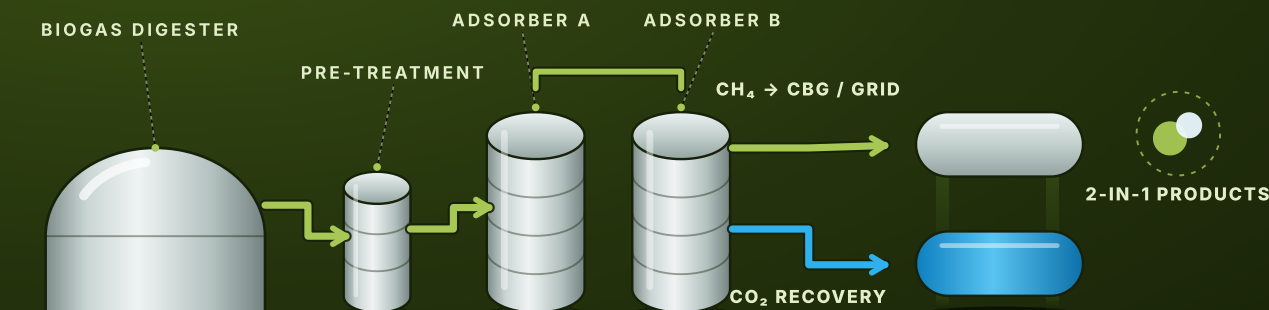
COMMERCIAL-GRADE  
RECOVERY

## Modular

SKID-MOUNTED PLANTS

### PROCESS OVERVIEW

### PURIFICATION PLANT (CH<sub>4</sub>, CO<sub>2</sub>)



## 01 Overview

Raw biogas is roughly half methane, half carbon dioxide — valuable in both directions, if you can separate them. The Brise Purification Plant applies dual-plant adsorption technology to do exactly that: one train enriches methane into pipeline- and vehicle-grade biomethane, while the second recovers the displaced carbon dioxide as a high-value commercial product instead of venting it.

The result is a two-revenue-stream plant that fits squarely into India's compressed biogas (CBG) momentum and the circular-carbon economy: renewable methane for the gas grid, transport and industry — plus saleable CO<sub>2</sub> for beverage, food-chain, dry-ice and industrial applications, all from the same feedstock.

## 02 At a Glance



### Two products, one feed

Monetise both the methane and the CO<sub>2</sub> in your biogas



### Adsorption-based

Robust dual-plant adsorption cycles, no exotic consumables



### CBG-ready

Suits compressed biogas programmes and grid injection

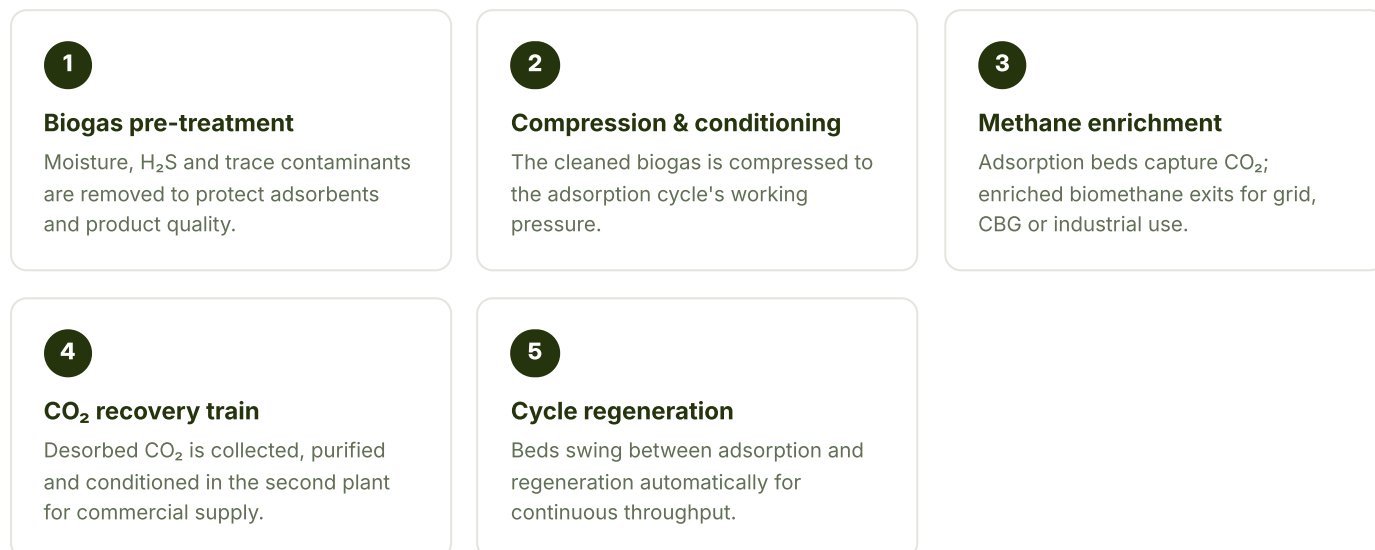


### Zero-vent philosophy

Captured CO<sub>2</sub> becomes product, not emission

### 03 Technology & Process

After pre-treatment, adsorption beds separate the biogas: CO<sub>2</sub> is captured while methane passes through enriched. A second recovery train desorbs, concentrates and conditions the CO<sub>2</sub> into a commercial-grade product stream.



#### Two products, two markets

One biogas stream becomes two revenue lines:

|                                         |                                                                         |
|-----------------------------------------|-------------------------------------------------------------------------|
| <b>Biomethane (CH<sub>4</sub>-rich)</b> | CBG retail, city-gas grid injection and industrial fuel switching       |
| <b>Recovered CO<sub>2</sub></b>         | Beverage and food-chain supply, dry ice, greenhouses and industrial use |
| <b>The Brise difference</b>             | Dual-plant design monetises both streams instead of venting the carbon  |



#### End-to-end EPC delivery

Concept, FEED and engineering through construction, commissioning and PG testing.



#### Certified quality

ISO 9001 / 14001 / 45001 systems; designs per PESO, IEC, ATEX & IS standards.



#### Lifecycle partnership

Operator training plus AMC/CMC programmes for maximum plant uptime.

## 04 Technical Specifications

| PARAMETER        | SPECIFICATION                                                |
|------------------|--------------------------------------------------------------|
| Technology       | Dual-plant adsorption (upgrading + CO <sub>2</sub> recovery) |
| Feed             | Raw biogas (digester / landfill / STP), pre-treated          |
| Product 1        | Methane-enriched biomethane for CBG, grid & industry         |
| Product 2        | High-value carbon dioxide for commercial use                 |
| Pre-treatment    | H <sub>2</sub> S, moisture & trace contaminant removal       |
| Operation        | Automatic swing cycles, PLC-sequenced                        |
| Configuration    | Modular skids, sized to biogas flow                          |
| Delivery options | Compression / bottling / liquefaction-ready interfaces       |

✓ Product purities and capacities are engineered to feed-gas analysis and offtake specifications per project. Figures shown are design values from Brise Chemicals product documentation; final specifications are confirmed during detailed engineering.

## 05 Key Features



### Dual revenue streams

Sell the biomethane and the CO<sub>2</sub> — the plant pays back from both sides.



### Robust adsorption cycles

Proven swing-adsorption separation handles real-world biogas variability.



### Circular-carbon impact

Turns a vented greenhouse gas into a captured, useful product.



### Automated operation

PLC-sequenced cycles run continuously with remote supervision.



### Modular scale-up

Skidded trains grow with digester capacity or feedstock supply.



### Offtake-grade quality

Product conditioning engineered to grid, CBG and commercial CO<sub>2</sub> specs.

## 06 Applications & Industries



### CBG & vehicle fuel

Compressed biogas for transport programmes



### City gas grid injection

Pipeline-grade renewable methane



### Industrial fuel switch

Renewable methane for process heat



### Beverage & food CO<sub>2</sub>

Commercial carbon dioxide supply chains



### Dry ice production

Solid CO<sub>2</sub> for cold-chain and cleaning



### Greenhouses & agriculture

CO<sub>2</sub> enrichment for controlled growing

## 07 Scope of Supply



Biogas pre-treatment package (H<sub>2</sub>S, moisture)



Compression & conditioning skid



Methane-enrichment adsorption train



CO<sub>2</sub> recovery & conditioning train



PLC controls, analysers & remote supervision



Installation, commissioning, training & AMC/CMC

**CERTIFIED &  
COMPLIANT**

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

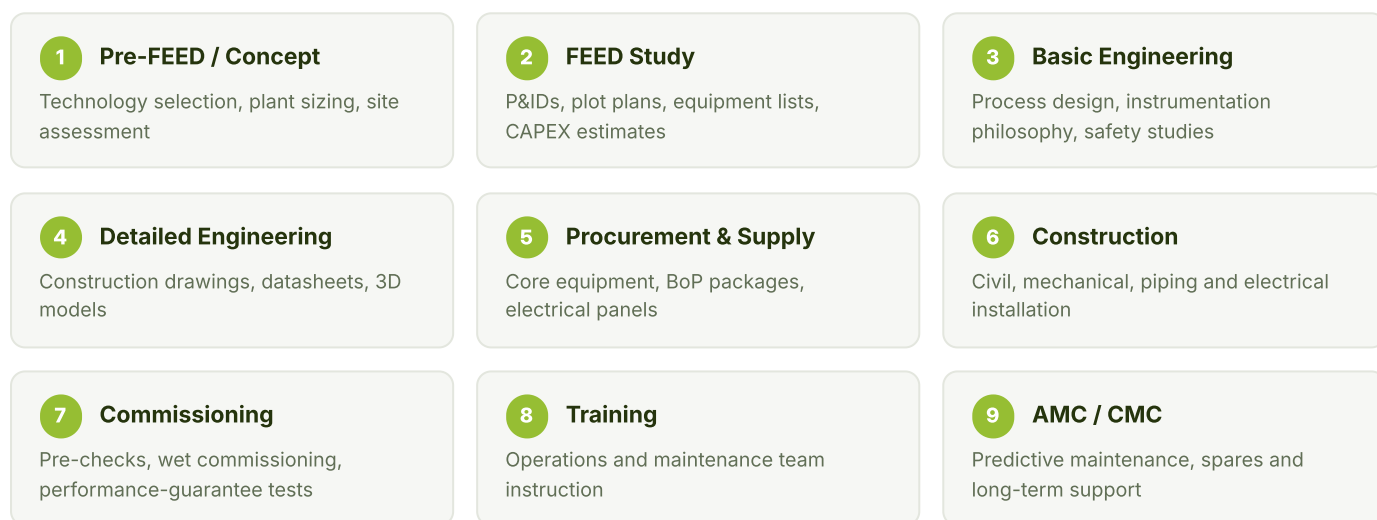
Designs compliant with PESO, IEC, ATEX & IS safety standards

## 08 About Brise Chemicals

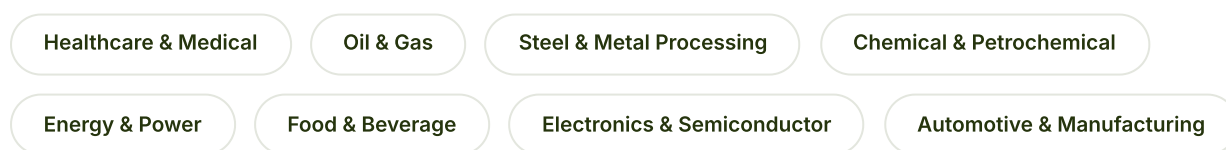
Brise Chemicals Pvt. Ltd. is a technology-driven OEM and industrial gas plant technology owner, founded by professionals with deep experience across turbo-machinery, oil & gas, refineries and the industrial gas sector. From our engineering and fabrication base in Pune, India, we design, engineer, manufacture, install and commission cryogenic and non-cryogenic gas plants — spanning alkaline electrolysis, gas generation, gas purification, ammonia and methanol synthesis, air separation and hydrogen liquefaction.

Our name derives from the ballet step “Brisé” — a reminder that precision, integrity and discipline underpin everything we build. With in-house fabrication, certified welding, an HVOF catalyst-coating facility and rigorous QA/QC, we deliver complete EPC projects and stand behind them through long-term AMC/CMC support.

## 09 The Brise EPC Lifecycle



## 10 Industries We Serve



### Let's engineer your plant.

Request a detailed proposal, FEED study or site consultation for the Purification Plant (CH<sub>4</sub>, CO<sub>2</sub>).


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