



**KANKYO**

[www.kankyo.global](http://www.kankyo.global)

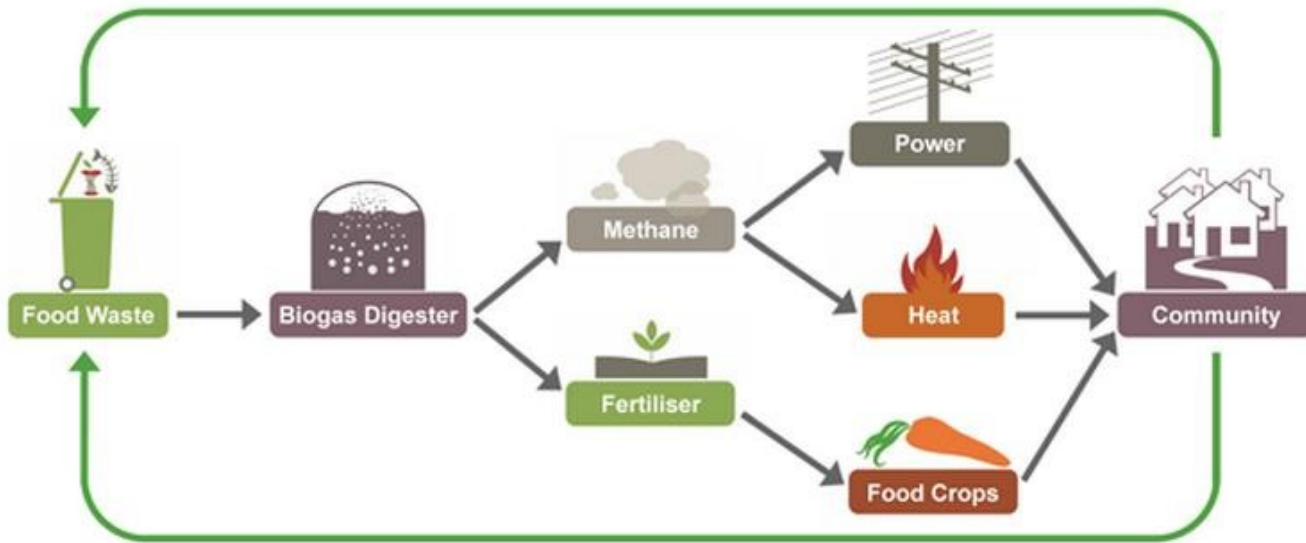
WATER & WASTEWATER TREATMENT | WASTE TO ENERGY  
BIOREMEDIATION | SOLID WASTE MANAGEMENT  
AIR POLLUTION



**Total Environmental Solutions  
Provider**

# Biogas

Biogas is a byproduct of the decomposition of organic matter by anaerobic bacteria. Biogas is typically composed of 60% methane and 40% CO<sub>2</sub>. It is similar to natural gas which is composed of 99% methane. Biogas is a clean and renewable energy that may be substituted to natural gas to cook, to produce vapor, hot water or to generate electricity. At room pressure and temperature biogas is in gaseous form, not liquid like LPG (propane)

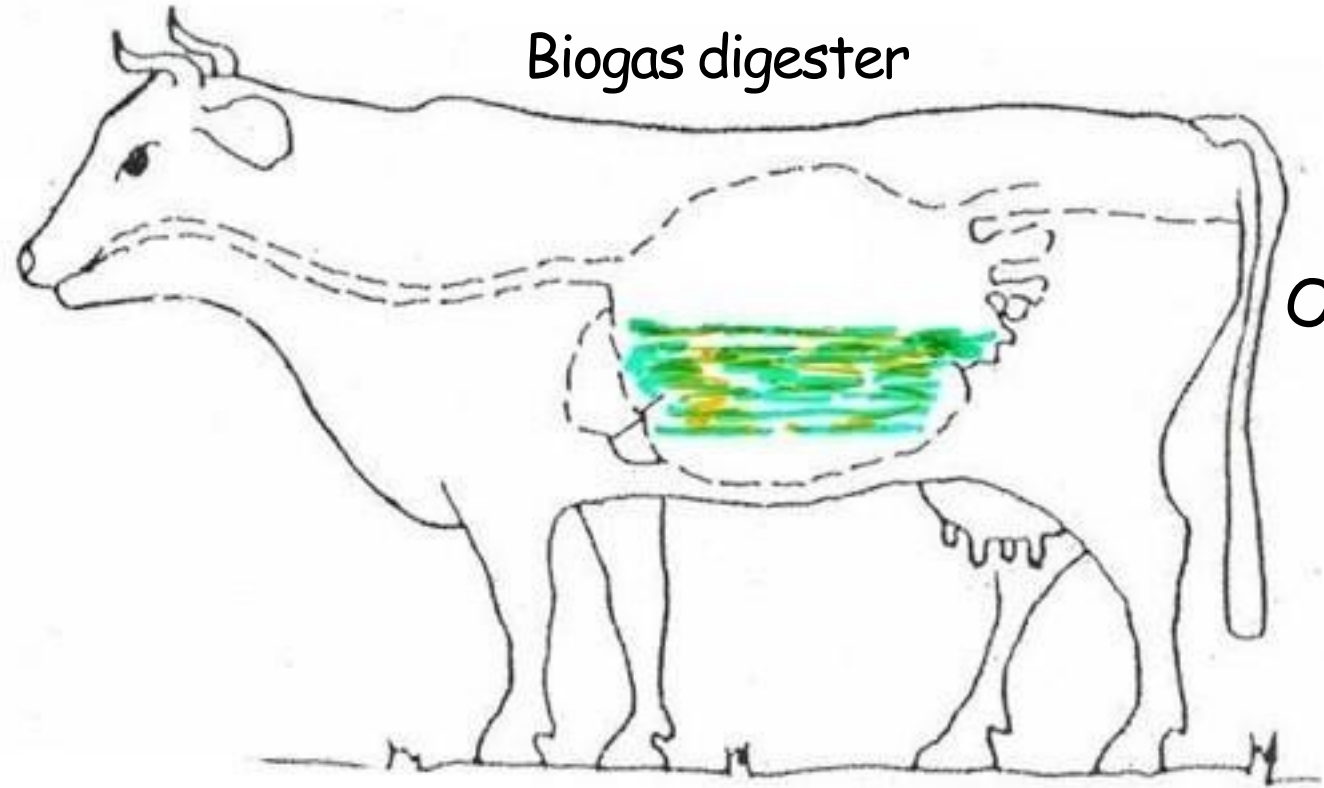


## COMPOSITION

Methane (CH <sub>4</sub> )	40-75%
Water (H <sub>2</sub> O)	0-10%
Carbon dioxide (CO <sub>2</sub> )	25-55%
Hydrogen sulfide (H <sub>2</sub> S)	1-3%
Ammonia (NH <sub>3</sub> )	0-1%
Nitrogen (N <sub>2</sub> )	0-5%
Oxygen (O <sub>2</sub> )	0-1%
Hydrogen (H <sub>2</sub> )	0-1%

# NATUR AL BIOG AS PLAN T

Inlet

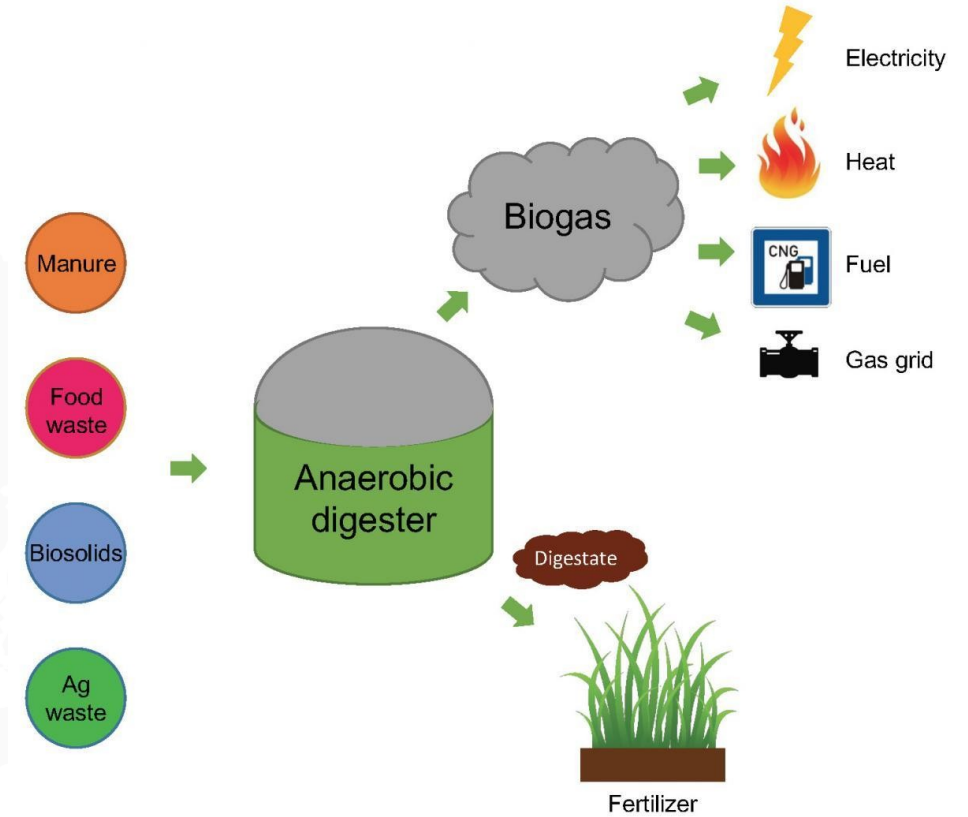


Biogas digester

Outlet

# ADVANTAGES

- ✓ Biogas is an important form of renewable energy, which can be used where organic waste is produced in appropriate quantities.
- ✓ It can make an important contribution to the protection and improvement of natural resources and environment.
- ✓ Slurry, a residue from the process, is a high-grade fertilizer which can replace expensive mineral fertilizers, in particular nitrogen.
- ✓ The technology provides an efficient sanitary system - that enhances effective waste product disposal.
- ✓ The use of biogas enables women, especially in rural areas, to save time for productive agriculture, leisure and family care and welfare.
- ✓ Use of biogas technology improves the standard of living and can directly contribute to economic and social development of a country.





**bert**

GERMAN TECHNOLOGY..... INDIAN ENGINEERING



**BIOGAS DRIVEN CONTAINERIZED SOLUTIONS**

**CONTAINERIZED  
BIOGAS  
FROM  
ORGANIC WASTE**

***BERT KANKYO** is an indigenous technology for Eco friendly power production for space conditioning and refrigeration. Our mission behind this concept is to employ unused biomass, which in-turn used as fuel for electrical energy or absorption chillers*

## BERT KANKYO CAN BE STARTED WITH OUR

Smallest BioBox Series to BERT series which can generate **1 KW to 60 KW** and more from biogas.

### NATURE WORKS FOR OUR CUSTOMERS AND HELPS SAVING ON INVESTMENT AND OPERATING COST

- ❖ **BERT KANKYO** technology was designed to use minimal moving parts and allows operation with minimal amount of time (15-30 minutes per day).
- ❖ This concept reduces maintenance cost.
- ❖ All plant components are standardized, consequently serviced and maintenance is straight forward and can be quickly trained by our Franchise Partners.

140

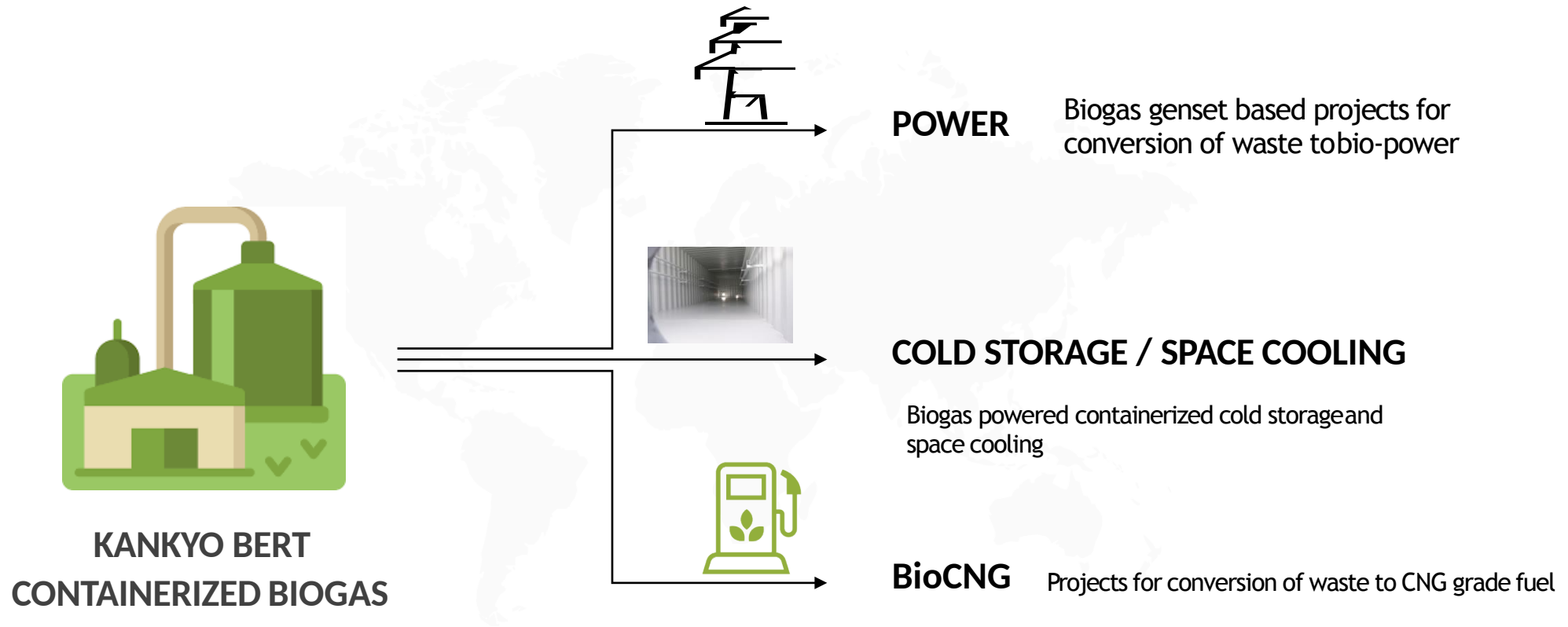
*berts* are in operation in Europe

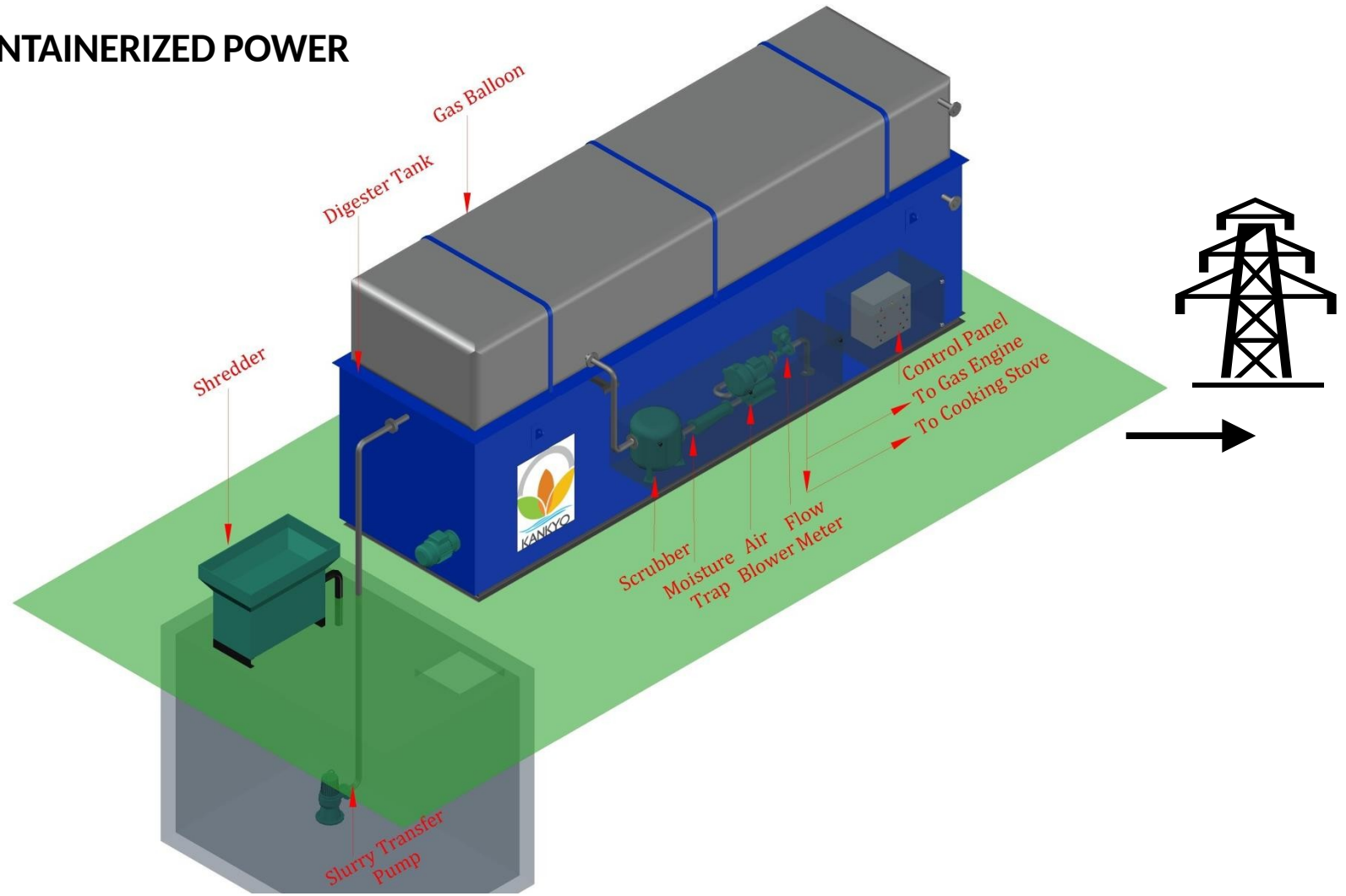
**ANNUAL PRODUCTION**

70

Million kWh

# KANKYO BERT - INNOVATIVE **BIOGAS** CONTAINERIZED SOLUTIONS

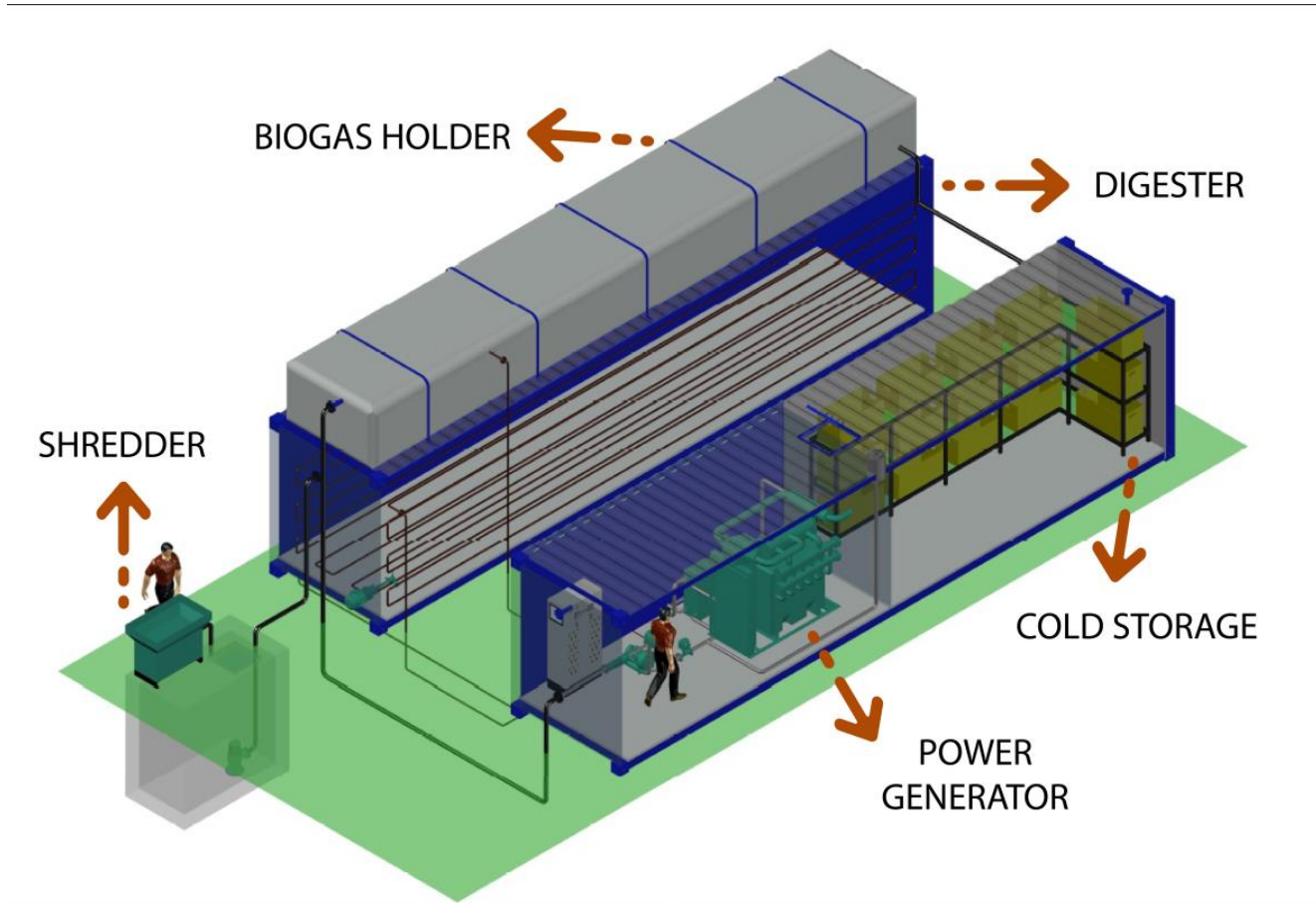




## FEATURES

- Shorter retention saves space.
- Higher biogas yield
- No scum formation
- Horizontal mixing to enhance gas production by providing interface between microbes and substrates in the digester.
- Can handle high solids content of the substrate to the tune of 15 to 20%.







## WHY BioCNG

- Prices paid for renewable electricity are plummeting
- Prices for diesel and gasoline are rising
- Desire for energy independence and control

# How **organic waste** is transformed into **Compressed Biogas (CBG)**?

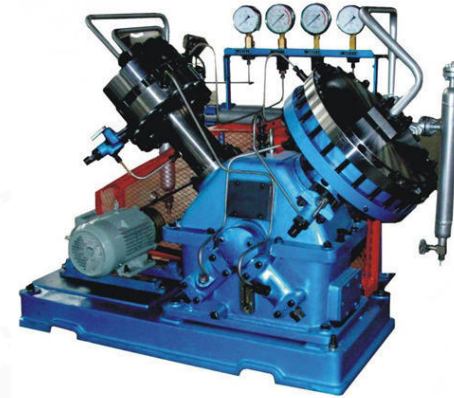


Compressed Biogas (CBG) is equivalent to Compressed Natural Gas (CNG)

# BIO CNG CONTAINERISED



PSA Unit



High pressure  
Compressor



BioCNG Cascade

## BIOGAS UPGRADING UNIT (BUU)

MODEL	RAW BIOGAS M3/HR	BIO CNG , KGS/ DAY AT 95% PURITY	CASCADE	PRICE (USD) EX-CHENNAI
BUU 10	10	90	8	52000
BUU20	20	180	16	80000
BUU 60	60	540	48	135000

NOTE: If Fuel dispensing unit is required then add 25,000 USD Extra

# REFEREN CE PLANTS



## *Dillingen, Germany*

- Fermenter: 200m<sup>3</sup>
- CHP: 30kW
- Start: Okt. 2012

**CATTLE SLURRY**



## *France*

- Fermenter: 600m<sup>3</sup>
- CHP: 50kW
- Initial: 44,0kW
- Start: Feb. 2013

**PIG SLURRY**



## *Udine, Italien*

- Fermenter: 300m<sup>3</sup>
- CHP: 40kW
- Initial: 27,1 kW
- Start: Feb 2013

**CATTLE SLURRY**



## *Matsuyama / Japan*

- ❖ Digester: 800m<sup>3</sup>
- ❖ CHP: 100 kW
- ❖ Start: 2019

**DIVERS WASTE  
BIOMASS**



## *South Africa*

- ❖ Fermenter: 600 m<sup>3</sup>
- ❖ CHP: 115kW
- ❖ Initial: 94,3 kW
- ❖ Start: Dec 2012

**SLAUGHTERHOUSE WASTE  
WITH CATTLE SLURRY**

# PAST EXPERTISE



**1**  
**TON**  
CONTAINERIZED  
BIOGAS PLANT



*offset*

**1.5 Tons of CO<sub>2</sub> emissions**







Thank you

## REGIONAL PRESENCE

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## GLOBAL PRESENCE

