About Us:

GGE Power Private Limited was founded in the year of **2005**. An ISO 9001:2008 certified company. GGE Power is the authorized distributor and service provider for **SIEMENS** gas engines in India. We are leading technology provider's right from concept to commissioning of Biogas to Power Generation, Bio-CNG Up gradation System, Biogas Cleaning System, Biogas Digester Tanks, Biogas Dehumidifiers, Biogas Flares, Agitators and Mixing Pumps for Digesters etc. We offer total solutions and also undertake Renewable Energy Projects on Turnkey Basis.

GGE Power focuses on long term relationships its clients, providing unmatched service and technical support for fulfilling individual customer needs and ensuring the economic success of the plants. GGE Power is committed to delivering high quality installations and providing reliable, accountable, long term maintenance support for your plants and Power / Gas generation equipment.

Our products include and are not limited to Bio Gas Digesters, Membrane type gas Domes mounted on digesters, Bio Gas Storage Balloons, Gas Scrubbing System Bio Gas Gensets and Upgrading Equipment. Developed under the supervision of experienced professionals, these systems are acknowledged for their high operational competency, low maintenance cost and reliable service life.

We undertake Turnkey Projects related to the installation and commissioning of Bio Gas Based Power Plants from 10 KW to 10 MW in case power is required, and Bio-CNG upgradation systems incase high heat value Methane Gas is needed.

GGE

Bio CNG and Biogas Upgradation

GGE offers various options for converting Biogas to Bio CNG

Bio CNG can be used in lieu of LPG for industrial applications or as fuel for automotive vehicles. Bio CNG gas produced must have high methane content, low CO2, low H2S and should be clean and dry.

GGE Offers equipment for upgrading biogas to Bio CNG through various technologies. These include Pressure Swing Adsorption (PSA) or Membrane. Each have their own advantages and disadvantages.

The deciding factor of the technology is based on the usage requirement of the generated Bio CNG.

General Specifications:

Purity > 95 %

H2S < 10 ppm .

GGE Power Pvt. Ltd.
GGE Genset Pvt. Ltd.

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Service Centers in India :

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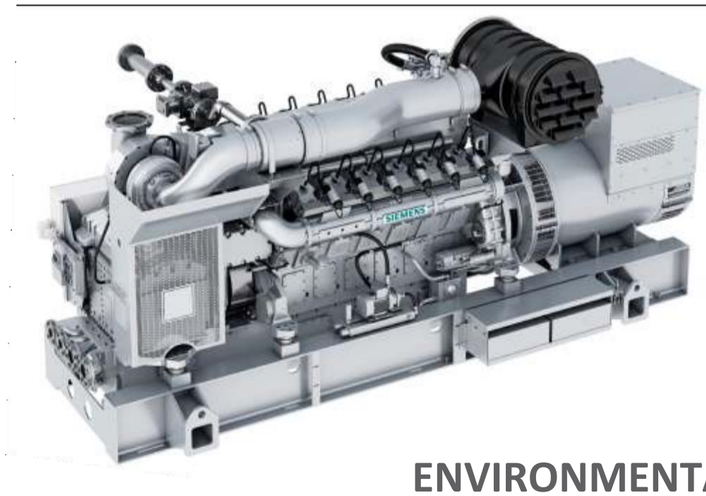
GGE® GREEN GAS EQUIPMENT

Sustainability Efficiency



ENVIRONMENTAL SOLUTIONS

CHP Solutions from GGE World's most reliable and fuel efficient gas genset - natural gas & bio gas Solutions

Natural & Bio Gas Gensets 30 KWe to 2000 KWe

As a well-known provider of biogas and energy management solutions for various industries, we have built up a wealth of expertise over the years. This also greatly benefits our customers in the biogas industry. During both planning and commissioning, we synchronize the activities of all partners, be it for a small farm, medium-sized cooperative or large industrial plant. And at the same time we work very closely together with plant builders and system integrator

BIO GAS & NATURAL GAS GENSET

Product Specifications for Gas Gensets

GGE Gas GENSET

Rated Power	No. of Cylinders	Bore mm	Stroke mm	Cylinder Volume Ltrs.	Compression Ratio	Length mm(A)	Width mm (B)	Height mm (C)	Net Weight
30KW/37.5KVA	4	98	115	3.5	11.5:1	1800	740	1280	850kg
40KW/50KVA	6	105	135	7	10.5:1	1850	770	1350	920kg
50KW/62.5KVA	6	105	135	7	11.5:1	1950	820	1380	1150kg
80KW/100KVA	6	105	130	6.8	11.5:1	2500	890	1380	1250kg
100KW/125KVA	6	126	155	11.6	11.5:1	2750	1080	1680	2100kg
120KW/150KVA	6	126	130	9.8	11.5:1	2850	1100	1680	2250kg
150KW/187.5KVA	6	126	155	11.6	11.5:1	3050	1100	1800	2210kg
260KW/325 KVA	8	125	155	11.6	11.5:1	3000	1550	1950	2650kg

Siemens Gas Gensets Range 300 KWe to 2000 KWe

Electrical KW	KVA at 0.8 p.f	Rated Amperes at 415V, 0.8 p.f.	Mechanical Brake KW	Engine Model	No. of Cylinders	Bore mm	Stroke mm	Cylender Volume Ltrs.	Compression Ratio	Length mm (A)	Width mm (B)	Height mm (C)	Weight Kg.
300	360	521	314	SGE-18SL	6	152	165	18	11.8 : 1	3024	1226	2210	3885
400	500	696	419	SGE-24SL	8	152	165	24	11.8 : 1	3658	1235	2268	4795
600	750	1040	630	SGE-36SL	12	152	165	36	11.8 : 1	3830	1664	2150	6530
808	1010	1400	838	SGE-48SL	16	152	165	48	11.8 : 1	4396	1664	2184	8450
945	1180	1650	985	SGE-56SL	16	160	175	56	11.7 : 1	4670	1670	2817	9780
1000	1250	1758	1033	SGE-42HM	12	160	175	42	11.9 : 1	4865	2155	2373	10735
1200	1500	2100	1240	SGE-56HM	16	160	175	56	12 : 1	5800	1670	2817	11200
1300	1625	2100	1360	SGE-56HM	16	160	175	56	12 : 1	5800	1670	2817	11200
2012	2515	3500	2065	SGE-56EM	12	195	240	86.1	13.5 : 1	6056	2043	2075	25000

Complete & Comprehensive Solution for Biogas to Power Generation

MEMBRANE TYPE GAS HOLDERS :

GGE is the largest manufacturer and supplier of Double membrane type biogas holders in India. The fabric of the membrane is especially imported from Europe. The double membrane gas holder like its name suggests has an inner membrane which is holding the gas. This membrane is H2S resistant, has low permeability and high tensile strength. The space between the inner membrane and outer membrane is filled with air by means of blowers. The outer membrane is exposed to sunlight and is designed to be UV protected, with high tensile strength.

The inner membrane expands or contracts depending upon the quantity of gas in the holder.

The gas holder has the required safeties for high pressure and vacuum as per duty requirement. It also has a level indicator that provides remote readings through a SCADA and can control the blowers feeding the gas to the holder or withdrawing gas from the holder as the case may be.

The gas holders are individually designed and fabricated for each project based on the size, pressure and flow taking into account the ambient temperature, wind velocity etc.

Both the membranes are fastened to the foundation by means of a ring with bolts.

GGE has a well experienced team of engineers and technicians to carry out the installation and commissioning of the gas holders.

GGE offers both types of gas holders, stand alone type which is installed on a foundation and digester mounted gas holder dome as per clients requirement.

General Specifications:

Volume: 10 - 15,000 M3, Pressure: 3 - 30 mbar

Gas Flow: Based on System Requirement

Salient Features:

1. Membrane made of double-sided PVC coated polyester fiber fabric, , UV, microbial, H2S resistant, flame retardant,
2. High Tensile Strength with an expected life of 10 to 15 years.
3 The design is made on a special computer with stress chart available to the client in case they need to get a consultant client approval.
4. Membranes are cut to the required shape and then welded with a European high frequency electronic welding machine to get the desired shape.
5. Fastest deliveries compared to any other manufacturer the world over.

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FLARE SYSTEM

Bio-Gas Flares help to protect the environment and also provide safety to your plant. GGE Manufactures automatic self ignition and manual type flares. GGE flares are capable of burning low methane Biogas and have a high turn down ratio.

General Specifications:

Range - 5 M3/hr to 5000 M3/hr, Gas Pressure - 0mbar 50 mbar

Type - Manual, Semi automatic and Fully automatic, Configuration - Open and Enclosed

FLAME ARRESTORS

Flame arrestors are required to be installed as a safety device in order to ensure that there is no flame travel through the biogas line from one equipment to the next. Normally flame arrestors are recommended to be installed before and after every major equipment.

GGE manufactures fabricated type flame arrestors which can be opened for cleaning or replacement of the element.

General Specifications: Suitable for Pipelines of 25mm to 600 mm

BIOGAS CLEANING & CONDITIONING EQUIPMENT

Biogas Scrubber for H2S Removal

Hydrogen sulfide (H2S) is a highly toxic and corrosive gas. It is also a major pollutant. Sweetening of biogas is essential before it can be used in the boiler, genset or for upgradation. GGE Offers Biogas Scrubbers for removal of H2S from the gas. Scrubbers can be of different types Chemical, Bio Chemical or Biological. GGE can offer all types of scrubbers, however selections must be made, based on the substrate, H2S content, gas generation, capital cost and operating cost considerations.

General Specifications:

Inlet H2S < 3 %, Outlet H2S < 200 ppm, Flow 10 m3/hr - 3000 m3/hr.

GGE manufactures Chemical Scrubbers in house . The Scrubber is skid mounted with a small footprint and plug and play design. It requires no civil work apart from a shed and foundation.

The principle of operation is based on the neutralization of H2S with Caustic Soda (NaOH) solution.

General Specifications:

Input H2S < 10,000 ppm, Output H2S < 200 ppm, Flow Upto 2000 m3/hr

Salient features:

1. Low Capital Cost
2. Very less Civil Work or Construction requirement.
3. Immediate operation after installation as no dependence on bacterial growth. .
4. Low Power and Water Consumption
5. Effluent is a neutral salt unlike other systems.

CERAMIC FILTERS

Biogas is contaminated with minute dust particles. This dust can damage equipment that is using or processing the biogas. Ceramic filters need to be installed in line to clean the gas.

GRAVEL FILTERS

Foam can cause blockage of pipes, malfunction of instruments and can be harmful for the biogas equipment. GGE manufactures Stainless Steel Gravel Filters that remove foam and dust from the pipelines.

General Specifications:

Gravel Sizes: As per design requirement

Pipeline Size: 25mm to 600mm

Type: Manual or Auto Drain

BIOGAS DEHUMIDIFIER:

GGE manufactures Biogas Dehumidifiers to reduce the water content / Relative Humidity in the Biogas.

Biogas generated from the digester is fully saturated and contains impurities like H2S.

H2S and water forms acids which are very harmful for all the equipment that comes in contact with the biogas. In order to reduce the damage due to the moisture a dehumidifier is a necessity in a plant whether for upgradation or for CHP.

General Specifications:

Flow: 50 m3/hr to 3,000 m3/hr.

Biogas Cooled to < 6 C

Biogas Temperature at Outlet > 28 C

Salient Features:

1. Critical Equipment made in Stainless Steel
2. Regenerative type Heat Exchanger to reduce power consumption

MOISTURE TRAPS

Since biogas is normally fully saturated, it is important to remove its moisture. GGE manufactures passive type, low pressure drop moisture traps. It is generally recommended to install moisture traps every 30 meters of pipe line and before most critical equipment.

General Specifications:

Suitable for Pipelines of 25mm to 600 mm

Type: Manual or Auto drain

System Capacity: As per project requirement

Agitators and Mixers

GGE Offers imported from Europe propeller type mechanical agitators and mixers most suitable for wet type anaerobic digesters. The agitators are suitable for upto 12 % solids. most suitable where the digestrate is from Agro, MSW, Mixed Waste, Cow & Pig Manure or Chicken Litter.

Agitators available are Submersible in Digester or External Mounting Horizontal, Vertical or Lateral. GGE also supplies the mounting arrangement to suit the digester.

General Specifications:

Power Rating: 3 KW to 22.5 KW

RPM:

Salient Features:

1. Double sealed submersible agitators with epoxy or Stainless Steel body.
2. Stainless Steel Propeller with self cleaning profile
3. Gear Driven with automatic lubrication and cooling system.
4. Complete arrangement with Guide rail, Service Box, Mounting bracket and Electrical or Mechanical Lifting arrangementavailable

Chopper Pumps

GGE offers European make Chopper Pumps for feeding the digester from the settling tank. The pumps serve a dual purpose of chopping up the larger substrate and also pumping the digestrate to the digester.

General Specifications:

Power: 5 - 15 KW , Flow: , Pressure:

Salient Features:

1. Digester is fed smaller organic particles reducing the retention time.
2. Particularly useful for Agro, Kitchen, Sewage and Abattoir wastes.
3. Reduces the clogging of the pipelines and settling at the bottom of the digester

SEPARATORS

GGE Offers European Separators for the mechanical separation of solid and liquid fractions.

Due to its robust design it can handle all types of livestock manure and biogas slurry with ease, thereby resulting in high yield of very dry solids. The liquid fraction can be recirculated to the digester if necessary or can be sold as a liquid fertilizer. The separated dry matter can be converted to compost after pasteurization or directly sold as fertilizer.

General Specification:

Power 5 KW - 11.5 KW

Separation Size 0.25 mm to 1 mm

Salient features:

1. Rugged and Reliable design to suit any kind of slurry and particle size.
2. Lowest power Consumption for a high throughput.
3. Reduces odour and health risks. Reduces the water consumption while generating revenue for the plant.

BIOGAS COMPRESSORS FOR ANAEROBIC DIGESTERS

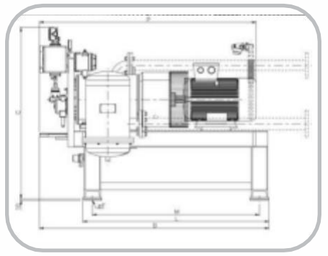
Anaerobic digestion is a biological process in which microorganisms break down biodegradable material in the absence of oxygen.

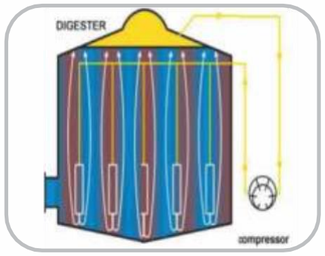
It is used as part of the process to treat effluents, sewage sludge ,and almost any organic material. It takes place into digesters where the process produces a biogas,

mainly consisting of methane and carbon dioxide.

GGE sliding vane rotary compressors are widely used for the agitation of the digester contents.

GGE compressor sucks the biogas from the digester dome and re-inject it at the bottom of the digester, thus providing uniform





Special Equipment for Sewage Treatment & Waste Water Treatment Plants

TURBO BLOWERS FOR AERATION:

Air Foil Bearing Type Turbo Blowers

GGE represents Turbowin for the sale of their air foil bearing type high efficiency and speed turbo blowers. Turbowin is a renowned Korean manufacturer of turbo blowers. The blowers are of oil less design with semi permanent life .

General Specifications:

Low Pressure WL Series:

Pressure 0.4 - 1.0 bar, Flow 600 - 24,000 m3/hr., Speed 20,000 - 50,000 RPM, Noise < 85 dBA at 1m.

High Pressure WH Series:

Pressure 1.5 - 3.5 bar, Flow 700 - 7,620 m3/hr.

Speed 20,000 - 50,000 RPM

Noise < 85 dBA at 1m.

Salient Features:

1. Directly coupled permanent magnet,
   Class H motor.
2. Oil less system
3. Aluminum alloy blower fan
4. 7" - 10" user interface unit PLC Controller with RS 232 / RS 485 / Ethernet 3

BIOGAS FLOW METERS :

GGE Make Flow Meters are developed for the measurement of Various gases like natural gas, CNG, LPG, Flare gas, syngas. They are designed to withstand the wet and corrosive biogas. Another optional feature in GGE flow meters which is not available with any other make is that they can also provide a rough measurement of the Methane content in the gas.

General Specifications:
Suitable for Pipe Line 25 mm - 400 mm
Accuracy Range : Class 1.5
Features:
1. Low Pressure drop, Corrosion Resistant, No moving parts, low maintenance
2. Single Probe to measure flow, velocity, temperature and methane content
3. Local digital display and Remote readings, SCADA connectivity, GPRS Option available

BIOGAS ANALYSERS

GGE offers Portable as well as Standalone Biogas Analyzers. The analyzers are suitable for upto 4 gases - CH4, CO2, H2S and O2

General Specifications:

Range:

Ch4 0 to 100 %	Co2 0 to 100 %	H2S 0 to 1%	O2 0 to 25%

Salient Features:

1. Local and Remote readings available through SCADA
2. Optional inbuilt gas dryer available.
3. In case of high H2S gas, inbuilt air mixing before testing arrangement available.