REDESIGNAGENCY.CH z fontanz

TB.BIS.EN.201508

ENERPROJECT SA
Via Cantonale 53
CH-6805 Mezzovico
Switzerland

www.enerproject.com

SAMAPI GROUP

FSC
Paper Satimat Green

ENERPROJECT
GAS COMPRESSION SOLUTIONS

COMPRESS, NOW.

BIOGAS
SOLUTIONS

OVERVIEW

Biogas is primarily a mixture of methane (CH4) and inert gases. The term “biogas” includes a large variety of gases originating from organic – animal and household – waste and resulting from specific treatment processes.
Different production processes lead to different specific biogas compositions. The presence of hydrogen sulphide (H2S), carbon Dioxide (C02) and water (H20) requires the use of suitable materials to handle it.

The table below shows typical biogas compositions resulting from different types of waste treatment.

Whatever end use of biogas (heat or electricity), the presence of large varieties of components, such as hydrogen sulphide, have poisonous and corrosive properties.
An important knowledge on materials and gas treatment are required in order to safely work with these substances.
Prior to be used for production of electricity or heat, biogas shall be dehydrated and if level of H2S exceed a certain limit, desulphurization is also required.
Biogas represents a more cost-effective and more environment friendly alternative to natural gas.

Our Biogas Compressors are designed to compress biogas from very low pressure up to the required pressure as well as to dehydrate.
The discharge pressure depends on the size of the equipment (turbines or engines) or process installed downstream of the gas compressors.

COMPONENTS	HOUSEHOLD WASTE	WASTEWATER TREATMENT PLANTS SLUDGE	AGRICULTURAL WASTES
CH4 % vol	50-60	60-75	60-75
C02 % vol	38-34	33-19	33-19
N2 % vol	5-0	1-0	1-0
02 % vol	1-0	< 0,5	< 0,5
H20 % vol	6	6	6
Total % vol	100	100	100
H2S mg/m^3	100 - 900	1000 - 4000	3000 - 10 000
NH3 mg/m^3	-	-	50 - 100
Aromatic mg/m^3	0 - 200	-	-

WE

We are ISO9001 certified.

We provide logistics, commissioning, training and maintenance.

We guarantee spare parts availability for the lifetime of our packages.

We offer tailor-made solutions.

We implement ways to reduce the environmental impact of our products.

We are committed to health and safety.

We believe in our competence and invest in our people with ongoing education and training.

We constantly invest in research and development.

SYSTEM DESCRIPTION

We install a scrubber inlet coalescing filter (FS175) to eliminate possible solid particles and to reduce the liquid content in the biogas.
The gas flows downstream of the screw gas compressor (SGC) through a centrifugal type oil separator (B200), where most of the oil is separated from the gas. The gas then flows through the same vessel and enters a coalescing filter (FS120) that reduces the oil content to the value required by the customer.
The biogas temperature after the compression is between 90°C and 100°C.
The biogas is then cooled down in a gas-water (or air-water) heat exchanger (W119) for a further reduction of water content.
The temperature goes below the dew point of the gas, thus allowing the removal of condensates. Then biogas is reheated by means of an oil-gas heat exchanger (W118) to approximately 15°C to 20°C above its “new” dew point. Before leaving the compressor, the gas flows through a second coalescing type filter (FS122).
This separation-cooling-heating cycle enables us to deliver a dry and clean biogas in accordance with the most stringent criteria for fuel gas, as required by OEM processes and in particular by all major OEM gas turbines (GT) and gas engines (GE).

Our compressors are provided with separate oil- and gas-cooling circuits. Each circuit has its own dedicated heat-exchanger (W119 and W203). This system enables the control of the gas temperature independently of the operating mode of the SGC and within a very narrow range.
The volume of the B200 vessel is specially designed to prevent the overflow of oil into the downstream gas line even in case of an emergency stop at full load.