



COMPRESSING BIOGAS AND BIOMETHANE IN EUROPE SINCE 2005

138 compressors already operational in Biomethane production plants in Europe



Renewable Natural Gas (RNG) Compression Systems

1 ORGANIC RESIDUES AND WASTEWATER

Organic residues from animal, plant, agroindustrial, foodstuff industries or of urban waste origin are collected.

2 DIGESTER

Anaerobic digestion takes place at this stage, through which the biogas develops, normally consisting of 50-60% methane (CH_4) and the remaining portion being carbon dioxide (CO_2) and other components.

3 GAS TREATMENT SYSTEM

Gas is purified by removing moisture and part of the harmful components such as hydrogen sulphide (H_2S), produced by anaerobic digestion.

5 BIOGAS UPGRADING BY MEMBRANES

The compressed and filtered gas is upgraded through a membrane system that separates methane (CH_4) from carbon dioxide (CO_2) and from other gases thanks to different permeability speeds.

6 BIOGAS UPGRADING BY WATER SCRUBBING

Compressed gas is upgraded through the scrubbing column where impurities are absorbed into the water. Biologically degradable hydrocarbons are converted in the water-scrubber into H_2O and CO_2 . The non degradable hydrocarbons remain in the water.

7 BIOGAS UPGRADING BY AMINO SCRUBBING

Compressed gas is upgraded through the scrubbing column where impurities are absorbed by amine compounds. The absorption capacity of the scrubbing solution is completely regenerated under the supply of heat, such that it can be fed back to the processing. Given its chemical properties, the amine scrubbing solution adsorbs the carbon dioxide (CO_2) contained in the gas.

8 BIOGAS UPGRADING BY PSA

Biogas upgrading takes place through PSA technology (Pressure Swing Adsorption) which separates gases through compressed gas adsorption on a solid surface, using active carbon as the adsorption material.

TYPICAL DIAGRAM OF BIOMETHANE PRODUCTION PLANT

