

SEBIWASTE

**BIOGAS FROM 500 KW UP
BY OFMSW**

One of the current challenges for the biogas sector is to achieve more efficient transformation of the Organic Fraction of Municipal Solid Waste (OFMSW) for purposes of energy production. SEBIGAS can supply biogas plants fed by OFMSW by utilising a wet anaerobic digestion system specially researched by the in-house R&D Department capitalising on its technical and biological experience in the sector.

To better manage these substrates, heterogeneous and rich in impurities, SEBIGAS has implemented tailored modifications in the choice of the equipment and the design of the digesters.

Advantages of OFMSW anaerobic digestion

- Significant reduction of disposal costs, together with a decrease in environmental impact related to the waste management
- Sustainable production of electricity, heat and biomethane, together with the revenue related to its sale
- Production of a quality compost for agriculture purposes

“
**ANAEROBIC
 DIGESTION SYSTEM
 SPECIALLY RESEARCHED
 BY THE R&D
 DEPARTMENT**
 ”

Example of a biogas plant fed by OFMSW

↓ OFMSW QUANTITY

25,000 - 30,000 t/y

♻️ BIOMETHANE PRODUCTION

250 Sm³/h

⚡ INSTALLED POWER

1 MW

Plant features

01 PRE-TREATMENT

The pre-treatment line removes unwanted elements from the mix and creates a slurry suitable for wet anaerobic digestion. In this area of the plant, specially designed equipment that is simple and easy to operate performs the following functions:

- Bag breaking (plastic and biodegradable)
- Sifting
- Inert material removal
- Sand removal
- Pasteurisation
- Homogenisation of the organic suspension

02 ANAEROBIC DIGESTION

Thanks to its highly specialised experience, SEBIGAS utilises the wet anaerobic digestion process as the technological core of its plants. Digestion occurs inside digesters that have the following advantages:

- Conical bottom to facilitate an easier removal of the sediments
- Effective mixing system
- Easy maintenance of all components

03 LIQUID FRACTION TREATMENT

The fermented substrate exiting from the digester is sent to the dehydration stage (separation solid/liquid).

Through a series of stages including aerobic biological treatment, membrane separation treatment (ultra-filtration and osmosis) and evaporation, a clean waste adhering to stringent industry standards may be obtained.

The various technological steps, taken singularly or in a series, allow a reduction of volumes, the capture of excess heat, in addition to significant savings in disposal costs.

04 DIGESTATE COMPOSTING

The separated solid fraction is mixed with lignocellulosic material (green) followed by activation of the bio-oxidisation process. During this approximately 20-day process, the material is periodically turned and maintained in aerobic conditions to ensure that the biological stabilisation of the biomass is completed.

When the bio-oxidisation process has concluded, the material is taken and the maturation phase starts. The material is later stored in heaps in preparation for its end use in agriculture or to be packaged.

