How a biogas plant works


Whenever we need energy – biogas can supply it: during day and night, in wind and weather.

The bacteria in the digester convert the biomass, such as bio-waste, renewable raw materials or liquid manure, into biogas and the fermentation product.

The biogas generated is collected in the gas hood and transferred from there via gas pipelines to the combined heat and power unit (CHP) where power and heat is generated from the biogas.

Numerous different systems, techniques and operating modes can be considered when designing a biogas plant. The usual configuration includes the following components:

1. Storage for the biomass to be fermented (silo, collection point, liquid manure container)
2. Processing, sorting or cleaning systems, wherever applicable, for the biomass to be fermented or for residues
3. Inlet/pumping equipment transfers the biomass into, or out of, the digester
4. Agitators mix the bacteria in the digester with the fresh biomass
5. Heating – the usual fermentation temperature levels at 40 °C
6. Gas storage for the short-term or intermediate storage of the biogas generated
7. Gas cleaning system for desulphurization and dewatering
8. Pump lines for fermentation substrates and biogas pipelines
9. Safety equipment: pressure relief devices, safety valves, gas flares
10. Combined heat and power unit (CHP) for generating power and heat at the same time
11. Processing equipment, if necessary, for converting biogas into bio-methane
12. Storage tank for the fully digested fermentation products (with equipment for further processing, where applicable, such as solid/liquid separation, drying, pelletizing etc.)