Securing the future

MT-ENERGIE
Biogas Technology

MT-Energie – The leading supplier of biogas production systems

In the promising field of renewable energies MT-Energie GmbH is one of the leading producers of biogas plants of all sizes. With MT-BioMethan GmbH we offer innovative gas conditioning technology as well as feed-in technology. We represent above-average economic and efficient solutions and have the highest level of customer satisfaction.

MT-Energie primarily implements turnkey biogas plants. In addition, our components are in use all over the world. Our service portfolio includes not only the development, planning and construction of biogas plants and special components, but also intensive technical and biological support.

The company MT-Energie was founded in 2001. The headquarters is located in Zeven, Northern Germany. In 2006 the company started to expand into foreign countries – now MT-Energie offers its products in various European countries and the United States. Our local subsidiaries provide a reliable partnership for your biogas project.

We have built up an excellent market position and experience a strong growth in the national and international biogas industry. As an owner-managed company we are committed clearly to the business mid-tier and will retain our entrepreneurial freedom also in the future. Thus we can respond flexibly and demand-oriented to our customers' needs.

Quelle: KWS

How is biogas made?

Biogas is a mixture of carbon dioxide and methane. It is formed when bacteria break down organic material in the absence of oxygen, also called anaerobic digestion. The possible uses of biogas are diverse. Combined heat and power units (CHP) convert the biogas with energetically high-quality into electricity and heat. While the produced power is fed into the public network, the produced heat can be used for example for the heating of stables, residential buildings or industrial companies.

An interesting alternative for biogas is the conditioning of raw biogas to natural gas quality and then feeding it into the public gas grid. With this method, the gas can be transported over long distances and used as needed.

Suitable starting substrates for biogas production are among other things renewable resources like maize, grass or rye. Also other plants such as sunflowers or sugar beets can be used. Biogas can also be gained from solid and liquid manure. Even organic waste, for which there is otherwise no use, may be utilised. After the complete degradation a liquid, largely odour-neutral residue remains. This digestate is applied as a high-quality organic fertilizer for the fields. The nutrient cycle is completed.

Our services

If you want to produce biogas successfully and profitably, you need an experienced partner. We are of the opinion that biogas plants should be planned, constructed and supported by a single source. This is why we offer our customers a complete service package to ensure the successful operation of the biogas plant.

Project development

Profitability analysis

- Biological input analysis
- Plant rating
  (tank size, input system, plant output)
- Financial aspects
- Profitability analysis (liquidity/profitability)

Technical analysis

- Site planning with a view to possible expansion
- Support with planning permission
- Support with planning aspects of gas and electricity feed-in

Project implementation

Construction phase

- Construction and installation

Initial commissioning

- Technical and biological commissioning of the plant
- Operator training

Aftersales service

Biological process support

- Digestion sample analysis
- Feeding recommendations
- Monitoring process stability
- Advice on the introduction of new input materials

Technical & Maintenance Services

- Provision of maintenance work
- Remote monitoring
- 24 hour hotline
- Process Evaluation

The appropriate biogas plant for your farm

Biogas plants based on agricultural resources

If the input material mainly consists of plant materials such as maize silage, biogas plants generally operate with a continuously operating two-stage process. These consist of digester, secondary digester and a residue storage tank. This ensures a high biological stability of the installation.

For the bacteria the same environmental conditions are prevalent in the secondary digester as in the digester. Thus we can ensure a maximum yield of gas of the slower degradable input materials, because in this second stage up to 20% of the potential gas yield is obtained.

Many operators of biogas plants use manure or dung in addition. MT-Energie has developed a single-stage biogas plant which is specially adapted to the use of manure. This concept consists only of a digester and residue storage tank. The additional secondary digester is dispensed with.

Since manure digests more quickly than silage, the one-stage design without the secondary digester is an economically much more attractive concept. Due to the high proportion of manure, the substrate from the digester has only a very low residual gas potential, which does not justify the investment in the construction of a secondary fermenter.

Biogas plants based on organic waste

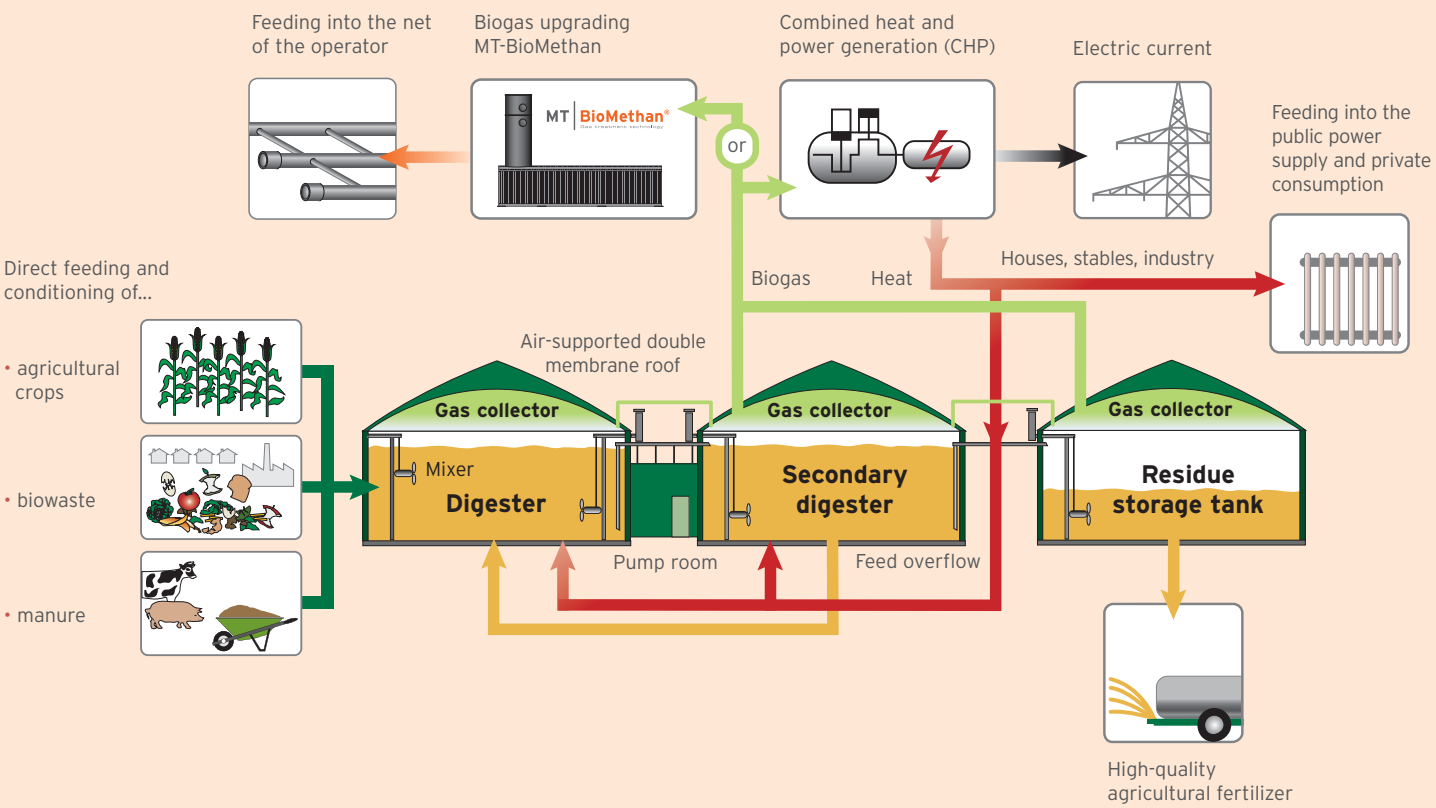
Organic waste material is also suitable as a starting substrate. In particular, waste from food production and processing, such as organic waste, fats, slaughterhouse waste, but also waste from the production of alcoholic beverages (including pulp and grains) can be used in a biogas plant.

Out of waste a high-quality raw material is made that can be used practically for energy production. This has many ecological and economic benefits.

Plants based on waste must be planned in accordance with statutory requirements and the respective substrate characteristics and volumes. This applies in particular to reception, storage, shredding and sanitation.

From plants which use organic waste a residue with a high fertilizer value remains.

General flow chart of a two-stage biogas plant



MT-Laboratory – Biological process support service

The deciding factor as to whether a biogas system is a success is the biology. The profitability is tightly coupled with the stability and effectiveness of the fermentation process, independent of what substrate (feedstock) is used.

MT-Energie offers a competent biological process support. Our experienced specialists always keep a track of the current process in your biogas plant. We detect process disturbances in time and can intervene immediately, if required.
The laboratory of MT-Energie serves about 600 biogas plants in Europe, including many plants of other manufacturers. Therefore, MT-Energie is the market leader in this field.

Our services include:

- Cost-effective service agreement without a minimum contract period
- VOA/TAC analysis, pH measurements and definitions of the acid spectrum
- Further analysis such as definition of dry matter (DM) and organic dry matter (oDM), measurement of the ammonium concentration and the electrical conductivity
- Fermentation tests with your substrates
- Determining of the residual gas potential
- Optimization of the substrates to be used
- Definition of the concentration of trace elements.

Apart from the analysis results, you will receive expert advice with regards to standard measuring results, gas yields, additives to the process (trace elements, enzymes) or other specific questions.

We have extensive experience, both with plants run with renewable raw materials and with co-fermentation plants which additionally use organic waste.


MT-Service – Your success is important to us

You can rely on us even after commissioning. If a technical failure should appear on your biogas plant, we will help both competently and quickly. Our technicians are specially trained for these tasks and ensure that your plant functions optimally in a very short time. Additionally, with the help of remote monitoring, we can track the current status in your biogas plant, if necessary. This allows for constructive cooperation between plant operators and our team.

- 24 hour emergency service
- Customer support by telephone
- Maintenance and servicing
- Consulting in optimising possibilities

A reliable partner does what he promises - and we exemplify that.

MT | BioMethan®
Gas upgrading technology

MT-BioMethan® – The new perspective

Many biogas plants work without a thermal concept which crucially improves the overall efficiency of the plant.

This is usually a result of the location. It is extremely rare for a biogas system to be located directly in an industrial or commercial estate with many potential consumers for heat generated in the plant. Frequently, there is no possibility of making profitable use of the heat in the near vicinity.

Turning biogas into electricity directly at the biogas plant is therefore less efficient. In many cases it would be better to turn it into electricity directly at the point of consumption, so that optimum use can be made of the heat as well as the electricity generated. The natural gas network is a suitable transport medium. But biogas has to be conditioned first before it reaches the quality of natural gas.

This is exactly where the biogas conditioning technology of MT-BioMethan GmbH comes in. This affiliate company of MT-Energie offers complete gas conditioning and gas injection systems. Using nonpressurized amine washing the biogas is separated into CO_2 and methane. This cooperation ensures that we can offer our customers complete projects.

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