

Anaerobic
Digestion Plants
made of
stainless steel



Organic energy worldwide

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Energy means enabling life.

Renewable energy means enabling life in the future and on a permanent basis.

Because a reliable energy supply is our lifeline, the careful use of natural resources should be a matter of course. However, the identification and use of renewable energy potential represents an inescapable challenge to our modern society. As a team, WELTEC BIOPOWER takes on this challenge, being aware that cooperation is a must in order to create future-oriented, ecologically and economically sustainable energy concepts for our customers and society.

Our energy is organic: As one of the first biogas pioneers, WELTEC BIOPOWER has the expertise and experience needed for the construction of high-performance anaerobic digestion plants and the efficient use of diverse organic raw materials.

We know what needs to be done: As a one-stop provider, we are an expert, and totally reliable partner in all phases of your project. To realise our vision and to make an effective contribution to the energy revolution, we actively cooperate with our customers. Together with you, we want to shape the future: here – now – worldwide.

Biogas as a Product Follow Nature

4



Renewable energy sources such as the sun, wind, hydropower and biogas are our resources of tomorrow. Modern biogas production follows the example of nature: the biological and geological methane production process has been taking place for thousands of years, e.g. in the digestive systems of animals. Therefore, the production of methane in an anaerobic digestion plant is actually the technical implementation of a biological process.

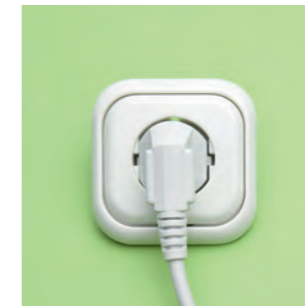
Methane – referred to as biogas – is the product of the decomposition of organic material by bacteria in the absence of light and air. In this process, microorganisms break down the material into their basic components, producing methane – our energy source – as a by-product. The natural methane emissions that take place every day (e.g. in landfills) endanger the climate due to the strong greenhouse effect, contributing to the warming of our planet. The secure production of methane by utilising organic waste in an anaerobic digestion plant helps to curb these emissions.

Modern anaerobic digestion plants, built by WELTEC BIOPOWER, are designed for the efficient use of various raw materials, known as biomass. The biomass may consist of manure, maize, or organic waste from the food industry (leftovers, abattoir waste etc). Depending on the needs and the individual situation, it is also possible to use an even wider range of raw materials in this process.



5

Biogas as an Opportunity Diversified Renewable Energy



With the help of special downstream treatment processes, biogas can be converted into three forms of energy:

Power: By means of the combustion process in a CHP plant, biogas is transformed into power for private use or for feed-in into the public power grid.

Heat: Combined heat and power generation plants generate heat as a by-product that can be used for a wide range of applications.

Biomethane: By means of special procedures, biogas can be upgraded to the quality of natural gas and be fed into the existing local natural gas grid.

Additionally, the digestate, a by-product of the biogas process, is a high-quality **natural fertiliser** that can be either spread directly on agricultural areas or used in dried form.

Apart from the ecological aspect, the production of energy from biogas also provides attractive economic opportunities. Sustainable plant concepts ensure a calculable, stable, long-term source of income over decades. WELTEC BIOPOWER delivers the solutions you need for the meaningful and economically successful utilisation of bioenergy.

Biogas The future is in your hands

Do you wish more independence from fossil energy and are open to lucrative business opportunities? If so, we should come together, as WELTEC BIOPOWER offers you individual solutions for the perfect integration of renewable energy production within your farm structure. With a WELTEC BIOPOWER anaerobic digestion plant, you opt for durable, high-quality technology and produce energy where it is needed. From the outset, WELTEC BIOPOWER is your perfect partner that accompanies you effectively and reliably on your way to your exciting future in energy.

Get the most out of it! The heat generated during the conversion from biogas to power (CHP) can effectively be used in greenhouses, pigsties, homes, or for drying wood pellets. This combination of heat and power greatly increases the efficiency and profitability of an anaerobic digestion plant. Alternatively, the biogas can be transferred to a suitable buyer through a small-scale gas grid for use in a CHP. No matter how you use your energy (power, heat, fuel), WELTEC BIOPOWER definitely means more performance.



Agricultural Biogas in Oldenburg Münsterland (Northern Germany)





Organic waste is an energy resource. Animal waste products, kitchen waste, domestic and industrial food waste, used cooking oil, etc. are all perfectly suitable for utilisation in industrial anaerobic digestion plants. Exploit your energy potential: WELTEC BIOPOWER offers you sustainable solutions in the field of industrial waste and disposal technology and ensures optimum integration with the other technologies in your process. Combined with smart heat utilisation concepts, you can benefit in two ways and perpetually enjoy maximum energy efficiency.

The technical design of industrial anaerobic digestion plants requires a high measure of experience, as all raw materials are subject to strict pasteurisation regulations. Another important factor, apart from smart and rugged technology, is the precise tuning of the employed components to each other, since process reliability and continuous efficient energy production depend on ongoing, uninterrupted waste supply. Industrial anaerobic digestion plants from WELTEC BIOPOWER are profitable and future-proof and are internationally recognised as outstanding examples for efficient climate protection.

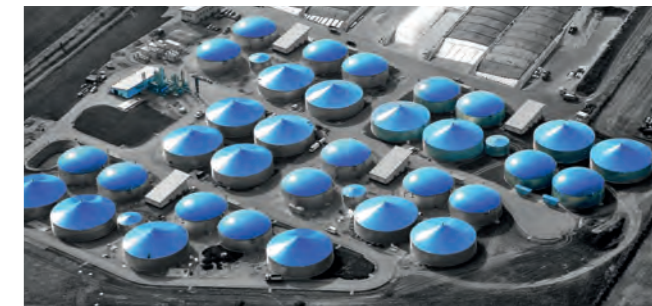


Produce Energy from Biomethane



Biogas is an all-rounder: In addition to the conventional use for the production of power and heat, biogas can be upgraded to natural gas quality and be fed into the local natural gas grid as biomethane. This is a future-oriented, lucrative step towards a sustainable, eco-friendly energy supply. As a valuable fertiliser, the digestate can be spread on agricultural areas or be sold. This special form of decentralised energy production ensures stable economic structures and strong synergies along the entire energy value chain, especially in rural areas.

Biomethane refineries require an advanced degree of specialised plant technology. A high level of automation, precise plant control systems with process control, and efficient remote maintenance solutions are vital. Furthermore, adaptation to on-site requirements is very important. WELTEC BIOPOWER analyses the local conditions and provides bespoke sustainable solutions for the entire biomethane production chain.



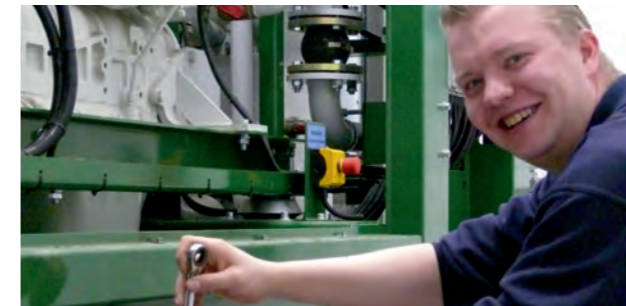
Bio-refinery plant in Könnern, total output: 17,5 MW_{therm}





Though the underlying principle is a natural process, the technical implementation is complex and sensitive. The reliable operation of modern anaerobic digestion plants requires perfectly adjusted processes and technologies which WELTEC BIOPOWER can offer. WELTEC BIOPOWER makes exclusive use of proven plant components and their own superior technical developments. Stainless steel – our material of choice – not only looks good, it also provides reliable protection from aggressive biogas components, ensuring a long life for your anaerobic digestion plant. Furthermore, our matchless manufacturing standards guarantee a consistently high quality product regardless of the location and contributes substantially to the global success of WELTEC BIOPOWER as a brand.

- Long plant life (stainless steel)
- Individual planning of your plant
- Processing of various raw materials
- High yield – low maintenance costs
- High-quality technology – rugged and functional
- Everything from one source



As a reliable partner, we actively support you before, during, and after the rollout of a project, focusing on your success. Professional follow-up services in the form of regular maintenance and due upkeep are vital for an anaerobic digestion plant to operate in a profitable, hassle-free manner. WELTEC BIOPOWER offers you custom-tuned service packages that ensure reliable operation and sustainable profitability. Special attention is paid to biological supervision, which plays a key role in the successful operation of the anaerobic digestion plant. With our specialists, we continually check, evaluate, and optimise the individual process biology of your plant for a continuous and convincing plant performance.

- Sound plant dimensioning analysis
- Efficiency calculation/insurance concepts
- Handling of approval/planning procedures
- Turnkey implementation
- Analytics, process and substrate consulting
- Comprehensive biological supervision
- Service, maintenance and repair

A promise means responsibility – responsibility towards our customers and our employees, to achieve your goals by means of a successful, cooperative partnership.

“Premium quality worldwide” is our promise, our drive, the challenge we face every day and a standard we strive to achieve in order to establish a solid basis of trust. For this, we have strong propositions:

LONG LIFE

WELTEC BIOPOWER manufactures fermenters and equipment entirely from stainless steel, thereby guaranteeing an extremely long plant life.

QUALITY

Stainless steel has the further advantage that parts of WELTEC BIOPOWER can be built with the same high quality standard throughout the world.

EXPERIENCE

With more than 300 designed and installed biogas systems in over 25 countries, WELTEC BIOPOWER boasts matchless competence and excellent expertise.

ONE-STOP PROVIDER

WELTEC BIOPOWER has a very high production depth and guarantees top-quality, premium plants – worldwide.

