



Biogas plants for agriculture

Planning

Construction

Start up

Operation

Service

++ Because of the variety of economic and ecological benefits it affords, many farmers set up biogas plants as a further source of income. Utilising renewable raw materials and other agricultural products contributes to value creation in rural areas. An efficient recycling economy is the result – reaching all the way to the use of fermentation residues as fertiliser.

+ Heat for several houses in Münster, Germany

LOCATION Münster/Germany

CAPACITY 370 kW_{el}

IN OPERATION SINCE 12/2007

INPUT MATERIALS Cattle liquid manure, maize silage

FEATURES Biogas plant operators are using exhaust heat to heat several residential houses.



Biogas plant operators are using exhaust heat to heat several residential houses. The plant in Münster-Roxel is a typical agricultural biogas plant with a closed value-creation cycle: the plant uses cattle liquid manure and maize silage as substrates. While the generated electricity is fed into the public grid, the plant operators use the exhaust heat produced to heat several residential houses and to dry agricultural goods. The fermentation residues are spread on the fields as a valuable fertiliser.

Biogas from agricultural substrata good for regional value-added



← Biogas plants contribute to creating a more efficient recycling economy.

→ In the Czech Republic, the biogas plant in Lípa heats a kindergarten and other facilities.

→→ The exhaust heat generated by a biogas plant in Volta Mantovana, Italy, is used to heat the residence of the Galetti farming family, thus cutting costs.



+ A Czech biogas plant heats kindergarten, primary school and cafeteria

LOCATION Lípa/Czech Republic

CAPACITY 526 kW_{el}

IN OPERATION SINCE 08/2008

INPUT MATERIALS Cattle liquid manure, maize silage

FEATURES A local primary school is being heated using exhaust heat from a biogas plant.



The entire electricity generated in the biogas plant in Lípa is sold to the state energy company EZ. The generated heat is used by the farm to heat a kindergarten, a primary school and a cafeteria in the town. To do this, the hot water from the co-generation unit is transported using a kilometre-long pipeline to the heat exchangers of the buildings. The plant in Lípa is a classic biogas plant designed for agricultural products and utilises approximately 7,000 tonnes of cattle liquid manure and 9,000 tonnes of maize silage per year.

+ 8 million kWh of green electricity generated for the Italian grid

LOCATION Volta Mantovana/Italy

CAPACITY 999 kW_{el}

IN OPERATION SINCE 07/2009

INPUT MATERIALS Cattle liquid manure, solid manure, maize and whole-plant silage

FEATURES Thanks to innovative technologies like EnviTec Feedcontrol, the Italian plant has a capacity of approximately 99 percent.



Put into operation in July 2009, the plant in Volta Mantovana is the first EnviTec biogas plant in Italy. The country currently has one of the highest feed-in tariffs in Europe for electricity from biomass. In addition to cattle liquid manure and solid manure, the biogas plant in Volta Mantovana primarily utilises maize and whole-plant cereal silage. It feeds approximately 8 million kWh into the public electricity grid every year. As a further cost-cutting measure, the exhaust heat generated by the plant is used to heat the residence of the farming family.

tes –



++ Biogas offers a variety of advantages. The weather-independent source of energy provides the plant operator with a secure, calculable source of revenue. A particularly efficient aspect of biogas production is the additional utilization of exhaust heat and the availability of fermentation residues as bio-fertiliser – this closed value-added chain strengthens both the economy and the region.

+ Long-term perspective



Many farmers use biogas production to

establish a second economic mainstay, thereby ensuring that their agricultural enterprises continue to flourish into the next generation. Because energy generated from biogas is not subject to price fluctuations, it represents a reliable source of revenue. Farmers additionally save on long-term energy costs when they use exhaust heat from the co-generation unit to heat buildings or stables. The exhaust heat can also be marketed via local heating networks to external purchasers to further increase profits. An alternative to the generation of electricity from biogas is upgrading it to valuable bio natural gas.

→ Biogas represents a great opportunity
It secures the existence of agricultural



← With their biogas plant, the farmer Imerio Galetti and his son are securing the existence of their farm for the next generation.

→ An alternative to the generation of electricity from biogas is upgrading it to valuable bio natural gas.

→→ The utilisation of exhaust heat from a biogas plant creates an efficient cycle which represents a major contribution to environmental protection.

→→→ After drying, fermentation residues from biogas plants serve as valuable fertiliser.



+ Higher added value

Decentralised biogas production using independent resources strengthens value creation in rural areas. Using renewable resources effectively reduces the dependence on foreign energy imports, so that revenues remain in the region. More and more bioenergy villages are showing us how biogas can be used to get the most out of local synergies. This supports rural development and creates efficient cycles which represent major contributions to environmental protection.

+ High flexibility

Biogas can be generated from different renewable resources. Instead of being tied to a certain crop type, farmers can adapt flexibly to different framework conditions. Even catch crops, whole-plant silage and energy beets deliver top yields. Plant operators can also integrate businesses from the local community to procure substrates.

+ Maximum efficiency



No other use of energy is as efficient as biogas utilisation in a co-generation plant. Because they simultaneously generate both electricity and heat (hence "co-generation"), the efficiency of co-generation plants is considerably higher than that of conventional large-scale power plants, which only generate electricity. Co-generation plants convert between 80 and 90 percent of energy generated from biogas into heat and electricity. By way of comparison: the average efficiency of coal-fired power plants worldwide is 31 percent.

+ Valuable fermentation residues

The high efficiency of energy production from biogas is not limited to its optimal utilisation of electricity and heat. Fermentation residues represent another value in the efficient recycling system of biogas production: as fertiliser with a high nutrient content, they relieve farmers from purchasing expensive mineral fertiliser.

unity for rural development. ltural enterprises.



++ You can rely on our experience as plant manufacturers and our innovative technologies for producing biogas. These two factors guarantee that you will reach your goals and use agricultural substrates as an efficient source of energy. This way, you can profitably market electricity and heat.

+ Technological innovations

As technology leader of the biogas sector, EnviTec Biogas is driving forward the development of technological innovations. Whether it's the EnviTec Feedcontrol, Kreis-Dissolver or mid-size agitators: EnviTec biogas plants employ the newest processes to give you the highest possible efficiency.

+ Maximum safety



Safety is one of the most important factors when constructing a biogas plant. EnviTec Biogas AG is among the few providers certified according to DIN EN ISO 9001 who exclusively commission plants with a CE mark. Our plants meet all safety-related EU regulations and are fully ready for TÜV certification. Even after commissioning your biogas plant, the staff of our international service team remains available to react speedily in case of any maintenance issues.



You need an efficient production. We have the technology for you.




MACHINE
OF THE YEAR 2010

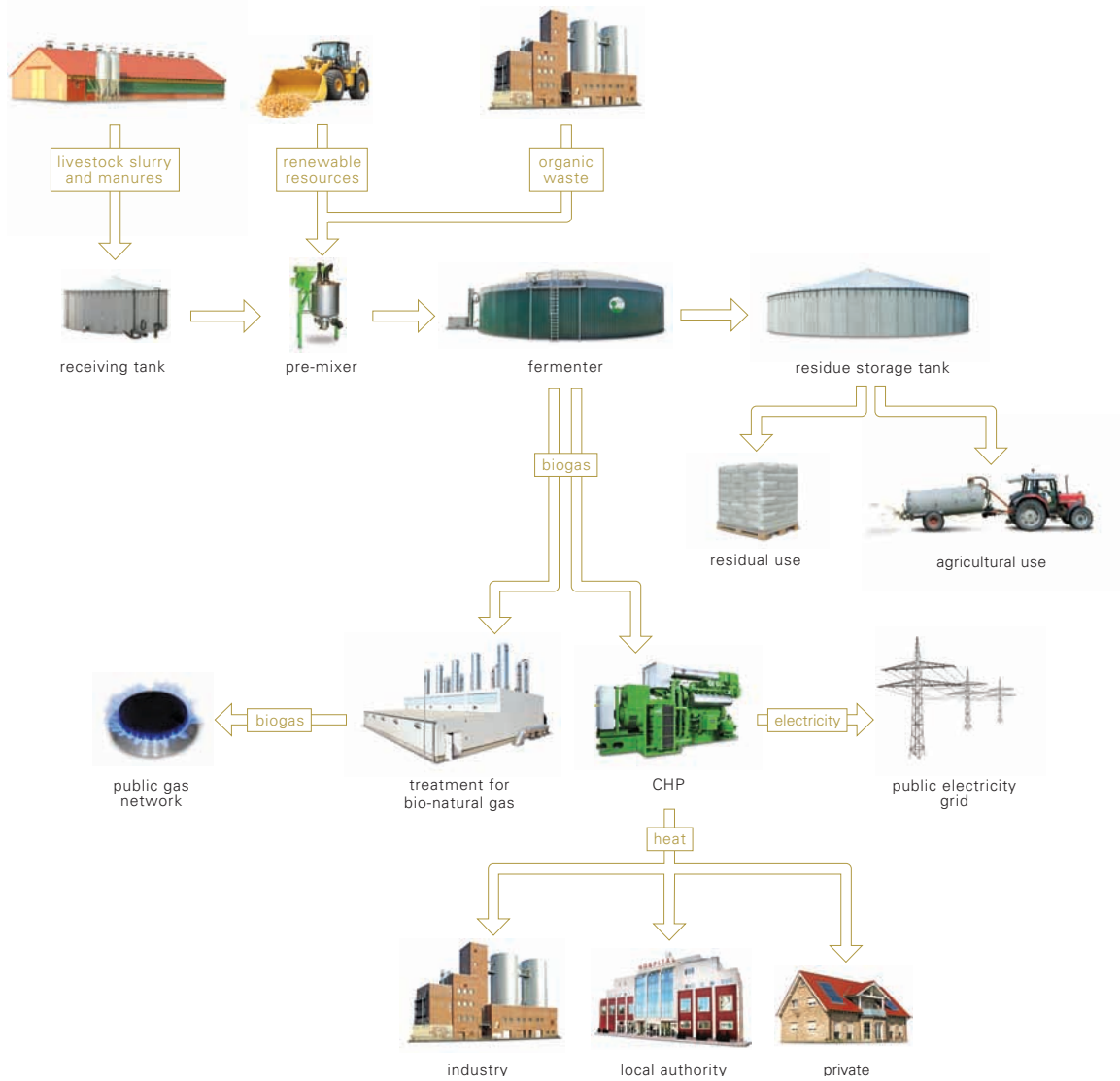
← EnviTec Feedcontrol, the "Machine of the year", saves on valuable input materials.

→ The Kreis-Dissolver optimally breaks down input materials, thereby increasing the biogas output.

→→ Even after your biogas plant goes into operation, our service representatives are available to help you at all times.



The working principle of a biogas plant



EnviTec Biogas AG

Administration:

Industriering 10 a

D-49393 Lohne

Tel.: +49 4442 8065-100

Fax: +49 4442 8065-110

Sales and processing:

Boschstraße 2

D-48369 Saerbeck

Tel.: +49 2574 8888-0

Fax: +49 2574 8888-800

info@envitec-biogas.com

www.envitec-biogas.com