BIOGAS STATION

VÍTKOVICE ENVI

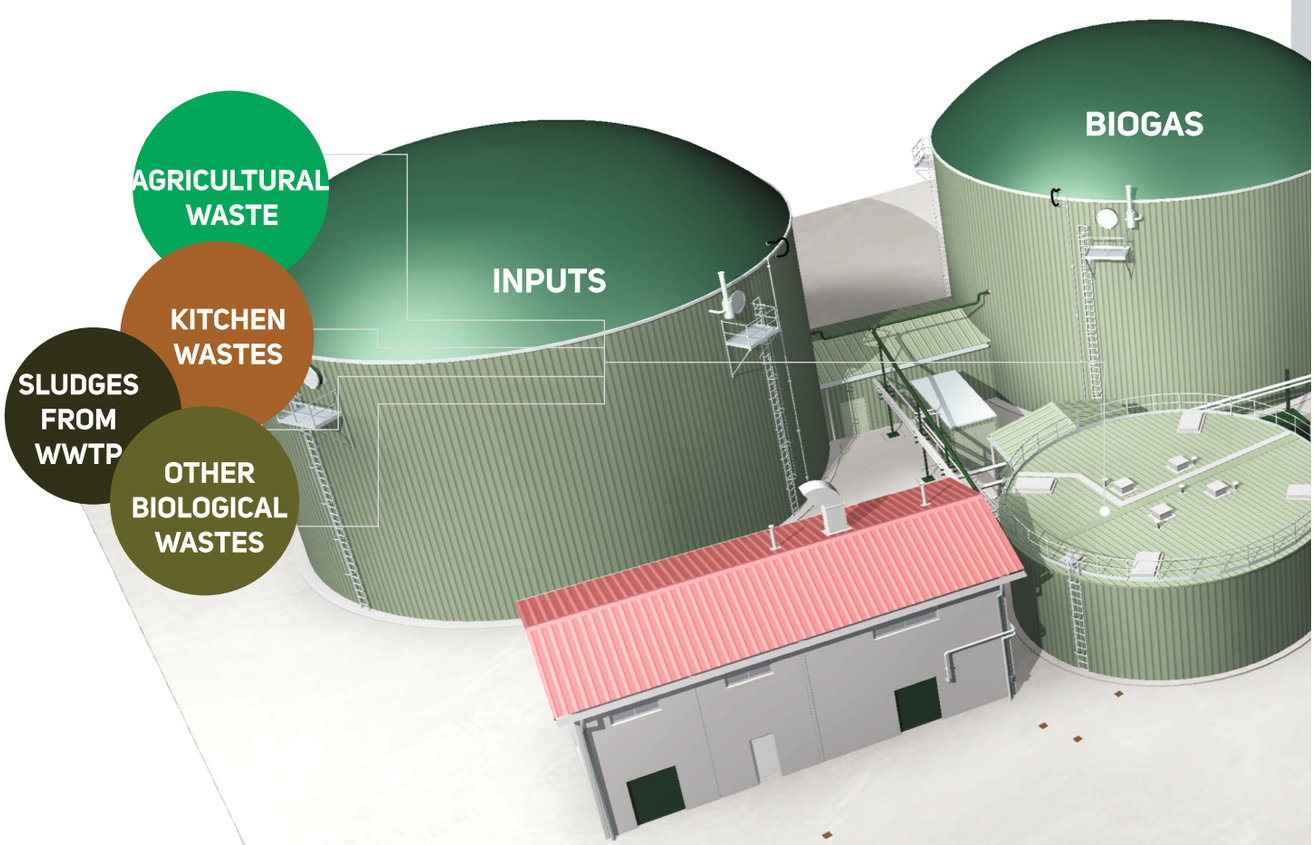
VÍTKOVICE ENVI

BIOGAS STATION

Biogas stations with wet processes made by Vítkovice ENVI a.s. were developed from the traditional programme of enamelled tanks for agriculture use.
The development of our enamelled tank products has been in co-operation with leading Czech farmers over the last 50 years. These enamelled tanks, thanks to their excellent chemical and heat resistance, along with unique technologies from our own development, have become the cornerstone of our supplied biogas stations. At present, we design and deliver complex technology solutions for biogas stations for agriculture and industry all over the world.

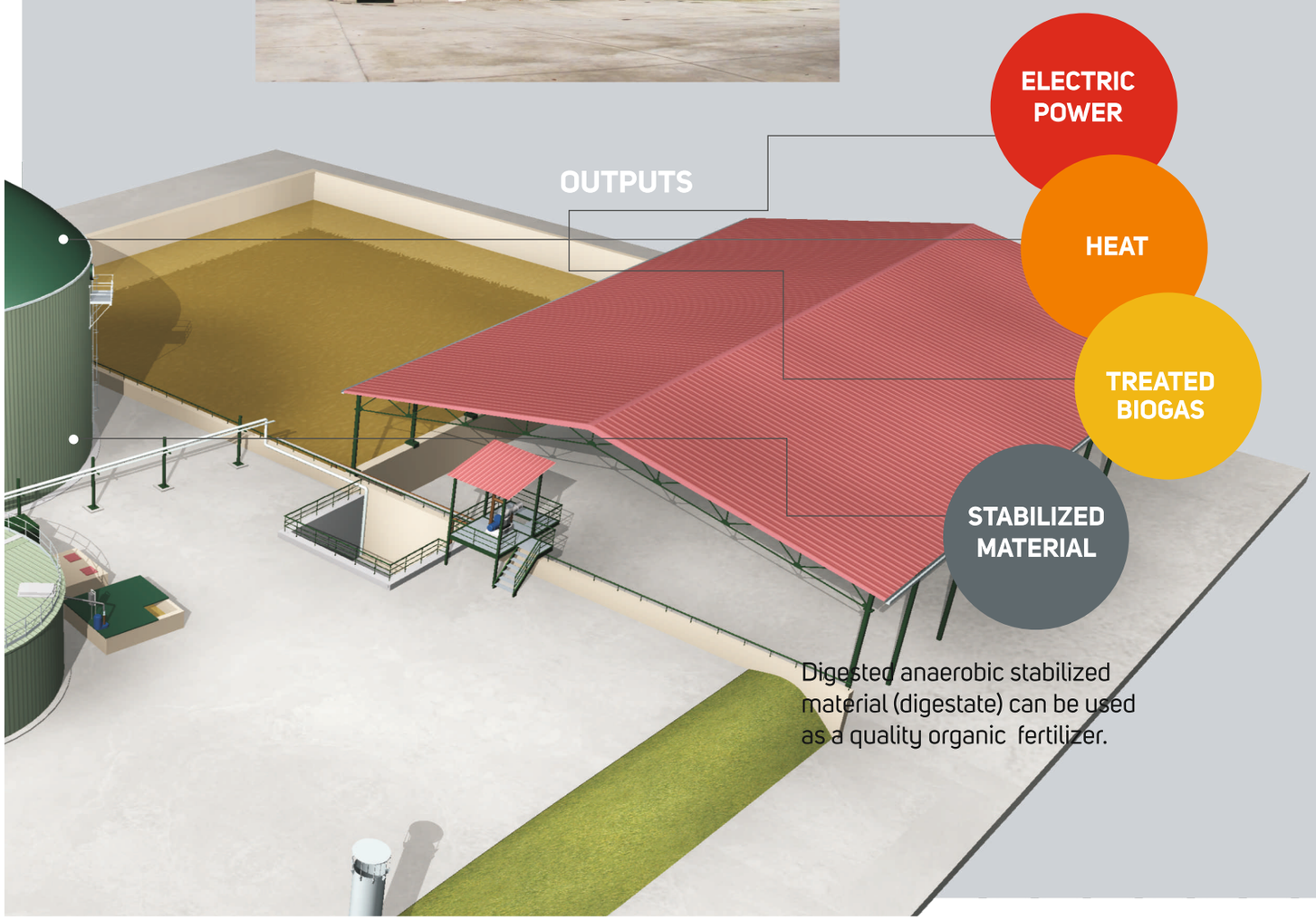
COMPLEX SOLUTIONS FOR A TECHNOLOGICAL WHOLE

- free consulting and solution design
- own design and construction know-how
- area management and building permit
- own production
- supply and implementation of work
- customer service



THE MOST IMPORTANT BENEFITS OF BIOGAS STATIONS

- stabilization of excrement of livestock, and reduction of odour
- use of energy from organic waste
- environmentally friendly production of electricity and thermal energy
- reduction of energy costs and improving the company's competitiveness in the market
- production of high-quality organic fertilizer
- closed circuit for improvement of soil fertility
- reduction of dependence on fossil fuels and reduction of greenhouse gases
- expansion of activities and sources of income for farmers and rural areas
- increase in the competitiveness and stabilisation of agriculture
- increase in energy self-sufficiency of the state



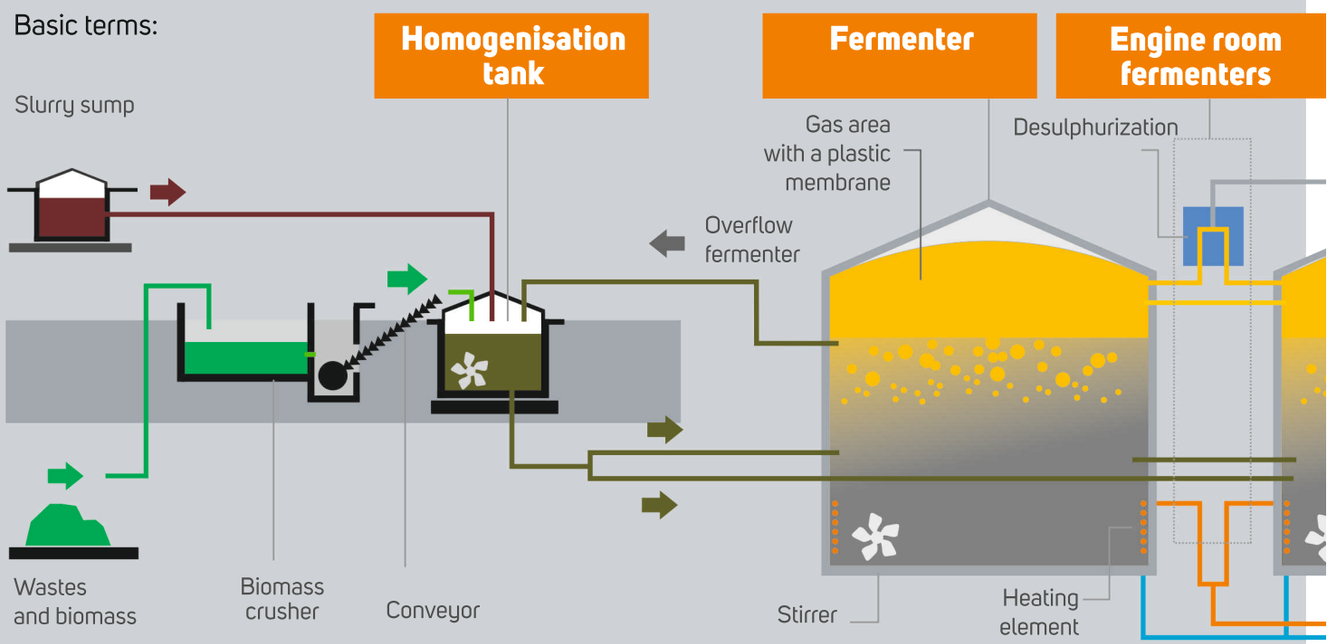
Digested anaerobic stabilized material (digestate) can be used as a quality organic fertilizer.

HOW BIOGAS IS MADE

Biogas is made at the station by the controlled digestion of organic substances without the access of air. The biogas station this way processes mainly organic wastes from agricultural and industrial production, and ensures their efficient disposal. Gas production is derived from metered waste. Typical materials for processing into biogas are livestock manure, vegetable waste, sugar beet pulp, corn silage, brewers waste, or distillery stillage.

Gas which arises from such waste reaches a methane content of 50-70%, and becomes an effective substitute for natural gas. The biogas is burned in boilers or cogeneration units that ensure the production of electricity and heat. The system security is ensured by a burner which, if necessary, burns off excess quantities of gas.

FUNCTIONAL SCHEME FOR A BIOGAS STATION (BPS)



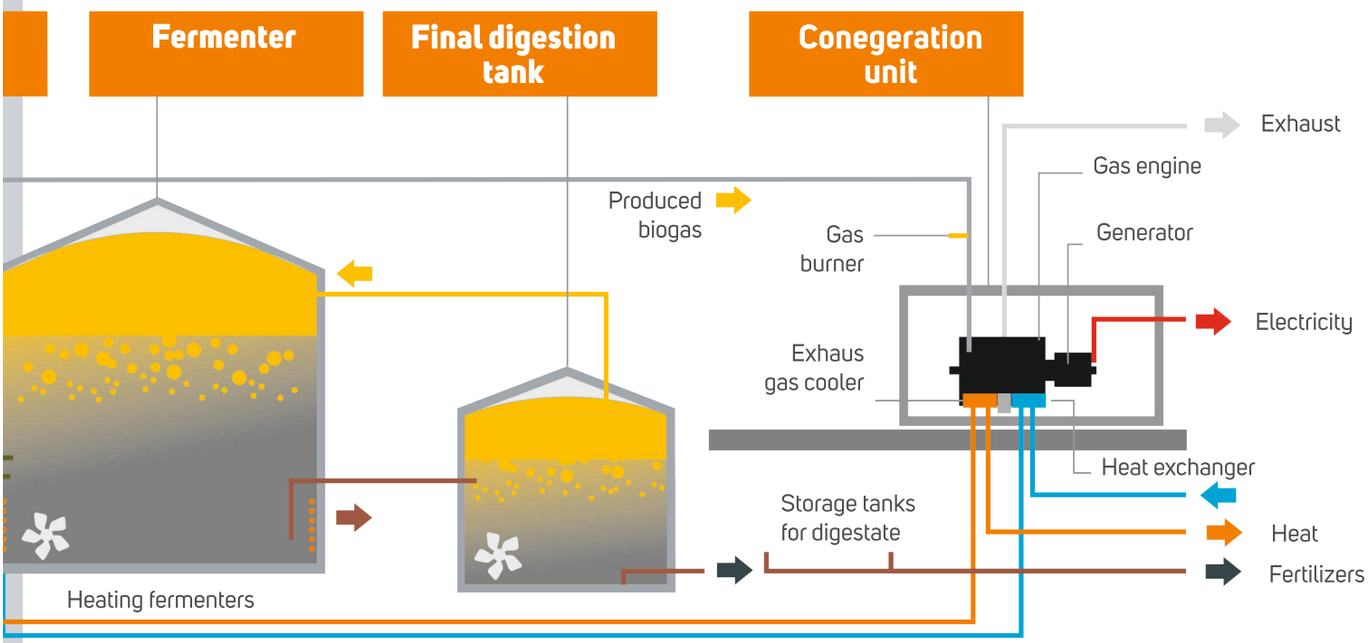
Desulphurisation

To ensure the long life of gas engines, each fermenter has its own biological desulphurization, on the principle of dispensing air into the gas chamber of the fermenter. This simple natural method ensures stable operation for desulphurisation without additional operating costs. According to customer requirements, a different method of chemical or biological biogas desulphurisation may be used.

Measurement and regulation

Our biogas stations are controlled by an automated management system and process control. The operator then controls the process through visualisation software from the dispatching centre.

On the screen, actual measured values, signalled failure states, received warnings, and also archived data traffic are displayed. Finally, this procedure also allows remote access for effective and speedy solution of faults.



Gas tanks

Biogas stations can be easily supplemented by enamel gas tanks of our own design. The gas tank is designed to combine the advantages of a solid and a membrane gas tank. The enamelled skeleton supporting the gas tank ensures its resistance to external influences, the diaphragm inside the gas tank, on the contrary, guarantees perfect air tightness, and distributes gas pressure.

Biogas station
PUSTĚJOV

The biogas station in Pustějov belongs to the group of supplied agricultural biogas stations. For the station, fermenters were selected with a fixed enamel roof, enabling work with a higher gas pressure. The station is supplied with beef and pig manure, with the addition of corn silage, sugar beet pulp, and grass silage, in an amount of 130 m^3/d dose, and 10-12% dry matter. The input substrate is heated during fermentation to 40°C for 30 days. The emerging gas is used for power generation in four cogeneration units, with a total electrical power output of 680 kW. The thermal energy is used to heat the digester and adjoining barns.

Biogas station
PIASCZYNA

The biogas station at Piasczyna used our many years of experience in the construction and operation of biogas stations, and combines them in the unique technology of an industrial biogas station. For this biogas station, fermenters were chosen with the saddle roofed gas tank, which guarantees the efficient accumulation of a large amount of gas. The biogas station is installed as part of the distillery technology, and with it forms a closed functional unit. This way, the station handles nearly pure distilling waste with a high acidity level, along with a small amount of corn silage. The resulting solid wastes amount to just 8%. The substrate is processed in the station for about 30 days. The resulting power output of the station is 2000 kW of electricity and 2500 kW heat, which is used for heat management in the distillery. This own energy source and method of processing waste by the distillery ensures lower operating costs for the distillery, and a significant improvement in market competitiveness.







1. SAIFEILA Gu Am, China
2. Ultzama, Spain
3. Kunovice, Czech Republic
4. Střížov, Czech Republic
5. Bolkovice, Czech Republic
6. Pustějov, Czech Republic
7. Piasczyna, Poland

VÍTKOVICE ENVI

VÍTKOVICE ENVI a.s.
Ruská 1142/30, 703 00 Ostrava-Vítkovice, Czech Republic
T + 420 595 954 315, **E** sales.envi@vitkovice.cz
http://www.vitkovice-envi.cz