



BIOLAK® Technology GmbH
COMPETENCE IN WATER AND RENEWABLE ENERGY



GÄRREV System

Fermentation residue refinement: More profit from fermentation residue





What is GÄRREV?

In larger biogas plants and biogas parks, reutilisation of fermentation residue is a problem because of the large quantities. On the other hand the CHPs units generate a lot of waste heat. GÄRREV combines both of these and changes the residue into further energy and fertilizer!



GÄRREV plant for bioenergy park "Klarsee", Germany, approx. 20 MW_{el}/h

Fields of application

GÄRREV is many-sided; typical application examples are:

Fermentation residue from agricultural biogas plants

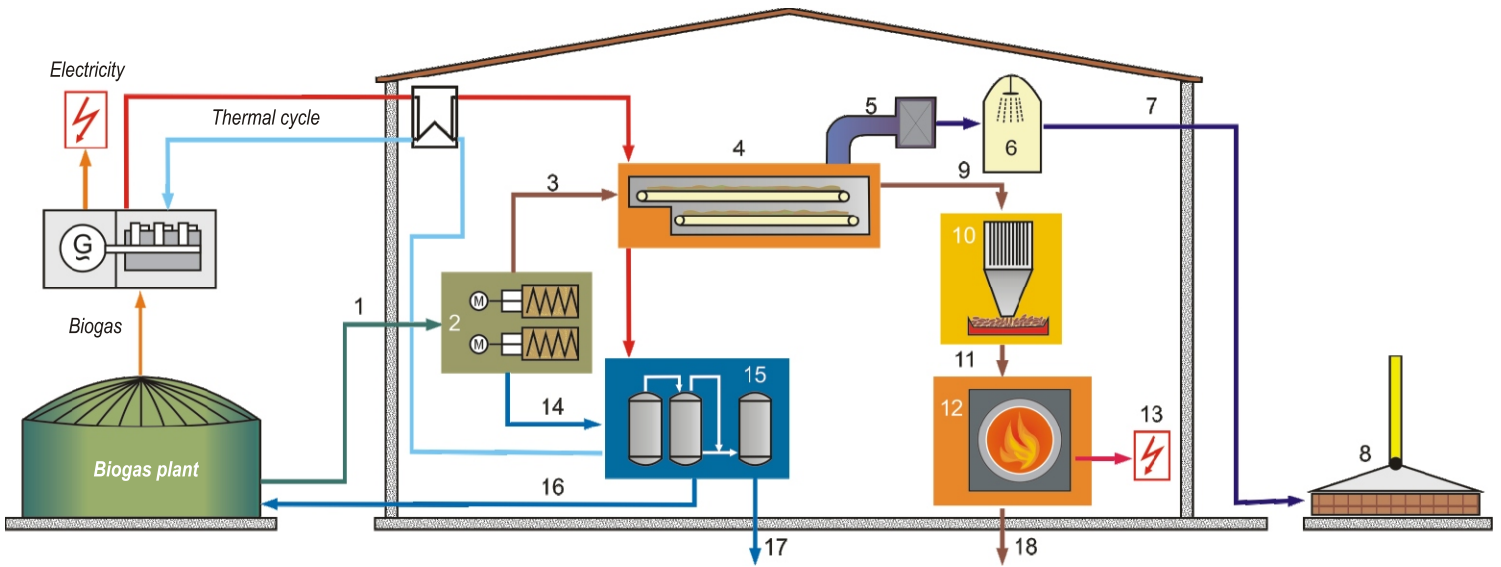
Mash from foodstuff production and fermentation

Residue from biomass fuel production

Solid residues from foodstuff processing



Design of GÄRREV



- | | | |
|---------------------------------|------------------------|------------------------------------|
| 1 Fermentation residue | 7 Waste air | 13 Electricity |
| 2 Mechanical product separation | 8 Biofilter | 14 Liquid phase |
| 3 Solid phase | 9 Dry material | 15 Multi-step condensing |
| 4 Drying | 10 Pellet forming | 16 Condensate |
| 5 Dryer's air treatment | 11 Pellets | 17 Concentrate (liquid fertilizer) |
| 6 Waste air washer | 12 Thermal utilization | 18 Dry fertilizer |



Heat transport system

The heat transport system includes the pipes which collect the excess heat from the cogeneration units and conduct it to the heat exchangers of the drier and condensing. The cooled water is sent back to the cogeneration unit in a return pipe.

Volume reduction of large quantities of fermentation residue



Mechanical product separation

In a first step the fermentation residues are separated by mechanical treatment in a solid and a liquid phase.

Reduction of transport and storage requirements



Drying

The solid phase is processed by drying and pelleting and used as fertilizer or heating pellets.

Further production of energy and fertilizer



Multistep condensing

The liquid phase is severely reduced in volume by evaporation and turned in liquid fertilizer.

No external energy required



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Contact

BIOLAK® Technology GmbH
Killistrasse 3
85658 Egming
Germany
Phone +49 (0) 8093 902 40 0
Fax +49 (0) 8093 902 40 91
info@biolak.de
www.biolak.de

Representatives

Bosnia-Herzegovina
Bulgaria
China, Hongkong
Croatia
Egypt
Hungary
India
Iran
Latin America
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Poland
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