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Energy from biogas plants in rural areas - a chance for agriculture and the environment

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Biogas plant – the scheme



Methane fermentation is nothing new! AgroRES



Millions of small, primitive biogas plants operate in Third World countries

Modern biogas plants of different scales



Modern biogas plants vary in size and construction. These can be small containers with a capacity of several kW or even entire biogas units with a capacity of several MW

Raw materials for anaerobic digestion

- Biogas plants in Germany the main substrate is maize silage, and additional animal manure and slurry
- This results in competition for fields for growing food crops and, consequently, an increase in food prices
- A much better solution is to use biodegradable waste, especially from agricultural processing. These can be plant residues, distillery stillage, fruit and vegetable pomace, pulp from sugar mills, re-food etc.
- Fermentation of slurry and manure is of great importance for the environment, as it reduces greenhouse gas emissions







The main thing - green energy!



- The basic product of the biogas plant is electricity produced from renewable raw material - biomass
- Cogeneration also generates heat that can be used to heat houses or various technological processes (in distilleries, dairies, animal farms, etc.)
- The energetic combustion of biogas allows to reduce the consumption of fossil fuels and the emission of greenhouse gases into the atmosphere







Digestate – natural fertilizer

- The digestate is used in the fields to fertilize plants, it enriches the soil with organic matter as well as macro- and microelements
- This is perfectly in line with the idea of a **circular economy**



Summary



- Anaerobic digestion produces **biogas** that replaces natural gas
- Biogas can be burned in a CHP engine to produce **electricity and heat**
- Biogas can also be fed into the grid or used as **liquefied fuel** for vehicles
- A biogas plant can also be **an energy store**, because a biogas tank can be constructed and CHP can be run during times of high energy demand
- Digestate is an excellent **natural fertilizer**, environmentally friendly
- Digestate is an excellent natural fertilizer, environmentally friendly
- The use of waste and by-products for biogas production is a good way to manage them in accordance with the circular economy and does not affect food production





Thank you for your attention! AgroRES

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