GREEN FACTS

INFOSERVICE
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Biogas! Invented by the cow!

Modern biogas technology for the production of renewable energy is comparable to the digestive system of cows

Future energy supply will be “green”. “Green electric power” from renewable energy sources presently guarantees for more than 20 percent of electric power supply in Germany. Accordingly, Germany is well on the way of achieving the objective of 35 percent renewable energy in the year 2020. Bio-energy from biomass such as corn, pasture and many other “green” raw materials contributes an important share of more than two thirds at present.

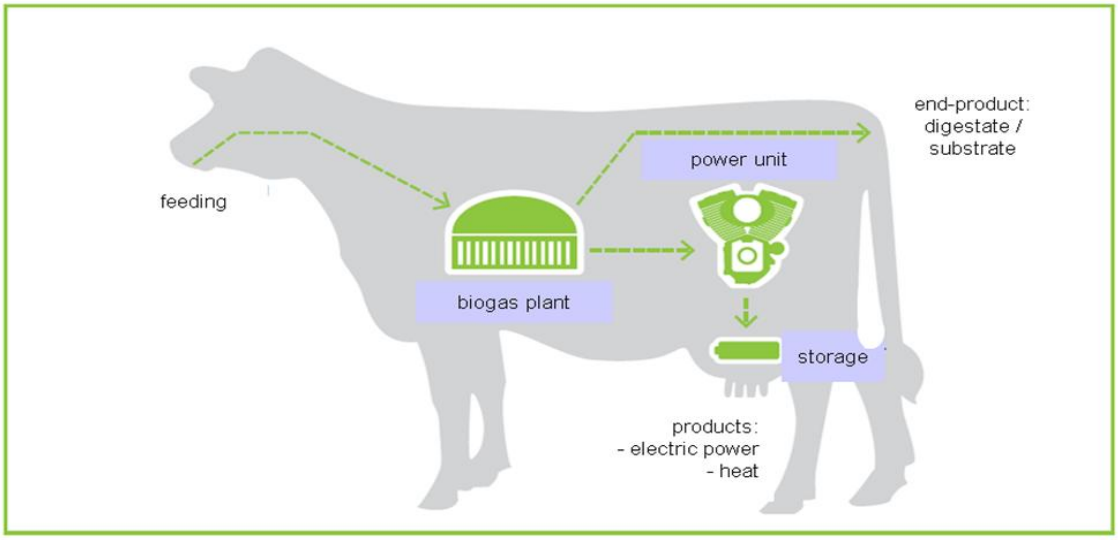
In people’s minds, the conversion of these „green“ products to energy is tightly associated with more than 7200 biogas plants which have been built in Germany in recent years. However, this modern and complex biogas process is taking place in a comparable manner in the digestive system of cows.

As biogas plants are loaded with biomass such as corn, feeding rye, sugar beets and comparable plant material, cows are supplied with grass, corn silage and concentrated feed, the so-called ruminating being a particular feature of the digestive system of cows: the fodder is chewed for a second time, hence being well minced and mixed with saliva.

The fermenter in a biogas plant equals the rumen of a cow. With the help of micro-organisms such as bacteria, the components of plants are broken up to protein, fat and carbohydrates. These substances then are the basic material for milk production. In a biogas plant, these basic materials protein, fat and carbohydrates are further broken up and converted to biogas as renewable energy source in several steps. This biogas can either be transformed to electric power and heat in a block heat and power plant or be used as renewable fuel in natural gas-dedicated vehicles after cleaning the gas to the quality of natural petroleum gas.

The indigestible remainder which cannot be broken up further is excreted. This remainder – from cows as well as from biogas plants – can be recycled and used as high-value fertiliser in the field.

Just as many other examples, this process gives evidence of the fact that nature is the best source of innovative ideas for tomorrow.



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