

### Biogas plant and wooden chips heating AVEG GmbH, Kusey (Krs. Klötze)



The biogas plant is part of a disposal concept for a potato peeling firm. From the whole process water including all peeling rests, the starch and the potato rests are separated first. High-quality ethanol is gained. The remaining laitance is processed in the biogas plant and from the gained biogas current and heat is produced in a power station. The missing heat energy, especially steam is made by a wooden chips firing. Thus this company is supplied with energy from renewable resources to 100 %.

The remaining process water comes also to the biogas plant and is there pre-treated by a production of biogas at the same time.

The biogas fermenter is made of monolithic formed steel concrete and totally sunk into the ground. The entire outer area including the base plate and the cover are good insulated. The protection house on the fermenter consists of the feeding building, the gas safety devices, the measuring and sampling locations and the distribution for the fermenter heating.

The fermenter is a further developed two-step high-quality system, which is based on experiences of the Spradau - Schraufstetter – Principle. Because of the special installations very high reduction rates of the organic components can be achieved. This is the basic condition, that the at the beginning very high polluted waste water can be given to the canalisation at better conditions.



#### Technical data

planned substrates:

laitance from distillery ca. 7.500 m<sup>3</sup>/a  
 process water from the potato peeling firm ca. 15.000 m<sup>3</sup>/a

fermenter volume: 1.200 m<sup>3</sup>

gas production rate:

from laitance: 0,65 m<sup>3</sup>/kg OTS<sub>add</sub>  
 from process water: 0,45 m<sup>3</sup>/kg OTS<sub>add</sub>

biogas yield: > 1.000 m<sup>3</sup>/d  
> 300.000 m<sup>3</sup>/a

hydrogen sulphide (H<sub>2</sub>S): < 500 ppm

purification rate

biogas plant: from ca. 20.000 mgCSB/l  
to < 2.000 mgCSB/l

installed power station: 2 x 55 kW<sub>el</sub>

installed biomass firing 1,5 MW<sub>th</sub>

in the plant generatable electric power: ca. 770.000 kWh<sub>el</sub>/a

in the plant generatable heat energy ca. 3.200.000 kWh<sub>th</sub>/a



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