

Biogas plant with Cogeneration Unit



Biogas plant Moeckern GmbH

The Moeckern Biogas plant was erected in the area of the former sewage treatment plant of a industrial chicken slaughterhouse. By the reuse of this area the existing plant infrastructure could be integrated into the new Biogas plant



Highlight of the Moeckern Biogas plant is the complete pasteurization of the input stream for more than one hour at 70°C. This hygienization process is required by German law for the safe reuse of animal waste products.

All nonfermentable substances like wood shapes are completely separated prior to the start of the fermentation process. The hydrolysis stage is completely finalized before the substrate enters the single stage high performance INNOVAS fermentor, constructed of reinforced concrete.

This process organization guarantees for a very high decomposition of the input material. The Biogas produced is dewatered by a special condensing process and sulfur reduced to obtain highest gas quality. This purification of the Biogas is increasing the operation efficiency of the gas motors by extending their maintenance and service intervals.

The sources of energy are mainly agricultural residues like chicken manure from neighboring chicken breeders and waste products (fats and proteins) of an industrial chicken slaughterhouse.

The result is a high quality Biogas which is used at a distance of 1.5 km in a CHP plant (330 kW gas motor with generator). A Gas pipeline from the Biogas plant to CHP is installed. The total electrical output is sold to the local utility and the heat produced is fed into the district heating system. The fermented substrate is returned to the neighboring farmers, who welcome the high quality liquid fertilizer.



Technical data

Substratum input		Biogas quality	
• Dry chicken manure	ca. 2.400 t/a	• Methane content	70 % CH ₄
• Fatty sludge from slaughterhouse	ca. 2.000 t/a	• H ₂ S content after cleaning	< 200 ppm
• Slaughterhouse sewage water	ca. 8.000 t/a	CHP plant installed (Jenbacher)	330 kW _{el}
Output		From Biogas producible	
• Biogas yield, average	1.700 m ³ /d	• Electric energy yield	1.500.000 kWh/a
• Biogas yield, maximum	2.800 m ³ /d	• Thermal energy yield	1.900.000 kWh/a

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