



Wietzendorf biogas plant



Site:	Wietzendorf, Germany
Construction period:	2001/ 2002
Substrate:	Potato Pulp, Waste Water of a Potato Starch Factory
Fermenter:	Steel Tanks, glass coated, 4 x 2.500m ³
CHP:	4 x 2,1 MWel gas engine
Extras:	Protein Recovery 3 Tanks for Hydrolyses Stage pH-Value Regulation Gas Holder, 5.000m ³ Liquid-/Solid Separation Membrane Technique for total Treatment of Effluents.
Costs:	ca. 25,000.000 €

The builder of the WIETZENDORF biogas plant is Agrar Bio Recycling GmbH (ABR). More than a thousand farmers have participated in the project of a combined biogas and wastewater treatment plant. The main substrate supplier of the plant is the neighboring potato starch factory Wietzendorf (60,000 t/a starch production). The treatment in the biogas plant eliminates the previously necessary transports and the energy-intensive raining of the wastewater.

The waste materials from starch production and other liquid waste are pre-treated in two hydrolysis tanks, each with a volume of 750 m³, and then fermented in the 5 steel fermenters to produce biogas. The biogas is converted into electricity in 4 CHP units with a capacity of 8.4 MWel. The heat generated is used to generate process steam (8 t/h), which is used in the potato starch factory. The digestate is thickened in a decanter plant. The solids are returned to the digesters (anaerobic contact process), allowing a short retention time. The liquid phase from the decanter is purified by wastewater treatment with ammonia stripping and membrane revitalization to such an extent that the remaining wastewater can be discharged into the receiving water. A portion of the wastewater is further treated by reverse osmosis and used to generate steam. With this plant, greenhouse gases in the order of 3,500 t CO₂ equivalents can be saved annually.