

Biogas Plant WIESENAU



Location:	Germany
Construction Period:	2005
Input:	Cattle Manure and Dung, Grass and Corn Silage
Fermenter:	Concrete Tank, 2,616 m ³
Co-Generator:	Gas engine, 526 kW
Special Features:	Double Membrane Gas Holder Roof, Separate Building for all Equipment incl. CHP
Costs:	about € 1,500,000.-

The WIESENAU dairy farm with about 2,000 cows is located in East Germany. This biogas plant was designed to handle 35,000 m³ of liquid manure plus 2,000 t/a of dry manure (dung) and enough corn and grass silage to feed a 500 kW_{el} gas engine, combined heat and power (CHP) system. The concrete digester was constructed using an innovative pre-stressed technique thereby minimizing the wall thickness. The 14 m diameter x 17 m fermenter tank was placed 4 m into the ground and is mixed with a top-mounted, centrally located mixer. This 18.5 kW_{el} mixer is inverter controlled which allows the farmer to mix sufficiently and minimize power usage. Thick substrate is fed to the digester via a reliable solid material input device. It is located at the bottom of the digester and works like a piston pump automatically feeding a precise volume of dung and silage. The hydraulic retention time (HRT) is 21 days which has been optimized for a good HRT:OLR ratio (organic load rate). All of the equipment including the gas engine is located in its own building near the digester. Start up of this digester occurred in January 2006.

Responsibility of Krieg & Fischer Ingenieure GmbH:
 Conception, Preplanning, Permission, Detailed Final Construction Plans, Tenders, Supervision of Construction, Start-up