



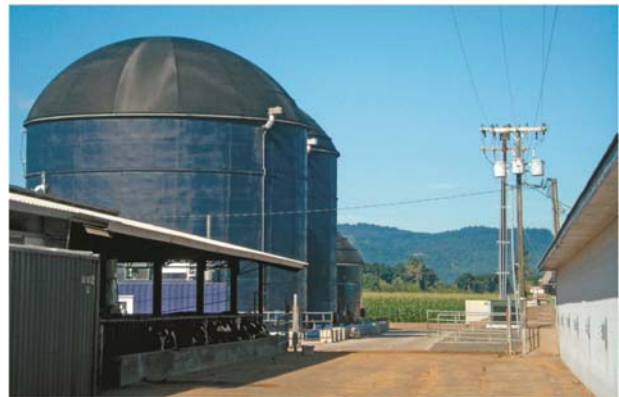
# How to boost your anaerobic digestion ...

## Efficient digester heating system with corrugated pipe in Junction City, Oregon

**“Due to the excellent handling of the corrugated pipe BIOFLEX valuable installation time and therefore providing significant savings in labor costs. In addition, the quality of the material and the installation without any connections inside the digester provide an absolutely secure and highly efficient operation of the heating system and thus a continuous operation of the biogas plant. This in turn saves the customer time and money.”**

Alan Tank, CEO,  
Revolution Energy Solutions

The Lochmead Dairy farm in Junction City, Oregon is a modern dairy cattle company, which today covers a large part of its power requirements with renewable energy.



Digesters with BIOFLEX pipe installed at the Lochmead Farm

Since a suitable raw material is close by, in this case cattle manure, biogas can be produced on site to generate electricity that is delivered and sold to the local utility utilizing a proprietary anaerobic digestion process. For this purpose our customer, Revolution Energy Solutions LLC, constructed a biogas plant on the farm property. This plant consists of two digester tanks, an effluent storage tank, and a combined heat and power unit where the fermentation gas is converted into electricity and heat.

For optimum gas production both digesters must be maintained at a constant temperature. To maintain this temperature, external heat is required and is supplied by



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the cooling water of the power generator. The decision was made to use a wall mounted pipe heating system. After the evaluation of various pipe systems, the BIOFLEX system by BRUGG PIPESYSTEMS selected for its ease of installation and superior heat transfer capability. The BIOFLEX pipe is a corrugated, flexible pipe made of 316L stainless steel and is made in “endless” lengths. This makes the installation of the pipe considerably faster than any other pipe and eliminates the need for connections inside the digester that may leak down the road. The only connections to the pipe are outside the digester. All of these facts supported the customer’s choice of the BIOFLEX pipe.

Before the actual installation, the BIOFLEX system had to be adapted to the specific design of the digester.

The digesters at this plant are made of glass-fused steel sheets that are bolted together. The supports for the pipe, also made in stainless steel, were designed such that they straddle one sheet height. This way the sheets and the pipe supports could be installed with the same tank bolts.

The BIOFLEX heating system installed inside the digester



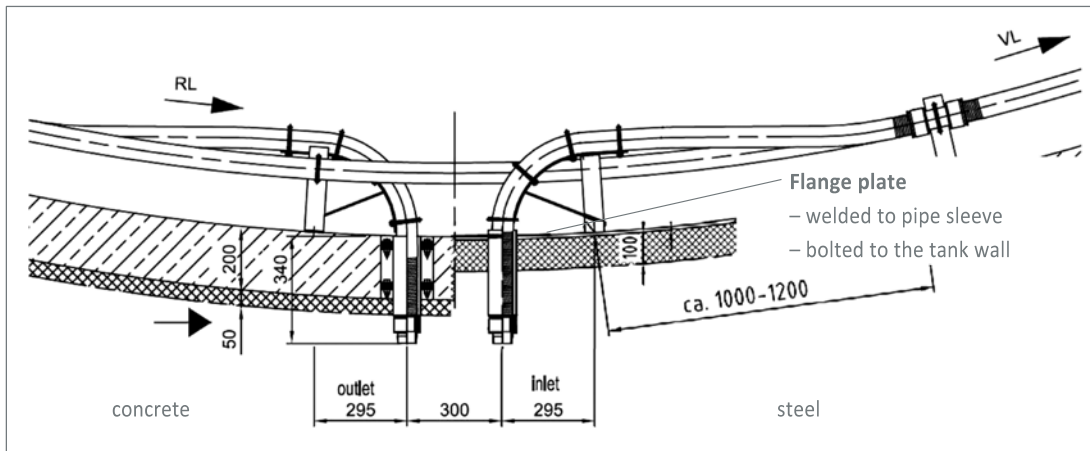


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To bring the pipe outside the digester and to terminate it in an end fitting a special penetration fitting was designed. It consists of a flange with a tube that is inserted into a wall penetration, bolted, and sealed to the wall. The pipe is then inserted into the tube and attached to the end fitting with a graphite compression seal to keep the system tight for many years.

The pipe was shipped in individual coils for each heat circuit. This made the installation process quite simple because the pipe could be easily uncoiled and attached to the pipe supports within a few hours per digester.

The installation of the wall penetrations and the connection of the pipe to the end fitting outside the digester completed the installation of an efficient and leak-free system that will provide years of reliable service and improved biogas production.



Installation of the BIOFLEX digester heater system – Penetration through concrete or steel digester wall

### To obtain additional information please fill in the data below and fax to 706.235.6035

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