



Application note

Biogas Measurement from Wastewater to Power Plant

Benefits:

- Accurate and reliable measurement
- Ability to measure at very low pressure
- Absence of pressure drop



Summary

Stockholm water company produces biogas from their wastewater facility which feeds Scandinavian Biogas for energy production. As they need to accurately meter what they sell to the energy facility they used a project contractor firm to engineer and define the best solution for the project.

Application

Biogas comes from the digester. It is a mixture of methane and carbon dioxide and is handled at very low pressure and ambient temperature.

Biogas: CH₄ 58% to 70% + CO₂: 42% to 30%, traces of N₂ and H₂S < 500ppm

Flowrate: 400 to 5,000 Nm³/h

Pressure: from 15 mbarg to 30 mbarg (0.22 psig to 0.44 psig)

Temperature: 0°C to 37°C (32°F to 99°F)

Pipe: DN300 (12") PN10 EN 1.4404 (SS316).

Challenge

Due to the technical challenges ultrasonic technology was selected. To get accurate readings they needed to find a compromise between meter velocity and pressure drop. Our partner's technical advices were taken into consideration and they went for a DN300 line (12").

Solution

We supplied our gas flow meter with our T5 transducers mounted on a flowcell with air calibration. That's a set up that has good records for low pressure application like what we see on flare lines.

With this in place, Stockholm water company can now bill accurately Scandinavian Biogas Company and maximize the energy transfer thanks to the absence of pressure drop.

