

Project – Completion of biogas plant for Mjölby municipality  
Location – Mjölkkulla sewage treatment plant, Mjölby, Sweden  
Revision -

# **Calambio Engineering AB**

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## **Biogas plant, Mjölkkulla**

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## 1 BIOGAS PLANT, MJÖLBY, SWEDEN

The plant is producing biogas which is utilized for hot water. The bio gas is produced from sludge (and some added fat) in a digester.

The plant was completed during 2015/2016 by Calambio Engineering. We also installed a complex hot water production system to utilize the energy. Before that all gas were burned in an open flare.

The plant was upgraded with a complete gas treatment system. The gas is treated and also compressed. The compressed gas is fed to a gas burner mounted on a hot water boiler producing internal process heat and district heat.



*Photo – Gas burner mounted on the hot water boiler*

General data	
Nominal effect [kW <sub>th</sub> ]	450
Average biogas production [Nm <sup>3</sup> /h]	55
Methane content [%]	60-65
Substrate	Sludge (some fat)

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To ensure a stable operation of the hot water production the raw gas is lead to a gas holder of double membrane type. The gas holder assures a stable hot water production even if the biogas production in the digester is varying.



*Photo – Gas holder*

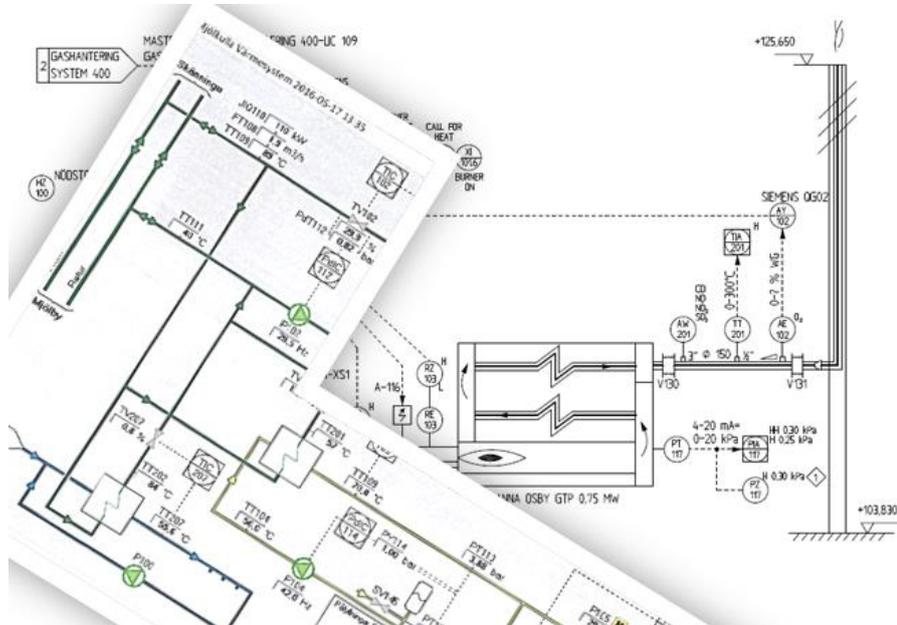
The project was split on several contracts to assure the best technology at nominal cost. The split contract concept also means that each step of the project automatically involves the operational staff and the customer to a higher level, the knowledge exchange is naturally raised and more detailed over the project period.



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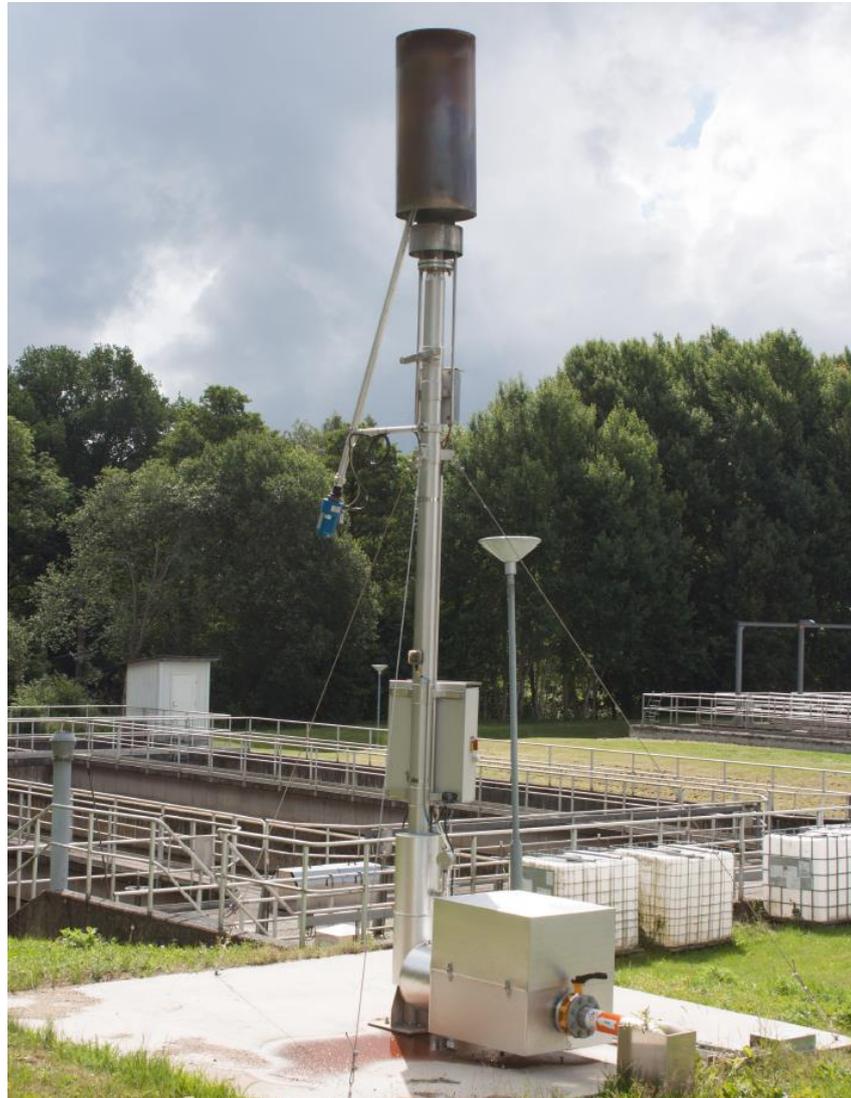
*Photo – Configuration of electrical components*

The Calambio scope includes troubleshooting, calculations (economy, pressure drops, energy balances, emissions), upgrading existing process systems (gas treatment, internal process heating, tap water, buildings internal heating, and ventilation), rebuilding of open flare to fulfil laws and regulations, total project management including planning, contract work, procurement, detailed engineering (including process design, piping, civil engineering, risk analysis, programming description, stack design, power and automation), construction site coordination, education and documentation.



*Photo – P&ID and HMI layouts*

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*Photo – Rebuilt open flare*