

## Interview with Daniel Küspert, Bio Gas Plant Owner

### Bio Gas Reference Statement.

In Bad Alexandersbad, municipality of Germany in Oberfranken Bavaria, in the district of Wunsiedel, Agricultural Engineer Daniel Küspert is operating his Bio Gas Plant. He has a MAN engine from the series of MAN 2876 LE302 operating at 200kW.



The plant has been in operation since 30. December 2009 and has so far produced 7.058.573 kWh.

The engine has now 36'000 hours and is shortly before major overhaul.

In order to remain innovative and staying ahead with latest and reliable technology, Daniel Küspert grants us his site for R&D on products such as Mixer, Speed Control, Integral Actuator and Air Fuel Ratio Control. All these products have been mounted to his engine since long time and have gained several thousand hours without any interruption or any issues. The products installed are: RM-25-O; AF-2000; SG-100; HT-TM-2200-75L with adaption kit KT-GAS-MAN-33276 for the original MAN throttle.

Daniel Küspert states that since he uses our RM-25-O mixer, he has gained until to date 15'000 hours without any major issues. He also says that he does not need to clean or service the mixer or any other product from Huegli Tech.

### Plant Details:

Capacity: 200 kW

Bio Mass: Cattle Manure liquid and solid; Corn silage; Crop silage; Grass silage. For research also uses part of Sudan grass and Cup plant

Engine: MAN 2876 LE302

Gas filter: No filtration

Gas composition: CH<sub>4</sub> 53%; CO<sub>2</sub> 44%; H<sub>2</sub>S 63ppm; O<sub>2</sub> 0.1% This was measured on 10.2.2014

Short Interview with Daniel Küsspert:

- How much H<sub>2</sub>S ppm does the bio gas usually contain during the year?  
*Between 20 and 100ppm. Depending on the input (more grass silage = more H<sub>2</sub>S because of the high protein level). The average level is about 50ppm.*
- How long approximately is the pipe from Fermenter to the Engine?  
*Approx. 100 meter and diameter is DN150 piping*
- Is there a gas filter such as coal etc?  
*There is no specific filter system in place. In order to reduce H<sub>2</sub>S we simply pump air in to the fermenter, which is all. There is of course a normal gas filter in the gas train due to aerosol.*
- How often do you need to service the engine, such as oil etc?  
*Regular maintenance every 500 hours (oil, air filter, spark plugs, etc.). Larger inspections are coordinated with the team for several operations to minimize downtime. Last year (2013) we had 8.694 full load hours!*
- How did you get to know Huegli Tech Switzerland?  
*We first had installed a GAC speed governor and had much trouble with it. So Huegli Tech visited our plant to get rid of this problem and since then the contact remained and the problems are all gone.*
- Are you satisfied with the Huegli Tech products?  
*YES!*
- Is there a specific Huegli Tech product which you think made a beneficial change to your application?  
*Most positive benefit was the change of the throttle motor. The old one was too weak for the engine with the boost pressure at full load.*
- What can you say about the Huegli Tech support and service?  
*Always friendly, competent and fast delivery of ordered items!*
- Is there anything specifically you wish to say about the products or the Huegli Tech Company?  
*Keep on going in engineering and producing such products! Always a pleasure 😊*

In case there are any specific questions, you can directly ask Daniel Küsspert by email:  
daniel\_kuespert@me.com

The interview was conducted by Emrah Uzunlar, Product Manager for Governing and Gas Division on the 12<sup>th</sup> February 2014.

## Some Snapshots of the Site

