

## “100 % satisfaction – because we are investing in proven quality and experience!”

Stephan von Rundstedt,  
Co-owner „Der Grashof“ nursery



“As the co-owner of ‘Der Grashof’ nursery, I’m totally satisfied with the cogeneration plant operated near our greenhouses by KBB Biogas GmbH & Co. KG. Now we can buy heat at a much lower price. The plant has a thermal output of 3.5 million kWh per year, so it covers more than 40% of our heating needs. This means substantial savings for us. The 250,000 orchids that we produce annually require constant temperatures of up to 28°C. In the summer, our entire base load is covered. We also have an oil-fired heating system, but it is seldom used. Another plus is that the biogas system can be controlled with much greater flexibility.”



### “Green Energy: An additional economic basis for farmers.”

Gerd Clasen, former IT-consultant and now CEO of KBB Biogas GmbH & Co. KG: “We were looking for an additional source of income for our farming operations. Biogas was a natural for farmers, and turns out to be financially attractive. The partners in our company – there are five of us – produce our own feedstocks on 348 hectares (860 acres) of land. We are also working together with other farmers in the region, which means shorter hauling distances and more environmental protection. It is also important that we practice sustainable soil management. So far our plan is paying off, and we will be expanding the plant, that means optimizing and adapting.”

### “Careful planning and proven components are the key to success.”

“We are very satisfied. Everything went smoothly from the very beginning. One big reason why was that we checked out many systems in advance and carefully compared numerous offers. In the end we decided to go with proven components and convincing performance. The MWM TCG 2016 V12 C gas engine, for example, is unbeatable when it comes to system and operating efficiency. Thanks to our suppliers and contractors, the technical implementation came off without a hitch. Since October 2011 we have been profitably generating electrical power for the public grid and operating the combined heat and power plant for a nearby nursery.”

“The technical installation of the system went smoothly, thanks to our suppliers and contractors.”



## KBB Biogas GmbH & Co. KG – Kirchlinteln, Germany

Contact	Gerd Clasen
City	Kirchlinteln
Country	Germany
Substrate	corn and grass silage, liquid manure
Partners	5
Arable land	more than 350 ha (860 acres)
Gas production	2.7 million m <sup>3</sup> per year
Power generation	6,600 MWh per year
Heat output	4,200 MWh per year
CHP since	October 2011

## CHP plant technical specifications

Commissioned	October 2011
Engine model	MWM TCG 2016 V12 C
Generator	Marelli MJB 400 LA4
Electrical power	600 kW
Electrical efficiency	42.5 %
Thermal efficiency	40.3 %
Overall efficiency	82.8 %
Power-to-heat ratio	1.05
Sound pressure level	99 dB(A) at 1 m
Lubricating oil consumption	0.2 g per kWh



## Details

Positive overall environmental balance: The substrate is hauled less than 8 km; digestion residues are used as fertilizer; sustainable farming of the acreage protects soil quality.



### Caterpillar Energy Solutions GmbH

Carl-Benz-Straße 1  
DE-68167 Mannheim  
T +49 621 384-0 | info@mwm.net  
F +49 621 384-8800 | www.mwm.net