

Flexible Power Generation for a Perfect Surface Finish

The automotive division of OTTO FUCHS KG is known for its forged aluminum wheels in the premium segment, the so-called Fuchs wheels. In the new surface center in Meinerzhagen, Germany, a cogeneration power plant equipped with an MWM genset delivers heat and power to one of the most modern paint plants on the market.



Porsche, Mercedes, BMW, Audi, or Ferrari ... marveling at these wonders of automotive technology, you have doubtlessly noticed the exquisite forged aluminum wheels made by OTTO FUCHS. The market leader in forged aluminum wheels is based in Meinerzhagen in the west of the Sauerland region. In the nearby Grünewald industrial zone, OTTO FUCHS has invested about €80 million in a new surface center: OTTO FUCHS Surface Technology GmbH & Co. KG. Here, the beautiful Fuchs wheels get their special finish. The state-of-the-art coating plant is connected to a high-bay warehouse and a shipping and logistics center. The building application for the new plant included the request for permission to set up a cogeneration power plant to generate electricity on site. The power-controlled cogeneration power plant with an MWM TCG 2020 V12 genset and an output of 999 kW generates about 50 percent of the power required on site. "Since 2015, we already have a cogeneration power plant with an MWM TCG 2032 V16 genset in the main OTTO FUCHS factory. All our experiences with this model have been positive, both with regard to the performance and reliability of the engine and in terms of the good collaboration with the manufacturer and the MWM Service. For us, these were good reasons to opt for another MWM gas engine for the new cogeneration power plant", says Paul J. Plikat, who was involved in the planning of the new cogeneration power plant as head of the "Grünewald energy industry" project.

Cogeneration Power Plant in Flex Operation Adapts Power Generation to Factory's Shifts

The power-controlled MWM gas genset runs in flex operation, adapted to the factory's shifts. "In this way, we can effectively control the power generation in accordance with the demand in the factory", says Vladimir Giebert, Project Engineer Supply, Factory Planning, and Maintenance at OTTO FUCHS. Giebert goes on explaining that especially during the cold season, the exhaust heat from the power generation is used in its entirety. Apart from heating the factory, many surface coating processes also depend on heat, e.g. the pre-treatment or special washing systems.



Vladimir Giebert, Project Engineer Supply, Factory Planning, and Maintenance, OTTO FUCHS KG.



Tight Schedule Met Thanks to Good Teamwork

For the cogeneration power plant in the Grünewald factory, the planning and rollout of the energy supply was handled by the company itself. "During the planning and rollout stages, the challenge was to seamlessly involve a dozen suppliers in the face of a relatively tight time schedule", says Giebert. The go-live took place in spring 2020. Vladimir Giebert underlines the good cooperation between OTTO FUCHS and Caterpillar Energy Solutions: "As expected, the collaboration was very pleasant and professional. Minor initial difficulties were quickly resolved in a competent manner by the MWM Service in collaboration with our maintenance personnel. Apart from the good collaboration with Caterpillar Energy Solutions, our team members also played their part in ensuring that the project was successfully completed within a short period of time."







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OTTO FUCHS Surface Technology GmbH & Co. KG

Location:

Country: Contacts: Gewerbepark Grünewald 10, 58540 Meinerzhagen Germany Paul J. Plikat, Vladimir Giebert (OTTO FUCHS KG, Meinerzhagen)

Technical data CHP

Go-live:	March 2020
Engine type:	TCG 2020 V12
Generator:	Marelli MJB 450 LB4
Control:	TEM
Gas type:	Natural gas
Plant builder:	OTTO FUCHS KG
Electrical efficiency:	42%
Thermal efficiency:	46.3%
Electrical output:	999 kW
Thermal output:	1,101 kW
Total efficiency:	88.3 %

Centrally Controlled Heat Supply

The cogeneration power plant is not the only heat generator at OTTO FUCHS Surface Technology in Grünewald. A natural gas boiler and the heat recovery system of the compressed-air supply are hydraulically connected to the cogeneration power plant. These individual heat generators are controlled by a central control that the TEM control of the cogeneration power plant is also connected to. One of the challenges encountered during the installation, was to ensure the efficient networking of these various components. After some minor initial glitches, everything is now on track, and the annual usage amounts to more than 70 percent.

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