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## Increasing efficiency by modernisation

Reference Report Bosch Industrial

## Sutter achieves significant energy savings

### The operator

With around 900 employees the family-owned company Sutter GmbH produces a wide range of meat and sausage specialties at several locations. The focus of the production lies on the manufacturing of cooked cured products and boiled sausages for supermarkets. Therefore, a lot of heat and steam is required for processes as well as for adhering to the high requirements of food safety/hygiene. In order to be able to compete on the extremely price-sensitive market as a German family-owned company, cost efficiency and an uninterrupted production are crucial. This is also reflected in the requirements to steam supply: Besides efficiency, one of the most important criteria is maximum supply safety.

### The project

In the course of a continuous plant optimisation Sutter decided to introduce an energy management system in its main production facility in Gau-Bickelheim. The resulting tax and cost advantages are used to compensate the increase in energy costs over the past years. In addition, many tons of CO<sub>2</sub> emissions are avoided.

Upon request of the Energy Manager of Sutter, Christian Böhme, the savings potentials had been analysed and evaluated economically. The process heat supply with three oil-fired steam boilers was quickly identified as one of the biggest energy consumers of the plant. „Prior to the modernisation we had been supplied with around 30,000 l of light fuel oil – every week at another price. The switch to natural gas has improved our reliability of our energy cost planning,“ explains Christian Böhme.

In the course of the modernisation the dual fuel burners had been retrofitted while the existing light fuel oil supply was maintained as backup. In case of supply shortages in winter times the natural gas supplier can request the short-term operation with light fuel oil. In return, the natural gas supplier waived a building cost subsidy for the laying of the gas pipeline. In comparison with the previous fuel oil burners with mechanic combined group the new electronically controlled burners are able to modulate down to 350 kW and thus facilitate a significantly quieter and more efficient part-load operation. In addition, by using a combustion control with oxygen sensor the losses on the flue gas side could be reduced from 6 % to 5 %.

The availability of spare parts for the boiler control based on Siemens Simatic C7 components will foreseeably become more and more difficult in the coming years. Therefore a state-of-the-art boiler control system consisting of BCO and SCO was integrated. Besides the automated water treatment, the SCO includes the adaptive boiler cascade control in order to avoid standstill damages in the backup boiler. Furthermore, it automatically reports abnormalities during operation of a boiler to the superordinate control system. As a precaution it switches to the backup boiler.

During the introduction of a certified energy management system the consumption figures need to be recorded on a regular basis to enable the analysis of energy saving



potentials. Sutter opted for the superordinate control system MEC from Bosch. Thanks to this system the energy manager and the technical managers can view the status of the system at any time from their working places and can easily evaluate the recorded data. Each user can intuitively configure the view in order to maintain an overview of the data relevant for him. „I think it's great how good the system has proved itself in operation. Some days after the commissioning I found out through small differences in energy data that the setting of one of the older valves in the automatic desalination system could be optimised. This would not have been noticed so quickly with a conventional system,“ explains the responsible customer service engineer from Bosch, Torsten Fischborn, during his first service date after the modernisation.

The Energy Manager Christian Böhme shows his satisfaction: „Despite the recently decreased prices for light fuel oil we will



*Dipl.-Ing. Christian Böhme is Energy Manager at Sutter GmbH.*

*In 2015 he has introduced the certified energy management and has accompanied the modernisation of the boiler system.*

save annually 250,000 euros. The investment will be amortised after approximately three years – a worthwhile project and a considerable contribution to reducing our CO<sub>2</sub> emissions.“



*The system control from Bosch consists of:*

- ▶ *controls of the individual boilers and their safety chains*
- ▶ *sequential control and water treatment of the multi-boiler system*
- ▶ *superordinate control system for the visualisation, recording and evaluation of operating data*
- ▶ *interface for direct messages to the technical manager*

## The companies involved

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