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**Newsletter**  
3/2015



**BOSCH**  
Invented for life



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## In Focus

In our latest issue you can look forward to: Pivovar Klášter brewery with a new steam boiler system from Bosch, a modernisation of Loos boilers at the meat processing company Sutter, and new reference material from the beverage sector. Visit us @ BrauBeviale in Nuremberg, Germany - we will show you the potential savings of your energy generation system.

If you would like to be always up to date and receive information at first hand, you can subscribe to our free digital Newsletter with the form attached. We hope you enjoy browsing through this issue.

## Bosch Industrial at the BrauBeviale trade fair

### Efficient energy solutions for the beverage industry

At the BrauBeviale trade fair in Nuremberg (Germany) from 10 to 12 November 2015, Bosch Industrial presents its efficient energy solutions for the beverage industry. One of the highlights is an interactive efficiency-configurator for process heat. The configurator simulates a complete boiler system and visualizes achievable energy cost savings for example by retrofitting heat exchangers or switching from light oil to natural gas operation.

A further highlight is the MEC (Master Energy Control) system control family and remote technology, which facilitate cutting-edge efficiency and reliability for the operation of boiler and CHP systems. An industry expert is on hand for live demonstrations of the secure remote access to an energy system within a Bosch factory. Visiting the Bosch booth can be concluded by participating in one of the beer tastings held by the sommelier and head of the German Hops Museum Dr. Pinzl.



**Bosch Industrial: Hall 4, stand 313**

Traditional art of brewing meets environmentally-friendly efficiency

## New steam boiler from Bosch saves up to 16 percent energy costs

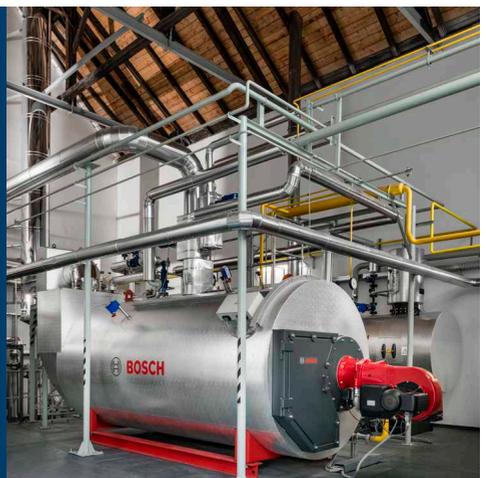
Pivovar Klášter brewery renews its steam supply

Mashing, boiling or keg and bottle cleaning: The production of beer is an energy-intensive process and thus needs an efficient and reliable steam supply. In the Pivovar Klášter brewery in the Czech Republic a steam boiler operated for over 30 years - as is the case in many breweries. In order to increase the reliability of supply and to reduce the running costs Pivovar Klášter decided to renew its existing energy system. With the new UL-S steam boiler from Bosch not only the reliability increased thanks to numerous automation equipment, the steam boiler also saves around 47 m<sup>3</sup> of natural gas per hour. Around 75 percent of these savings are realised by the recovery of waste heat from flue gas. In total, the brewery saves up to 16 percent on fuel costs with the new system.

The first flue gas heat exchanger, the economizer, is used for preheating the feed water. Thus, the need for fuel for heating up and evaporation of water in the boiler is reduced. In the downstream heat exchanger the flue gas is additionally condensing. Due to the low temperature of this waste heat it is used for preheating the brewing water.



The steam boiler UL-S from Bosch efficiently supplies brewhouse, bottle and keg cleaning with steam.



Economizer and condensing heat exchanger: Saving costs and conserving resources with effective waste heat utilisation from Bosch.

Since 1894 Pivovar Klášter brews traditional Czech style beer on the site of a former monastery of the Cistercians.



The shell boiler can provide 4,000 kilogram of steam per hour. The natural gas firing with modulating control ensures an elastic operating behaviour. The burner capacity can be adjusted continuously to the actually needed steam demand.

Director Zdenek Prokupek of Pivovar Klášter brewery relies on traditional brewing in combination with state-of-the-art engineering.



It is thus possible to reduce the number of burner starts resulting in higher efficiency and prolonged lifetime of the boiler and burner. After downtimes the boiler can be started very gently from the cold state by using the intelligent automatic function SUC (start-up control).

The boiler control BCO provides easy access to important operating data like fuel consumption, boiler and burner operating hours or the number of burner switches. Further optimisation possibilities can be derived from this data. Furthermore, the BCO automatically controls desalination and blow-down. In comparison to a manual operation the demand-controlled process saves energy and water. In addition, the water service module from Bosch provides the boiler with deaerated feed water. This protects the system from corrosion and ensures a continuous high steam quality.

The perfectly matched components from Bosch provide a reliable system and allowed a quick and smooth installation. Zdenek Prokupek, director of Pivovar Klášter, is pleased about the good result and the cooperation with Bosch: „With the new system we have managed to reduce our energy costs significantly and thanks to the high degree of automation we can now completely focus on beer brewing. Both the quality as well as the local service from Bosch in the Czech Republic have convinced us.“

## Increasing efficiency by modernisation of Loos boilers

### 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. This is an advantage that we can pass on to our customers in the form of stable prices,“ explains Christian Böhme.



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.



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 six percent to five percent.

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.



- 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

Dipl.-Ing. Christian Böhme and Torsten Fischborn (from right to left)

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 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.“

## New reference material: Rauch Fruchtsäfte uses air preheating

In the last edition of our Newsletter we presented the case study “Rauch Fruchtsäfte”. The beverage manufacturer uses an air preheating system from Bosch for efficient waste heat utilisation. We would like to give you further information about this energy-efficient solution with our new reference report and video.

► [References section](#)



Energy-efficient Bosch UL-S steam boiler with air preheating system and twin-fuel firing system.



Effective use of waste heat with the integrated economizer.

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