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PHE for process and industry

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## Intelligent use of energy

In the Vienna Ottakringer brewery, about 740,000 hectolitres of beer are produced every year, and the company reported an energy requirement of about 20,000 MWh. The new heat recovery system with integrated thermowave plate heat exchanger allows for returning the waste heat which is produced, for instance, during the cooling process, from the refrigeration system back into the production process. This way, the waste heat can be reused in an environmentally friendly way.

### Plate heat exchangers support heat recovery system

The Ottakringer brewery was awarded for its contribution to the „Climate and environmental protection“ by the Federal Ministry for a Livable Austria. The reason for this: Since 2014, an integrated heat recovery system has allowed for the intelligent use of available energy and has combined ancient brewing tradition with modern technology in an optimal, efficient and environmentally friendly way.

The aim was to reduce the superheated steam energy through the integration of a heat recovery system and to recirculate it back into the production process. Also two thermowave plate heat exchangers are integrated into the process for this purpose.

The deployed thermolineVario TL 150 KEAL acts as oil cooler and supports the existing NH3 refrigeration system. About 70 kW of heat output are released here. For a significant use of this excess heat, an additional thermowave thermolineEco EL150 ECCL plate heat exchanger is used. It serves as a system separator between refrigeration plant and brewing process and uses the dissipated heat of the refrigeration system for heating the brewing water. This brewing water is first heated from about 12 °C to



▲ thermowave plate heat exchangers in operation...



▲ ...more than 25 MW must be provided

thermowave Gesellschaft  
für Wärmetechnik mbH  
Eichenweg 4  
06536 Berga  
Germany

### Overview

Business Line:	Food & Beverages, Refrigeration
Application:	Heat recovery/system separation Oil cooling
Country:	Austria / Vienna
Refrigerant:	Propylene glycol (35 %)
Product:	thermolineVario TL 150, thermolineEco EL

35 °C and, in a second step, from 35 °C to up to 50 °C. It is then stored temporarily in a 30 m<sup>3</sup> buffer storage in different temperature layers and, according to demand, removed for the further brewing process.

Since the commissioning in the summer of 2014, about 200 MWh had been saved already until the end of the year. This means monthly savings of 28.5 MWh which roughly corresponds to the energy consumption five single-family homes with each a 4-person household require throughout the year.

### **Production efficiency and sustainability**

The integration of the new heat recovery system to support the hot water network shows the high production efficiency and sustainability in the Ottakringer brewery and the enormous potential of heat recovery systems. thermowave plate heat exchangers are key components. They can transfer the resulting waste heat to another process, or transfer thermal energy from one fluid to another and thus contribute significantly to the reduction of primary energy consumption.