METALS
PRO CLIMATE

The best practice example of KME

Energy efficiency by the heat combination of ASARCO melting furnace / thermal afterburning / boiler house

At the Osnabrück site of KME Germany GmbH & Co KG, a system has been developed, which enables the energy-efficient recovery of generated heat. In this process, waste heat from thermal afterburning is on the one hand used for preheating the combustion air of the ASARCO melting furnace and is on the other hand directed to the boiler house. During the afterburning of exhaust gases from the melting furnace, a temperature of 860°C develops. In order to use this efficiently, heat exchangers were installed, which increase the temperature of the combustion air required for the furnace from about 20°C to 350°C, thus considerably reducing the energy requirement in the melting furnace.

Efficient combustion process
Conversely, the exhaust gases extracted from the melting furnace also supported the combustion process in the plant. Initially only about 160°C warm, they are directed through the hot flue gas flow which heats them up to 520°C. The hotter the flue gases, the more efficient the combustion process.

Finally, a further part of the still existing residual heat is used to heat up drinking and heating water and steam in the adjacent boiler house. The flue gas leaves the afterburning plant at a temperature of only about 150°C and is then cleaned by ultra-modern system technology and filters.

Sophisticated energy concept increases resource and energy efficiency
The entire energy required to operate the thermal afterburning unit is recovered by way of this ingenious energy concept and supplied to the production process and to the central heating system. Factory halls, administration buildings, process baths and the water for the sanitary facilities are heated. By using this technology, KME not only contributes to climate and environmental protection, but also to increasing the resource and energy efficiency at the Osnabrück site.

KME has invested approx. € 2 million in this development. The combined heating supply enables the avoidance of a natural gas consumption of approx. 9,700 MWh a year.

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