

HeatMatrix polymer LUVO heat-exchanger increases the energy efficiency of a biogas fired boiler with 3,5%



Summary

Carlsberg's brewery in Kiev, is front runner in the Carlsberg group with respect to energy savings and reducing carbon dioxide emissions. In Q2 2015 a polymer heat exchanger of HeatMatrix has been installed by an Ukrainian installation company at the brewery. Since then it has been operated 24/7.

The polymer heat-exchanger preheats cold combustion air using the waste heat from the corrosive flue gas after the economizer. **The energy saving is approx. 300 kW at full load and has increased the boiler efficiency with 3,5% resulting in a CO2 emission reduction of 600,000kg/year.**

Details

Successful start-up of the HeatMatrix polymer LUVO air preheater installed on a bio-gas co-fired steam boiler

Recently Carlsberg Ukraine successfully installed a HeatMatrix polymer LUVO air preheater on their co-fired steam boiler at their Kiev site. Carlsberg is front runner amongst breweries with respect to energy savings and reducing carbon emission. An air preheater is a heat exchanger that recovers heat from hot flue gas by pre heating cold combustion air. In this case a polymer air preheater was installed downstream the existing economiser, which resulted in an energy saving of approx. 300 kW at full load. This saving corresponds with an overall efficiency improvement of approx. 3,5% and a CO2 emission reduction of approx. 600,000 kg/year.

Carlsberg Ukraine's head of engineering Dmytro Markovskyy said "I'm very pleased with the performance of the HeatMatrix LUVO exchanger since it is operating according to specification and was delivered on time".

Director Global Sales and marketing of HeatMatrix Marco Oomen emphasises that it is a schoolbook example of the benefits of the HeatMatrix polymer LUVO air preheater.

Many breweries have invested in conversion of waste water into bio-gas. Energy cost are reduced when this biogas is co-fired on existing steam boilers. However, due to a small concentration of sulphur in biogas the flue gas becomes acidic when cooled below the acid dew point (frequently

around 110 °C). The polymer tube bundles of the HeatMatrix LUVO air preheater are resistant to acid dew point corrosion and are durable because of the rigid honeycomb configuration. Similar applications on biogas co-fired boilers can be found in the sugar, potato and paper industry.

The HeatMatrix polymer LUVO heat-exchanger is, because of its material, very well capable to deal with corrosive flue gas which is formed when burning biogas. The installation in Kiev, is the first within the Carlsberg Group and already has drawn attention from many other companies in the region.



The HeatMatrix polymer LUVO heat exchanger installed on the LOOS steam boiler at Carlsberg, Kiev.