Case study factsheet
Northern region, GERMANY

Co-funded by the Intelligent Energy Europe Programme of the European Union

Warsteiner Brauerei

Food and beverage

Main CHP project indicators

Heat capacity (total)	MW_{th}	2,3
Electrical capacity (total)	MW_{el}	2,3
Technology	Motor engine	
No. of units	2	
Manufacturer	AGO AG & MWM	
Type of Fuel	Natural gas	
Heat: yearly generation	GWh	15
Electricy: yearly generation	GWh	15
Year of construction	2009	
Total investment costs	EUR	3.000.000
Financing	Own founds	
State support	Feed – in tariffs	
Location	Warstein, Germany	
Information	http://www.warsteiner.de	

Picture

General description of the case

The cooling water from the 2 natural gas driven engines, which is heated as a part of the combustion process, supplies the heat for an energy storage system through the primary heat exchanger. From there, the water is pumped to several secondary energy circles in the brew house. For optimized delivery, as well as to minimize acquisition costs, it was necessary to integrate 3 preliminary, already existing old water tanks from the defunct plant as new storage tanks. The electricity, which is generated by this process, is utilized completely by the brewery itself. The most important factor of the project is that the total amount of heat obtained from the combustion process can be used by the brewery, the main aim within the calculations for the cogeneration plant.

For this project Warsteiner was awarded the Energy Master 2010 Award: http://business-masters.econique.com/486.html?L=0.

Success factors

- Reduction of CO_2 emissions by 5.200 t/year.
- Reduction of expenses for energy.

Main barriers

- Interaction of individual hydraulic engine heat circles.
- Rapid changes in the returning temperature.

Recommendations

- Cogeneration plants provide economic benefits for the company as well as reducing CO_2 emissions.
- All factors related to the proposed plant should be calculated carefully.