

RES:

- Solar thermal
- PV
- Biogas
- Heat pumps
- Biomass
- Absorption chiller
- Wind
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Changes in the production and energy supply:

- Process optimisation
- Process intensification
- Heat integration
- Storage
- Energy efficiency
- solar integration
- Biobased products
- Emerging technologies
- Cleaner production
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Unit operations:

- Cleaning
- Drying
- Evaporation and distillation
- Blanching
- Pasteurization
- Sterilization
- Cooking
- Other process heating
- General process heating
- Heating of production halls
- Cooling of production halls
- Cooling processes
- Melting
- Extraction
- Bleaching
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Project name: Hütt-Brewery

Project description:

A concept for solar process heat generation at the Hütt-brewery in Kassel, Germany was developed and implemented. Within a first step an energy efficient new wort boiling technology was installed. Following the heat recovery was optimized and a solar heating system with 155 m² flat plate collectors and a 10 m³ solar buffer tank installed. Cold brewing water is heated up by the solar buffer tank and fed into a buffer that supplies hot water to all consumers in the brewery.

Sector: food & beverages

Sub sector: wine/ beverage

Country: Germany

Company scale: Small (< 50 people and/or < 10 mio€ turnover)



<u>Investigated Company:</u>		<u>product output</u>	tons/a
		<u>product output</u>	Beer: 61.000 hl/a
		<u>product output</u>	NAB: 7.500 hl/a
		<u>product output</u>	hl/a
<u>Employees:</u> 44		<u>Turn over:</u>	
<u>Unit operations involved:</u>	<u>Temperature and Energy demand [°C, MWh/a]:</u>	<u>Equipment for heat/cooling generation:</u>	
Wort boiling cleaning of production facilities	80..100°C	Steam boiler	
<u>Process optimisation:</u>	<u>System optimisation:</u>	<u>Energy supply technology:</u>	
new wort boiling technology	optimization of heat recovery within brewhouse	Solar heating system	
<u>Energy saved [%, MWh/a]:</u>	<u>Fossil energy saved [%, MWh/a]:</u>	<u>CO2 emissions saved [%, t/a]:</u>	
approx. 400 MWh/a	530 MWh/a	106 t/a	
<u>Link to further information:</u>	<u>Co-ordinator, realising partner:</u>	<u>Filling in person:</u>	
www.solar.uni-kassel.de			