

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: Toni Braeu

Project description:

Based on a a sustainable status quo of beer production including solar thermal, photovoltaics and pellet boiler further optimisation potentials has been identified including an optimised storage management and control strategy. The realised measures are the integration of the waste heat from the wort cooling in an existing thermal storage and the installation of a cphotovoltaics driven old storage (ice storage) in order to reduce the external electricity demand.

Sector: food & beverages

Sub sector: beer/ malt

Country: Austria

Company scale: Micro (< 10 people and/or < 2 mio€ turnover)



<u>Investigated Company:</u> Toni Braeu is a local small brewery producing beer for own restaurant and brewing cellar, The owner is very interested in the sustainable production of beer (green production) and has invested in solar thermal, photovoltaics, internal heat recovery and a pellet boiler previously. By the measures realised a further step towards totally fossil fuel free beer production has been done.		<u>product output</u> 170 hl/a <u>product output</u> tons/a <u>product output</u> tons/a <u>product output</u> tons/a
<u>Employees:</u> 3		<u>Turn over:</u> -
<u>Unit operations involved:</u> fermentation, wort boiling, wort cooling, cooling	<u>Temperature and Energy demand [°C, MWh/a]:</u> 40 - 110°C, 36 MWh/a	<u>Equipment for heat/cooling generation:</u> pellet boiler, solar thermal, electric chiller, PV, heat recovery chiller
<u>Process optimisation:</u>	<u>System optimisation:</u> waste heat from wort cooling has been integrated in the thermal storage	<u>Energy supply technology:</u> additionally a cold storage tank (ice storage) has been installed
<u>Energy saved [%, MWh/a]:</u> 5 %, 1,58 MWh/a	<u>Fossil energy saved [%, MWh/a]:</u> none as no fossil fuel is used	<u>CO2 emissions saved [%, t/a]:</u> CO2 savings out of reduction of external consumed electricity
<u>Link to further information:</u> www.tonibraeu.at	<u>Co-ordinator, realising partner:</u> AEE INTEC, Toni Bräu	<u>Filling in person:</u> Juergen Fluch, AEE INTEC