

Reference Fixkraft Futtermittel

The companies involved

Operator: Fixkraft Futtermittel GmbH

- ▶ Established 1971
- ▶ Austria's largest privately-owned manufacturer of compound animal feed with some 80 employees
- ▶ 420 complementary feed mixtures for all farm animals
- ▶ Produces around 180 000 tones annually

Rebuilding of the energy supply system

Combination of conventional and renewable energy sources

Planning and implementation:

Ing. Aigner Wasser – Wärme – Umwelt GmbH



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The project

- ▶ New boiler house with a Bosch UL-S steam boiler in combination with a solar thermal system
- ▶ Steam is in direct contact with the product, thus the condensate return is very low and the demand for fresh make-up water (feed water) increases
- ▶ After desalting and softening the make-up water is stored in a heat storage tank with a capacity of 6 000 l
- ▶ Solar thermal system releases energy to the water in the storage tank via a heat exchanger

Environmentally
friendly solar
energy for
preheating the
make-up water

Collector surface: 320 m²



6 000 l



2 500 kg/h steam



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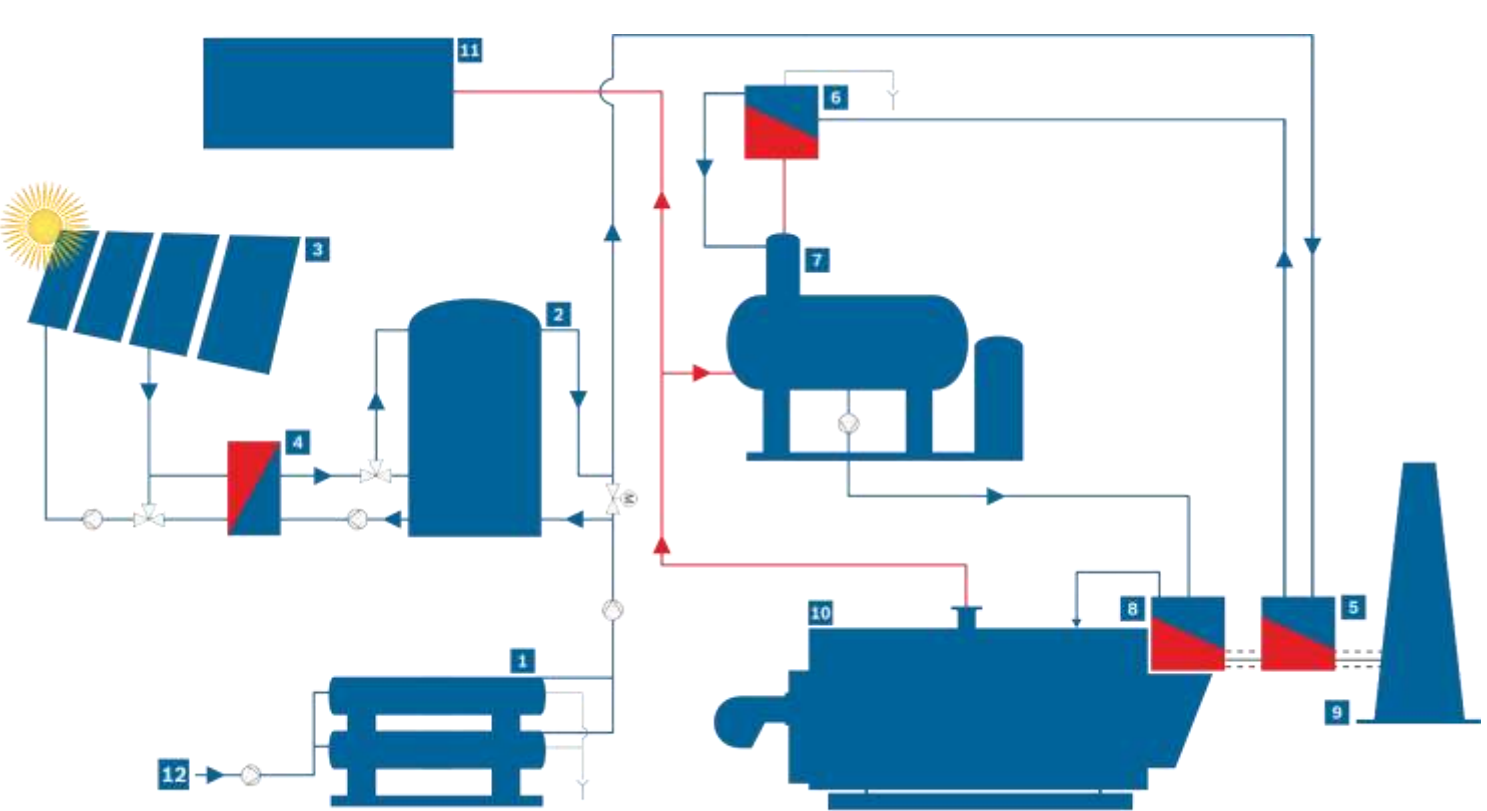
The project

- ▶ Condensation heat from the condensing heat exchanger further heats up the make-up water
- ▶ Water service module WSM-V (deaeration) removes dissolved O_2 and CO_2 from the water and thus protects the boiler and its components against corrosion
- ▶ Vapour cooler VC uses escaped vapour steam from deaeration for further heat input into the make-up water
- ▶ Controls for boiler and system components save important operating data (e.g. fuel consumption, steam amount and pressure profile) and protect against maloperation



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Simplified piping diagram







- 1 Osmosis plant
- 2 Heat storage tank
- 3 Solar thermal system
- 4 Heat exchanger
- 5 Condensing heat exchanger
- 6 Vapour cooler VC
- 7 Water service module WSM-V
- 8 Economizer ECO
- 9 Chimney
- 10 Steam boiler UL-S
- 11 Production
- 12 Fresh water

— Water/Condensate
— Steam
--- Flue gas

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The result

-  Efficient and environmentally friendly heating of fresh make-up water by **using solar energy and heat recovery systems**
-  Reduction of CO₂ emissions by around **85 tons**
-  **Energy savings of around 15 %** compared to the previous system
-  **Reduced energy consumption, high efficiency**



Steam generation cleverly combined with solar heat

