



# Reference report



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## Efficient steam supply at Itzehoe Hospital

Itzehoe Hospital (Klinikum Itzehoe) in Northern Germany is a tertiary hospital with about 650 beds and also serves as an academic teaching hospital for the universities of Kiel, Lübeck and Hamburg. Here patient well-being is the top priority. Correspondingly, supply reliability is a must at all times, and efficient, environmentally-friendly provision of energy now plays a significant role as well. That is why Itzehoe Hospital decided to extensively modernise its steam supply system.

The steam generators installed were significantly oversized for the actual output consumption. The laundry service, one of the main consumers, was outsourced and consumption also decreased for other steam applications as a result of various partial improvements and renovations. Finally, the steam generation systems, 16 and 38 years old, respectively, were also at the end of their service life. To exploit this savings potential, two highly efficient Universal UL-S steam boilers from Loos, a Bosch Thermotechnik brand, were used. The new boilers each have a steam capacity of 1250 kg per hour. Saturated steam is needed at the hospital for humidification in climate control systems, sterilisers, cleaning and disinfection units, the kitchen and the duvet and pillow washer. A fully redundant second boiler ensures maximum supply reliability.

In gas operation, the steam boilers are equipped with modulating burners and integrated flue gas heat exchangers. This enables a boiler efficiency of about 95% to be achieved. The hospital is further increasing energy efficiency by installing downstream stainless steel condensing heat exchangers: with regard to the net calorific value, system efficiency rises another 5% whilst emissions and fuel input decrease. The PLC-based LSC/LBC boiler control facilitates optimised system settings in terms of energy. The touch screen clearly displays the consumption and system values in the form of line graphs or total figures.

With the aid of the implemented measures, Itzehoe Hospital can now use much of the waste heat and expect an increase of efficiency of 20%. The Westerrönfeld-based engineering company Georg Schröder was commissioned with the planning and design of the plant. The planner received extensive support from the sales region for Northern Germany of Bosch Industriekessel GmbH. The system was placed and installed by Johann Storm GmbH & Co. KG, a plant construction company from Rendsburg.



The state-of-the-art Loos steam boiler system with downstream stainless steel condensing heat exchangers ensures efficient energy supply at Itzehoe Hospital.