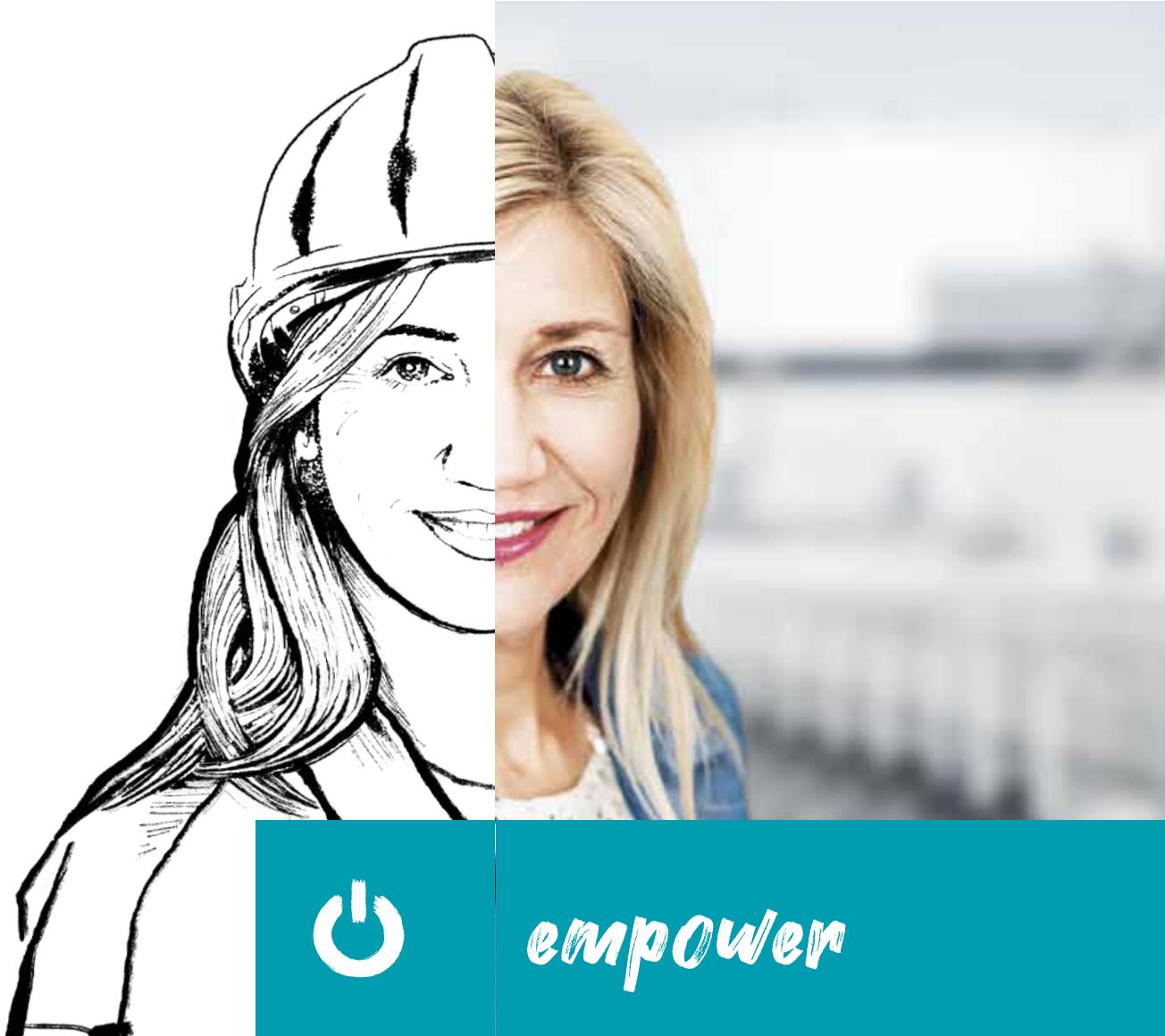


Reference project

Energy and load management system



Customer: Municipal water board
Sector: Water/wastewater

Sustainability at the touch of a button

Modernization of one of the largest sewage treatment plants in Europe

Design and implementation of a process automated system

Introduction of an energy and load management system

Less than one percent of the water on our planet can be used by humans. This makes water the number one resource – far ahead of other raw materials. The demand for water has been rising continuously for years. Causes of this are globalization, climate change, population growth and an increasing trend towards urbanization, i.e. the spread of urban lifestyles. For many years, onoff AG has been supporting industrial and municipal companies in the water/wastewater sector that operate in areas ranging from water collection and processing to water treatment and purification. This customer has also been part of our customer base for seven years. With a capacity of over 1.3 million population equivalents, the sewage treatment plant is one of the largest and most modern in Europe.

First, the existing process automation system was replaced by a state-of-the-art system and the pumping stations were modernized. The existing process technology was integrated in the design of the new system, and the customer's expertise was decisive in its implementation. onoff also has many years of solid knowledge of and experience in the field of water/wastewater, which can be easily adapted to new process automation projects.

Smooth from the start

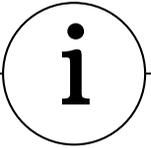
The conversion itself succeeded without any significant plant downtime since the startup procedure had taken place virtually in advance, in a test simulation. Thanks to the process-automated control of the sewage treatment plant, it is now possible to more clearly display and more easily assess the degree and type of contamination of the water. The corresponding adjustment of the system takes place earlier, more smoothly and more effectively than before.

A basis for new goals

The successfully completed project formed a solid foundation of trust for the customer relationship. Based on it, we were able to continue growing together with a view toward the future. The water board quickly set its next goal: The optimization of energy consumption. The operation of a completely self-sufficient, energetically autonomous sewage treatment plant was already under consideration. This was an

ambitious, cost-intensive project whose profitability had to be proven beforehand. onoff implemented an energy and load management system that showed how much energy the sewage plant uses on average under various conditions. Since empirically verified data such as load peaks were now permanently available, energy management could be optimized overall.

Since then, the sewage treatment plant has been operated autonomously by nearby energy generation plants. These generate even more energy than is needed for water purification. The surplus is sold and now represents an important additional source of



- WinCC 7.3 with 10x S7-400 and 3x S7-300, redundant server and 10x clients and 2x ES
- Remote control integration of 64 pump stations with S7-300
- Virtual commissioning with WinMod
- Connection to a virtual power plant

income for the customer. Economical, sustainable plant operation is in the interest of the fee payers, since the sewage treatment plant is a municipal enterprise which they support. The autonomous energy supply of the plant from sustainable sources is not only cost-effective and profitable; it protects the climate and thus contributes to a livable environment. Through the introduction of an autonomously operated, clean energy supply, the sewage treatment plant meets the demanding requirements for sustainable and resource-friendly operation.

“Now we can find out how the plant is doing at any time, and also when we need to modernize it.”

Head of wastewater treatment plant operation on the customer side



Would you also like to take advantage of all opportunities? We look forward to meeting you.

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