

## CASE STUDY

# Sulzer Equipment Increases Wastewater Treatment Capacity and Efficiency

The Kujawy Wastewater Treatment Plant (WWTP) in Kraków, Poland, was built in 1999. The capacity of this mechanical-biological plant ranged from 80,000 m<sup>3</sup>/d in dry weather up to 223,000 m<sup>3</sup>/d during rainy periods. The plant was originally built using ABS aerators, agitators, pumps, and mixers.



The XRCP 800 is specifically designed for pumping and recirculation of activated sludge in the denitrification/nitrification process of a wastewater treatment plant. This compact and easy-to-handle pump is efficient and reliable.

### The Sulzer difference

- 25% bigger hydraulic capacity
- 50% better treatment of biogenic components
- More than 20% reduction in energy consumption compared to the original plant

**“ This was our biggest project in Poland so far and a great challenge for our people. It was rewarding to see how the customer gained even more confidence in the delivered products day by day. ”**

Marcin Jankowski, Sales & Project Manager, Sulzer Pumps Wastewater Poland

### The challenge

After twelve years of operation, a modernization of the treatment plant was needed for the removal of nitrogen and phosphorous pollutants, as well as an enlargement by another 100,000 PE (population equivalent).

After a thorough quality and efficiency analysis, Sulzer was selected to make the final proposal for the plant modernization.

### The solution

During 2011-2013, we finalized the design and in December 2013 we signed the significant contract for the delivery of altogether 81 pieces of equipment including turbocompressors, agitators, pumps, flowboosters and mixers.

The delivery and installation of the equipment was started in the second quarter of 2014 and the last submersible XFP pump was delivered to the Krakow wastewater treatment plant in December.

### Customer benefit

Sulzer offers a wide range of aeration systems for municipal and industrial wastewater treatment. Our application and process know-how combined with our unique product portfolio provide customers with high-tech solutions that guarantee efficiency and process reliability at minimal life cycle-cost.

The new Krakow Kujawy plant now has a 25% bigger hydraulic capacity and provides 50% better treatment of biogenic components (nitrogen and phosphorus). The energy consumption has been reduced by more than 20% compared to the original plant.

## Product data

Turbocompressor type ABS HST40-300-1-L	
Capacity q	13,000 Nm <sup>3</sup> /h / 1 unit
Pressure p	60 kPa
Motor power	300 kW

For more information on our products and solutions for wastewater treatment, please visit [sulzer.com](http://sulzer.com)



HST turbocompressor installation at the Kujawy plant

### Contact

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### Applicable markets

Municipal and industrial wastewater treatment

### Applicable products

Turbocompressor type ABS HST, agitator type ABS Scaba, flow booster type ABS SB, submersible mixers type ABS XRW, submersible recirculation pump type ABS XRCP, submersible sewage pumps type ABS XFP