

Reducing hydraulic loading to maximise efficiency

Discover how simulations helped predict improved treatment performance and reduced costs in a WWTP

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Evaluation of WWTP performance under different hydraulic loading



Up to 35% reduction on effluent load and 20% reduction in energy consumption



Up to 350,000 DKK per year in lower operational costs

Challenge

Rønne WWTP is challenged with excess inflow during the winter period and wants to achieve higher treatment capacity and improve effluent quality following an investment in separate sewer infrastructure.

To implement the new infrastructure, the water utility needed to quantify the positive impacts of the project, and evaluate potential compensation for the new sewer system investment.

Solution

A model of Rønne WWTP was developed and calibrated using WEST, DHI's dynamic modelling and simulation software. The model was used to evaluate improvements in effluent quality and cost savings in different scenarios, simulating progressive reduction of excess inflow.

Solution highlights

- Model development, calibration and validation
- Model-based scenario analysis to evaluate WWTP performance under different hydraulic loading resulted in improved efficiency and lower operational costs.



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