



## Who are we?

DHI is a **leading, innovative, global advisory company** that integrates deep **domain knowledge and technology** to enable new ways to use, manage and live with water and to protect water-related ecosystems. DHI's knowledge of water environments represents 50 years of dedicated research and real-life experience from more than 140 countries. We strive to make this knowledge globally accessible to clients and partners by channelling it through our local teams and unique software.

## Wastewater Treatment at DHI

The Wastewater Treatment Team at DHI combines decades of expertise in the **auditing, modelling and optimization of wastewater treatment plants (WWTPs)**. By using our software technology for advanced process modelling (**WEST**) and digital twinning (**TwinPlant**), we can help to:

- ◆ Improve effluent quality
- ◆ Increase plant capacity
- ◆ Recover valuable resources
- ◆ Become energy neutral
- ◆ Implement advanced real-time control
- ◆ Digitalize and automate WWTP operations

## WEST

WEST is a **powerful and user-friendly software for dynamic modelling and simulation of wastewater treatment plants (WWTPs)** and other types of water quality related systems. It is designed for operators, engineers and researchers interested in studying physical, biological or chemical processes in WWTPs, sewer systems and rivers.

The **WEST model library** is fully accessible and customizable, and includes state-of-the-art **process models** (ASM series and beyond) as well as a comprehensive set of models for **process unit operations (water, sludge, biogas, energy) and control logics**.

The advanced graphical features, the very high simulation speed and the wide set of tools available (e.g., scenario analysis, statistics) make WEST the **preferred application for any type of WWTP projects**.



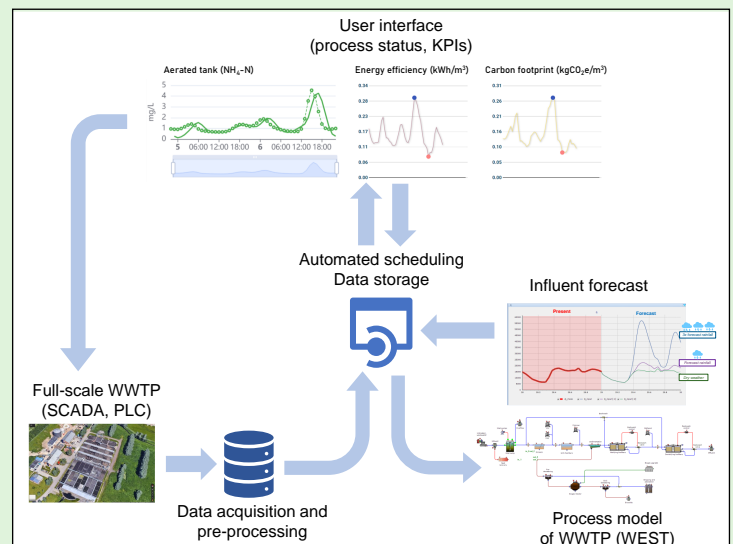
### SELECTED CASE STORIES

- ◆ Cost-efficient capacity expansion of Viby WWTP
- ◆ Optimising energy recovery and effluent discharge of Ravenna WWTP
- ◆ 50% carbon footprint reduction of West Lafayette WWTP

## TwinPlant

TwinPlant is DHI's **digital twin technology for WWTPs** designed to provide **real-time and predictive decision support in the operation of WWTPs**. The technology integrates acquisition, pre-processing and validation of online data from SCADA (sensors, energy meters) and process modelling in WEST.

Through a tailored user interface, operators, engineers and plant managers can assess the current **status of the WWTP (hard and soft sensors) and evaluate alternative operational and control strategies** through what-if scenarios. A wide set of **KPIs (compliance, energy efficiency, OPEX, CO<sub>2</sub> footprint)** can guide the implementation of **optimal strategies** in full-scale operation.



### SELECTED CASE STORIES

- ◆ A digital twin to support operations at Bresso-Niguarda WWTP