VEOLIA

Previously known as **AQUAVISTA™**

Hubgrade

PERFORMANCE

CASE STUDY I Bluekolding

BLUEKOLDING

An environment, energy and climate company covering the entire municipality of Kolding located in Jutland, Denmark. BlueKolding is inspired by the concept of Blue Economy and is constantly working to find new ways of exploiting the resources in wastewater and improving the processes for cleaning it. The municipality of Kolding manages the treatment of 15 million m3 of wastewater for the City of Jutland and its surrounding area every year with 12 million m3 of wastewater treated at the Agtrup central wastewater treatment plant (WWTP).

THE CHALLENGE

Through many years, BlueKolding A/S has prioritized and applied software solutions for capacity extension and operations optimization for the entire sewerage system, from the sewer network to the wastewater treatment plants.

The aim was to **maximize the use of the existing facilities** and at the same time ensure an **optimum and compliant operation** under all conditions, such as under dry and wet weather conditions. BlueKolding wishes to provide its staff with efficient tools to ensure a good **overview of all its utility's systems.**

Hubgrade Performance (formerly known as AQUAVISTA™ Plant) was first installed in 2007 at the Agtrup WWTP.

In 2011, BlueKolding completed a larger extension of its plant facilities, which included an upgrade at the same facility as well as integrating control strategies for the entire sewerage system for the City of Kolding – from the sewer network to the wastewater treatment plants.

Hubgrade Performance was installed at three satellite wastewater treatment plants in Vamdrup (2012), Christiansfeld and Lunderskov (2013).

New available in the cloud from 2017, BlueKolding expanded Hubgrade Performance to integrate the control of Agtrup WWTP together with the sewer network for the City of Kolding as well as the three satellite wastewater treatment plants.

INNOVATION PROJECTS

The BlueGrid project

With the BlueGrid project, BlueKolding and Veolia Water Technologies took yet another exciting step into the **intelligent use of data from the entire sewerage system** in the municipality of Kolding, combined with weather forecasts and rain radar data.

The purpose of the project was to **sell balancing services to the electrical grid with a short response time** via up or down adjustments of the energy consumption and production. The need for alternative balancing options increases as more and more fluctuating renewable energy is being produced.

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The BlueGrid project will contribute to an **increase in the security of supply of electricity,** and allow more **renewable energy** to be used while ensuring a sustainable and compliant treatment of wastewater at the lowest possible cost.
Veolia Water Technologies and BlueKolding have collaborated since 2011 on the development of various solutions for the intelligent use of large amounts of data obtained from the entire sewerage system, i.e. the sewer network and the treatment plants.
The latest innovation projects are from 2014 (SMARTGrid) and 2017 (BlueGrid). Both focus on **energy balance optimization** through the utilization of the basin volume in the catchment area, as part of the active control strategy at the wastewater treatment plants.

The SMARTGrid project

The idea behind the SmartGrid system is to withhold the wastewater up to 24 hours so that treatment mainly takes place when the electricity tariff is low. As electricity tariffs on the free electricity market fluctuate substantially throughout the day, purchasing prudently means large savings on the energy bill.

Per Holm, CEO of BlueKolding, says: “We work continuously to energy-streamline our processes. Setting up an advanced SMARTGrid system with close interaction between the treatment of wastewater and electricity market tariffs is a huge step forward for us.”

CLIENT BENEFITS

In 2007, the aim for Agtrup was **to improve the effluent quality and ensure operational savings.** The result was a **25% reduction in effluent total nitrogen** (Total-N) and a **reduction of the chemical precipitant by 45%.** The introduction and integrated control of the Agtrup WWTP and sewer system in 2011 secured an **80% higher hydraulic** load meaning the costs related to the planned extension with basins in the catchment area were **reduced by 22% compared to the original budget.** At the same time, BlueKolding even managed to **reduce the number of overflow events from approximately 35 to below 10 per year thanks to Hubgrade Performance.**

For the satellite wastewater treatment plants in 2012 and 2013, the purpose was to ensure a **stable operation and maximize the operational savings** by providing its team with relevant software for optimization of the plant. Over the years, BlueKolding has experienced compliant operation under all conditions by active online control with far less manpower than that required for visits to the satellite plants.

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