

Xylem's Flygt Experior® cuts energy use at pumping station by 27 percent

Sustainable wastewater pumping solution also eliminates clogging

Xylem's Flygt Experior successfully eliminated clogging and reduced the energy consumption by 27 percent at a municipal sewage pumping station on the shores of Lake Como.

The challenge:

Lake Como in northern Italy is world renowned as a prime holiday location as well as being home to high profile celebrities. The region's heavy dependency on tourism puts a strong focus on maintaining the quality of the local environment and means that smart wastewater management is a particularly crucial business in the region. An added challenge is the dramatic mountainous terrain; not the most ideal landscape for housing wastewater treatment stations. The rugged nature of the landscape means that the main sewage treatment plant for the area is located just a few hundred metres from the historic city centre.

A complex pump station management system oversees a total of 14 pumping stations which push 55,000 cubic metres of effluent per day to the treatment plant. Comodepur, the organisation responsible for managing the wastewater system in the region, must ensure that the treated, purified water which is discharged directly back into Lake Como complies with stringent environmental standards. The team at Comodepur was very aware that a pump malfunction could result in reflux from the sewage system ending up directly in Lake Como.

"We were very conscious that we needed a sustainable, cost-effective system, particularly as any cost increases would ultimately impact on rates paid by local inhabitants."

The Tavernola sewage pumping station located on the western shore of the lake was one of the most energy-intensive stations of the entire system. Here, wastewater from neighbouring municipalities converges, including wastewater from some textile companies, resulting in fabric filaments entering the system. Aided by the low speed of the pumps, these textile remnants frequently became wrapped around the pump impellers, resulting in persistent clogging of the system.



The Xylem Flygt N-Chopper pump has the capacity to cut fibres in wastewater even at low speeds which prevents clogging.

Customer: Comodepur

Challenge: to eliminate clogging issues and deliver a sustainable, cost-efficient wastewater pumping system that safeguards the local environment.

Products: Flygt Experior®

Results: a sustainable, cost efficient solution that cut energy consumption by 27 percent and eliminated clogging problems. The products had paid for themselves within eight months.

Flygt Experior combines state-of-the-art hydraulics, premium efficiency motors, and intelligent controls for the ultimate in reliability, efficiency, and simplicity.

Concerns about system inefficiencies, rising energy consumption and maintenance costs led the operators to decide to upgrade the system. In an attempt to improve the efficiency of the operation, the team had installed an inverter to regulate the speed of rotation of the pumps according to the real-time needs of the system. Unfortunately, this yielded little in terms of positive results.

"It got to a stage where the system required intervention up to three times every week," said Alberto Turconi, Technical Manager, Comodepur, "The considerable size and weight (over 300 kg each) of the pumps in the system meant that two men were required each time it had to be unclogged. In addition to the deployment of personnel, the complex cleaning operation involved a costly suction lorry for draining and cleaning the sump as well as the expense of disposing of filamentous and biological material."

Luigi Cece, Director of the Comodepur plant and sewage system said, *"We were very conscious that we needed a sustainable, cost-effective system, particularly as any cost increases would ultimately impact on rates paid by local inhabitants."*

The Xylem solution:

Flygt Exporior, sustainable wastewater pumping solution. Flygt SmartRun™ intelligent controls combined with four Flygt NP 3202 HT 30 kW pumps were installed as part of the system. Xylem's award winning Flygt N-technology has over 300,000 installations throughout the world. This hydraulic design with its self-cleaning principle ensures reliable, trouble-free pumping and sustained high efficiency over time. The chopper ring version cuts long fibres and solids and handles any type of sewage without clogging problems.

Xylem's Flygt SmartRun, an intelligent pump controller specifically designed for the efficient transport of sewage, was also incorporated into the system. This control system automatically adjusts the speed of rotation of the pump impellers to the needs of the system, particularly the composition of the wastewater being pumped, while simultaneously minimising energy usage. Flygt SmartRun intelligent controls are pre-programmed and pre-set to handle any wastewater handling situation, making it very easy to install and operate.

Comodepur agreed to install Xylem's recommended solution under the company's 'Try and Buy' offer which allows customers to install and experiment, for an agreed period, after which they may purchase the solution or return the pumps without incurring any costs.

The result:

After three months in operation the Flygt Exporior solution delivered energy savings of 27 percent with no clogging or blockage issues. Comodepur agreed to purchase the solution, which had paid for itself within just eight months.



The traditional system required intervention up to three times every week.



After one year of operation Xylem's Flygt Exporior continues to operate efficiently without clogging.

