ENGINEERING TOMORROW

Case story | Veolia Water Technologies

Veolia Water Technologies and Danfoss retrofit municipal water plant to **save 57% in energy**

Highlights

- Significant energy savings
- Simple and fast installation
- Improved reliability

Veolia Water Technologies Iberica recently completed a retrofit for Suministros de Agua La Oliva, the municipal water company that supplies Corralejo on Fuerteventura in Spain's Canary Islands. Built around Danfoss's APP high-pressure pumps and iSave energy recovery devices, the 2,000 m³ plant reduces the municipality's energy consumption by 57%.

The challenge:

Reduce energy consumption for a busy municipal water company

With its mission of supplying high-quality water at the best possible price, Suministros de Agua La Oliva, SA, has served 23,000 inhabitants and a large tourist population since 1989. In 2019, its board of directors decided that the time had come to perform a major retrofit of its RO plant.

"Board members recognized that the time had come to look for alternatives to the plant's aging centrifugal pump," recalls Pedro Viera of Veolia Water Technologies Iberica. "The technological advances of the last 30 years – not least in energy efficiency – make retrofits of similarly sized plants increasingly attractive, especially in locations like Fuerteventura where electricity costs are high."

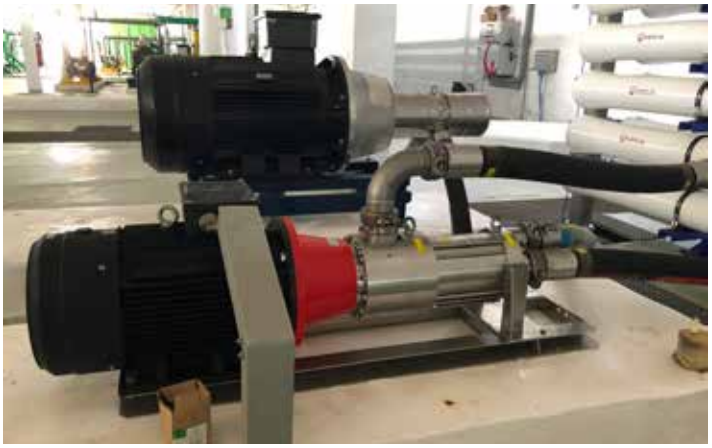
ENGINEERING
TOMORROW

The solution:

Danfoss **APP** pumps, **iSave** ERDs, and **Vacon Flow** drives

Engineers from Veolia Water Technologies Iberica worked closely with Suministros de Agua La Oliva to examine replacement options for the plant's multistage centrifugal pump, which used 4.7 kWh/m^3 to process 1,000 m^3 per day.

After considering a variety of high-pressure alternatives, engineers proposed a two-train solution based on Danfoss technology. Each 1,000 m^3 train consists of one APP 53/1500 high-pressure pump, one iSave 70 energy recovery device, and three Vacon 100 Flow drives (one for each train's low-pressure seawater pump, high-pressure pump, and energy recovery device).



The result:

Easy installation, **improved** reliability – and **57% energy saving**

As is customary for Veolia Water Technologies, their local technicians worked closely with the end user throughout the design and installation phases to facilitate smooth implementation. Since installation was completed, Veolia technicians have monitored the new plant constantly to ensure utmost reliability.

According to Viera, installation of the two trains was simple and fast. Unlike larger centrifugal pumps, no special crane was required to install the lighter, more compact APP pumps. "The end user was surprised to discover how little space the two new trains required," says Viera.

What came as no surprise, however, was the new plant's dependability and energy savings. Maintenance has been simple, and actual consumption is even lower than Veolia's engineers had calculated in their bid. The retrofitted plant uses 2.0 kWh/m^3 to process 1,000 m^3 per day, or 57% less than the plant's previous 4.7 kWh/m^3.

"The combination of Danfoss APP pumps, iSave ERDs and Vacon 100 Flow AC drives results in extremely significant energy savings," explains Viera. "As we have seen elsewhere, the relatively short payback time makes a very compelling case for retrofitting older RO plants. When you also consider the advantages of improved reliability and lowered CO_2 emissions, it's clear that such retrofits are appealing to many RO customers."

VEOLIA

Veolia helps cities and industries worldwide to manage, optimize and make the most of their resources. The company provides an array of solutions related to water, energy and materials – with a focus on waste recovery – to promote the transition toward a circular economy. Veolia supplies more than 95 million people with drinking water through management of more than 4,000 water production plants. For more information, please visit www.veolia.com

Danfoss A/S High Pressure Pumps . Nordborgvej 81 . DK-6430 Nordborg, Denmark

AE347548044753en-000201