ENGINEERING TOMORROW

Case story | Quantum Water

Quantum Water relies on **compact, efficient Danfoss SWRO components** for world's largest wellboat

Highlights

- High efficiency
- Low maintenance
- Zero contamination

With a tank capacity of 7,500 m³, the ***Gåsø Høvding*** is the world's largest wellboat. Designed specifically for salmon aquaculture, the high-capacity vessel began operations at the end of 2021 in Norway, where it processes salmon with unprecedented efficiency and care. Quantum Water selected Danfoss APP high-pressure pumps, iSave ERDs, and VFDs for the SWRO plant to save space, energy, and maintenance.

The challenge:

Tailor-make the SWRO plant for an **innovative, high-capacity** wellboat

Serving the Norwegian aquaculture industry, one of the ***Gåsø Høvding's*** key tasks is freshwater treatment to remove sea lice from salmon. To do this, the world's largest wellboat needed a SWRO plant that would live up to very specific demands.

"Of course, energy efficiency was one of the key criteria," explains Nicolás Alberte, general manager of Quantum Water. "However, even though this is the world's largest wellboat, space onboard a vessel is always at a premium. Therefore, maximizing capacity and ensuring easy access to key components while minimizing plant footprint was essential. Finally, operational reliability is critical: salmon welfare and aquaculture productivity depend directly on these treatments to mitigate the risks of sea lice infestation and amoebic gill disease, so reliable performance and long service intervals are vital."

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The solution:

5,000 m^3/day plant built around **Danfoss APP pumps, iSave ERDs,** and **VFDs**

To meet these demands, Quantum Water designed a tailormade SWRO plant that would produce the required water, 5,000 m^3/day.

"We chose Danfoss components with proven marine track records," says Alberte. "Four APP 65/1000 high-pressure pumps and four iSave 70 ERDs make up the core of the plant, each connected to a Danfoss VLT AQUA Drive FC 202 for optimal control and efficiency. Although we split the plant into two trains to optimize flexibility and facilitate maintenance, its footprint is still quite small compared to any existing alternative."

The result:

Reliable, clean, and **energy-efficient** SWRO plant for 24/7/365 operations

"The combination of Danfoss APP pumps and iSave ERDs played a significant role in achieving the goals set by our client for the desalination plant," Alberte says. "Not only does it provide a reliable low-energy solution with low maintenance needs, but it also delivers high production capacity in a compact package."

"That Danfoss APP pumps use only the pumped medium for lubrication, thus presenting zero contamination risk, is also a plus," adds Alberte.

About Quantum Water:

Quantum Water designs and manufactures innovative, advanced reverse osmosis solutions tailormade for the marine, aquaculture, offshore, industrial, food, and healthcare industries. For more information, please visit https://quantum-europe.com.

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