CASE STUDY

A great leap forward in efficiency on the Baltic coast

Göhren (Rügen) wastewater treatment plant: 42% energy saving with 50% increase in capacity

45,000 (PE)
Capacity

42%
Energy savings

50%
Capacity increase

The issue is...
Capacity fluctuations of up to 400%

The island of Rügen is one of Germany's most popular holiday destinations. The number of tourists is correspondingly high, with demand rising steadily, especially in the summer months. For the Göhren wastewater treatment plant, this means strong seasonal fluctuations in the inflow volumes of up to 400%. Flexible concepts and efficient solutions are required.

"Many thanks to AERZEN for the competent advice and the excellent and uncomplicated cooperation."

Christoph Kruse
Water and wastewater master Mönchgut at Zweckverband Wasserversorgung und Abwasserbehandlung Rügen

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AERZEN
EXPECT PERFORMANCE

The solution
Efficient machine network

Two Aerzen Turbo, two Delta Hybrid and one Delta Blower, in combination with new high-efficiency plate aerators and intelligent control and regulation technology, ensure the precise and efficient operation of load changes.

1. The mix of technologies used between forced displacement fans and turbo-machines enables effective process air generation over a high turndown.

2. The AERsmart control system selects the appropriate blowers. Depending on the workload, the turbo blowers, screw blowers and positive displacement blowers are switched in combination or as individual solutions to achieve the best energy solution for aeration.

3. During the conversion phase, rental machines from Aerzen Rental were used. Three plug-and-play containers with the complete blower or compressor technology took over the temporary aeration.

Type	Turbo,-/screw/positive displacement blowers
Design	Positive pressure
Volume flow	100 - 16,000 m³/h
Positive pressure	max 1,250 mbar (g)
Conveying medium	Air
Conveying/compression	Oil-free

The result is...
Sustainable investment in the future

Thanks to the optimisation of biology and the installation of a photovoltaic system, energy savings of 42% were achieved despite the expansion of capacity from 30,000 to 45,000 PE. At 280,000 kWh, this corresponds to €84,000 per year. These measures not only make an important contribution to sustainability, but also strengthen the wastewater treatment plant's energy self-sufficiency.

280,000 kWh
less energy consumption in the aeration

Summary

The redesign of the biological treatment stage with technology from AERZEN takes wastewater treatment at the Göhren wastewater treatment plant to the next level. An optimally harmonised system of blowers, aeration elements and oxygen input control ensures that low discharge values are reliably maintained even during peak loads and high tourist volumes.