

CASE STUDY

Sulzer Blowers Set New Standard at Herning Vand in Denmark

Herning Vand is a water treatment company owned by the municipality of Herning. It provides clean drinking water to its almost 87,000 residents and collects and cleans their wastewater. At the largest of the total of 14 wastewater treatment plants of Herning Vand, 9-12 million cubic meters of wastewater are treated annually. This requires a daily capacity of 150,000 PE (population equivalent).

The old compressors of the treatment plant had been in operation since 1986. They used a lot of power and were not maintenance friendly. Herning Vand decided to replace the blowers and to place them in a new building with more space to improve the working environment.



“ All three suppliers invited to make a bid actually chose the same blowers – the Sulzer HST compressors. They considered the Sulzer solution as the best for the energy consumption requirements, a low degree of maintenance and a low noise level. ”

Ole Aslak Mortensen, Projects Director at Orbicon, the engineering consultant

The Sulzer difference

- The annual energy savings are calculated to be 400,000 kWh – the equivalent to about 54,000 EUR per year.
- The old blowers used 23 W per Nm³ whereas the new Sulzer compressors use 17 W per Nm³.
- The Sulzer turbocompressors have 20 years of operation experience. They are known for their reliable operation and top efficiency at the lowest cost, while minimizing the environmental impact.

The challenge

Herning Vand wanted a fully integrated solution for the treatment and aeration of 12 million m³ of wastewater per year. The requirement for the new compressors was 30,000 m³ of air per hour.

“Our requirements were not only technical, but we also took into consideration energy consumption, maintenance, work environment, economy, space and aesthetics to ensure a future-proof solution.” Bo Laugesen, Project Manager at Herning Vand.

The solution

The aeration process at Herning Vand was optimized with 3 new Sulzer turbocompressors type ABS HST. In addition, the work environment was improved and the need for maintenance as well as the energy consumption reduced remarkably.

Herning Vand signed a five-year service agreement with Sulzer. Sulzer is able to monitor the compressors online and to carry out service and maintenance proactively. Under normal circumstances, the blowers run automatically, unmanned, and are monitored from the central control system.

Customer benefit

The Sulzer turbocompressor solution was the most energy efficient in the range from 7,000 to 8,000 m³ of air per hour, which is the range with the most hours of operation – and where the most kWh and savings are.

The operational costs will be smaller in the long term, because this compressor solution has a lower energy consumption, fewer shutdowns and lower expenses for service and maintenance. Sulzer also offers a full-scale service organization.

At the low noise level of around 70 dB (A), you can have a normal conversation right next to the blowers, without hearing protection.

Product data

Two turbocompressors type ABS HST 20 and one turbocompressor type ABS HST 40

- The HST compressors are provided with oil-free magnetic bearings that prevent mechanical wear

Operating data	HST 20	HST 40
Airflow range	2,000 - 7,000 Nm ³ /h	4,100 - 16000 Nm ³ /h
Pressure rise	30 - 90 kPa	40 - 85 kPa
Input power	125 - 190 kW	300 - 400 KW
Max. current (400 V)	112 - 309 A	470 - 620 A
Power supply	380 - 690 V	
Input frequency	50 - 60 Hz	
Protection class	IP33D	
Thermal protection	PT100	
Max. noise level	70 dBA	

For more information on our products and solutions for wastewater treatment, please visit sulzer.com.



From the left: Turbocompressors type ABS HST40-350, HST20-6000 and HST20-4500

Contact

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Applicable markets

Municipal and industrial wastewater treatment

Applicable products

Turbocompressors type ABS HST