

CASE STUDY

THE MOST MODERN WWTP IN EUROPE

The ARA Oberengadin relies on the digital twin – and AERZEN technology.

1.650 m

Installation height a.s.l.

90.000

Population equivalents

5

SBR reactors



THE ISSUE

Efficiency and sustainability

Strict water protection laws, strong seasonal fluctuations (peak season: 110,000 PE, off season: 15,000 PE), high installation altitude of 1,650 metres above sea level, maximum cost efficiency: many issues had to be reconciled in the construction of the new Swiss ARA Oberengadin. The demands on the technologies used were correspondingly high.



I am glad that we are working with AERZEN blower technology. The technology is efficient, reliable and low-maintenance and the service is excellent.“

Godi Blaser
Operations Manager of ARA Oberengadin



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AERZEN

THE SOLUTION

Focus on life cycle costs

In the SBR biology (SBR = Sequencing Batch Reactor), the heart of the plant, energy efficiency and availability in service were decisive factors. Particular attention was paid to the aeration system, which can consume between 60 and 80 percent of the total energy consumption required for wastewater treatment.

1

Five AERZEN Delta Hybrid D 52S ensure optimum oxygen supply to the five SBR reactors. Rotary lobe compressors (screw blower) are among the most innovative solutions in compressor technology. Thanks to their robust design, they can also easily cope with the high pressure fluctuations inherent in SBR technology. The condition of the blowers is monitored via the frequency inverters at ARA Oberengadin. Im Sandfang werden ebenfalls AERZEN-Aggregate eingesetzt - und zwar zwei robuste Drehkolbengebläse vom Typ Delta Blower.

2

AERZEN packages are also used in the grit chamber - namely two robust positive displacement blowers of the Delta Blower type.



Type of technologie	Positive displacement blower, screw blower
Version	Overpressure
Volume flows	110 to 9.000 m ³ /h 30 to 15.000 m ³ /h
Overpressure	1,000 mbar
Conveying media	Air, neutral gases
Conveying	Oil-free

THE RESULT

Maximum efficiency in aeration

At high altitudes, more powerful packages are needed than at sea level. Against this background, the issue of energy efficiency takes on even greater relevance. The highly efficient Delta Hybrids are exactly the right choice, because thanks to their technological superiority, they enable significant energy savings of up to 20 percent compared to classic blower technology.



80%

Energy self-sufficiency announced

SUMMARY

State-of-the-art technology combined with a sustainable energy concept: ARA Oberengadin is a pioneer in Saxony automation, digital twin, energy efficiency and sustainability - setting new standards for wastewater treatment. The innovative and efficient AERZEN packages are fit for the future and make a valuable contribution.