

CASE STUDY

Proven Energy Savings with New Mixer Technology

The existing installed mixers at the Anglian Water-owned Cotton Valley Sewage Treatment Works (STW) were replaced with Sulzer submersible mixers type ABS XRW and now deliver significant energy savings. A trial and subsequent analysis showed that a reduction of the energy consumption by 38% could be achieved.



Divers used for installation close-up.

“ *The new mixers have delivered over and above the estimated energy savings, which is a fantastic result. We are exploring the opportunity to install new mixers at various other sites to help lower the operational carbon emissions.* **”**

Senior Energy Manager at Anglian Water

The Sulzer difference

- The submersible mixers type ABS XRW provide significant energy savings, as they can be adapted to the mixing conditions.
- The annual operation costs were reduced by almost 40%.
- The payback time of the equipment was 1.8 years.
- The mixers were installed with minimum disruption to the plant by divers in cages, with no need to drain the aeration lanes.

The challenge

There were four aeration lanes with 12 fixed speed mixers operating 22 to 23 hours per day. Several mixers were not operating due to installation problems and mixer failure. The mixers were not energy efficient due to the fixed drives.

The Sulzer technical team surveyed the site and found that new shock absorbers and lifting handles needed to be provided for the new installation.

The solution

Twelve Sulzer submersible mixers type ABS XRW with variable speed drives were installed at the Cotton Valley STW. A local workshop manufactured new shock absorbers/lifting handles which were fitted to the new mixers. Specialist divers were employed to complete the installation.

Customer benefit

The new Sulzer submersible mixers type ABS XRW have their own variable speed drive, which is an integrated part of the mixer, and its control was installed in the existing control room. Therefore the mixers can be run at an optimized speed in order to obtain consistent mixing.

The Senior Energy Manager for Anglian Water states that the new mixers have delivered over and above the estimated energy savings, which they believe is a fantastic result. They are now exploring the opportunity to install new mixers at various other sites to help them lower their operational carbon emissions.



Sulzer submersible mixer type ABS XRW

System data

Motor	X 55/24	X 75/24	X 100/24
Rated power (kW)	5.5	7.5	10.0
Motor efficiency (%)	94.8	93.8	94.0
Variable Frequency Drive (VFD)	A	B	C
Rated power (kW)	5.5	7.5	11.0
Rated current at 400 V (A)	9.7	12.9	17.8
Total system efficiency (%)	90.2	90.3	91.0

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Applicable markets

Wastewater treatment

Applicable products

Submersible mixer type ABS XRW