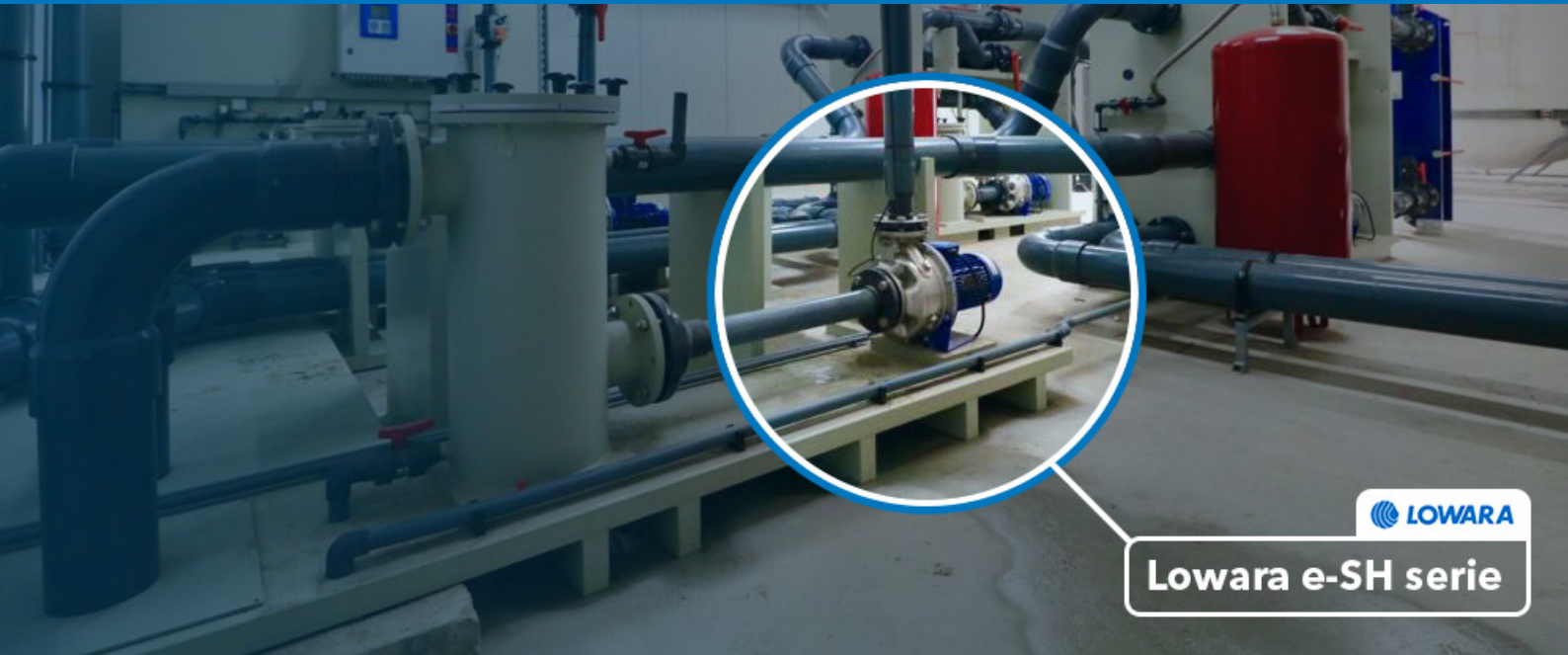


New medium: same pump

Lowara e-SH pumps used for air scrubbers of INNO+

In the past, the air scrubbers of INNO+ worked mainly on the basis of sulphuric acid, which is used to 'scrub' ammonia and fine dust from the air of animal sheds. The sulphuric acid made it necessary to use an expensive plastic pump. When a new bacteria-based biological air scrubber was developed, the company started looking for an alternative. This ended up being a Lowara pump from the e-SH series, which surprisingly also proved suitable for chemical scrubbers.



LOWARA

Lowara e-SH serie

Livestock such as pigs and chickens produce ammonia, odour and particulate matter. According to current legislation and regulations, these emissions cannot simply be discharged into the air. For this reason INNO+, based in Panningen, was one of the first companies to develop 'air scrubbing concepts' some twenty years ago.

The associated systems extract contaminated air from the shed and spray it in the opposite direction with acidified water. Bart Appeldoorn is project coordinator: "A chemical reaction takes place between the ammonia and the acid as the particulates precipitate through the water droplets. This allows the cleaned air to be discharged and the residual product to be spread over the land as fertiliser."

END USER: INNO+

INNO+
AIR INSIDE

APPLICATION: Air scrubbers
PRODUCT: Lowara e-SH series
MATERIAL: Corrosion-resistant AISI 316
CAPACITY: Up to 240 m³/hr
HEAD: Up to 110 metres
MOTOR: IE3
CONFIGURATIONS: Frame-mounted
With extended shaft
Close-coupled

From chemical to biological

As interest grew in the livestock sector in more environmentally friendly ways of working, INNO+ started looking for an alternative way to clean the air. They ended up opting for the use of bacteria. Appeldoorn: "You need a somewhat longer lead time with this solution because sufficient bacteria first have to grow, but in the end the effect is the same. We now sell more organic air scrubbers than chemical ones."

Change of pump

In the chemical version, a plastic pump was previously used which was resistant to the high acidity of the water. Since this was not necessary in the biological system, the company contacted Xylem to find a good alternative.

Based on use with specified working points and medium data, a proposal was made for the Lowara e-SH series. These centrifugal pumps have a single impeller that not only suits the medium, desired flow rate and head, but is also suitable for the many international projects in which INNO+ is involved. These are projects in countries where not only the media but also the frequency and voltage can differ.

Surprisingly versatile

Appeldoorn: "As we prefer to work with as few different products as possible, we also tested the Lowara pump in the chemical air scrubber on a trial basis, and in consultation with Xylem. When we took this pump apart after a couple of months for an inspection, it turned out to be still in a good condition. This means that we have switched to the Lowara pumps of this series for all types of air scrubbers. Ideal. Suitable for both chemical and biological systems, internationally available and a solution for the different projects that require different flow rates. This was chosen during an excellent collaboration with Xylem, which was very involved during the testing phase."

Future

Finally, switching to one type of pump also helps the company realise further developments. "Many farms are also focusing on saving energy in the context of climate change. To this end, we have now developed a climate system that can be linked to the scrubber. The most important function is recovery - via a heat exchanger - of the heat contained in the air extracted from the sheds. This heat is returned to the shed, enabling the farmer to make considerable savings on heating costs."



The air scrubbers are used to clean the air in livestock applications.



Fine dust settles through the water droplets. The cleaned air can be discharged and the residual product can be spread over the land as fertilizer.

