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Wastewater treatment – a cornerstone of sustainability

Thanks to energy-efficient plant technology and digital support, the technology group ZF can run its wastewater treatment systems at its Saarbrücken site more sustainably.

The technological group ZF aims to achieve climate neutrality by 2040. To this end, ZF is leaning into sustainably generated energy for its own sites, making its processes more energy-efficient, electrifying many of its products and using recycled materials.

An analysis of the production processes at the Saarbrücken site revealed room for improvement in its wastewater treatment processes. Switching to a more sustainable and energy-efficient process technology and using the digital service platform WaterExpert delivered an impressive result: the newly installed ultra-filtration plant from EnviroChemie reduced the energy consumption for wash water treatment at Site 1 in Saarbrücken by 78% – corresponding to an annual CO₂ saving of 363 tonnes. The selected process technology can also be used as a preliminary stage for a potential water recycling process, enabling the site to conserve valuable drinking water.

The production processes analysed generated up to 65 m³ of wastewater of a highly heterogeneous composition every day. In partnership with EnviroChemie, the company evaluated all processes in their entirety to identify how they could be optimised as sustainably as possible. Using this as the basis, an innovative combination of processes was then developed with Envopur ultra-filtration at its core. This has now been in use since January 2023, replacing the evaporator system used until then.

Because operating staff need highly specialist expertise to run an ultra-filtration plant, ZF tapped into the knowledge of EnviroChemie in this area too – for instance by having their operators trained at ZF's premises to fully integrate the plant's operation into the company's day-to-day processes. Moreover, EnviroChemie provided its digital service platform WaterExpert to offer additional operative support. A highly transparent, fast, reliable and sustainable solution was thus realised in collaboration with ZF.

EnviroChemie's digital service platform WaterExpert helps the company meet a range of challenges. The app collects the data, visualises the most important KPIs and provides the required documents in a straightforward interface. At the same time, the app assists operators in their day-to-day tasks: from sending alerts to their smartphones via push notifications and providing recommendations for action during maintenance work and inspection tours, all the way up to periodic reports. This saves time and cuts down on tedious documentation work whilst also providing transparent visualisations of trends and overviews.



The new, energy-efficient Envopur ultra-filtration plant at the heart of the new wastewater treatment plant ensure more sustainable and resource-efficient wastewater treatment at ZF's site in Saarbrücken.

Quote from Jürgen Weiskircher, the responsible coordinator at ZF:

“With WaterExpert, we have an overview of the wastewater system at all times and can be sure that it is running in the most energy and resource-efficient manner possible.”

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