

Tests have begun on water reuse in the WaRelp research project

Since 2016, EnviroChemie has been working with a group of industry and research partners on the WaRelp (Water Reuse in Industrial Parks) research project, funded by the BMBF and aimed at optimising water use in industrial parks. Recently developed water supply and disposal concepts are being examined, and practical trials are being carried out to study the technical problems that particularly affect water reuse in industrial parks. EnviroChemie is working on the use of innovative electrically driven membrane processes to desalinate the salt-rich wastewater flows found in industrial parks.

To test two different membrane processes, namely electrodialysis and membrane capacitive deionisation, a pilot plant was built to treat the wastewater directly in industrial operation. The pilot plant has been in operation at Merck KGaA on the Gernsheim site since September 2019. After pretreatment for solids retention, mixed wastewater from the local production processes is desalinated either directly or after aerobic biological treatment with both membrane processes. By adjusting the level of desalination, various qualities of water can be produced that can be utilised for different water reuse purposes.

The WaRelp pilot plant was officially opened in October together with Merck and all the other project partners involved, including Endress+Hauser and Darmstadt Technical University, which is coordinating the project. Prior to discharge, the pretreated wastewater from the pilot plant is fed into the existing industrial wastewater treatment plant.



Image: Pilot plant for the WaRelp research project at Merck KGaA in Gernsheim

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