

## Innovative MD pilot project launched at municipal wastewater treatment in Forchheim/Germany

A pilot system for the energy efficient recovery of ammonia from municipal wastewater using membrane distillation (MD) technology was recently commissioned at the Abwasserzweckverband Breisgauer Bucht (AZV) in Forchheim/Germany. The partnership project named "Ammonium MD" is co-funded by the German Federal Environmental Foundation and runs until June 2021. SolarSpring GmbH, a 100% subsidiary of Industrial Solar Holding Europe AB, will receive a funding of 65 k€.

Within the project "Ammonium MD", the Freiburg-based company SolarSpring GmbH developed a novel membrane distillation pilot system for Forchheim's municipal wastewater treatment which was commissioned on site. The main goal of the project is the development and investigation of a novel, energy efficient membrane contactor process for the removal of ammonia from municipal and industrial wastewater treatment plants with anaerobic digestors. The system runs on waste heat in order to minimize CO<sub>2</sub> emissions and is based on membrane distillation technology. An important part of the project, besides the technical evaluation, is the holistic ecological and economic analysis of the process in comparison with the state of the art in order to quantify the potential reduction of environmental impacts.

The ammonium sulphate which is created in the process of ammonia recovery is a common fertilizer in agriculture which can be used in the future when this type of technology is implemented as a standard. Another benefit of the concept is the avoidance of nitrous oxide emissions which are normally produced as a byproduct of biological ammonia removal.

The project consortium consists of 4 partners: SolarSpring GmbH | Membrane Solutions, Fraunhofer Institute for Solar Energy Systems, University of Stuttgart and the Association for Sewage Treatment Breisgauer Bucht. All partners expect a significant reduction of resources, costs and energy compared to the state of the art.

The German Federal Environmental Foundation supports the project with a funding volume of € 296 k€. SolarSpring will receive a support of 65 k€ with a funding rate of 60%.

Based on the results of the project, SolarSpring GmbH, who coordinates the project, will be capable of transforming the pilot scale membrane distillation system into a full- scale commercial product ready for marketing.

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Industrial Solar Holding Europe AB holds 100% of Industrial Solar GmbH and 100% of SolarSpring GmbH - both located in Freiburg/Germany. Industrial Solar GmbH is an international leading technology and solution provider, which develops projects mainly based on its innovative Fresnel collector technology suitable for fulfilling an expected growing market of solar process heat. As a one-stop-shop Industrial Solar offers turnkey solutions for customers in several industries.

Find out more about Industrial Solar GmbH at the following address:

<https://www.industrial-solar.de/>

Founded in 2009 as a spin-off of the Fraunhofer ISE, SolarSpring GmbH - membrane solutions, has evolved into an international pioneer in the field of membrane distillation offering innovative waste- and drinking water treatment technology.

Find out more about SolarSpring GmbH at the following address:

<https://www.solarspring.de/>