

## PROJECT PROFILE

Title	Aachen Network for Waste Water Reuse (Concept phase) <b>(Aix-Net-WWR)</b>
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Project Partners	INTEWA GmbH Membion GmbH
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<p>Around the world, climate change is leading to extreme shortages of regionally available water supplies, to longer periods of drought with significant impact on agriculture and forestry, and to rising temperatures, especially in cities. This has also resulted in record heat and drought in Central Europe in recent years. The international community is trying to counteract this development with the Paris Climate Agreement. Within the framework of this agreement, various measures are being discussed and promoted, such as the greening of cities, which contributes to cooling through shading and evaporation effects, captures CO<sub>2</sub> and stores rainwater locally. The greening of cities but also other decentralized measures against climate change create an enormous, additional water demand. For this purpose, rainwater in form of urban runoff, as well as grey and black water but also industrial wastewater and municipal sewage can be considered as "alternative" and valuable water resources. Decentralized reuse of "alternative" water resources will, on the one hand, reduce the growing deficit in water supply due to</p>	

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precipitation changes. On the other hand, usable ingredients can be recovered, and the energy potential contained in the water can be utilized, thus protecting the environment.

This is where AIX-Net-WWR comes in as an entrepreneurial innovation alliance. AIX-Net-WWR aims to bring together regional competences in wastewater treatment and reuse for a sustainable, i.e. ecological and economical, circular economy.

To realize these goals and the multitude of different treatment requirements, the alliance plans the development of new and modular technologies, the further development and optimization of existing sub-processes as well as the economic and innovative combination of the individual process modules in order to develop decentralized and semi-decentralized solutions for the different wastewaters. The treatment of the various partial streams is to be adapted to the planned use, from simple irrigation water to drinking water or even high-purity water for electrolysis for hydrogen production. The vision above the modular individual innovations is the vision of developing, producing and marketing standardized, modularly adaptable treatment systems, e.g. as container solutions. These recycle water, heat and valuable materials in equal measure. They are exportable, can be installed into existing buildings and enable economic operation, for example also in operator models for municipalities.

The Institute of Environmental Engineering (ISA), INTEWA GmbH and MEMBION GmbH are building the central project team for the concept phase of the innovative and interdisciplinary alliance Aix-Net-WWR. Many research and development projects are expected to emerge from this concept phase, involving further regional partners and aiming at developing and establishing new technologies, but also creating new value chains for the alliance partners and the region.