

# MELODIZER: a EU project aimed at increase water reuse and desalination with sustainable technologies

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**Sustainable membrane distillation for industrial water reuse and decentralised desalination approaching zero waste**



## Project

MELODIZER implements high-performance membranes and modules in strategic applications of **membrane distillation (MD)**. MELODIZER's overarching goal is to provide the needed step to transform membrane distillation (MD) and especially its core components, namely, membranes and **membrane modules**, into products for the benefit of industry and society.

MELODIZER will demonstrate membranes, modules, and components in **four MD prototypes** in operational environments: specifically, **two demos will be demonstrated in industrial settings, while two demos for drinking water production**. Versions of the MD technology have already been validated in real environments, but MELODIZER will provide improved and currently missing core membrane components, and additional technology transfer in new and more appropriate implementations.

## OUR Objectives



### New membranes and modules

Creation of next-generation membranes and modules obtained with green and readily scalable approaches



### Smart renewable energy

Rationally integrate the core innovative membrane and module components with energy and control systems that maximise their performance and enable the smart utilisation of renewable energy



### Reuse of water

Reuse of industrial waste for production of drinking water



### Benefits

Demonstrate the economic and environmental benefits associated with the implementation of the innovative membrane components

## EXPECTED Impacts



New membrane materials, delivering smart solutions for greening of industrial plants



Recycling of waste streams from industrial plants to support the Zero Pollution strategy



Better materials with outstanding separation performance in terms of chemical and mechanical



Reduction of the water footprint of 10% in industrial plants for the preservation of freshwater resources



MELODIZER will develop new MD systems and designs with disruptive energy efficiencies



The membranes will be obtained using alternative green, non-toxic, and more sustainable solvents



## Project details

**Project number:** 101091915

**Project title:** Sustainable membrane distillation for industrial water reuse and decentralised desalination approaching zero waste

**Project Acronym:** MELODIZER

**Granting authority:** European Health and Digital Executive Agency

**Start date:** 01 December 2022

**Duration:** 48 months

**EU Contribution:** 7.0007.470,74

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