

MEloDIZER

SUSTAINABLE MEMBRANE DISTILLATION FOR INDUSTRIAL WATER REUSE AND DECENTRALIZED DESALINATION APPROACHING ZERO WASTE

MEloDIZER implements high-performance membranes and modules in strategic applications of membrane distillation (MD), hence providing the decisive step for the success of MD.

These core components are fabricated with a focus on feasible wide uptake and on sustainability, substituting harmful materials and protocols with >80% of benign solvents and relying on green chemistry principles.

The project prioritizes approaches that are scalable within the framework of the project and focus specifically on sustainability, extension of service life, and end-of-life issues.

The modules will simultaneously increase thermal efficiency and productivity through smart geometry, arrangements, spacers, and energy recovery strategies.

A major advantage of MD is the possibility to be run solely on sustainable and relatively cheap sources of low temperature thermal energy.

Two prototypes (2-5 m³/day, 0.5-2 m³/day) are demonstrated in industrial facilities (textile, beverage, chemical industries) to reuse wastewater (70-90%), thus reducing water footprint and approaching zero waste, as well as to recovery valuable nutrients as secondary raw materials from aquaculture wastewater.

Two prototypes (50-100 L/day, 10-20 L/day) are demonstrated as low-cost, ready-to-use, passive, autonomous, decentralised units, delivering drinking water from saline and challenging sources at community and family level.

PROJECT DURATION

From 1/12/2022 to 30/11/2026
48 months

WEBSITE E SOCIAL MEDIA

<https://www.melodizer.eu/>



PARTNERS

- POLITECNICO DI TORINO (coordinator)
- CNR
- AMAPEX ENVIRONEMENT SLU
- SOLARSPRING GMBH
- INOTEX SPOL SRO
- DeltaMem AG
- ATHINAIKI ZYTHOPIA ANONYMOS ETAIRIA
- WINGS ICT SOLUTIONS INFORMATION & COMMUNICATION TECHNOLOGIES IKE
- AQUABIOTECH LIMITED
- INNOVATION IN RESEARCH & ENGINEERING SOLUTIONS
- BLUETECHTRACKER LIMITED
- CIEMAT
- AALBORG UNIVERSITET
- WARRANT HUB SPA
- POLYMEM
- enGits GmbH
- FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV
- MUNICIPALITY OF EILAT

FUNDING INSTRUMENTS

HORIZON-CL4-2022-RESILIENCE-01

BUDGET

Total funding: **8 711 520.00 €**

Funding allocated to **POLITO: 1 398 125 €**

Funding allocated to **DIATI 778 002,50 €**

PoliTo and DIATI's role:

PolitTo is the coordinator of the consortium.

Scientific Supervisor for DIATI:

Prof. Alberto Tiraferri.



This project has received funding from the European Union Horizon Europe