NAMOR

Advancing Decentralized Water and Wastewater Systems

Fusing bioengineered microalgae–bacteria systems with cutting-edge membranes and real-time AI optimisation to deliver modular, decentralised water treatment



Why NAMOR

NAMOR is an EU-funded initiative advancing next-generation wastewater treatment technologies. It combines microalgae-bacteria co-cultivation with advanced membrane filtration and digital tools for real-time monitoring, optimisation, and decision support. Its modular and decentralised design allows site-specific treatment across diverse water streams, enhancing flexibility and adaptability. This integrated, nature-based and digitally enabled approach strengthens the resilience and sustainability of the urban water cycle, improves the efficiency and responsiveness of water management services, and supports the transition toward a circular, climate-resilient and resource-efficient economy aligned with EU priorities.

Our Ambition

- Reduce energy use by over 25% in wastewater treatment using an advanced DSS for data-driven optimisation.
- Recover over 80% of nutrients from biomass and valorize them for soil amendment.
- Develop and deploy a digital twin using predictive analytics for real time monitoring, simulation and optimization of treatment performance.
- Boost social acceptance of decentralised water reuse using inclusive co-creation that builds participation and shared ownership.
- Deliver high-quality, fit-for-purpose treated water with low energy input and environmental impact, adaptable to various urban, peri-urban and rural contexts worldwide.

NAMOR Methodology

Integrates locally adapted microalgae–bacteria co-cultivation in photobioreactors with advanced membrane filtration to achieve efficient nutrient and contaminant removal from wastewater.

Explores innovative methods for treating diverse waters and effluents under extreme temperatures using advanced media for mixed-culture cultivation.

Employs a Digital Twin and advanced DSS for real-time monitoring, predictive modelling and optimisation of treatment performance, energy use, and resource recovery.

Uses participatory, multi-actor engagement from design to implementation, capturing perceptions and co-designing context-specific, collaborative solutions.

Deploys valorization strategies, using recovered material into treatment for renewable energy generation or nutrient recovery.

3 Demo sites



Demo Site 1
High flow rate stormwater
Slovenia

Demo Site 2
Immobilized biota and membrane filtration
Greece



Demo Site 3
Low T strains
Finland



START DATE 01 June 2025

DURATION 48 months

BUDGET 4 950 237.50 €

PROJECT COORDINATOR International Hellenic University

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NAMOR project

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