Silver-based Advanced Filtration for Wastewater Treatment in WWTPs - Seeking EU Partners for Water4All Proposal

Summary

Profile type	Company's country	POD reference
Research & Development Request	**Spain**	**RDRES20250916003**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• World**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**16 Sep 2025** **16 Sep 2026**	**16 Sep 2025**

General Information

Short summary

We seek partners for a Water4All 2025 proposal focused on deploying a mobile pilot plant for wastewater treatment in municipal and industrial WWTPs. The system applies a novel silver-based technology (NPAg-22 and CPC) to eliminate pathogens and reduce AMR risk, offering a chemical-free, energy-efficient alternative.

Full description

This R&D project addresses a critical need for efficient, sustainable, and scalable technologies for advanced wastewater treatment, especially in municipal and industrial WWTPs. The main objective is to validate in operational environments a pilot plant using NPAg-22 (liquid application) and CPC (solid filtering media with silver nanoparticles) – two proprietary silver-based technologies developed to reduce microbial loads, biofilm formation, and the spread of antimicrobial resistance (AMR).

The solution avoids chemical disinfectants or UV treatments, reducing operational costs, environmental risks, and energy consumption. It offers high antimicrobial efficacy at extremely low doses (below NOAEL levels), with documented results in water reuse applications.

The pilot plant will be installed sequentially in two different European WWTPs selected by EurEau, enabling real-life validation under various effluent conditions. Key tasks include system integration, field testing, analytical validation

(CMI/CMB), and regulatory readiness.

The consortium is coordinated by Funditec (Spain) and includes ARPA (mobile plant engineering), UNIZAR (microbiological analysis), and Enosan (technology provider – Third Party Linked). We seek international partners to strengthen the proposal and comply with Water4All requirements.

Advantages and innovations

- High antimicrobial efficacy at ultra-low concentrations
- No need for chemical disinfectants or UV systems
- Compliant with NOAEL values (EU and US standards)
- Reusable and recyclable filtering material (CPC)
- Effective against biofilm and multidrug-resistant bacteria
- Suitable for both industrial and municipal wastewater
- Modular and scalable pilot plant for mobile deployment
- Significant energy and cost savings over current solutions

Technical specification or expertise sought

- Water filtration technologies and systems
- Regulatory and environmental compliance (registration consultancy)
- Pilot-scale water treatment systems
- Microbiological or analytical validation
- Participation in EU-funded R&D projects (preferably Horizon or Water4All)
- Industrial or municipal wastewater reuse

Stage of development

Available for demonstration

Sustainable Development goals

- **Goal 6: Clean Water and Sanitation**
- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 3: Good Health and Well-being**
- **Goal 13: Climate Action**
- **Goal 12: Responsible Consumption and Production**

IPR Status

Secret know-how

IPR Notes

Partner Sought

Expected role of the partner

- Provide access to WWTPs for pilot demonstration
- Support installation and operation of the pilot plant
- Offer expertise in filtration system design and implementation
- Conduct regulatory assessment and support registration strategy
- Participate in performance validation and exploitation strategy

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **Big company**
- **SME 50 - 249**
- **SME 11-49**
- **R&D Institution**
- **SME <=10**
- **Other**

Call Details

Framework program

Horizon Europe

Call title and identifier

Water4All 2025 Joint Transnational Call – “Aquatic Ecosystem Services”

Submission and evaluation scheme

Two-stage submission

Anticipated project budget

€1.5–2.0 million

Coordinator required

No

Deadline for EoI

Deadline of the call

3 Oct 2025

13 Nov 2025

Project duration in weeks

130

Web link to the call

https://water4all-partnership.eu/

Project title and acronym

SILWAT – Silver-based Innovative Low-impact Water Treatment in WWTPs

Dissemination

Technology keywords

- **10004003 - Wastewater Recycling**

Market keywords

- **09008002 - Water, sewerage, chemical and solid waste treatment plants**
- **08004003 - Water treatment equipment and waste disposal systems**

Targeted countries

- **World**

Sector groups involved