Assembling

a training package for the **capacity development** of water experts

PFAS are getting more attention; however, there is still a lack of comprehensive and accurate information on the fate of PFAS during wastewater treatment and the possibilities to remove them, their fate in the environment and the extent of contamination caused to the aquatic environment. An important part of the project activities led by TUB addresses the identified lack of knowledge, responding with tailor-made training material for relevant target groups.

The training package will be developed based on the demands of the BSR countries and of the specific target groups, including information relevant to beginner's up to expert's level. The package will include theoretical and practical training courses, as well as materials for addressing PFAS within the interests and mandates of the municipalities. It will be based on existing, and new knowledge created by the project, integrating the experience gained through all steps towards the project's realisation.

Tailor-made digital-based training material

Deliverable:

Transferable training package for infrastructure and service providers (Berlin University of Technology)

Partnership

1. Union of the Baltic Cities Sustainable Cities Commission c/o City of Turku (FI)
2. Baltic Marine Environment Protection Commission – Helsinki Commission (HELCOM) (FI)
3. University of Tartu (UT) (EE)
4. Berlin University of Technology (TUB) (DE)
5. Turku University of Applied Sciences (TUAS) (FI)
6. Gdańsk Water Utilities (PL)
7. Water and Sewage Company Ltd of Szczecin (PL)
8. Tartu Waterworks Ltd (EE)
9. Tallinn Water Ltd (EE)
10. "Kaunas water" Ltd (LT)
11. Turku Region Wastewater Treatment Plant (FI)
12. German Association for Water, Wastewater and Waste DWA Regional group North-East (DE)
13. Environmental Centre for Administration and Technology (LT)
14. City of Riga (LV)

Funding

Interreg Baltic Sea Region Programme 2021–2027

Budget

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Implementation

January 2023 – December 2025

Contacts

interreg-baltic.eu/project/emperest

emperest

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Interreg Baltic Sea Region

Co-funded by the European Union

SUSTAINABLE WATERS EMPEREST

ELIMINATING MICRO-POLLUTANTS FROM EFFLUENTS FOR REUSE STRATEGIES

THE EMPEREST PROJECT AIMS

to test advanced treatment technology that helps water utilities and companies better remove organic micropollutants such as PFAS from wastewater.

PFAS (Per- and polyfluoroalkyl substances) also known as the forever chemicals, are a large group of mobile persistent man-made substances, that have been linked to serious health issues. Together with other organic micropollutants, such as pharmaceuticals, their discharge management is becoming one of the most pressing environmental challenges in the Baltic Sea Region.

The holistic approach to the elimination of PFAS and other persistent organic pollutants within the project incorporates regional strategies for monitoring and assessment, technological advances in wastewater treatment, and risk management assessment for cities.

Developing

regional recommendations for **monitoring and assessment** of PFAS in the aquatic environment

PFAS has been identified as a group of priority contaminants in the Baltic Sea marine environment, and the project activities focus on developing a solution for comprehensive and feasible monitoring system to address PFAS. Today, the monitoring and assessment of PFAS in the Baltic Sea has significant gaps, which could be bridged by taking a regionally harmonised approach to the issue.

Coordinated by HELCOM, methodological recommendations on PFAS monitoring and assessment will be developed, to provide harmonised guidance to the Baltic Sea based on the regional needs. These recommendations, including detailed information on what, when and where to measure and how to assess and use these results, will be assembled in cooperation with regional experts and authorities, to assure their quality and applicability. Furthermore, through science-policy dialog, these recommendations are expected to contribute to the development of potential target values and indicators for the regional assessment of the Baltic Sea aquatic environment.

Regionally harmonised approach for PFAS monitoring and assessment

Output:

Methodological recommendations for monitoring and assessment of PFAS in the aquatic environment (HELCOM)

Preparing

local PFAS **risk assessment** plans in five municipalities

Tested with 18 municipalities in the Baltic Sea Region

The mobility of PFAS in the environment, combined with persistency, causes PFAS accumulation in water bodies, drinking water, plants, and air. Significant PFAS contamination cases of drinking water have been detected in the EU, however, PFAS are not being actively monitored in EU cities.

The project activities include developing a PFAS risk assessment approach, tailor-made tools and guidance for local authorities enabling them to identify and assess PFAS-related risks and propose relevant risk mitigation strategies. Engaging in this work, the local authorities in the Baltic Sea Region will expand their understanding of the environmental risks posed by PFAS and will be able to uptake and localise practical approach and functional tools to manage the potential impact of PFAS entering the environment. The PFAS risk assessment framework prepared and validated within the project will be paired with at least 5 local PFAS risk assessment plans.

Output:

PFAS risk assessment plan for local authorities (City of Riga)

Testing

advanced mobile technology for micropollutants removal from wastewater effluent

The continuous emissions of organic micropollutants from treated municipal wastewater to our environment are becoming more discernible throughout the region. There are plans for strict regulations in the future, but it will present significant challenges and will require large-scale physical investments. The EMPEREST project will set up mobile pilots for advanced wastewater effluent treatment, to address many of them.

The mobile pilot plants will include ozonation, granular activated carbon filtration and UV disinfection – a combination proven to have a high degradation rate of different organic micropollutants, reaching up to 90% reduction in many problematic substance groups. Throughout the project, these mobile pilots will travel to 6 WWTPs in different countries to collect the data on the treatment efficiency, most efficient combination of technologies and specific conditions required for the optimal operation of the advanced treatment.

Piloting in 6 different wastewater treatment plants

Output:

Strategies and technological means for minimising organic micropollutant emissions from WWTPs (University of Tartu)