

# Systems for the purification of pharmaceutical residues and other priority persistent substances

Systemförslag för rening av läkemedelsrester och andra prioriterade svårnedbrytbara ämnen



## Collaboration partners



## Funding

**Swedish Agency  
for Marine and  
Water Management**

and project partners own contribution

## Summary

The project, in which both fundamental and applied research organisations and sewage treatment plants are involved, links existing and new knowledge aiming to contribute to the implementation of more resource-efficient wastewater treatment. The focus is on substances as pharmaceutical residues and other priority substances.

## Description

Pharmaceutical residues and other priority persistent substances pass through the sewage treatment plants and end up in the environment. Some of the substances that treatment needs to focus on are not sufficiently known, the analysis of the substances does not exist or is not good enough and degradation products from different treatment techniques are not sufficiently investigated in order to develop techniques, which not only ensure resource efficient purification of already well-known substances, but also other priority substances. The project will lead to better understanding and

methods to increase our knowledge of the concentrations and amounts of relevant compounds in existing and newly developed removal processes.

The most effective treatment options, with associated design and cost calculations, will be presented so that treatment plants can choose the solution that is best suited to their conditions and future goals. This includes a comparison of techniques in terms of the overall environmental impact and cost, but also the prospects of various systems in order to adapt to new technologies, which will be used in sewage treatment plants in the future. The project will, therefore, both provide a basis for a direct implementation of complementary purification technologies for pharmaceutical residues and other priority persistent substances, and prepare for future effective and sustainable solutions, which also allows for an internal resource-efficiency and –saving for sewage treatment plants.

### Goal

The goal of the project is to contribute to the implementation of better treatment systems by providing a basis for the selection of systems to suit different Swedish sewage treatment plants. The prepared material will provide insight into the most realistic treatment methods for different plant types.

### Expected benefit

The project will help to meet the need for extended treatment of pharmaceutical residues and other persistent substances in particular by:

- Providing a basis for selection of the priority substances and guiding for improved analysis of these in various matrices
- Providing decision support for sewage treatment plants for selecting the most effective treatment techniques from a sustainability and system perspective
- Contributing to the implementation of efficient cleaning techniques and their development

### Contact person

#### Project manager:

Christian Baresel, IVL Swedish Environmental Research Institute, christian.baresel@ivl.se, +46-8-598 56 406

KTH: Maritha Hörsing

Stockholm Vatten AB: Cajsa Wahlberg

SYVAB: Sara Söhr