

# BONUS CLEAN WATER



**BONUS CLEANWATER** is a research project working with solutions to reduce input of micropollutants and microplastics into the Baltic Sea.

## BONUS CLEANWATER

The project is focussing on research on innovative water technology to remove micropollutants and microplastic from wastewater, to reduce input into the Baltic Sea. The solutions will be developed in close collaboration with end-users. Tests will be performed both in laboratory- and in pilot scale at selected wastewater treatment plants in Sweden, Denmark and Germany.

### WHY

- The lack of knowledge on input loads of micropollutants and microplastic, into the Baltic Sea for which pollutants wastewater effluents or stormwater are the relevant sources.
- The lack of energy efficient and eco-technology based treatment systems to remove micropollutants and microplastic from wastewater and stormwater (combined sewer overflow (CSO) and rain runoff).
- The lack of cost-efficient high frequency testing methods for micropollutants and high validity testing for microplastic particles.

### GOALS

**Develop** eco-technological solutions for removing micropollutants and microplastic from contaminated water.

**Determine** the dominant source, wastewater or stormwater, for various micropollutants and microplastics.

**Develop** testing methods for analysis of xenobiotics and microplastics in storm-, leachate- and wastewater.

### HOW

The project combines fundamental studies on how the respective processes are controlled with applied ones, concerning operation control, cost of operation and energy consumption.

More energy efficient ways of ozonation will be explored and tested.

Special focus on ways to decrease the formation of unwanted ozonation products.

Processes controlling the removal of micropollutants in moving bed biofilm reactors (MBBR) will be studied, based on the most recent finding of enhancing the removal for some pharmaceuticals by a factor of about 20.

Membrane based technologies will be studied with the aim to increase removal of both microplastics and micropollutants and simultaneously to increase the lifetime of the membranes. Biofilters will be studied for their potential to remove micropollutants and microplastics in decentralized water treatment systems.



#### PROJECT FUNDING

BONUS CLEANWATER has received funding from BONUS, funded jointly by the EU and Innovation Fund Denmark, Sweden's innovation agency VINNOVA and the German Ministry for Education and Science (BMBF). The budget is 3.8 million € for the project period April 2017 – March 2020.



## PROJECT COORDINATOR



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## PROJECT PARTNERS

