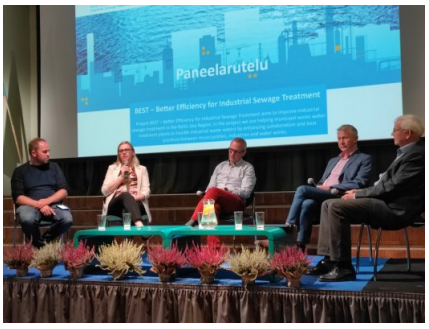
BEST Better Efficiency for Industrial Sewage Treatment | Interreg Baltic Sea Region | EUROPEAN REGIONAL DEVELOPMENT FUND EUROPEAN UNION | WITH FINANCIAL SUPPORT OF THE RUSSIAN FEDERATION

Dear project BEST stakeholder! You are receiving this letter, because we think you might be interested in knowing about the project and would like to be informed about the project proceeding. If you don't want to get this newsletter in future, please contact Project BEST communications manager Miitta Rantakari (firstname.lastname@hel.fi).



BEST Project Final Seminars were arranged as parallel national events in Poland, Russia, Latvia, Estonia and Finland

Project BEST achievements and outputs were presented in national seminars in the project partner countries in September. Altogether over 400 people interested in industrial wastewaters followed the seminars in Warsaw, Poland LINK, Kaliningrad, Russia LINK, Riga, Latvia LINK, Põltsamaa, Estonia LINK, and in Helsinki, Finland LINK. Organizations participating the seminars presented national permitting authorities, scientific and educational organizations, water utilities, industrial organizations, and consultants. Due to COVID-19 pandemic, the events were arranged as webinars, or alternatively, arranged for a small audience present, but recorded and streamed to the wider audience. Seminars were mainly in the local national language, but some presentations were streamed from other countries and were therefore in English. Below links to the presentations in English.

BEST Project, main goals and outputs, *project manager Kajsa Rosqvist*, *City of Helsinki* VIDEO LINK

Assessment of the current situation in the industrial wastewater management in the Baltic Sea Region, *Dr. Sandis Dejus*, *Riga Technical University* VIDEO LINK

Guidelines for management of industrial wastewaters, *Eero Makkonen, Afry Finland Oy* VIDEO LINK

HELCOM for wastewater management, *Dmitry Frank-Kamenetsky*, HELCOM VIDEO LINK

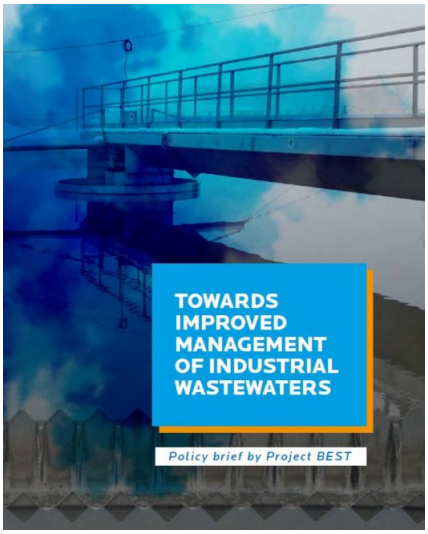
Project BEST

workpackages have been completed and finalized products are collected into a brochure

Information about the project outputs was collected into a brochure, which is available on the Project BEST website LINK TO THE BROCHURE

The brochure, as well as the Project BEST website www.bestbalticproject.eu, provide information on

- **New Baltic Sea Region wide guidelines for co-treatment of industrial and municipal sewage LINK**
- **Current situation in the industrial sewage treatment LINK**
- **Toolbox of best practices LINK**
- **Cooperation models for wastewater treatment plants and industries LINK**
- **BEST investments and pilots LINK**



New Baltic Sea Region wide guidelines for co-treatment of industrial and municipal sewage were completed in Project BEST

The new guidelines give guidance to authorities at different levels, and water utilities affected by industrial wastewaters as well as industrial operators conveying industrial wastewater to the sewer. The experts formulating the guidelines identified the most important obstacles for the successful implementation of existing legislation and best practices and suggested the possible solutions to overcome these obstacles. According to the key challenges and recommendations, the guidelines are divided into four categories and into the national annexes for all BEST partnership countries (Finland, Poland, Estonia, Latvia, Lithunia and Russia).

- Guidelines for legislative and institutional developments
- Guidelines for the co-treatment and pretreatment of industrial wastewaters
- Guidelines for industrial wastewater contracts
- Guidelines for cooperation

The separate Policy Brief document gives specific recommendations for industrial operators, environmental authorities, wastewater treatment plants and policy makers. This policy brief is available in different languages (English, Polish, Russian, Latvian, Estonian, Finnish and Swedish).

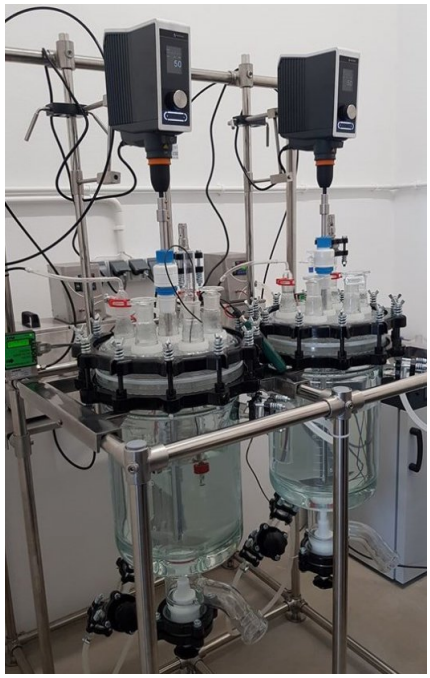
Guidelines document and Policy Briefs in different languages are available on Project BEST website LINK

BEST investment

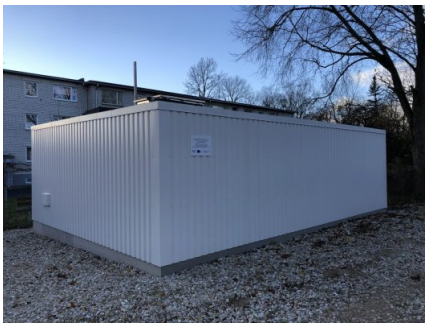
reduced phosphorus content in the treated wastewater in Doruchów, Poland

The new wastewater treatment line for the industrial waste from local meat industry in Doruchów, Poland is in use and functioning well. With this new treatment line, wastewater treatment plant in the municipality of Doruchów was able to reduce the effluent phosphorus content from earlier 40 mg/L to less than 3 mg/L. The tertiary wastewater treatment with calcium silicate filtering efficiently removes phosphorus from wastewater, and furthermore, P loaded filter media can be used as a fertilizer facilitating P recycling. The used rock filter media with a high pH and content of calcium (Ca) and amorphous silica (Si), may be a potential soil conditioner, which can be particularly beneficial for acid soils. See a video about the completed investment and a tool card on BEST website VIDEO LINK, LINK TO TOOL CARD

Pilot-scale fermentation unit gives crucial information that helps to optimize the process of producing biogas from sludge and industrial waste



At the water utility company in Leszno, Poland, the energy potential of the sludge produced at the municipal WWTP was previously unused. Thus, the municipal WWTP studied the possibilities of producing biogas from the sludge together with biodegradable waste from the food processing industries in the vicinity. In order to optimize quality and amount of substrates used in the co-digestion, the process was studied on a pilot scale. The pilot installation allows the interference resistance of the process to be tested, the susceptibility and efficiency of the process to be determined for individual substrates, the prediction of biogas and methane production, and the prevention of process inhibition via the early detection of adverse changes. See a video and a tool card about the completed Project BEST pilot VIDEO LINK, LINK TO THE TOOL CARD.



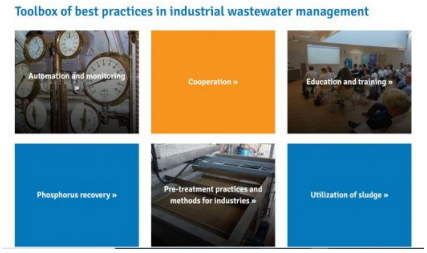
Regulation tank for a dairy helps to optimize flotation flocculation wastewater pretreatment process

Epiim dairy and cheese factory in the Southern Estonia invested in a regulation tank in order to equalize the water flow to reach optimal function and capacity of the previously built flotation process. The regulation tank reduces hydraulic peaks to the pretreatment facility, balances the industrial wastewater content and quality and increases the precision of chemical dosing. Furthermore, the collected flocs are utilized for biogas production. With the new optimized

pretreatment process, the effluents from Epiim facility no longer hamper treatment processes at the municipal wastewater treatment plant Põltsmaa Vesi. Watch a video about the completed Project BEST investment VIDEO LINK.

Flotation flocculation pretreatment reduces organic matter and nutrient load from Latvijas Piens cheese factory and dairy

The dairy production company Latvijas Piens in Latvia discharges its wastewater to the Jelgavas Udens municipal wastewater treatment plant. Previously, the wastewater from Latvijas Piens contained a high concentration of BOD and nutrients, and hindered the treatment processes at the Jelgavas Udens treatment plant. In Project BEST Latvijas Piens invested in a flotation and flocculation wastewater pretreatment process in order to reduce the wastewater load. In the pretreatment process, wastewater from the dairy plant is directed to the buffer tank to equalize of the concentration and flow. After equalization, the wastewater stream is pumped into the flocculation flotation system for the removal of suspended solids, fat, oil and grease. The generated sludge and the collected flocs can be utilized for biogas production after pretreatment. See a video and a tool card about the completed Project BEST investment VIDEO LINK, LINK TO THE TOOL CARD.



Good practices and achievements collected during Project BEST were stored in Toolbox of best practices

Achieved wisdom, experiences and good practices about industrial wastewater management and co-treatment at the municipal wastewater treatment plants were stored in the Toolbox of Best Pracitces. In the Toolbox, the best practices are presented as tool cards, each card representing one good practice. The themes of the Toolbox are automation and monitoring, cooperation, education and training, phosphorus recovery, pretreatment practices and methods for industries and the utilization of sludge. LINK TO THE TOOLBOX

Ideas, experiences and examples of arranging seminars, workshops and training were collected in a Training concept manual. LINK TO TRAINING CONCEPT

You get this e-mail, because you are listed as a stakeholder of the BEST Project. If you don't want to receive these letters in future, please contact project communication manager Miitta Rantakari (firstname.lastname@hel.fi)

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