



**Energy-efficient
technologies for removal
of pharmaceuticals and
other contaminants of
emerging concern**

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Problem

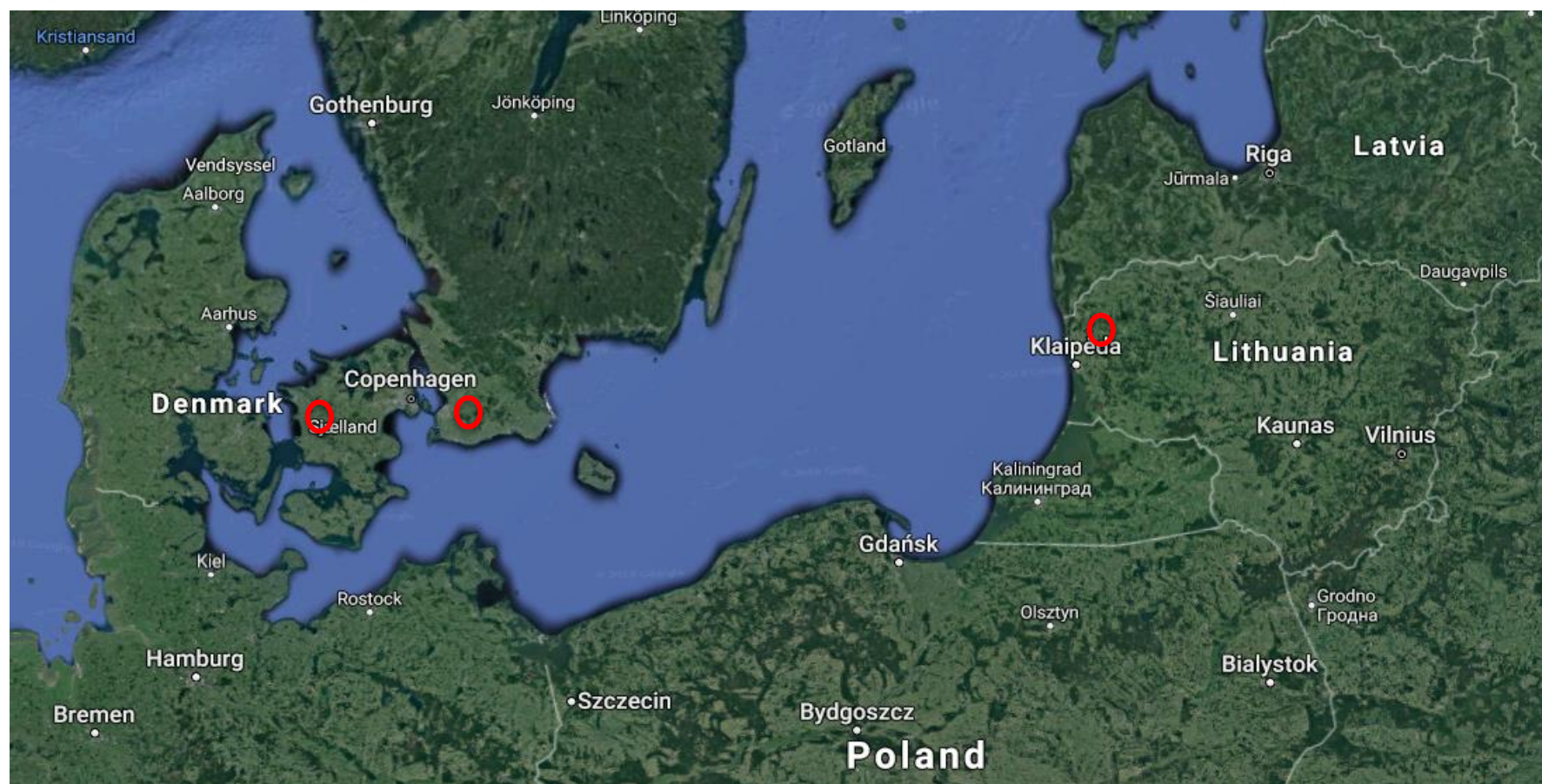
- Increasing use of pharmaceuticals and other organic micropollutants
- Wastewater treatment plants are not designed to remove them
- Negative effects on aquatic ecosystems reported
- Problem related to drinking water resources



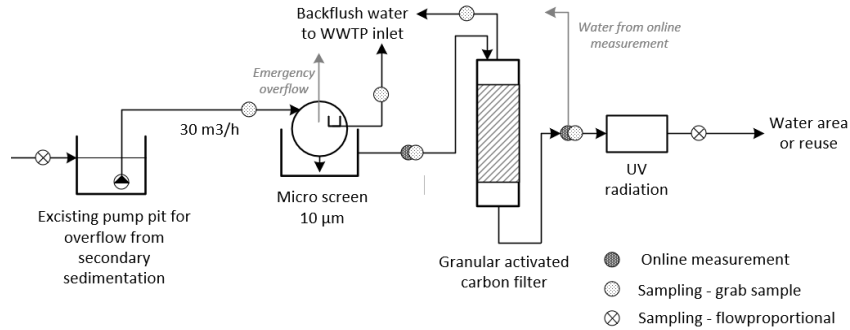
Project objectives

Long term objective: reduce input (of pharmaceuticals and other contaminants of emerging concern as well as antibiotic resistant bacteria) from wastewater to Baltic sea through upgrading of WWTP's

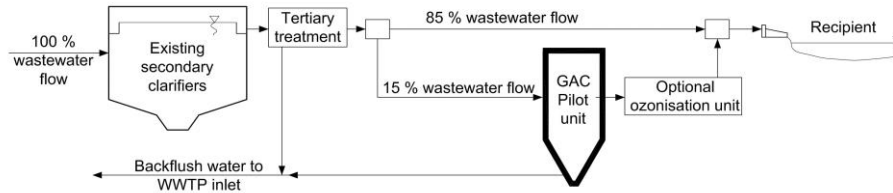
Specific project objective: Pilot testing to demonstrate, test and validate new technological solutions at small and mid-sized WWTP's and disseminate information to end-users



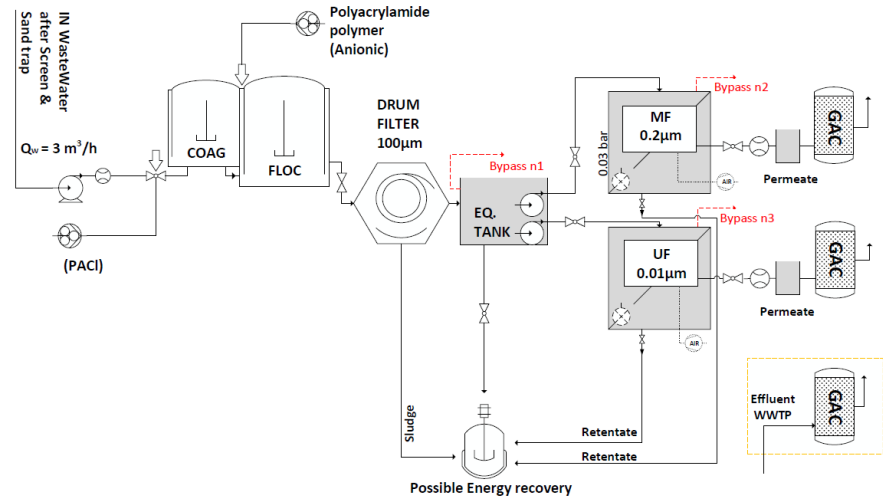
Technologies



Concept for pilot tests in Slagelse, Denmark



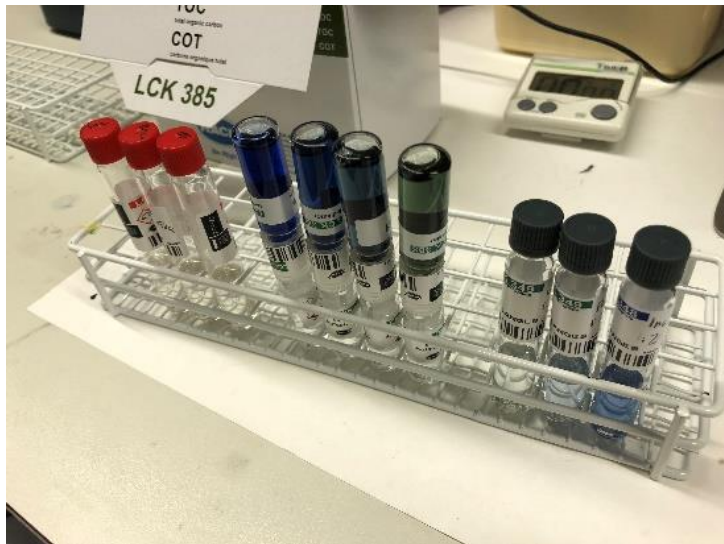
Concept for pilot tests in Kretinga, Lithuania



Concept for pilot tests in Svedala, Sweden

Different pilots in different countries...

- ... but same laboratory
- ... and complementing laboratory tests



Ämnen för utvärdering av avancerad reningsteknik

Listan är baserad på ämnen upptagna på EUs 1st Watchlist och Läkemedelsverkets lista från 2015. Ämnesurvalet täcker väl in en rad aspekter som är viktiga vid utvärdering av avancerad rening såsom; halter (hög och låg), varierade kemiska egenskaper och relevans ur ett miljö- och hälsoperspektiv.

- 1 Acetamidrid
- 2 Atenolol
- 3 Bisphenol A
- 4 Carbamazepine
- 5 Ciprofloxacin
- 6 Citalopram
- 7 Clarithromycin
- 8 Diclofenac
- 9 Erythromycin
- 10 Estrone
- 11 Fluconazole
- 12 Furosemide
- 13 Ibuprofen
- 14 Imidacloprid
- 15 Ketoconazole
- 16 Losartan
- 17 Methotrexate
- 18 Metoprolol
- 19 Naproxen
- 20 Oxazepam
- 21 Paracetamol
- 22 PFOA
- 23 PFOS
- 24 Propranolol
- 25 Sertraline
- 26 Sulfamethoxazole
- 27 Tramadol
- 28 Trimethoprim
- 29 Venlafaxine
- 30 Zolpidem

Partners

- Lund University, Department of Chemical Engineering
- Sweden Water Research AB
- Kristianstad University
- Slagelse Utility
- Slagelse Municipality
- JSC "Kretinga Water"
- Gdansk Water Foundation



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sweden  water research



Gdańska Fundacja Wody

Associated Partners

- Svedala municipality
- Lithuanian Water Supply Association
- Danish Water and Wastewater Association (DANVA)
- Swedish Water & Wastewater Association
- Swedish Agency for Marine and Water Management
- WIN – Water Innovation Accelerator

Time plan

Start: 2018-01-01

Planned completion: 2021-06-30

THANK YOU FOR YOUR ATTENTION!

CONTACT



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**LESS IS MORE
ENERGY-EFFICIENT
TECHNOLOGIES FOR
REMOVAL OF
PHARMACEUTICALS
AND OTHER
CONTAMINANTS
OF EMERGING
CONCERN.**