Interreg Co-funded by the European Union

Northern Periphery and Arctic

ENFORCE (interreg-npa.eu)

Climate change

Duration:
1/12/2022 – 30/11/2025
Budget:
Total budget € 1,298,612.87
EU Funding € 736,019.20

Project Overview

ENFORCE aims to develop a resource efficient wastewater management model that will reduce water and environmental footprint of wastewater treatment provisions in the region. Currently, wastewater treatment is a utility service and maintenance, and operational costs are paid from public funds. The level of WWT practices varies from direct discharge to mechanical and advanced level treatment due to different regulations in the region. It is now widely accepted that wastewater is a resource and not a liability. There are opportunities to implement Circular economy principles (i.e. re-cycle, re-use, recovery of nutrients and energy). The project will analyse the current wastewater treatment plants (WWTP) and legal framework to implement technologies to achieve the goals of providing sustainable treatment of wastewater. The ambition is to present a wastewater management model that transform WWTP into resource recovery hubs, which can also provide business and economic opportunities to communities within the region.

Objectives

Project aim will be accomplished by achieving the following objectives.

- Benchmarking: state-of-the-art investigation to identify WW management practices, policy issues, discharge quality limits, minimum water needs and water consumption, sources of pollution (municipal, industry, agriculture, etc.,) for analysing environmental impact to verify the opportunities and challenges that exist in each region will be conducted.

Pathways: The technologies for energy, nutrient, and material recovery (biogas phosphorous, hydrogen, nitrogen etc.) will be evaluated for their potential for the region. The evaluation will be based on data from the plants, simulations, and laboratory studies. End users for recovered materials and Industries that can process and/or upgrade the materials into products for consumption will be identified for each region.

- Case studies: The selected wastewater management approaches on the basis of CE will be studied in detail in the context of the three participating regions, which represent different socioeconomic bases and climate conditions because the approach will need to adapt to individual conditions. Based on real and simulated data, new concepts will be evaluated on the basis of environmental, economic, and social benefits.
- Business models & exploitation: Information and output from the project activities will be disseminated among interested groups using relevant routes such as research publications and in popular and local media, workshops, and seminars for stakeholders (local authorities, industry, and peer groups).

Mismanagement of sewage has been one of the major reasons behind the shrinkage in freshwater resources as its disposal in the water bodies makes water unsuitable for consumption and further disrupts the aquatic ecosystem. Wastewater has been identified as a rich resource for nutrients, reclaimed water, and energy by the scientific community. There is a need to holistically manage water and wastewater resources and drive the community towards a circular economy, which will not only lead to water sufficiency but resource recovery, nutrient recovery, energy recovery, and prevention of pollution in water bodies. Data on discharge quality of effluents, the information about WWTPs, and waste management practices, scope for resource recovery can lead to CE potential in the wastewater sector. Further, drivers and barriers affecting CE implementation in the wastewater sector can be identified to assess resource recovery potential and facilitate the practitioners and companies in making conscious decision and planning and put forth all they key factors that affect CE implementation.

Opportunities for Companies and Individuals:

We seek participation from persons/ companies engaged in waste water management industry or interested in Circular economy (CE) principals relating to waste water practices. Companies can join as associate partners in the project to share data on current practices and receive guidance for better efficiency, compliance with the regulations.
Such tasks may also be performed by master's student projects and require no financial contribution. There are several funding opportunities for small and medium size companies and working together with researchers at the University companies can develop new management and technology.

Partner Institutions:

UiT, The Arctic University of Norway
University of Ireland Galway, Ireland
The Environment Agency Faroe Islands
Arctic Experts, Norway

Associate Partners:
University of Faroe Islands
Interkommunalt politisk råd for Lofoten

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