

Tackling Microplastic Pollution – Technological Solutions for Municipal Wastewater Treatment Plants

INSPIRE Demonstration Day: From Innovation to Implementation – Advanced Technologies and the Future of Wastewater Treatment

Wednesday, 11 November 2026

Domžale, Slovenia

The INSPIRE Demonstration Day at the Slovenian pilot site will be organised by the University of Maribor in collaboration with the Domžale–Kamnik Wastewater Treatment Plant (WWTP) and will take place at the INSPIRE demonstration site in Slovenia.

The INSPIRE project is implemented under the European Mission ***"Restore our Ocean and Waters by 2030"***, which aims, among other objectives, to reduce microplastic pollution in the environment by at least 30% by 2030. Through its innovative technological solutions, the project contributes to achieving this target, particularly by preventing plastic pollutants from entering aquatic environments. Municipal wastewater treatment plants represent critical intervention points, as they receive wastewater containing microplastics from various sources. Although conventional treatment processes already remove a substantial proportion of microplastics, remaining particles may still be discharged with treated wastewater into rivers and ultimately reach the seas. Developing

additional technologies for their removal is therefore an important step towards reducing pollution in aquatic ecosystems. Project information: PROJECT INSPIRE

The event will showcase the results of pilot testing of INSPIRE technologies for microplastic removal from municipal wastewater, with particular emphasis on their scale-up potential and application in full-scale wastewater treatment plants. Four innovative technologies will be presented: **EcoPlex** developed by Waste & Water, **Super-TW-Net** developed by DELVEC, **the membrane filtration system** developed by CleraOne, and **the photocatalytic reactor** developed by KTH Royal Institute of Technology.

During a guided tour of the demonstration site, participants will have the opportunity to observe the technologies in operation and explore their potential integration into existing wastewater treatment systems.

An important part of the event will also focus on the future of municipal wastewater treatment considering the revised EU Urban Wastewater Treatment Directive (UWWTD). The panel discussion will bring together representatives of research institutions, technology developers, wastewater treatment plant operators, and relevant public authorities to address technological readiness, regulatory requirements, investment challenges, and opportunities for implementing innovative solutions in practice.

Participation is free of charge. However, places are limited, and registration is mandatory for all participants.

Registration form

Venue: Domžale–Kamnik Wastewater Treatment Plant, Študljanska cesta 91, 1230 Domžale, Slovenia

Event Programme:

8.30 – 9.00 Arrival and Registration

9.00 – 9.15 Welcome Addresses

- Dr. Marjetka Levstek, Director CČN Domžale-Kamnik;
- Mayor of one of the municipalities co-owning the Domžale–Kamnik WWTP (TBC).

9:15–10:00 INSPIRE Pilot Testing and Results at the Domžale–Kamnik WWTP

- Introduction to the INSPIRE project and the demonstration site at the Domžale–Kamnik WWTP – Assoc. Prof. Dr. Annamaria Vujanović, University of Maribor;
- **Keynote Speech:** Results of INSPIRE Technology Pilot Testing at the Domžale–Kamnik WWTP – Prof. Joydeep Dutta, KTH, Sweden.

10:00–11:00 From Pilot Testing to Real-World Applications: Innovative INSPIRE Technologies

Presentation of the technologies and their potential application in full-scale wastewater treatment plants:

- **EcoPlex** – Nikos Katsafados, Waste & Water (WNW), Greece;
- **Super-TW-Net** – Jeorge Deligiannakis, DELVEC, Greece;
- **Photocatalytic Reactor** – Prof. Joydeep Dutta, KTH, Sweden;
- **Membrane Filtration** – Kostja Klabjan and Arpad Talasi, CleraOne, Slovenia.

11:00–11:30 Coffee Break and Networking

11:30–12:30 Panel Discussion: The Future of Wastewater Treatment – Innovative Technologies, European Legislation, and Implementation Challenges

The discussion will focus on the challenges and opportunities arising from the revised EU Urban Wastewater Treatment Directive (UWWTD), as well as the role of innovative technologies in removing micropollutants, including microplastics.

Moderator: Assist. Prof. Dr. Annamaria Vujanović, University of Maribor

Panellists:

- Dr. Marjetka Levstek, Director of the Domžale–Kamnik WWTP, Slovenia;
- Prof. Joydeep Dutta, KTH, Sweden;
- Nikos Katsafados, Waste & Water, Greece;
- Jeorge Deligiannakis, DELVEC, Greece;
- Dr. Tine Bizjak, Institute for Water of the Republic of Slovenia;
- Flanders Marine Institute (VLIZ);
- Slovenian Ministry of Natural Resources and Spatial Planning or relevant public authority (TBC).

12:40–13:40 Clustering Event: Horizon EU Mission Ocean and LIFE Projects

Moderator: TBC

Panellists:

- **INSPIRE, Tools4CleanBANOS, Tools4Ocean, BlueActionBANOS** – VLIZ;
- **TASC-RestoreMed -** Assist. Prof. Dr. Annamaria Vujanović, University of Maribor;
- **REMEDIES –** Marko Petelin, Infordata;
- **REMEDIES 5.0** – Dr. Dušan Materić, National Institute of Chemistry;
- **RISTANC** – Dr. Irena Fonda, YouSea Institute;
- **INSPIRI** – Dr. Cristina Canella, ZRS MIOS;
- **RESTART** - Mateja Simčič, Ministry of the Environment and Spatial Planning.

13:40–15:00 | Lunch and Networking

In parallel: INSPIRE Showroom