

#EU
GREEN
WEEK

20 June 2025

Partner Event

ToDrinQ: Design Support Tool of flexible Drinking Water Treatment Plants

Dirk Vries



Context

ToDrinQ at a glance



Objectives: Design Support Tool (DST) for flexible Drinking Water Treatment Plants (DWTPs)

Aim

To provide a design-support tool (DST) for flexible/adaptable DWTPs

Specific objectives WP6

Identify and characterize treatment technologies and treatment trains applicable for DWTPs

Define key design components related to uncertainties and goals when designing DWTPs

To develop a tool that can identify optimal design alternatives making DWTPs more flexible

End users

Water utilities for the preliminary design of drinking water treatment plants

WP6 Leader: Lydia Vamvakeridou-Lyroudia

Objectives translated to the challenge



DWTP options (trains) required for **groundwater** and **surface water** sources



Treatment trains based on **user preferences** regarding **technologies**, **costs** and **CO₂** footprint



Pros, cons, costs, uncertainties & CO₂ footprint of the selected treatment trains

From
source
water
quality

to

design
of a
DWTP

Technology description



Automated decision tree procedure for the identification of treatment technologies and trains



User has the option to select from a range of technologies



Uncertainty parameters for each technology are quantified, complexity, robustness, flexibility and the environmental impact



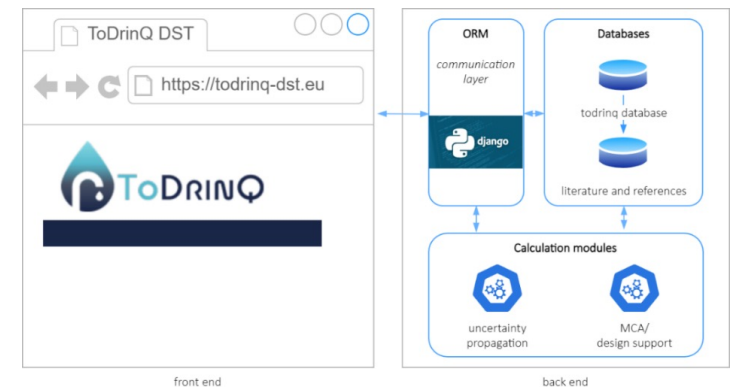
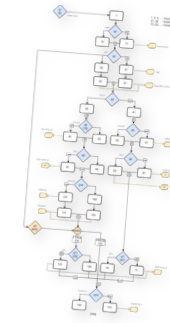
Parameters calculated: efficiency, area footprint, nominal capacity, head losses, CO₂ and costs



Information about uncertainty, advantages and disadvantages per technology



Web application



Software architecture

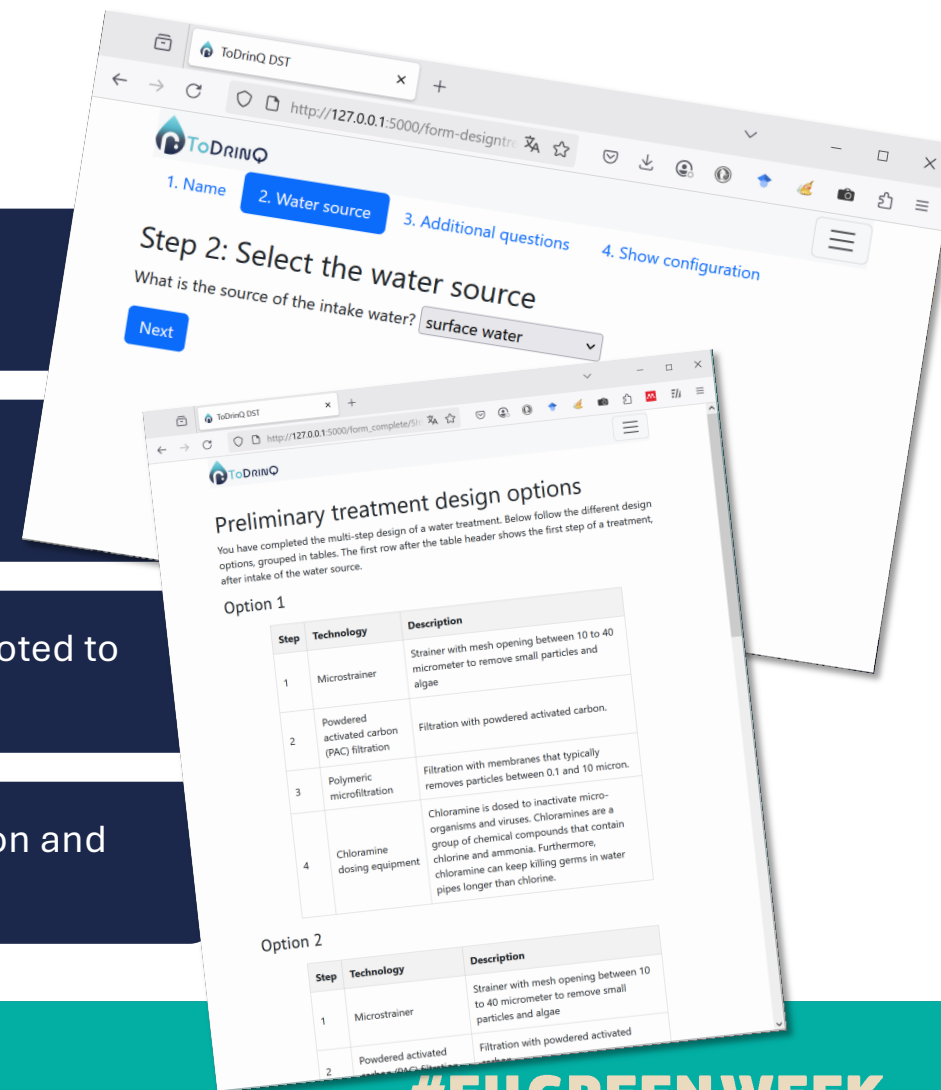
Roadmap: further development & market uptake

Further work on uncertainty, costs, treatment capacity and energy/CO2 footprint

Evaluation & validation by stakeholders

Tool will be publicly available on GitHub, open-source and promoted to water utilities

Open-source code creates opportunities for further collaboration and integration with other tools



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Thank you!

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