

EXPOPLAN

EXPOPLAN - Web-based planning tool for wastewater treatment plants in hot and cold climates

In the BMBF-funded project EXPOPLAN, software tools for wastewater treatment plant planning in hot climates have been developed, which are provided free of charge as a web application on the Internet and in new versions of the simulation software SIMBA#.

The web application is publicly accessible free of charge at the address <http://iservice.ifak.eu/expoplan/> with the user name "expo" and the password "plan".

The software tools are based on the DWA volume T4/2016 "Design of wastewater treatment plants in warm and cold climates" [1, 2], which was first published in October 2016 and describes internationally applicable design approaches for wastewater treatment plants. Additionally, calculations of costs and CO₂ equivalents for the evaluation of the plants were implemented in the tools. The web-based EXPOPLAN planning tool is open not only to users, but also to developers of other process modules. The currently integrated process stages of wastewater treatment are:

- Mechanical pretreatment in a primary clarifier
- Activated sludge stage consisting of activation tank and secondary clarification
- Trickling filter
- Anaerobic wastewater treatment as "Upflow Anaerobic Sludge Blanket (UASB)" process
- Anaerobic, aerated and optional wastewater ponds
- Waste water pumping unit (influent or intermediate)

Sludge can accumulate in each stage. The sludge streams are collected additively and fed into the sludge treatment as a mixture. The added sludge can also pass through different treatment stages. Options for this are:

- Mechanical sludge dewatering
- Anaerobic sludge digestion
- Agricultural application
- Solar sewage sludge drying
- Sludge Mono Incineration
- Sludge co-combustion

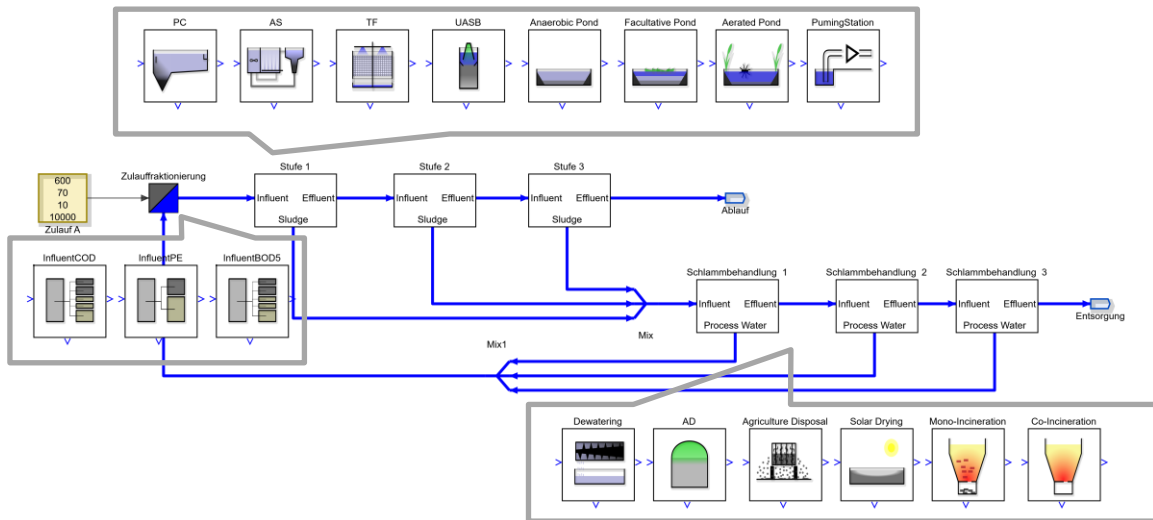


Figure 1: Connection of wastewater treatment modules and sludge treatment modules

Further information on the structure and background can be found in the manual and the final reports of the individual partners.

Acknowledgement

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Literatur

- [1] DWA: Bemessung von Kläranlagen in warmen und kalten Klimazonen. DWA-Themen T4/2016, Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e. V., Hennef, korrigierte Fassung November 2017, ISBN 978-3-88721-409-8, Download: <https://www.expoval.de/de/dwa-themenband>.
- [2] Verbundprojekt „Exportorientierte Forschung und Entwicklung im Bereich Abwasser – Validierung an technischen Anlagen“ (EXPOVAL), Website, <https://www.expoval.de/>.

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