

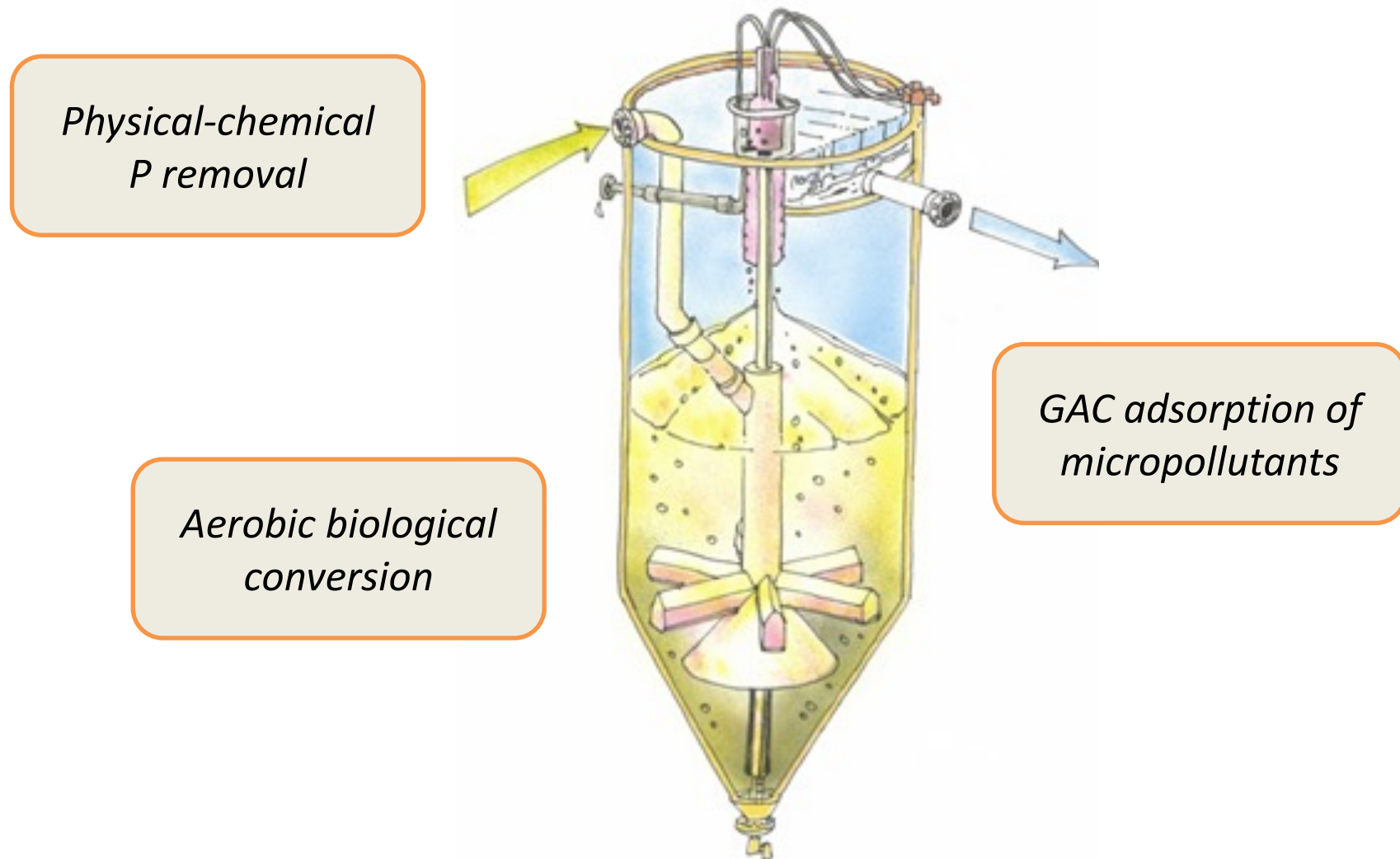
## **Bologically enhanced Continuous GAC filtration (BC-GAK)**



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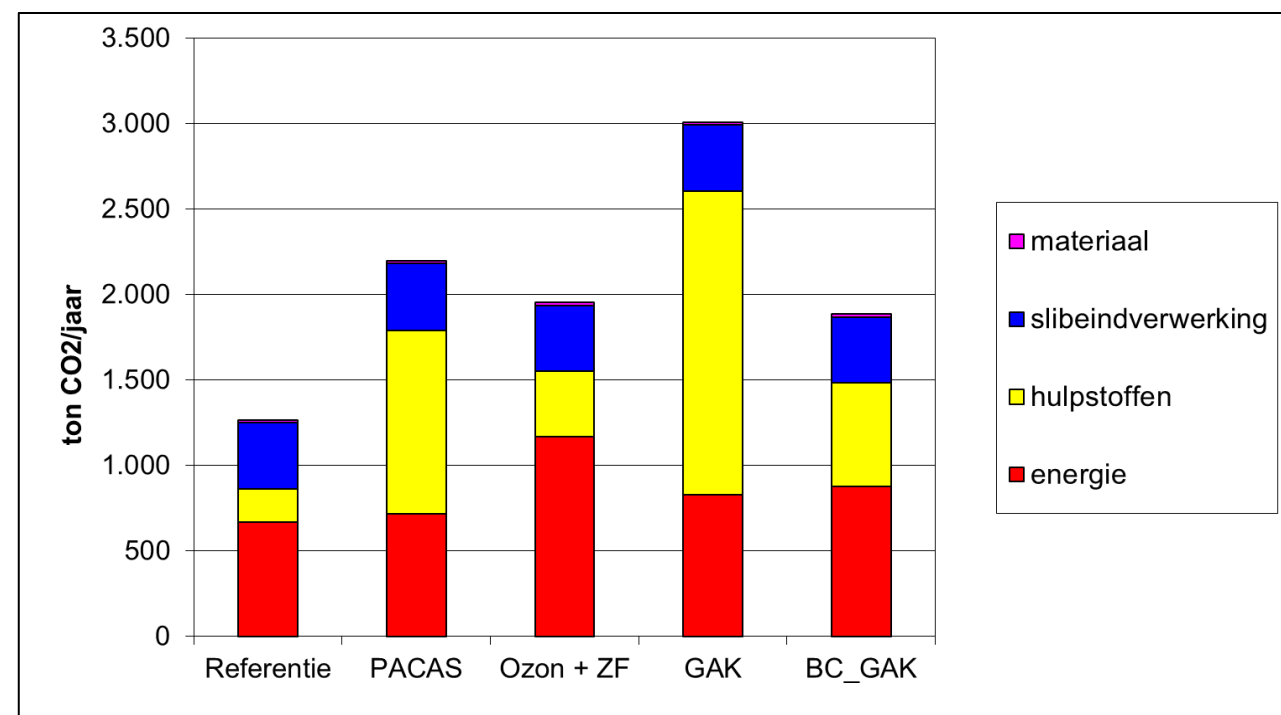


## Combining functions in one reactor



## Targets

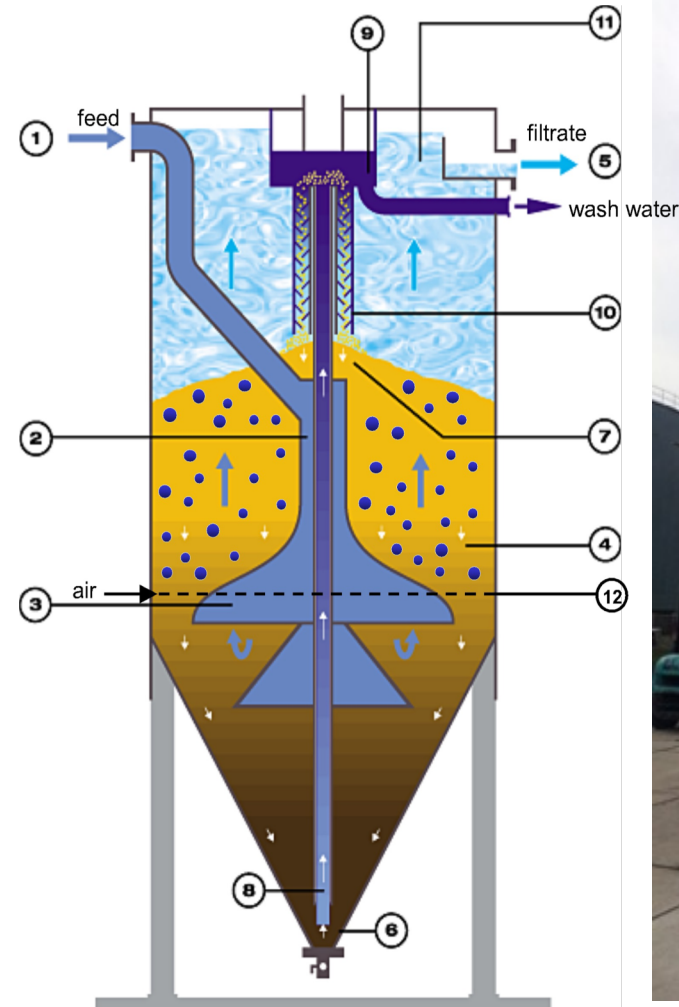
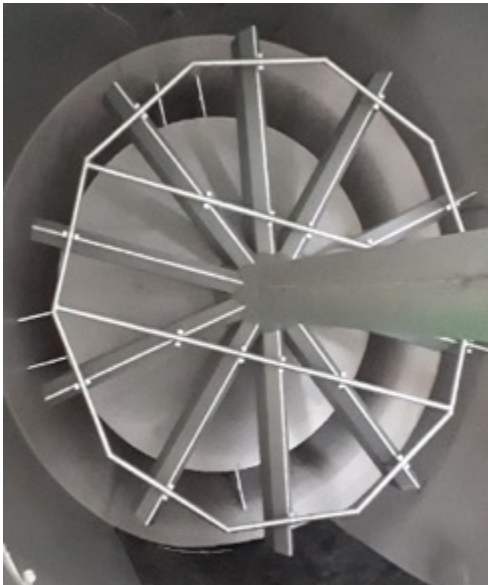
- Consistent removal of targeted micropollutants
- Positive contribution to effluent ecotoxicity
- CO<sub>2</sub> footprint calculated at 115 g CO<sub>2</sub> per m<sup>3</sup> treated waste water
- Simultaneous P removal by inline coagulant dosing to meet KRW
- Biological conversion by gentle aeration to stretch GAC regeneration
- Sludge retention time > 10 days
- Enhanced media circulation control
- Average EBCT around 30 minutes
- Filtration rates: 5 – 7 m/h





# Pilot

- Pilot location: WwTW Emmen
- Parallel to BODAC pilot
- 2 years piloting period
- Starting early 2022
- Pilot capacity: 5 m<sup>3</sup> per hour
- GAC volume: 2 m<sup>3</sup>



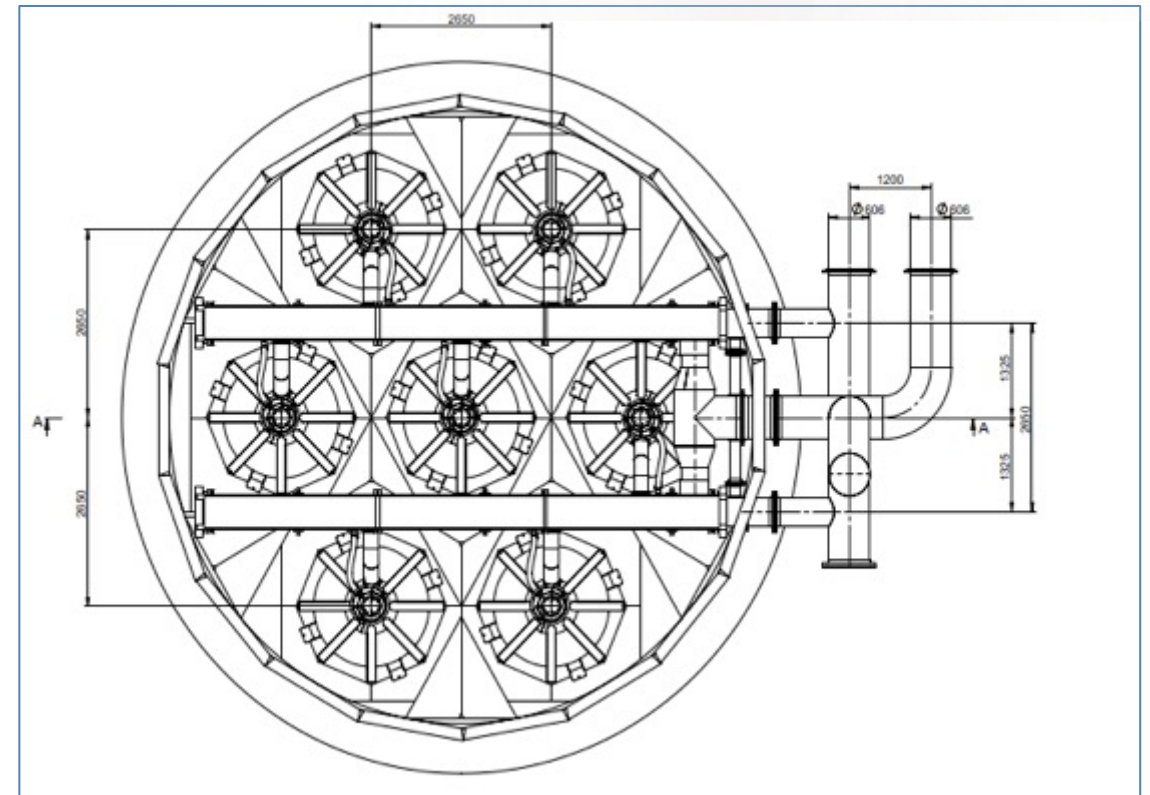
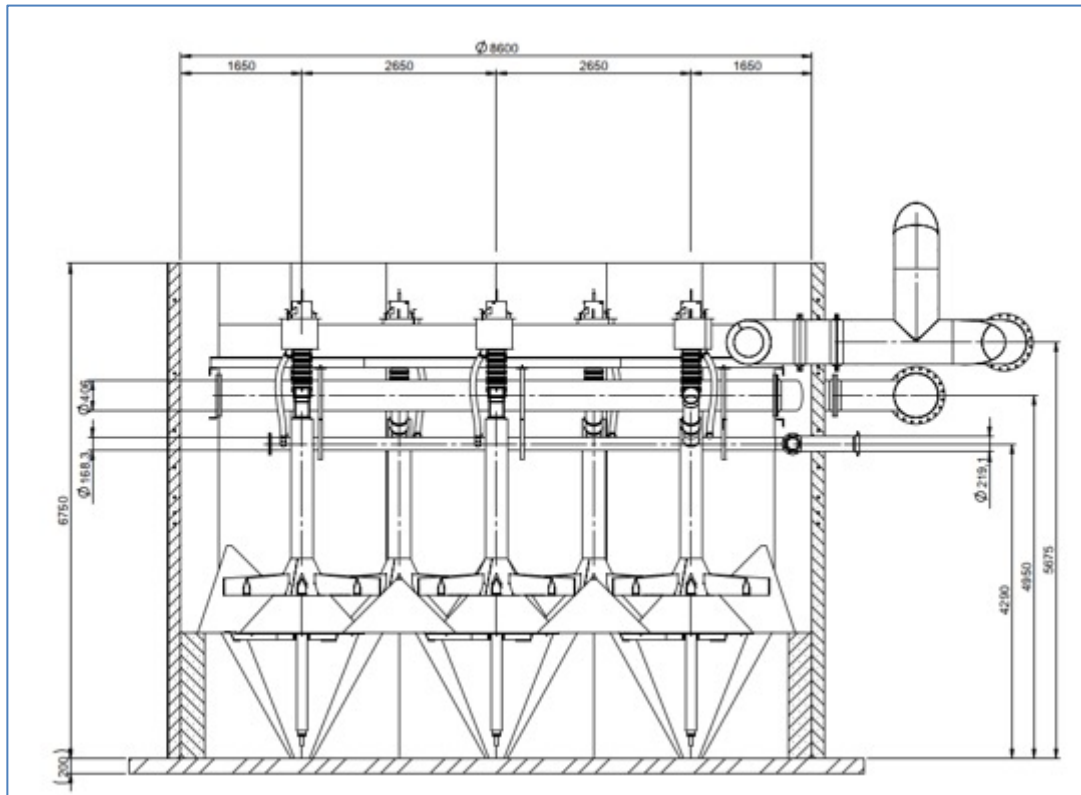
## Pilot project partners

- Waterschap Vechtstromen, contractual partner
- Waterschap Rijn & IJssel
- Waterschap Drents Overijsselse Delta
- Wetterskip Fryslân
- Waterschapsbedrijf Limburg
- Aquafin



## Full scale modular set-up

- 100,000 PE design basis
- 3 x circular reactor (diameter 8.5 m x height 7.0 m)





## Opportunities within installed base

- > 25 plants in the Netherlands
- Over 20,000 plants worldwide





**Thank you for your attention!**

**Hans Wouters**

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*Collaborating to help using our global water resources respectfully*



**Tackling Micropollutants in Wastewater**

**Approaches on Implementation and Innovation in Europe and The Netherlands**



Rijkswaterstaat  
Ministry of Infrastructure  
and Water Management

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**Aquatech Amsterdam**