

# Integration of wetland wastewater treatment with disinfection via bio-electrochemical $H_2O_2$ production

Jan B.A. Arends, Sara van Denhouwe, Jo De Vrieze, Nico Boon, Willy Verstraete, Korneel Rabaey

Conventional decentral Wetland WasteWater treatment:

WasteWater;  
Domestic or Agricultural

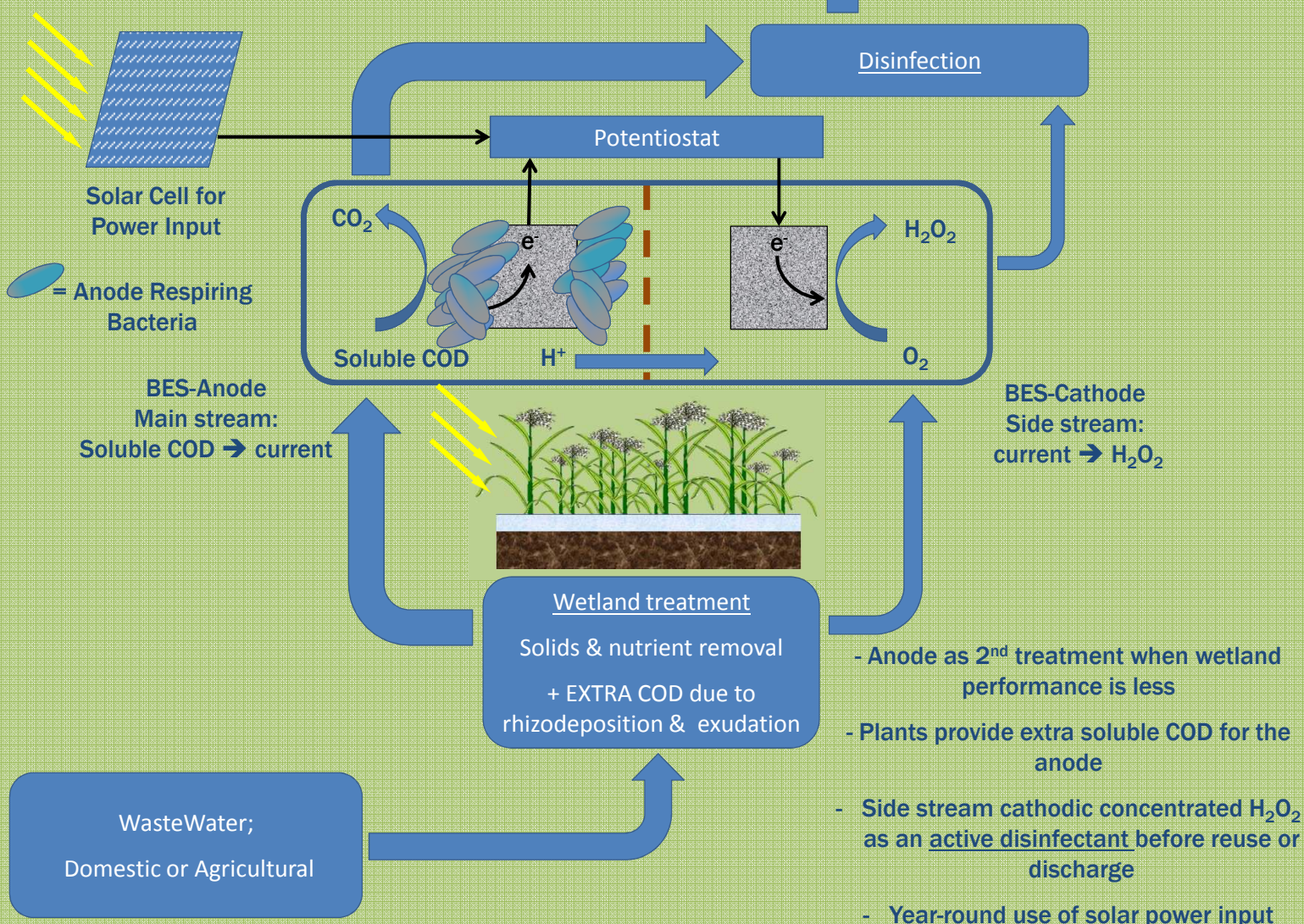


Wetland treatment  
COD & nutrient removal

- Good stable performance in Spring & Summer
- Limited COD and nutrient removal during colder periods
- Passive disinfection

Discharge to Surface water

Conceptually new decentral Wetland WasteWater treatment:



- Anode as 2<sup>nd</sup> treatment when wetland performance is less
- Plants provide extra soluble COD for the anode
- Side stream cathodic concentrated  $H_2O_2$  as an active disinfectant before reuse or discharge
- Year-round use of solar power input



**Acknowledgements.**  
This work is supported by the European Community's Seventh Framework Programme FP7/2007-2013 under Grant Agreement No. 226532.

