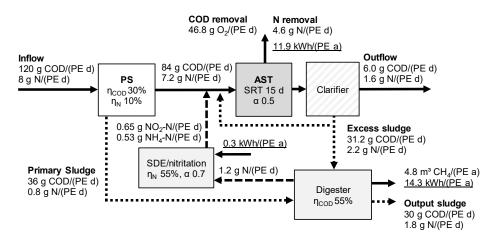
## **Supplementary Material**

## **S1: SDE Treatment Concepts**

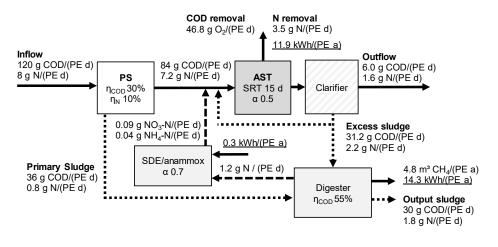
#### COD removal N removal 4.6 g N/(PE d) 46.8 g O<sub>2</sub>/(PE d) 12.3 kWh/(PE a) Outflow Inflow 84 g COD/(PE d) 6.0 g COD/(PE d) 120 g COD/(PE d) PS 7.2 g N/(PÈ d) AST 1.6 g N/(PE d) 8 g N/(PE d) η<sub>COD</sub> 30% η<sub>N</sub> 10% SRT 15 d Clarifier α 0.5 Excess sludge 31.2 g COD/(PE d) 2.2 g N/(PE d) SDF **Primary Sludge** 1.2 g N/(PE d) 36 g COD/(PE d) 0.8 g N/(PE d) 4.8 m3 CH4/(PE a) 14.3 kWh/(PE a) Digester $\eta_{COD} 55\%$ Output sludge 30 g COD/(PE d) 1.8 g N/(PÈ d)

# 1) single-stage WWTP, SDE treatment in mainstream



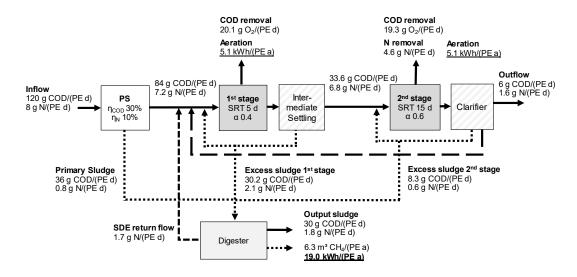


# 3) single-stage WWTP, SDE treatment via anammox

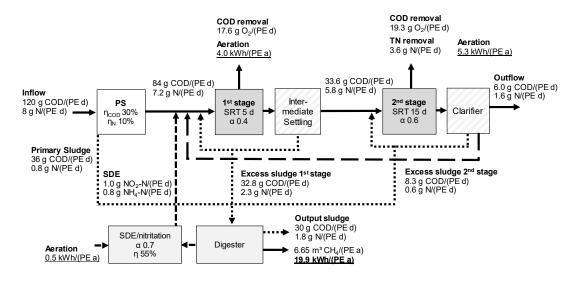


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### 4) two-stage WWTP, SDE treatment in mainstream



#### 5) two-stage WWTP, SDE treatment via nitritation



## 6) two-stage WWTP, SDE treatment via anammox

