KEY FIGURES FOR ENERGY BENCHMARKING IN THE BALTIC SEA REGION

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Abstract
The current energy demand of variously scaled and equipped wastewater treatment plants (WWTPs) in the Baltic sea region (BSR) which are operated under different legal requirements and diverse restrictions regarding nutrient effluent values (mostly according HELCOM) has been analyzed. In the framework of Interreg BSR project Interactive Water Management (IWAMA), operating data has been collected with a questionnaire addressing WWTPs in the region. A total number of 66 responses (reference year 2015) could be assessed for evaluation of the energy consumption related to nutrient removal. The information was provided from Sweden, Finland, Russia, Estonia, Latvia, Lithuania, Poland, Belarus and Germany. The data collected revealed that different technologies are applied with varying success in high treatment efficiency combined with low energy consumption. However, there is no clear region based dependency.

Half of the WWTPs considered in the evaluation are operated using less than 37 kWh/($PE_{COD,120\cdot a}$). But only 20 % consume less than 23 kWh/($PE_{COD,120\cdot a}$). This benchmark is proposed to be aimed by all plants in the region, still considering that the main task of a WWTP is treating wastewater in a proper way.

Keywords: Wastewater treatment, Nutrient removal, Energy optimization, Benchmark

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