

Lindtner, S., Nowak O., Kroiss H. (2003): Benchmarking of municipal Waste Water Treatment Plants (an Austrian Project), Vortrag: 9th IWA Specialised Conference, Prag

**Abstract:** An Austrian research project focused on the development of process indicators for treatment plants with different process and operation modes. The whole treatment scheme was subdivided into 4 processes, i.e. mechanical pretreatment (Process 1), mechanical-biological waste water treatment (Process 2), sludge thickening and stabilisation (Process 3) and further sludge treatment and disposal (Process 4). In order to get comparable process indicators it was necessary to subdivide the sample of 76 individual treatment plants all over Austria into 5 groups according to their mean organic load (COD) in the influent. The specific total yearly costs, the yearly operating costs and the yearly capital costs of the 4 processes have been related to the yearly average of the measured organic load expressed in COD (110 g COD/pe/d). The specific investment costs for the whole treatment plant and for Process 2 have been related to a calculated standard design capacity of the mechanical-biological part of the treatment plant expressed in COD. The capital costs of processes 1, 3 and 4 have been related to the design capacity of the treatment plant. For each group (related to the size of the plant) a benchmark band has been defined for the total yearly costs, the total yearly operational costs and the total yearly capital costs. For the operational costs of the Processes 1 to 4 one benchmark (€ per pe/year) has been defined for each group. In addition a theoretical cost reduction potential has been calculated. The cost efficiency in regard to water protection and some special sub-processes such as aeration and sludge dewatering has been analysed.

**Keywords:** Benchmarking, Controlling, Cost efficiency, Waste water treatment, Performance Indicators