

## Technical Sustainable Management: An Instrument to Increase Energy Efficiency in Wastewater Treatment Plants, a Case Study in Jordan

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**Abstract :** This paper contributes to the improvement of the municipal wastewater systems in Jordan. An important goal is increased energy efficiency in wastewater treatment plants and therefore lower expenses due to reduced electricity consumption. The chosen way to achieve this goal is through the implementation of Technical Sustainable Management adapted to the Jordanian context. Three wastewater treatment plants in Jordan have been chosen as a case study for the investigation. These choices were supported by the fact that the three treatment plants are suitable for average performance and size. Beyond that, an energy assessment has been recently conducted in those facilities. The project succeeded in proving the following hypothesis: Energy efficiency in wastewater treatment plants can be improved by implementing principles of Technical Sustainable Management adapted to the Jordanian context. With this case study, a significant increase in energy efficiency can be achieved by optimization of operational performance, identifying and eliminating shortcomings and appropriate plant management. Implementing Technical Sustainable Management as a low-cost tool with a comparable little workload, provides several additional benefits supplementing increased energy efficiency, including compliance with all legal and technical requirements, process optimization, but also increased work safety and convenient working conditions. The research in the chosen field continues because there are indications for possible integration of the adapted tool into other regions and sectors. The concept of Technical Sustainable Management adapted to the Jordanian context could be extended to other wastewater treatment plants in all regions of Jordan but also into other sectors including water treatment, water distribution, wastewater network, desalination, or chemical industry.

**Keywords :** energy efficiency, quality management system, technical sustainable management, wastewater treatment

**Conference Title :** ICWWTP 2019 : International Conference on Water and Wastewater Treatment Plants

**Conference Location :** Berlin, Germany

**Conference Dates :** May 21-22, 2019