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MECHANICAL-BIOLOGICAL TREATMENT OF MUNICIPAL SOLID WASTE IN POLAND - CASE STUDIES

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Abstract

After the entry into force of Landfill Directive 1999/31/EC the member states of European Union (EU) turned towards other technologies for waste treatment and management, such as mechanical-biological treatment of waste (MBT) in order to meet the obligations related to the reduction of the amount of landfilled biodegradable waste. This paper presents an analysis of the waste management in Poland in terms of the current regulations and requirements of the EU and achievement of the mechanical - biological treatment of municipal solid waste based on operational data from two waste treatment plants with different degrees of segregation and aerobic waste stabilization applied technologies: one MBT plant with aerobic stabilization in open chambers with forced aeration of remaining municipal solid waste after separation at source and a manual sorting line (KKO-100 technology), and the other MBT plant with mechanical and manual sorting and aerobic stabilization of biodegradable waste in a dynamic system in a closed hall in bioreactors (BIOFIX system). Based on the mass balance analysis of the waste and the technological and economic parameters, the efficiency of the mechanical-biological treatment of the waste was determined. The results showed that the waste sorting technology within the framework of MBT had a significant effect on the final efficiency of resource recovery and waste disposal reduction.

Key words: mechanical-biological treatment, municipal solid waste, Landfill Directive 1999/31/EC

Received: October, 2012; Revised final: October, 2013; Accepted: October, 2013

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