

Modelling of Reverse Logistics of Plastic Municipal Waste in the Perspective of International Experience

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Abstract

The aim of the project is to develop a parametric method of modelling, evaluation and prediction of economic efficiency as well as technical and organizational efficiency of reverse logistics processes of plastic municipal waste. The basic elements of the method will use the morphological analysis of waste, and will refer to modern reverse logistics solutions used in selected countries. The expected modelling effect will be the possibility of optimal solutions indicating in the field of reverse logistics of plastic municipal waste, which will be characterized by higher economic efficiency than previously used. An additional goal of the authors is to develop such a form of the model so that it is characterized by scalability, guaranteeing the possibility of its use in local government units of various sizes and features. The following research hypothesis will be adopted in the paper: the traditional municipal waste segregation model, based on shifting the waste segregation process towards the waste supplier (individual customer) is economically inefficient. The subject of the analysis will be solutions for reverse logistics of municipal waste used in the Polish economy and their modelling, using the context of solutions and experiences of countries from the NUTS-2 region, which are a benchmark for Polish solutions.

Keywords: Reverse logistics, plastic waste, municipal system, NCN, project presentation