

THE PROBLEM OF OPTIMIZING THE WASTE MANAGEMENT SYSTEM

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Abstract. *At the same time, this article discusses the problems of working with production and consumption waste, which are among the main problems in society and belong to the type of global problems of environmental protection. Also, the article provides the necessary recommendations on the processes of optimizing the waste management system.*

Keywords: *waste, waste management, production waste, consumer waste, waste problem, environment.*

One of the main global problems in this field of environmental protection is the problem of working with production and consumption waste. To date, all cities and countries of the civilized world have realized that the correct organization and construction of infrastructure, services that solve the problem of garbage and waste, mean the possibility of making sure not only at this time, but also in the future. It is true that our children live at least relatively cleanly.

Currently, the "waste problem" is observed mainly in cities and urban-type settlements. For this reason, creating an effective waste management system is one of the most important tasks that require an urgent solution.

The problem of waste and its solution is not only about taking it far, but also about properly organized disposal and recycling, which allows us to move to an industrial high level of processing of solid domestic, industrial, toxic and medical waste and to minimize them. After all, the listed types of waste have a negative impact on the quality of the environment and the health of the population.

The goal of creating a waste management system is an attempt to combine ecological and economic interests and more effective management of the environment, environmental protection with the comprehensive and optimal use of natural resources. The creation of waste management systems, as well as their implementation, is determined by the fact that it allows to achieve significant economic benefits due to the reduction of budget costs.

The conclusions of the studied cases of the waste problem showed that the problem of waste can be solved only by using a comprehensive approach. The basis of the concept of integrated waste management consists of household waste, which ideally should not be mixed with each other, but also consists of various components that should be disposed of separately from each other in the most economical and environmentally friendly ways. Currently, the majority of solid household waste is disposed of. And often it does not meet environmental requirements.

The ecological and economic analysis presented above shows the effectiveness of the integrated organization of waste transportation in terms of reducing the negative impact on the environment, minimizing the costs of solid household waste transportation and even obtaining additional income from the introduction of the resource.

Solving the problem of optimizing the development of the existing waste management system in cities requires large investments. The need to take into account a large number of

different factors, the complex structure of the urban waste stream, the presence of a large number of sources, sources of waste generation, potential points for the construction of new waste transportation and sorting complexes, solid waste composting plants, waste incineration factories cannot determine effective directions of investment in the environment without using economic and mathematical methods and models.

A positive implementation of this situation related to the waste problem is to reduce the volume of consumer waste sent for production and disposal, increase the level of obtaining secondary resources from waste, use methods that include commercially attractive fractions, develop in relation to urban waste the development of the system of waste processing enterprises and the system of solid household waste processing and others allow solving such basic problems of waste management.

And such a model consists of a system of linear equations and inequalities with respect to real, binary and integer variables that determine the space of possible solutions of the optimization problem and a linear functional.

Thus, natural communities are currently being studied. The presence of microorganisms, the possibility of using both natural and artificial consortia for the biodegradation of raw materials containing cellulose is being studied. These actions are of great importance in optimizing the waste management system.

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