

CIRCULAR ECONOMY AND MODERN CONCEPTS OF WASTE MANAGEMENT SYSTEM

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The circular economy is a new economic model that emphasizes the reuse of materials. It is an economic concept whose fundamental principle is to keep resources coming from the environment in the economic chain, thus extending their life cycle and avoiding their return as waste. This leads to increased efficiency, lower operating costs, greater sustainability and less environmental impact. The main measures within the circular economy include reuse (reusing), repair, renewal and restoration (remanufacturing), recycling (recycling) of existing materials and products, and preventive actions to reduce waste. The main idea is that what used to be considered “waste” turns into a valuable resource. Currently, there are several concepts of waste management systems:

1. “Waste management hierarchy” - “Zero Waste”. It is based on the principle of maximizing the benefits of the product consumed with minimal waste.
2. “Extending the scope of the manufacturer's responsibility”, which implies the responsibility of the manufacturer for the entire life cycle of the product and packaging.
3. The concept of “polluter pays” is a strategy that provides for compensation for environmental damage, i.e., reimbursement by the manufacturer of the costs of product waste disposal.

In today's world, more and more people and companies are paying attention to solving environmental problems, and eco-friendly lifestyle and zero-waste lifestyle are gaining momentum. People realize that they need to reduce the amount of garbage and use eco-friendly products. One of the ways to significantly reduce waste is to switch to selling goods without packaging. Prevention and minimization of waste generation is associated with a reduction in consumption, a move towards a service economy, in which gross global income from services is growing faster than gross income from mass industrial production. At this stage, economic instruments are used to support the production of products with a longer service life and maintainability, which becomes an additional factor in the competitiveness of such products. Implementation of these models allows solving a whole range of problems, including congestion of the transportation network, availability of goods and services, landfill pollution. The circular economy has long-term goals and objectives. In this regard, the implementation of its principles in the economic system should be based on extensive theoretical research, the practice of implementing pilot projects, and organizational and financial support from government agencies.

It addresses energy efficiency, reducing polluting emissions, creating innovative and efficient ways of production and consumption, optimizing waste management through the cycling of material and energy flows, innovative industrial and product design, focusing on reusability, durability, maintenance and other characteristics of the 10R framework. The Zero Waste concept and the principles described above can be an excellent first step towards a new way of life and a circular economy.