

EVOLUTION OF THE CONCEPT OF RESOURCE CONSERVATION: FROM RESOURCE SAVING TO CIRCULAR ECONOMY

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The current stage of human development is characterized by the aggravation of environmental problems caused by the excessive use of natural resources, the growth of waste volumes and the degradation of natural ecosystems. In these circumstances, the issues of rational use of nature and resource conservation acquire particular importance, since they directly affect environmental safety, economic stability and the quality of human life. The concept of resource conservation has undergone a long evolution – from its initial understanding as a simple saving of resources to the modern recognition of the need for systemic changes in production and consumption models. One of the most promising directions of this transformation is the transition to a circular (closed-loop) economy, based on the principles of regeneration, reuse and minimization of material and energy losses.

The problem of rational use of natural resources arose long before the formation of modern environmental science. Back in the 18th and 19th centuries, the concept of resource conservation was considered mainly as an economic category related to the optimization of material and energy consumption in production. In the middle of the 20th century, against the backdrop of rapid industrialization and growing environmental pressure, resource conservation was rethought. It gradually began to be perceived as an ecological imperative, closely related to the idea of rational environmental management. With the emergence of the concept of sustainable development (Rio de Janeiro, 1992), resource conservation has acquired an interdisciplinary character, integrating economic, social and environmental dimensions. At the beginning of the 21st century, in the context of globalization, the emphasis shifted to resource efficiency and the concept of eco-efficiency, which combines economic benefit with environmental responsibility. Further transformation of ideas led to the formation of the concept of a circular economy – a model based on closed cycles of production and consumption, reuse and regeneration of resources.

In its modern interpretation, resource conservation is a complex process that encompasses all stages of natural resource use, from extraction to processing. Its main goal is to increase the efficiency of resource use without harming the environment. The circular economy is a new model of economic development based on preserving the value of materials throughout their life cycle. Its fundamental principles include waste-free design, reuse, recycling, consumption reduction, and regeneration of natural systems.

The main challenges in implementing resource-efficient technologies are high investment costs, insufficient funding for innovation, outdated infrastructure and low environmental awareness of the population. At the same time, there are significant opportunities: development of green business, integration into the European market, access to international financing and creation of new jobs.

REFERENCES

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