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ORGANIZATIONAL AND ECONOMIC DETERMINANTS OF ECOLOGIZATION OF INDUSTRIAL ENTERPRISES

ОРГАНІЗАЦІЙНО-ЕКОНОМІЧНІ ДЕТЕРМІНАНТИ ЕКОЛОГІЗАЦІЇ ПРОМИСЛОВИХ ПІДПРИЄМСТВ

Olena V. Nikoliuk, DEcon, Professor
Odesa National University of Technology, Odesa, Ukraine
ORCID: 0000-0002-1665-0361
Email: alenavn11@gmail.com

Natalia A. Dobrianska, DEcon, Professor
Odesa Polytechnic National University, Odesa, Ukraine
ORCID: 0000-0002-0826-8840
Email: semen-198@te.net.ua

Yuliya S. Levchuk
Odesa National University of Technology, Odesa, Ukraine
ORCID: 0000-0001-7417-2866
Email: yulyalevchuk.yl@gmail.com

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Ніколюк О.В., Добрянська Н.А., Левчук Ю.С. Організаційно-економічні детермінанти екологізації промислових підприємств. Оглядова стаття.

У статті представлено концептуальний підхід до дослідження змісту та особливостей організаційно-економічного забезпечення екологізації промислових підприємств в основу якого покладено принцип комплексності і системності дія яких орієнтована на удосконалення екологічної системи відносин й розвитку продуктивних сил задля сприяння захисту навколишнього природного середовища. Ідентифіковані наукові положення щодо формування структури екологічної системи промислових підприємств за рахунок її декомпозиції на підсистеми, яким притаманні специфічні властивості, головні принципи, завдання й інструменти функціонування. Доведено, що організаційно-економічна система забезпечення екологічної безпеки промислових підприємств представляє собою комплексну, впорядковану сукупність підсистем, взаємопов'язаних механізмів, інноваційних методів й засобів, стратегічних заходів, які орієнтовані на довгострокове забезпечення стійкості й екологічності промислових підприємств та захищеності інтересів суспільства.

Ключові слова: промислові підприємства, екологічність, розвиток, організаційно-економічні детермінанти, система управління, механізм

Nikoliuk O.V., Dobrianska N.A., Levchuk Yu.S. Organizational and economic determinants of ecologization of industrial enterprises. Review article.

The article presents a conceptual approach to the study of the content and features of organizational and economic support of greening of industrial enterprises based on the principle of complexity and systematization whose action is focused on improving the ecological system of relations and the development of productive forces to help protect the environment. Scientific provisions on the formation of the structure of the ecological system of industrial enterprises due to its decomposition into subsystems, which have specific properties, main principles, tasks and tools of operation, are identified. It is proved that the organizational and economic system of environmental safety of industrial enterprises is a complex, orderly set of subsystems, interconnected mechanisms, innovative methods and tools, strategic measures aimed at long-term sustainability and environmental friendliness of industrial enterprises and protection of society.

Keywords: industrial enterprises, environmental friendliness, development, organizational and economic determinants, management system, mechanism

Ukraine is marked by the unsatisfactory state of natural resources involved in industrial enterprises and the intense negative impact of its operation on the environment. The further development of industrial enterprises requires the state to develop and implement an effective mechanism of ecological safety of industry, which prompts the need for scientific and theoretical substantiation of proposals and the development of conceptual foundations for the systematic modernization of state policy in this area. Insufficient scientific and theoretical development of management aspects of organizational and economic environmental protection of industrial enterprises, the presence of significant deficiencies in the regulatory and legal support of this process determined the purpose of this study. Widespread among leading scientists is the definition of environmental safety of industrial production "as a process of continuous and consistent development and introduction into production processes of innovative technological and management measures that allow increasing the effectiveness of the use of natural resources while preserving or improving the quality of the

environment. In turn, it is impossible to ensure the environmental safety of industrial enterprises without reorienting public consciousness in an ecological direction.

Analysis of recent researches and publications

In the studies of domestic scientists, devoted to the problems of organizational and economic support of environmentalization of industrial enterprises, the state of affairs in this field is investigated to a greater extent and proposals for its improvement are provided to a lesser extent.

Management aspects of the organizational and economic support of environmentalization of industrial enterprises were developed in the works of: V. Borshevsky, O. Manoilenko, A. Nikiforov, V. Rusana, P. Sabluk, M. Skoryk, A. Cherepa, and others.

Unsolved aspects of the problem

Despite the wide range of directions for researching the peculiarities of organizational and economic support for the greening of industrial enterprises, in the works of the mentioned scientists, the issue of developing an effective toolkit for managing the organizational and economic support for the greening of industrial enterprises in modern conditions was practically not reflected.

The aim of the article is to substantiate the scientific and applied principles of organizational and economic support for the environmentalization of industrial enterprises.

The main part

At the current stage of the development of society, the interaction of man with nature, the organizational and economic support of environmentalization of industrial enterprises is not an isolated phenomenon, but is considered as an imperative requirement of economic stability and is an integral component of the balanced development of the nation. This, in turn, makes it necessary to study the management mechanisms of organizational and economic support for environmentalization of industrial enterprises with the aim of optimal, consistent transition to qualitatively new principles, which is one of the important and urgent scientific tasks of our time.

During the years of Ukraine's independence, the state of affairs with environmental protection, ensuring the necessary level of organizational and economic support for the greening of industrial enterprises is assessed as catastrophic. The Ukrainian state suffers significant material and financial losses as a result of emergency situations of both natural and man-made nature. Emissions of pollutants into the atmosphere from stationary sources are constantly increasing. In order to prevent and solve already existing environmental problems, the state must apply effective management mechanisms to ensure the necessary level of organizational and economic support for the environmentalization of industrial enterprises in society.

The systemic crisis, which, unfortunately, has become the main feature of today's Ukraine, has significantly deepened the potential vulnerability of economic and social objects, reduced the level of protection of the population and territories. That is why the strategy of both national and regional development should direct the organization of infrastructure in accordance with the latest challenges and requirements of life safety.

It is quite clear that one of the first steps can be an attempt to clarify the content and place of organizational and economic support for environmentalization of industrial enterprises in the general context of national security. Under such conditions, it should be logical, first of all, to try to analyze the general meaning of the concept of "security". This general meaning, first of all, can be defined as such a quality of an object or phenomenon that does not create a threat, is not capable of causing evil.

In scientific circles, the term "security" has been used for a long time and often, precisely when the state defined by it is associated with protection from the negative impact of certain factors that are perceived as a threat. A threat is a specific and immediate form of danger, or a set of negative factors and conditions. However, most often this concept had two levels of use, namely personal and social. But their combination is most often found when it comes to the safety of a person, a citizen, which must be ensured and protected by the state as a social institution.

Under such conditions, "security" is defined as the state and development trends of protection of the vital interests of society and its structures from internal and external threats. Then "security" is considered as a consequence of social activity aimed at ensuring the security of the individual, society and the state. Such activity acts as a social phenomenon in the course of resolving the contradiction between the objective reality that carries danger and the needs of a person as a social individual, social groups and communities to prevent its occurrence, localize its development and eliminate the consequences of danger. At the same time, material threats can be both social and natural phenomena [1].

In the context of this provision, the concept of organizational and economic support for greening of industrial enterprises is key and has a sufficiently clearly defined legal framework. They are determined by the criteria of the quality of the natural environment, its individual elements, the quality of food, clothing, housing, etc., established by legislation, the observance of which allows ensuring environmental safety. The system of criteria is fixed by the corresponding system of environmental regulations. The central place in a number of these regulations is defined as the maximum permissible: concentrations of pollutants in water, air, soil; the level of acoustic electromagnetic, radiation and other harmful effects on the natural environment; content of harmful substances in food products and animal feed. In addition to such regulations, there are numerous regulations that

determine the maximum permissible emissions of pollutants into the environment, levels of harmful effects of physical and biological factors for specific sources of pollution [2].

Realization by citizens of Ukraine of their constitutional right to a safe natural environment is the main goal of the state, which is designed to ensure the safety of the state in all areas of life and, first of all, environmental safety. It is this that determines the need to integrate targeted activities to solve a complex of environmental problems in all areas of state activity, to ensure the necessary conditions for the transition to ecologically balanced development of Ukraine.

Environmental safety and an updated version of the balanced development of industrial enterprises are considered by international experts as the newest driving force in society, capable of solving acute problems of modern socio-economic development. Among them, the danger of environmental degradation, the depletion of the main natural resources, the increase in the frequency of weather anomalies and climate change [3] are highlighted.

It was determined that the ecological situation in Ukraine is not stable and reliable. At official forums and in scientific publications, it was repeatedly emphasized that about 15% of the territory of Ukraine is in a critical ecological state [4]. Among European countries, it has the highest rate of anthropogenic load on ecological systems, which continues to grow and is several times higher than the corresponding rates of the developed countries of the world. Contamination of water and land resources, atmospheric air has reached a significant scale. The processes of degradation of soils and water bodies are being activated, which has a negative impact on the socio-economic parameters of the organizational and economic support of the greening of industrial enterprises and the level of well-being of the population.

World practice distinguishes several types of organizational and economic support for environmentalization of industrial enterprises (arranged in order of increasing regulation of the impact of industrial production on the natural environment):

1) establishment of rules for conducting activities for the production of industrial products – Codes of Proper and Good Industrial Practice (regulated by the EU "Nitrate" Directive (676/91/EEC); Good conditions for industrial production and the environment (EU Directive 1782/2003/EEC); Joint standards of Good Farming Practice (EU Directive 1257/1999/EEC), etc.;

2) spread of balanced (low-cost, compromise, adaptive) production systems: analogues of ЛИСА / ЛЕЙСА (Low (external) input sustainable agriculture, low-cost supporting agricultural production [187]), mini-agriculture (Bio-intensive Mini-Farming), biodynamic agriculture (Biodynamis Agrisulture), EM-technologies (Effestive Misroorganism Teshnologies [3], etc. The most widespread in the world and state support in this group have acquired LYSA / LEYSA technologies;

3) the development of organic (biological, ecological) production – involves the wide use of biological approaches (manure, siderates, minimization of soil treatment, biological loosening and structuring of the soil, biological conversion of nitrogen into organic compounds, biological control of weeds, pathogens and pests) , refusal to use pesticides or their regulated use only in seed treatment, ban on using genetically modified organisms, etc. [5].

4) the combination of industrial production technologies with nature conservation measures (environment-reproduction): for example, sowing or sowing in the fields of plants that support the food chain of local animals. The need to combine the production and environmental protection components in agricultural production is due to its specificity, which is characterized by a long operational cycle, wide territorial dispersion and a close connection with biotic and abiotic factors of the environment, which makes it difficult to implement environmental protection measures separately from the production process.

Scientific approaches to the definition of that characteristic of the industrial production process, which determines its impact on the surrounding natural environment, in modern domestic science are described by the following concepts:

1) ecological and economic safety of industrial production [2], which includes technological aspects, as well as physico-chemical parameters of the production process (consequences of the use of fertilizers, pesticides, plant and animal growth regulators, technological operations of growing agricultural crops and animal husbandry);

2) ecologically safe agricultural production. The given definitions are quite narrow and cover only the external environmental effects of the activities of the subjects of the industry, separating them from economic and social ones [3];

3) ecologically-oriented agriculture, ecologically-oriented technologies of agricultural production, indicating the philosophy of agricultural activity in relation to the surrounding natural environment. However, the essence of the "oriented" characteristic is vague and optional [5];

4) ecological industrial production – which involves "the production of ecologically clean products, the use of waste-free and low-waste technologies, obtaining useful products from waste, as well as complete decontamination of waste" [6]. The use of the term "ecological" does not reflect clearly enough the essence of the concept.

The shortcomings of the above definitions can be eliminated if the term "environmental safety of industrial production" is improved, which implies a strategic direction of organizational and economic support for the environmentalization of industrial enterprises in the context of its complementary relationship with the

environment. The primary basis of industrial production is ensuring the demand of the food market with quality raw materials. However, in the process of moving in this direction, side effects arise - depletion, degradation, pollution of natural resources and possibly low-quality industrial products, which collectively reduce the quality of life of the population in the area where the industrial enterprise is located and consumers of food products. That is why the concept of ecological safety of industrial production arises, which means movement along the vector of ensuring food safety with such ecological restrictions that ensure the development of the industry and the corresponding territory according to the principles of sustainable development [4], but without clarifying its essence and linking it to industrial production.

Based on the above, we substantiated that the approach to determining the organizational and economic support for environmentalization of industrial enterprises should be based on the principle of complexity (aimed at obtaining and practical use of new knowledge in the field of managing the relationship between the development of society, organizational and economic support for the environmentalization of industrial enterprises and surrounding natural environment) and systemic (takes into account the laws of nature and is based on objective economic laws) (Fig. 1).

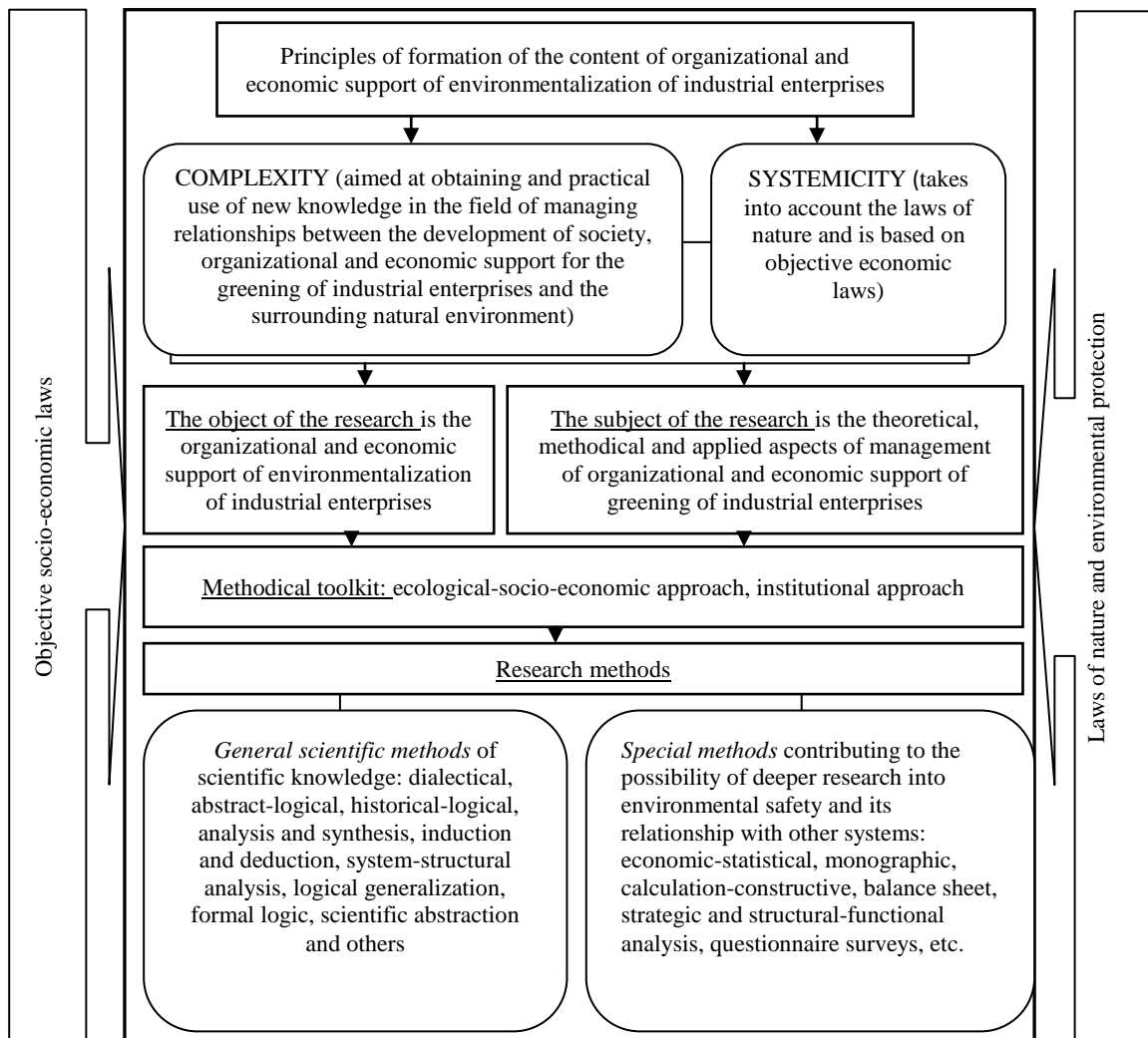


Figure 1. A conceptual approach to the study of the content and features of organizational and economic support for the environmentalization of industrial enterprises

Source: authors' own development

Determining the content of the organizational and economic support for the greening of industrial enterprises and the direction of the state's modern policy, which is dominant in the structural restructuring of the development of industrial production in the context of ensuring its environmental safety, it is necessary, on the one hand, to take into account its connection with the issues substantiated at the second UN World Conference on environment and development (Rio-92) approaches, and on the other hand, to take into account the broader and more complex context of the modern formulation of the problem.

Organizational and economic support for the environmentalization of industrial enterprises, as noted in international documents, is aimed at maintaining sustainable economic development while ensuring the rational use of natural capital, minimizing environmental pollution and mitigating other negative environmental impacts.

It is embodied in ecologically sustainable economic progress, and is aimed at improving public welfare by reducing the risks of disease, as well as achieving social justice by ensuring the need for environmentally safe food products with a significant reduction of environmental risks in the process of their production, including the risks of climate change and the scarcity of ecological goods [5-6].

Organizational and economic support for environmentalization of industrial enterprises is also analyzed from the standpoint of the need to overcome ecological and ecological contradictions that arise in the complex interaction of man and the natural environment. One of the ways to solve these contradictions is the strategic modernization of existing technological solutions. There is an urgent need to establish such a way of organizing industrial production that achieves the maximum output of ecologically safe industrial products with minimal consumption of production resources and minimal damage to the natural environment. That is, in our opinion, the organizational and economic support of the greening of industrial enterprises is a process of improving the ecological and economic system of relations and the development of productive forces in the context of environmental protection.

Common among leading scientists is the definition of organizational and economic support for the environmentalization of industrial enterprises "as a process of continuous and consistent development and introduction into production processes of new technological and management measures that allow increasing the efficiency of the use of natural resources while preserving or improving the quality of the environment [3].

A multifaceted approach to substantiating the essence of the organizational and economic provision of greening of industrial enterprises is presented in works such as [4-6]:

- a systematic process of creating, mastering, using and spreading methods, approaches, forms of management that are introduced instead of traditional ones and ensure the preservation of the reproductive potential of the organizational and economic support of environmentalization of industrial enterprises, their self-regulation and self-renewal;
- technical-technological, organizational-economic, scientific-production basis of industrial production of high-quality and safe industrial products;
- the effectiveness of modern state policy in the direction of organizational and economic support for environmentalization of industrial enterprises, goals, tasks in the context of taking into account the ecological and economic state of the natural environment;
- the direction of the transition to the management of the ecological development of productive forces based on the implementation of relevant legal norms, organizational and economic mechanisms and tools, organizational systems of environmental management, educational measures on the organizational and economic support of environmentalization of industrial enterprises;
- a system of organized knowledge, built on the principles of a holistic approach to the study of the system, the individual components of which, existing as autonomous subsystems, interact with each other in order to produce targeted new knowledge;
- a phenomenon that, thanks to business entities focused on the organizational and economic provision of greening of industrial enterprises, becomes a distinctive feature of the political process [4-6].

Therefore, the results of the study of domestic and foreign literature regarding the identification of the features of organizational and economic support for the environmentalization of industrial enterprises gave an opportunity to systematize common features, in particular: in the vast majority, the essence of environmental safety of industrial production is defined as a process that includes a set of sequential actions oriented to the transformation of forms, methods, production methods that are systematized and harmonized with modern laws of environmental development; organizational and economic support for environmentalization of industrial enterprises is closely related to innovation policy and is aimed at preserving the natural balance and improving the quality of society's life; organizational and economic support for environmentalization of industrial enterprises is designed to ensure timely prevention of the appearance of negative phenomena, threats caused by human activity and environmental factors.

Conclusions

At the current stage of society's development, human interaction with the nature of the organizational and economic provision of greening of industrial enterprises is not an isolated phenomenon, but is considered as an imperative requirement of economic stability and is an integral component of the balanced development of the nation. This, in turn, makes it necessary to study the mechanisms of organizational and economic support for environmentalization of industrial enterprises with the aim of an optimal, consistent transition to qualitatively new foundations. The basis of the approach to determining the essence of the organizational and economic support for the greening of industrial enterprises should be the principle of complexity (aimed at the acquisition and practical use of new knowledge in the field of managing the relationship between the development of society, the organizational and economic support for the greening of industrial enterprises and the surrounding natural environment) and systemic (takes into account the laws of nature and is based on objective economic laws).

Abstract

The article presents a conceptual approach to the study of the content and features of organizational and economic support of greening of industrial enterprises based on the principle of complexity (focused on obtaining and practical use of new knowledge to effectively manage the development of society, socio-economic interests of industrial enterprises and the environment) and systematization (includes the laws of nature and is based on the formed objective organizational and economic laws) whose action is focused on improving the ecological system of relations and the development of productive forces to help protect the environment. Scientific provisions on the formation of the structure of the ecological system of industrial enterprises due to its decomposition into subsystems, which have specific properties, main principles, tasks and tools of operation, are identified. This makes it possible to specify the directions and form common approaches to organizational and economic support of environmental safety of industrial enterprises in the long run. The main task of greening industrial enterprises is to maintain the integrity of the industrial ecological system and ensure the balanced development of industrial enterprises, which becomes possible by recognizing the relationship and content of its three components – environmental, social and economic. It is proved that the organizational and economic system of environmental safety of industrial enterprises is a complex, orderly set of subsystems, interconnected mechanisms, innovative methods and tools, strategic measures aimed at long-term sustainability and environmental friendliness of industrial enterprises and protection of society.

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