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## **THEORETICAL AND APPLIED ASPECTS OF ENVIRONMENTAL INVESTMENT OF DOMESTIC OIL AND GAS ENTERPRISES DEVELOPMENT**

## **ТЕОРЕТИКО-ПРИКЛАДНІ АСПЕКТИ РОЗВИТКУ ЕКОЛОГІЧНОГО ІНВЕСТУВАННЯ ВІТЧИЗНЯНИХ НАФТОГАЗОВИХ ПІДПРИЄМСТВ**

*The article considers the urgency and preconditions of the development of the domestic ecological investment system of domestic oil and gas enterprises. The attention was paid to the study of theoretical and practical features of environmental investment at the domestic level with the aim of improving the conceptual apparatus and extending the theoretical approaches to environmental investments. The necessity of more effective use of environmental investments for the strategic development of domestic oil and gas enterprises is determined. Considerable attention is paid to the signs of ecological investment at domestic oil and gas enterprises. The foreign experience in the effective and rational use*

of the corresponding investments is researched. The factors that create obstacles for the development of effective methods and ways of introduction of ecological investments at oil and gas enterprises are determined. On the basis of the conducted researches, the main features of ecological investments of enterprises of the oil and gas industry are determined. The main approaches to defining the concept of ecological investments in terms of the effect, which will accompany the implementation of the appropriate investment measures, are proposed. The theoretical approaches concerning characteristic features and directions of investment, types and objectives of environmental investments are generalized.

**Keywords:** investment system, oil and gas enterprises, ecologization, ecological investments, investment climate, effect, motivation of investment activity, ecological image.

У статті розглянуто актуальність та передумови розвитку вітчизняної системи екологічного інвестування вітчизняних нафтогазових підприємств. Приділено увагу дослідженню теоретичних і практичних особливостей екологічного інвестування на вітчизняному рівні з метою удосконалення понятійного апарату та розширення теоретичних підходів щодо напрямків екологічного інвестування. Визначено необхідність більш ефективного використання екологічних інвестицій для стратегічного розвитку вітчизняних нафтогазових підприємств. Приділено значну увагу ознакам екологічного інвестування на вітчизняних нафтогазових підприємствах та їх обґрунтуванню. Досліджено зарубіжний досвід стосовно ефективного та раціонального використання відповідних інвестицій. Визначено чинники, які створюють перешкоди для розроблення ефективних методів та шляхів впровадження екологічних інвестицій на нафтогазових підприємствах. На основі проведених досліджень, визначено основні ознаки екологічних інвестицій підприємств нафтогазової галузі. Визначено об'єкт екологічного інвестування вітчизняних нафтогазових підприємств. Визначено основні напрями здійснення екологічних інвестицій на вітчизняних нафтогазових підприємствах. Досліджено та систематизовано основні види екологічних інвестицій вітчизняних нафтогазових підприємств по групах. Обґрунтовано основні завдання екологічного інвестування на вітчизняних нафтогазових підприємствах. Приділено значну увагу мотивації екологічного підприємництва, представлено дві групи мотивують факторів. Вказано особливості використання внутрішньої та зовнішньої позитивної мотивації екологічного інвестування. Представлено основні види ефектів, які будуть мати місце при екологічному інвестуванні на вітчизняних нафтогазових підприємствах, як на мікро-, так і на макрорівні. На підставі досліджень визначено, що домінуючою мотивацією для здійснення зелених інвестицій виявилася відповідальність перед планетою та суспільством. Запропоновано основні підходи щодо визначення поняття екологічних інвестицій з точки зору ефекту, який буде супроводжувати реалізацію відповідних інвестиційних заходів. Узагальнено теоретичні підходи щодо характерних особливостей та напрямків інвестування, видів та цілей екологічних інвестицій.

**Ключові слова:** інвестиційна система, нафтогазові підприємства екологізація, екологічні інвестиції, інвестиційний клімат, ефект, мотивація інвестиційної діяльності, екологічний імідж.

В статье рассмотрены актуальность и предпосылки развития отечественной системы экологического инвестирования отечественных нефтегазовых предприятий. Уделено внимание исследованию теоретических и практических особенностей экологического инвестирования на отечественном уровне с целью усовершенствования понятийного аппарата и расширения теоретических подходов по направлениям экологического инвестирования. Определена необходимость более эффективного использования экологических инвестиций для стратегического развития отечественных нефтегазовых предприятий. Уделено значительное внимание на признаки экологического инвестирования в отечественных нефтегазовых предприятиях. Исследован зарубежный опыт по эффективному и рациональному использованию соответствующих инвестиций. Определены факторы, которые создают препятствия для разработки эффективных методов и путей внедрения экологических инвестиций на нефтегазовых предприятиях. На основе проведенных исследований, определены основные признаки экологических инвестиций предприятий нефтегазовой отрасли. Предложены основные подходы к определению понятия экологических инвестиций с точки зрения эффекта, который будет сопровождать реализацию соответствующих инвестиционных мероприятий. Обобщены теоретические подходы к характерным особенностям и направленным инвестирования, видов и целей экологических инвестиций.

**Ключевые слова:** инвестиционная система, нефтегазовые предприятия экологизация, экологические инвестиции, инвестиционный климат, эффект, мотивация инвестиционной деятельности, экологический имидж.

**Formulation of the problem.** The incredibly urgent problem of the domestic industrial complex is its gradual full reorientation to modern high-tech and nature-saving approaches and technologies in the design, production, organization, and distribution of products and services at the present time. All this requires significant amounts of financing for various areas of production and commercial activity. Unfortunately, now Ukraine has a rather negative investment image, due to political factors, which, in turn, led to “almost” military status in the state, so it remains incomprehensible that the state has made tangible steps in the direction of integration into the world economy in recent years. It became a member of the World Trade Organization, signed the Association Agreement between Ukraine and the European Union. In the face of the shortage of its own sources of financing, the Ukrainian economy is in need of investments in domestic oil and gas companies, which will be one of the most important means for achieving overwhelming socio-economic growth, development of export industries, technological re-equipment and environmental production. To move to a new level of development of the domestic economy, investments in the oil and gas complex are needed. The quality of the mechanism of environmental investment depends on the state of socio-economic development of the country, the standard of living of the population, the possibility and completeness of implementation of any modern environmental and environmental measures, projects and programs. All this determines the necessity and relevance of the chosen research topic.

Today, the urgency and necessity of financing resource-saving and environmental measures at domestic oil and gas enterprises in Ukraine and in the world are an area of need and there is no doubt. Therefore, the subject of environmental or “green” investment is quite widespread at the scientific level, at the level of society, in the media space. Investigation of investment processes of domestic oil and gas companies in the field of natural resources and environmental protection is widely represented in scientific publications of domestic and foreign scientists, in particular: O.F. Balatsky, L.G. Melnik, T. Galushkina, K. Harichkova, and others.

In addition to the above, equally important is the formation of an effective system of incentives for environmental investment at domestic oil and gas enterprises.

**Formation of the purposes of the article.** Investigation of theoretical and practical features

of ecological investment at the domestic level with the aim of improving the conceptual apparatus and expanding theoretical approaches in the areas of environmental investment.

**Presentation of the main material.** Modern conditions of fierce competition on the international and domestic markets require significant efforts from enterprises and a complex of organizational and economic measures to increase the competitiveness of production and production, create a positive environmental image of the state as a whole and individual producers in particular. Of course, this requires the availability of modern production facilities, innovative resource-saving equipment, which, in turn, can be realized through environmental investment. In the situation in the country, it is very necessary ecological investments for the strategic development of enterprises – these are investments aimed at the development and modernization of the production process with the introduction or use of innovative production technologies and production processes to reduce the negative man-made and anthropogenic impacts on the environment [1]. It should be noted that in scientific literature, there are different approaches to the interpretation of the concept of “environmental investments”. Appropriate approaches in the general sense can be divided into the interpretation of the concept of “environmental investment” in the narrow and broad sense. In the conditions of the domestic economy, the narrow interpretation of this category is popular and understandable. This is explained by the fact that today a significant number of economic and organizational nature conservation measures are aimed at some extent to combat only the consequences of inefficient and destructive management. That is, investment in the environmental sphere is not preventive in nature. Thus, for example, domestic environmental investments in domestic oil and gas companies are financing the production of treatment equipment, construction of landfills for the storage of TBV, control, monitoring and measuring equipment. The research of scientific literature on ecological investment allowed forming the main approaches to their definition in terms of the effect that will characterize the implementation of investments. Thus, the authors [1] state that the main objective of the environmental investment is the prevention and elimination of environmental pollution. In turn, S.V. Ryleev and A.L. Romanchuk emphasize the importance of the development of ecosystems as

a whole in the implementation of “green” investment [2]. The necessary attribute of the corresponding process in work [3], the author believes the provision of environmental safety of the country, resulting in achieving environmental, social and economic results. According to V.O. Anischenko, investing money and implementing only environmental measures should be accompanied by environmental investment [4].

It would be advisable to add that environmental investments in oil and gas companies will shape the environmental image of the company and increase the market value of the company in the market. It should be emphasized that the important feature of an environmental investment is not only profit but also the presence of an ecological effect (preventing economic damage from pollution and environmental degradation, saving through recycling, reducing resource use, etc.). Thus, the corresponding environmental-oriented business activity will be definitely profitable and competitive. Thus, foreign experience often indicates the unconditional economic efficiency of the relevant investments since modern innovative production and economic activity are impossible without the use of resource-saving technologies and control of environmental cleanliness of products. Along with this, an important role in the implementation of environmental investments is played by the state, which, at the international, national, regional, and local levels, should create conditions for the promotion and stimulation of a corresponding kind of investment. In this perspective, the state environmental investment management should, first of all, create the preconditions, motivate and encourage the entrepreneurial sector to invest in resource conservation, innovation, and environmental restoration. Equally important is the development of the ecological consciousness of society as a whole. The development of methods and ways of introducing environmental investments from the practical point of view is constrained by the lack of a clear definition of the features of environmental investments, its types and directions, and their areas of application. Analysing scientific research, one can generalize the information inherent in environmental investments, in the following directions: according to the specific features; in directions (objects) of investment; by types of environmental investments; for the purposes of environmental investments.

Thus, the most characteristic are the following signs of environmental investments [2]:

- the focus on the use, protection, reproduction of conditions for the support of natural resource potential;

- the investment object is public in nature for many consumers and users, and quite often the task cannot be solved by a separate subject, region, country;

- the need to consider various sources of investment, combining in time and space, their forms and types;

- the natural system (assimilation potential), its elements cannot be discounted, although they can reduce, lose their original properties under the influence of anthropogenic factors;

- a different form of investment, which involves state, interstate, own, mixed forms of organization of socio-economic activity of environmental users;

- taking into account the specific properties of self-regulation and self-restoration of ecosystems, its individual components. Immediate implementation of environmental investments in domestic oil and gas companies can take place in the following areas:

1. In production technology. The result will be: reduction of energy consumption; reduction in the use of raw materials per unit of finished goods; reduction of water consumption; reduction of emissions from production into the atmosphere; reduction of CO<sub>2</sub> and other greenhouse gases emissions into the atmosphere; reduction of production costs.

2. In production quality. This will ensure compliance with world environmental standards and standards; improvement of the investment image of the enterprise; reduction of ecological payments; increase in the number of consumers; access to new markets for products; reduction of anthropogenic and man-made risks; improvement of working conditions, observance of safety of production; ensuring ecological safety of the country as a whole.

3. In the organization of production. Implementation of new environmental standards and norms; use of environmental management system.

4. Personnel of the enterprise. Increasing the level of environmental education; raising the level of environmental ethics and culture; increase of environmental motivation and responsibility; increased production responsibility (consumer protection).

5. In the innovation activity of domestic oil and gas enterprises. Implementation in the production of innovative and patentable technologies and organizational and technical solutions; use of new low-waste, resource-saving, and non-waste technologies; innovative upgrade of equipment and modernization of technological processes.

6. In the technology of recycling (recycling) waste. Implementation of new technologies for the recycling of waste; introduction of new technologies for the processing of hazardous waste with minimal emissions; implementation of technologies with zero waste; use of own production wastes as resources for additional (auxiliary) production.

7. In the environmental audit. Ensuring permanent environmental monitoring and monitoring; the possibility of conducting a comprehensive audit of the company's activities; financing of intra-corporate eco-audit groups. The corresponding list can be supplemented by the following.

Thus, the object of environmental investment of domestic oil and gas companies may be the system of enterprise management in the case when it comes to the introduction or improvement of the environmental management system. It is common knowledge that enterprise management forms the so-called nanosecond. Nano (from Greek – nanos – dwarf ) is a prefix for naming distant units equal to one billionth particle of output units, a phenomenon (subject) that flows directly or indirectly on the performance of the enterprise.

Types of environmental investments.

Investment for functional purposes (for the use of natural resources and facilities, for the reproduction of natural resources and objects, for the protection of natural objects).

Investments by sources of financing (targeted state investments, funds of organizations that create market conditions).

Investment by management (local, regional, state and international).

Investments in the form of manifestation (production-technological, educational, organizational, managerial, and research).

The main objectives of environmental investment are [2]:

- improving the quality and properties of the ecosystem;
- rational use of natural resources;
- reduction of risks caused by the joint use of natural resources and objects;
- prevention and reduction of environmental risks and related social and economic risks of the enterprise itself;
- the profitability of investments and decrease of their payback period;
- development and improvement of socio-economic conditions of human life.

It is also evident that environmental investments in domestic oil and gas companies allow any com-

pany to reduce environmental payments and improve its image on the market as an eco-friendly company. Attracting environmental investments will enable the rapid change of the production process through the introduction of the latest technologies. That is, there is certain dependence: environmental investments – introduction of innovative production technologies – compliance with world environmental standards and norms – emission reductions – reduction of environmental payments – improvement of the company image – increase of customers – increase of profit – return on investment.

In a simplified version, this scheme will have the following form: environmental investments – reduction of environmental payments – increase in profits – return on investment. At the same time, the motivation for environmental entrepreneurship is no less important at the present stage for domestic oil and gas enterprises. It should be emphasized that the positive motivation of environmental investments in these enterprises should be the most effective, which includes two groups of motivating factors (internal and external).

1. Internal positive motivation of ecological investment – increase of profit due to the production of environmentally friendly products; increase in sales; reduction of cost through rationalization of resource and energy consumption, reduction of waste formation; increase of investment opportunities, reinvestment of profits; increase in the value of the share capital of the enterprise; formation and increase of the ecological image of the enterprise; stock price growth; attraction of highly skilled labour.

2. External positive motivation of ecological investment: increasing demand for eco-products, increasing the competitiveness of oil and gas companies in the domestic and foreign markets, expansion of markets; the appearance of a system of DSTU standards; an additional opportunity to be recognized internationally in this field; increase of investment attractiveness; state support; favourable development of relations with local authorities and state environmental control, population, public organizations local, regional, state, international), minimization of the risk of involvement in judicial ecological responsibility. In this perspective, the 2009 EDHEC French Business School, an experiment of 97 European investors, with more than 300 billion euros of assets, can be illustrative. Of the polled, 86% believe that environmental protection is an investment topic, 62% of investors invest in a variety of “green” sectors, and 21% specialize in a particular sector of the green economy. The domi-

nant motivation for green investment was a responsibility to the planet and society – 81%, but 48% of investors also called market motives. The transition to a “green economy” and, consequently, the introduction of various “green” technologies and enterprises, has found a positive response in the governments of many countries of the world. Summing up the previous statements, one can determine the following types of effects that will occur when investing ecologically, both at the micro and macro levels.

Ecological effect – reduction of pollution; minimization of economic damage to the environment; reduction of extraction of resources and gradual refusal from traditional sources; restoration of ecological balance and reproduction of ecosystem balance; preservation of natural landscapes; changing the peculiarities and customs of pest control.

The political effect is to reduce the dependence of the state on third-party resource providers, which will ensure certain stability of the political system; intensifying the use of international environmentally-friendly transactions.

Economic benefits of the investor – increase in the efficiency of economic activity of production through the use of environmental technologies and modern equipment; reduction of the cost of products due to recycling, reduction of resource and energy intensity; an increase of competitiveness and market value of the enterprise and significant expansion of markets.

Social effect – increase in life expectancy; reduction of the incidence rate; improvement of working conditions; raising the living standards of the population; changing the traditions of consumption as a whole; focus on their own opportunities and their expansion.

**Conclusions.** Analysing the foregoing, one can conclude that today the problem issues of environmental investments in the Ukrainian economy and domestic oil and gas enterprises in particular are caused not only by the economic problems of the state, the instability of the political situation in the country, but also by the reluctance and impossibility of a clear reorientation of industrial production in the side of the ecological reconstruction of all economic activity. The rapid reduction of total investment today leads not only to the withdrawal of investment funds from Ukraine but also to the impossibility of expanding investments in environmental protection and the introduction of new resource-saving technologies. Therefore, the prospects for future research in this direction should be the development and improvement of theoretical and practical approaches and mechanisms for the implementation of environmental investment in economic activities. Today, Ukraine needs to clearly outline the development priorities and choose investment development strategies to stimulate the attraction of environmental foreign investment in domestic oil and gas companies and create a favourable climate for domestic investors.

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