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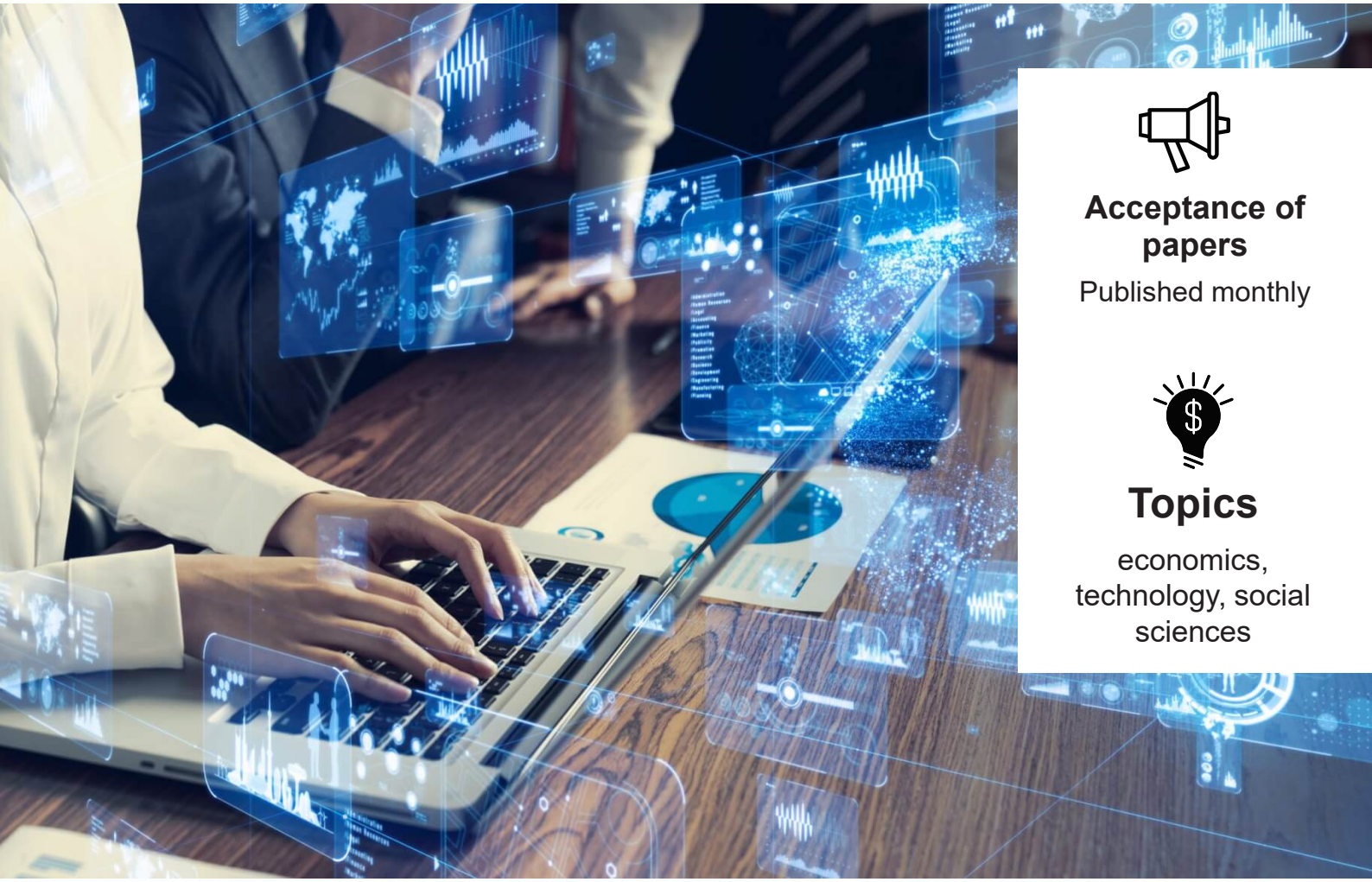

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## Editorial board:

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# MECHANISMS FOR STIMULATING INVESTMENT ACTIVITY AT ENERGY INDUSTRY ENTERPRISES

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Abstract: The article is devoted to the analysis of the mechanisms of stimulating investment activity in the enterprises of the energy sector. Sustainable economic growth in this industry is impossible without the introduction of effective tools aimed at enhancing investment and innovation activities, especially in the regional context. One of the key conditions for effective development is the formation of a national innovation system capable of ensuring close cooperation between government agencies, business and the scientific community.

Key words: mechanism, incentive, investment, innovation, innovation, energy, ecology, renewable energy sources, energy storage systems, smart grids, geothermal energy, wind energy.

Annotatsiya: Maqola energetika sohasi korxonalarida investitsiya faolligini rag‘batlantirish mexanizmlarini tahlil qilishga bag‘ishlangan. Bu sohada barqaror iqtisodiy o‘sishni investitsiya va innovatsion faoliyatni, ayniqsa, mintaqaviy sharoitda faollashtirishga qaratilgan samarali vositalarni joriy qilmasdan turib amalga oshirib bo‘lmaydi. Samarali rivojlanishning asosiy shartlaridan biri davlat organlari, biznes va ilmiy jamoatchilik o‘rtasida yaqin hamkorlikni ta’minlashga qodir milliy innovatsion tizimni shakllantirishdan iborat.

Kalit so‘zlar: mexanizm, rag‘batlantirish, sarmoya, innovatsiya, innovatsiya, energetika, ekologiya, qayta tiklanadigan energiya manbalari, energiya saqlash tizimlari, aqlli tarmoqlar, geotermal energiya, shamol energiyasi.

Аннотация: Статья посвящена анализу механизмов стимулирования инвестиционной активности предприятий энергетического сектора. Устойчивый экономический рост в этой отрасли невозможен без внедрения эффективных инструментов, направленных на активизацию инвестиционной и инновационной деятельности, особенно в региональном разрезе. Одним из ключевых условий эффективного развития является формирование национальной инновационной системы, способной обеспечить тесное взаимодействие государственных органов, бизнеса и научного сообщества.

Ключевые слова: механизм, стимулирование, инвестиции, инновации, энергетика, экология, возобновляемые источники энергии, системы накопления энергии, интеллектуальные сети, геотермальная энергия, ветроэнергетика.

## INTRODUCTION

In the context of modern economic transformation, modernization of the Uzbek economy with an emphasis on innovative development is of particular importance. The consequences of the market reforms have exacerbated the socio-economic imbalance, which requires the active use of innovation potential at both the national and regional levels.

The transition to an innovative development model is considered as the most important means of adapting to global challenges and ensuring the sustainability of the national economy. The formation of a knowledge economy involves concerted action by the Government, the private sector, and academia. Nevertheless, the development of innovative entrepreneurship remains one of the unresolved problems.

There is a contradiction in the country between the availability of significant natural and human resources and the lag in the technological development of the real sector. Ensuring stable economic growth requires the introduction of effective mechanisms that stimulate investment and innovation activity, especially in the regions. The directions of innovative progress have already been fixed in the regulatory framework, government programs, as well as in scientific and applied research.

## LITERATURE REVIEW ON THE TOPIC

M. Bazilian and B. Sovacool[1] analyze investment processes in energy supply, especially mechanisms for stimulating private sector participation through mini-grid systems. They point to state guarantees, tax breaks, and subsidies as effective tools. The study emphasizes that investments in the energy sector lead to stability and innovation. This approach is an important model for developing countries.

The IEA[2] report analyzes investment flows, trends, and the role of government policies in the global energy sector. The IEA shows that mechanisms such as tariff policies, “green finance,” carbon taxes, and credit guarantees play a significant role in increasing investment activity. The report recommends a public-private partnership model to increase the investment attractiveness of energy enterprises.

I. Yuldashev[3] article covers the practical aspects of attracting investments in the energy sector in Uzbekistan. The author justifies the need for tax breaks, long-term loans, and investment guarantees to reduce investment risks in energy enterprises. Also, recommendations are given on the use of a tender mechanism and extra-budgetary funds in energy projects.

Authors T. Altenberg and colleagues[4] study the effectiveness of the feed-in tariff (purchase guarantee) system in attracting investments in the solar energy sector. Such tariff policies guarantee investors a stable income and reduce risks. The study analyzes the mechanisms for attracting private investments through state-set tariffs, based on the experiences of Germany and India. This model has yielded significant results in electricity generation.

The article by Q. Abdurakhmonov[5] provides an in-depth analysis of the role of state participation and strategic policy in improving the investment climate in the national energy sector. The author considers such measures as tariff policy, legislative simplifications, and a guaranteed income model to be important in maintaining investment balance. The study provides recommendations for the implementation of large energy projects based on public-private partnerships.

## RESEARCH METHODOLOGY

The methodological basis of the research was the works of domestic and foreign scientists on the problems of studying the mechanisms of stimulating investment activity in the energy industry, legislative acts and other regulatory documents, materials of scientific and practical conferences devoted to these issues. The research methodology was based on the principles of a systematic approach. Methods of logical, comparative and statistical analysis were used to solve the tasks.

## ANALYSIS AND RESULTS

Despite the recognized need for innovative transformations, some countries are still experiencing a state of innovation difficulties. It is expressed in the low level of development of innovative production and the weak interest of business structures in investing in scientific and technical projects. Unlike Uzbekistan, most countries in Western Europe and the United States have a balanced distribution of funding for research and development (R&D) between the state and the private sector.

Experts explain the lack of business interest in innovative development for a number of reasons. Among them is a natural fear of innovation, in which any changes are perceived as a threat to the established order; lack of motivation among domestic enterprises to introduce modern technologies, since they are not yet considered as a competitive tool; as well as the desire of investors to return investments from previous projects before starting new ones.

The transition to an innovative model of state development is accompanied by an increase in the number of innovatively active enterprises, an increase in the volume of innovative products and the formation of new, previously non-existent markets. One of the central conditions for a successful transition is the creation of an effective national innovation system that ensures interaction between the government, business and the scientific community. Currently, such a system has not yet been fully formed in the Uzbek economy.

Despite the continuing difficulties, the current stage of development is accompanied by significant institutional transformations initiated by the State. Innovation process management is based on the coordination of regional innovation policy with national priorities of socio-economic development, as well as taking into account global technological trends.

The ongoing government measures to build an innovative economy are already yielding certain results. Although the level of innovative production remains insufficient, positive developments are being observed, indicating the effectiveness of the steps taken to create an institutional and infrastructural base for innovative growth.

Thus, according to Table 1, in 2023, the volume of innovation activity of enterprises and organizations in Uzbekistan amounted to 55.7 trillion soums, which is equivalent to 5.2% of GDP. Compared to 2022, this figure has increased almost 1.4 times. This indicates the desire of domestic enterprises to actively participate in the implementation of innovative initiatives (Table 1).

Table 1. The innovative volume of enterprises and organizations in the Republic of Uzbekistan, (trillion sum)

| Title | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Republic of Uzbekistan | 1,8 | 1,3 | 3,6 | 4,6 | 7,0 | 8,0 | 10,7 | 18,5 | 28,9 | 26,8 | 31,1 | 27,4 | 40,5 | 55,7 |

According to table 2, in 2023, research and development (R&D) was carried out in 289 organizations, which is 10.3% more than in 2022. However, it is worth noting that the maximum figure for the last 15 years was recorded in 2018, when the number of such organizations reached 668 (Table 2).

Table 2. The structure of enterprises and organizations in the field of innovation development

| Indicators | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| The number of organizations that carried out research and development, units. | 301 | 317 | 313 | 304 | 360 | 323 | 437 | 389 | 668 | 304 | 254 | 254 | 262 | 289 |
| Number of enterprises and organizations that have implemented innovations, units. | 149 | 196 | 187 | 761 | 852 | 935 | 933 | 1023 | 1024 | 1587 | 1217 | 1151 | 1323 | 5026 |
| Number of implemented innovations, units. | 500 | 842 | 699 | 1334 | 1465 | 1819 | 1906 | 2046 | 2558 | 4689 | 4290 | 4148 | 3792 | 8294 |
| Number of organizations that performed basic research, units. | 111 | 114 | 121 | 105 | 113 | 124 | 133 | 118 | 188 | 113 | 112 | 66 | 73 | 204 |

A significant increase is also observed in the number of enterprises introducing innovations: in 2023, their number amounted to 5,026, which is almost 3.8 times higher than in 2022. The number of implemented innovative solutions has also increased — 8,294 innovations were introduced in 2023, which is 2.2 times more than in the previous year. Positive dynamics was also recorded in the field of fundamental research: in 2023, 204 organizations performed them, which is 16 more than in 2018. These data indicate a gradual recovery and growth of the country's scientific and innovative potential.

Among the many barriers and structural constraints hindering innovative development, the high level of social inequality and pronounced regional differentiation in the Uzbek economy are particularly significant. Spatial imbalances of socio-economic development are manifested at all territorial levels, which has a constraining effect on the realization of the country's innovation potential.

One of the features of government regulation focused on the formation of a knowledge economy is the parallel existence of investment and innovation development programs at the regional level. At the same time, in the current legislation, the issues of investing in innovations are regulated separately, which reflects the specifics of approaches to this area.

The transition to an innovative development model was officially fixed in the Concept of Innovative Development of the Republic of Uzbekistan until 2030. This policy document emphasizes the leading role of the state in the transformation of the national economic system, focused on sustainable growth, improving the standard of living of the population, ensuring technological sovereignty and strengthening national security.

It should be noted that investment activities are gradually being integrated into innovation processes. This is confirmed, in particular, by the fact that one of the key principles of investment policy in the regions is the

priority of investments in innovation. However, a retrospective analysis of legislative changes shows a tendency towards the gradual exclusion of the innovation component from the definition of investment, which reduces its importance in official economic policy.

Currently, in Uzbekistan, the legal regulation of investment activities and investment conditions depend on the nature of investments and the goals pursued. In this regard, the investment sphere is conditionally divided into two areas: regulation of direct investment and regulation of portfolio investments. This approach is due to the difference in the level of investment risks — the risks arising from direct participation in capital are significantly different from those typical for a portfolio investor.

Depending on the investment entity, the following types of investment relations can be distinguished: public investments financed from budgetary funds; investments of national private investors — individuals and legal entities of the Republic of Uzbekistan; foreign investments coming from foreign individuals and legal entities.

The legal relations arising in the process of attracting, using and controlling investments, as well as interaction within the framework of investment and innovation activities, are regulated by the norms of civil law. These relations are investment legal relations that are covered by both domestic legislation and international legal norms.

Of particular importance is the regulatory consolidation of investor incentive mechanisms. This makes it possible to form an institutional framework to support investment activity and gives incentive measures a sustainable and guaranteed character.

The current system of regulatory legal acts regulating the investment sphere determines the legal status of participants in investment activities, establishes measures of legal responsibility, regulates the procedure for implementing investment projects and controls relations between all parties, including government agencies. It is extremely important for an investor to know the basic provisions of the law in order to avoid legal and financial risks that may lead to losses or liability.

Legal norms governing investment activities may be permissive, prohibitive, binding, or stimulating. In a market economy, the main task of legal regulation is to create conditions conducive to an active investment process and the development of the national economy.

Despite the strategic importance of stimulating investment inflows, there is still no single codified law in the country covering the entire range of issues related to investment activities. The current system of investment legislation is determined by the variety of tasks solved within the framework of the state investment policy. The whole set of regulatory legal acts regulating various aspects of investment activity forms the basis of investment law as an independent area of legal regulation.

The peculiarity of investment legislation is that regulation is carried out at the junction of various branches of law. As a result, the resulting investment legal relations are simultaneously subject to several regulations. This means that a full-fledged legal analysis of such legal relations and the resolution of disputes related to their implementation are impossible without an integrated approach, taking into account all applicable legal norms.

In many regions of the Republic of Uzbekistan, the formation and development of an institutional environment conducive to creating a favorable investment climate is recognized as one of the key strategic objectives of investment policy. The main focus is on strengthening cooperation between government and business, as well as creating a positive image of the Territory as an investment-attractive region. This indicates the high interest of the regions in attracting capital and boosting economic growth. To achieve these goals, regional authorities strive to provide investors with the most comfortable conditions, protect private property and reduce institutional risks.

The socio-economic situation of a particular territory is one of the determining factors of regional investment policy. Depending on the level of development achieved, it can both facilitate the inflow of investments and act as a deterrent to innovative transformations.

The current situation in the investment and innovation spheres requires the introduction of effective incentive mechanisms for both existing and potential investors. Ensuring the transition of all regions of the country to an innovation-oriented development model should become one of the priorities of national economic policy.

The concept of “mechanism” in economics is characterized by a high degree of ambiguity and is interpreted in different ways depending on the research approach. There is a wide range of opinions in the scientific literature regarding the essence and content of this term. Within the framework of this study, it is advisable to identify three main types of mechanisms implemented at different levels of management and economic activity:

Economic mechanisms are a set of methods and tools for influencing economic processes and their regulation [6];

Organizational and economic mechanisms of project implementation are forms of interaction between project participants, fixed in the project documentation in order to ensure its feasibility [7];

Management mechanisms are a set of interrelated methods and tools aimed at managing the behavior and actions of process participants, as well as regulating the relations between them [8].

In Russian legislation, various terms are used to designate measures aimed at stimulating investment activity, such as “incentive”, “support measure”, “benefit”, as well as “form” or “method of regulation2. Despite the terminological diversity, all these concepts inherently reflect a single legal phenomenon — a legal incentive, which in the theory of law is defined as a legal incentive to law-abiding behavior, creating favorable conditions for the realization of the interests of the subject.

It should be noted that a legal incentive is a special case of a broader legal category - a legal means used in legal regulation to achieve socially and economically significant goals [10].

The global practice of state stimulation of innovation activity is mainly focused on the use of indirect methods of influence. This approach allows us to simultaneously activate innovation processes, contribute to the formation of a favorable economic environment and strengthen the socio-political conditions necessary for sustainable scientific and technological development [11].

The high degree of risk inherent in the implementation of innovative projects often leads to market disruptions in the scientific and technical field, which necessitates government intervention. As D. S. Ivanov and co-authors rightly emphasize, the effectiveness of compensatory measures on the part of the state will be achieved only if companies have an intrinsic motivation for innovative development. [12]

The analysis of regional programs and strategic documents aimed at the development of innovation and investment activities has allowed us to identify the most common mechanisms of regulation, management and stimulation of innovation activity. These mechanisms are implemented through comprehensive measures, including the following areas::

1. Improvement of the regulatory framework in the field of innovation:

-development and adoption of regulations governing innovation activities;

- formation of a legislative framework for the development of public-private partnership mechanisms;

-creation of a medium-term program to support innovation clusters in high-tech sectors of the region’s economy.

2. Financial incentives for investment activity:

-simplification of procedures for concluding agreements on the implementation of innovative projects in order to apply regional tax preferences;

-analysis of the effectiveness of tax incentives provided at the regional level.

3. Administrative mechanisms to support innovative development:

- establishment of specialized agencies based on government agencies responsible for attracting investments and supporting promising projects;

-development and implementation of standards for the formation of innovative projects;

-organization of monitoring of the provision of most-favored-nation treatment to investors.

4. Organizational and economic development tools:

-formation of a regional innovation portfolio with constant updating of the register of priority projects;

-using the support of federal development institutions;

-assessment of financial stability of subjects of innovative activity, provision of consulting services;

-development of mechanisms to motivate municipalities for achievements in attracting investments, including through pilot projects and the creation of regional “growth points”;

-scaling successful practices to the local government level;

-implementation of inter-municipal investment initiatives involving funds from the regional budget.

5. Human resource development:

- definition and approval of professional standards for specialists in the field of innovation;

-the introduction of new educational programs in universities focused on training personnel for the innovative economy;

-creation of a system of competencies and motivation for government officials and specialized organizations responsible for attracting innovators to the region.

## CONCLUSION AND RECOMMENDATIONS

Gradually, they began to take competitive positions in the struggle to attract investment resources. This has led to the formation of a peculiar dilemma: on the one hand, there is an objective need to join forces to implement major investment programs in conditions of limited budget resources, and on the other, the desire of regions to form their own competitive advantages by creating a favorable investment climate capable of attracting both private and public investment.

Currently, the national economic model is largely focused on the energy and raw materials path of development, which does not correspond to the strategic objectives of modernization. One of the reasons hindering innovative development is the lack of institutional and socio-economic readiness for deep reforms.

Today, a number of systemic problems persist in the country, limiting the ability to direct regulatory efforts and budgetary resources to support the innovation transition.

In order to move to an innovative model, it is necessary to review the objectives of the state strategy, taking into account both the global market situation and the internal socio-economic dynamics. In this regard, the task of developing effective mechanisms for budget financing of innovative development of regions is of particular relevance.

Despite the continuing difficulties, the prerequisites for innovative growth are gradually forming in the Uzbek economy. This is made possible by improving the basic macroeconomic indicators that affect the country's investment attractiveness. In particular, the stabilization of the inflation rate at minimum levels over the post-reform period, as well as a gradual reduction in the refinancing rate, contribute to overcoming crisis trends and achieving a certain degree of socio-economic stability.

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