DEVELOPMENT OF GREEN TECHNOLOGIES IN THE ECONOMY OF THE REPUBLIC OF UZBEKISTAN: APPLICATION OF INNOVATIONS

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Abstract. *In this article, it is necessary to highlight the presence of problems in the development of green technologies in the country's economy and the application of innovations in the fields.*

Networks are shown the need to apply innovative green technologies to achieve sustainable development of economic systems within the framework of modern concepts of a circular economy, taking into account the influence of economic, social and environmental factors. The existence of a link between green technology and innovation. The impact of the introduction of innovations as a factor in ensuring the sustainable development of eco-socio-economic systems has been cited.

Key words: *economy, green technologies, innovation, sustainability, digital transformation, ecology.*

Introduction

The main impetus for the development of green technologies in the Republic of Uzbekistan comes from the need to reduce the impact on the environment, which is part of the global strategy against climate change. The country has all the conditions to become a leading region in the field of environmental innovation.

The introduction of green technology involves the development and application of renewable energy sources such as solar and wind energy, which reduces dependence on fossil fuels and reduces carbon dioxide emissions. It also helps to develop new sectors of the economy, create jobs and attract scientific institutions to the region.

The country is distinguished by its efforts in the field of environmental innovation, actively introducing green technologies into various areas.

A particularly important direction in the rise in energy and fuel prices is the company's investment in self-sufficiency, usually associated with the construction of its own devices that receive energy from renewable sources. Economic impact is inextricably linked with environmental impact.

The development of green technology is accompanied by the implementation of social initiatives. The improvement of the ecological situation directly affects the quality of life of the population, strengthens its health and creates conditions for the sustainable development of the region.

It is necessary to highlight the development of green technologies and innovations in agriculture.

The sustainable development of villages can become an engine of economic prosperity, in addition to social justice and Environmental Protection. The application of green solutions in agricultural practice and resource management is able not only to increase economic efficiency, but also to form an environmentally sustainable development model that will help improve the quality of life of local residents and preserve natural resources for future generations. This approach provides for the integration of environmental principles into all aspects of rural life, taking sustainable development as a basis not only for the goal, but also for the long-term well-being of the region.

This trend reflects global changes in the direction of a more responsible and sustainable approach to investment, focusing on the importance of Environmental Security, Social Responsibility and corporate governance efficiency. In the long run, companies that combine these principles into their activities and demonstrate high standards in the field of digital economy can expect more favorable conditions for financing and access to capital in the domestic market.

The results of this study suggest the importance of STI in promoting green growth and achieving SDGs. In other words, higher investments in STI promote lower pollution and higher productivity, competitiveness and development, and new knowledge and technologies are found to be important to increasing the sustainable use of natural resources in productive processes [1].

Scientific innovation in the field of ecology should create attractive conditions for the development of startups. Important aspects in this matter are not only to simplify the regulatory pressure on startups, but also to give them the opportunity to receive affordable loans and grant assistance.

Material and methods

Judging by the country's green economy from a modern point of view, development is a broader process than just economic growth.

The growth of well-being cannot be measured only by money. Economic growth is an external concept, while development is a broader internal concept that involves raising the standard of living, reducing poverty, and other factors in the social life of society. Economic growth can lead to an increase in the standard of living for a small part of the population, while the majority of the population is still poor. It is the distribution of economic growth among the population that determines the level of development of society. In order to achieve sustainable development and improve the well-being of current and future generations of people, it is necessary to introduce technological innovations and improve the social organization of society.

In this case, there is talk of green technologies and environmental innovation. Green technologies include technologies used in various sectors of the economy: energy, agriculture, construction, industrial production. The main focus of green technologies is to reduce anthropogenic impact on the environment associated with water, soil, air pollution. But, in addition, a number of other tasks are being solved: maintaining people's health, reducing the amount of waste and their reuse, reducing climate change. Many green technologies allow you to increase the number of jobs, increase the technological level of production.

Environmental innovation can be divided into technological and non-technological innovation. Technological innovation includes innovations in the field of ecoprocesses and environmental products. Non-technological innovations include social, marketing, organizational and institutional activities. By its definition, eco-innovation should only have a positive impact on the environment, while simple innovation can have a negative impact on it. We can say that green technologies are the result of environmental innovation. In technological environmental innovation, three main components can be distinguished: they must be based on new technological knowledge; they must be new to their firms, industries, etc.; they must reduce the harmful impact on the environment compared to previous technologies. It should be noted that environmental policy in the state and in the world as a whole has a significant impact on the emergence and direction of innovation in the field of Environmental Technologies.

State incentives for environmental innovation can be achieved with market regulation tools as well as direct regulatory forms. The assessment of the impact of environmental policy should be carried out taking into account the analysis of the exact foundations of such policies and

technological areas that may affect it. The basis of such an assessment can be the survey results of representatives of different areas of Business, national regulatory documents and reviews of international environmental agreements.

The development of the green economy has been interpreted in different ways in the scientific work of foreign and domestic scientists.

Sustainable development has ceased to be an exclusively academic concept and is becoming mainstream in the world of business and investment, which requires the development of management tools, both market and administrative-state type [2].

Among the conditions for the transition to a "green" economy, international cooperation and assistance play an essential role. Thus, intergovernmental organizations, international financial institutions, non-governmental organizations, the private sector and the international community as a whole can play a key role in providing technical and financial assistance to developing countries in the field of new green technologies [3].

With the increased efforts and focus on sustainable development and changes in the climate, literature has given more attention to the green economy [4].

The green economy as the need to live in harmony with nature, which is the second eternal problem of mankind, the use of an economic approach for the formation of a green economy is justified, a grouping of theoretical views on its understanding is proposed, the main directions for solving the problems of the green economy are put forward [5].

Special attention is paid to human capital as the most important factor of sustainable development, accumulation and use of human capital [6].

It will allow to the owners of enterprises more precisely to specify backlogs of increase of the labour productivity and work out the corresponding system of measures [7].

In our opinion, the green economy strategy should serve as a model for the sustainable development of host countries in the long term.

Green technological innovation can be a valuable resource for enterprises and business structures, while allowing them to achieve competitive advantages and contribute to sustainable development. Such innovations have great potential to reduce the consumption of Natural Resources and preserve them for future generations. Green technologies help to increase the positive attitude of customers towards the brand,

increase compliance with regulatory requirements, attract long-term investments, including investment in further research and development.

The article considers the systematization of basic and innovative methods of eco-planning in accordance with the main stages of designing buildings and territories: architectural and urban planning, structural design and technological design [8].

Comparative methods were used as a methodological variant of the study, and in it the approaches of a systematic approach, theory of sustainable development were applied in the research process.

In the scientific approach, the green economy can be considered as a separate sphere of knowledge, which can be formalized within the framework of the existing general theory of Economics and give it the peculiarities of a separate scientific sphere.

Within this approach, green economics is positioned as a new discipline formed by the merger of economic and natural science knowledge, resulting in a broader, multidisciplinary nature compared to other economic disciplines.

The economic approach means that the green economy is a set of measures and methods for optimizing existing economic relations between agents of modern market relations in order to maintain socio-ecological economic balance and achieve sustainable economic growth and development. The economic approach tries to meet the infinite needs of a person in conditions of clearly limited resources.

The cultural approach to understanding the green economy is primarily aimed at the person himself. If previous approaches are oriented towards the methodological side of the issue and economic processes, then the cultural approach is aimed at the desire of people to develop a high level of self-awareness and responsibility for the model of behavior in front of current people and subsequent generations. The cultural approach seeks to develop an appropriate attitude towards the environment in society that does not contradict the principles of sustainable development and green economy. Determined by the need to increase the competitiveness of the country internationally.

Methodological approaches in the study of green economics consist of:

Scientific approach; green economics is considered as a separate field of knowledge that can theoretically be formalized, give the status of an independent science with a specific theoretical and instrumental basis.

Economic approach; green economy is a set of measures and methods for optimizing economic relations between agents of modern market relations in order to maintain socio-ecological-economic balance and achieve sustainable development.

Environmental approach; green economy, which is an interpretation of the concept of sustainable development, combining issues of economic, social and environmental development. It is about creating an economic system that includes environmental and social factors. This should reduce environmental stress, help maintain and restore natural ecosystems, and increase natural capital.

Ideological approach; the green economy is officially enshrined in state documents, has the status of a program for the strategic development of the country in the short and long term.

Evolutionary approach; green economy reflects the result of the genesis of the global economic system, since Ponsky gives the most worthy answer to the problems of modernity, expressed in the formation of flexible forms of management

Field approach; green economy, which is a set of areas of Economics characterized by the use of advanced techniques and technologies. This complex is carried out in parallel with the classic sectors of the economy. Advanced technologies and technologies are characterized by minimal impact on the external environment and should be used in areas of the economy with significant negative environmental impacts. The main object of the green economy is the sector with a high level of environmental impact.

The evolutionary approach considers green economics as the result of random economic processes arising from the interaction of external and internal factors, and is manifested in the structure of the economy and the change of agents in them. The evolutionary approach means that all systems are in the process of constant and causal changes.

Result

Investing in any innovation is a step towards seeing a strong economy and a stable society. Human capital and a working, healthy population of the country, a well-educated nation are essential for economic growth. Satisfying social needs is not only an investment that will pay off later, but also an integral part of a successful economy, the purpose of which is the well-being of the population. But it is not enough for large enterprises to invest state funds in the social sphere and donate. Long-term, targeted

efforts of all stakeholders are needed. As a way to meet the important needs of society, it will be necessary to take a broad look at innovation and systematically change it for the purpose of long-term planning.

Innovation is a convenient way to solve important problems. In practice, there is a lot of evidence that innovation can solve the problems of vulnerable segments of the population, improve the quality of life and contribute to important systemic changes in society in order to improve its well-being.

The importance of innovation as a key factor in sustainable development for the country is undeniable as economic environmental and social, and they require constant control and management.

The stability of the development of a socio-economic system in a country is determined by the stability of the development of its structural socio-economic systems, which act as a subsystem.

In scientific research, we divide it into three levels as follows: sustainable development of the state; sustainable development of Regions; sustainable development of enterprises.

Because, let's see how innovative activities carried out by these systems affect sustainable development.

First, the sustainable development of the state is influenced by the innovative activities of the regions, the development stability of which is ensured by innovative enterprises. The sustainable development of enterprises, in turn, depends on their innovative activities and personnel activities. Innovation at each level allows you to solve problems at this level.

By studying the dynamics of green investments with a breakdown into different countries and the experience of international cooperation in sustainable development, the authors of the article generalize the results achieved by countries with regard to transition financing of their economies to a new pattern of ecologically sustainable development [9].

The influence of the introduction of innovations as a factor in ensuring the sustainable development of socio-economic systems is presented. The impact of the development, implementation and use of economic, environmental and social innovations of various levels. The country has identified the types of innovation and its level of sustainable development.

State: *Economic:* gross domestic product growth; replenishment of the Republican budget; growth of the share of innovative enterprises in the country; growth of the share of domestic innovative products; growth of the country's level of competitiveness; establishment of new sectors of the economy; strengthening the country's defense capabilities.

Ecological: conservation of the country's natural resources.

Social: improving the quality of life of the population; positive image of the state; high level of education and development; competitive quality of life; increasing the life expectancy of the population of the country.

Region: *Economic:* gross domestic product growth; replenishment of the regional budget; growth of the share of innovative enterprises in the region; growth of the share of innovative products in the total volume of products produced in the region; growth of the level; competitiveness of the region.

Ecological: conservation of the country's natural resources.

Social: positive image of the region; high level of education and development in the region; competitive quality of life of the population of the region.

Businesses: *Economic:* reducing the cost of products due to the introduction of new technologies; increasing net profit and profitability; increasing the level of competitiveness of the organization/enterprise; improving the quality of products/services.

Ecological: competitive advantage.

Social: positive public opinion; enterprise image; competitive advantage.

The effect of the agrarian sphere is an indicator of the sustainable development of socio-economic systems. The attractiveness of the development, implementation and use of innovations depends on the number of results obtained.

However, there are also three types of problems that create barriers to the sustainable development of socio-economic systems in the development, implementation and use of innovations.

At the same time, problems arise that create barriers to the sustainable development of socio-economic systems, as well as at three levels, in the development, implementation and use of innovations.

In the future, we will consider the possibility of the transition of the country to green products and find a dependence on a strong path in the accumulation of green capabilities [10].

Problems of development, implementation and use of economic, environmental and social innovations of various levels.

The levels of sustainable development depend on. *State:* imperfection of the legislative base; low attractiveness for international markets; significant delays in technical solutions; resistance of society to change; weak innovative infrastructure.

Region: imperfection of the legislative base of the region, which regulates the activity of innovation of enterprises; slowness of interregional cooperation; administrative barriers and corruption; weak innovative infrastructure of the region.

Businesses: imperfection of the legislative base regulating innovative activities; high cost of saving technologies in the introduction of environmental innovations; high cost of carrying out innovations due to high current costs; lack of own financial resources; obsolescence of basic tools; lack of economic efficiency of social innovations; long-term return period of a number of environmental and economic innovations; lack of qualified personnel; high; lack of information platforms for social innovation.

Problems are a serious threat to the implementation of innovative activities and prevent the development of the economy as a whole. Despite the developing problems, there is a high probability of creating, disseminating, stimulating and using innovations to ensure the sustainable development of socio-economic systems. Innovations provide a continuous competitive advantage for any level of sustainable development and, consequently, a high competitiveness for the state, region and organization/enterprise. The increase in environmental problems, the economic consequences of natural and anthropogenic disasters, problems of the social sphere, rapid shrinkage of natural resources necessitate the rapid development of Special specific areas of scientific and technological research and development.

In this case, through the introduction of advanced technologies, the effect of GDP growth appears, which is manifested in the fact that it is ahead of the pace of resource consumption.

Discussion

The development and application of technologies to reduce soil waste and pollution is an important component of environmentally sustainable development. Several key aspects in this area:

Industrial waste management: the development and implementation of industrial waste recycling and disposal technologies can help prevent soil contamination with toxic substances. This includes methods to bring waste to a safe level and clean it, as well as the use of technologies to monitor and control industrial waste.

Limiting the use of chemical fertilizers and pesticides: the introduction of agricultural methods aimed at reducing the use of chemical fertilizers and pesticides prevents soil contamination with agrochemicals. This includes the

use of more efficient processing methods, alternative pest control methods, and the introduction of agricultural practices to help maintain soil fertility.

Improving soil cover restoration techniques: the development and introduction of ground cover restoration technologies in areas affected by pollution and degradation will help restore soil fertility and stability. This includes the use of erosion protection methods, the implementation of Agro-reclamation measures and the restoration of biodiversity of soil organisms.

Improvement of Reclamation methods: the development of innovative methods of reclamation of contaminated lands and places, including the use of Biotechnology, phytoremediation and engineering methods, helps to restore the quality of the soil and improve its environmental characteristics.

Education and information: conducting soil conservation education programs and campaigns, as well as informing organizations and the public about ways to reduce soil pollution and the importance of maintaining it, can help raise awareness and motivation for environmentally responsible behavior.

The development and application of these technologies and approaches requires the joint efforts of government bodies, scientific research institutes, business and the public to ensure the sustainability of ecosystems and maintain the quality of soil cover.

Conclusion

The development of green technologies and innovations in the Republic not only helps to achieve environmental goals, but also opens up new horizons for the socio-economic development of the region, making it a leader in the field of digital transformation at the regional level. the key point is not only the introduction of green technologies, but also the creation of an innovative ecosystem capable of stimulating and supporting environmentally oriented initiatives and projects. Given the potential to create new jobs and attract investment, it is also important to assess how these changes affect the social structure and economy of the region.

The study of the development of green technologies and innovations as a promising direction of digital transformation in the Republic is becoming relevant in terms of global environmental trends, local economic and social needs. This will pave the way for a more sustainable and environmentally balanced development of the region, helping to create a healthy living environment and a dynamic economy.

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