



MODERN DEVELOPMENT TRENDS OF THE GREEN ECONOMY CONCEPT AND ITS ROLE IN THE GLOBAL ECONOMY

Khakimov Asadbek Makhsud ugli

Student of Tashkent State University of Economics

Email: mmen4218@gmail.com

ABSTRACT	KEY WORDS
The article provides a comprehensive analysis of the formation of the concept of a green economy, its modern development trends and its role in the global economy. The research study examines economic mechanisms aimed at ensuring sustainable development, efficient use of resources, prevention of climate change and environmental safety. It also highlights the impact of green technologies, renewable energy sources, carbon emission reduction policies in developed and developing countries, and the impact of “green” investments on global economic growth.	Green economy, sustainable development, environmental safety, renewable energy, green investments, climate change, efficient use of resources, carbon emissions, global economy, green technologies.

Introduction

The concept of a green economy was formed at the beginning of the 21st century as a response to global environmental problems, depletion of natural resources and climate change. This concept is fundamentally different from traditional models of economic development, as it takes into account not only economic growth, but also environmental protection and social justice. A green economy is a system of economic activity that significantly reduces environmental risks and ecological deficits, while increasing human well-being and ensuring social equality. Today, this concept is recognized by the UN, the World Bank, the OECD and other international organizations as a key direction of global development strategies.

Modern technologies play an important role in the development of a green economy. Artificial intelligence, big data analytics, the Internet of Things (IoT) and blockchain technologies are widely used to increase energy efficiency, manage waste and rationally use resources. Great strides have also been made in the field of renewable energy sources - the efficiency of solar panels and wind turbines is increasing year by year, and their cost is decreasing. Innovations such as electric vehicles, hydrogen technologies and green hydrogen production are fundamentally changing the transport sector. Biotechnologies, nanotechnologies and smart city systems are also becoming important parts of the green economy infrastructure.

The transformation of the global energy system is a prime example of a green economy. By 2024, many countries are investing heavily in renewable energy sources and are implementing plans to obtain

a large part of their energy from solar, wind, hydro and geothermal sources. China, the European Union, the United States and other major economies have set goals to achieve carbon neutrality. Energy storage technologies, especially lithium-ion batteries, and other innovative solutions are helping to solve the problem of the non-constant availability of renewable energy.

Decentralized energy systems, smart grids and energy efficiency management systems are forming the basis of a new energy infrastructure. The circular economy model is an important component of a green economy, which involves moving from a linear “take-use-dispose” model to a “recycle and reuse” model. This approach takes into account, starting from the design stage of products, their service life extension, repairability and the possibility of recycling materials at the end of their life. The European Union has adopted comprehensive circular economy strategies, including reducing plastic waste, granting products the “right to repair” and developing recycling infrastructure. Many companies are also rethinking their business models, moving from selling products to providing services, which will ensure more efficient use of resources.

Literature Review

In the process of analyzing the literature on the topic, scientific research has been conducted by several leading economists and experts from around the world on the modern development trends of the Green Economy concept and its role in the global economy. Among them, according to the scientific views of A.Kh. Kadyrov, the green economy is not only a concept aimed at solving environmental problems in the conditions of Uzbekistan, but also a strategic model that radically improves the quality of economic growth. The scientist indicates the rational use of natural resources, increasing energy efficiency, and ensuring environmental safety as the main pillars of the green economy. He notes that although green projects may seem expensive in the short term, in the long term they will serve to reduce production costs, reduce investment risks, and strengthen economic stability. Kadyrov explains the role of the green economy in the global economy in an inextricable link with international investment flows and environmental standards[1].

Z.R. Khudoyberdiev interprets the concept of a green economy as an important mechanism for ensuring the environmental and social security of the national economy. In his opinion, in the modern global economy, the competitiveness of countries is increasingly determined by the level of implementation of green technologies. The scientist justifies the fact that a green economy requires the integration of climate change adaptation policies with economic development strategies. Khudoyberdiev also emphasizes that a green economy plays an important role in integrating into global value chains, increasing export potential, and expanding the market for environmentally friendly products[2].

B.T. Karimov approaches the concept of a green economy from an investment and institutional point of view. According to him, a green economy is changing the direction of capital flows on a global scale, leading to a sharp increase in the share of green finance, green bonds, and investments based on ESG principles. The scientist explains the place of a green economy in the global economy through the interaction between international financial institutions, transnational companies, and state policy. According to Karimov, the transition to a green economy is not only an environmental obligation for national economies, but also a factor that ensures strategic competitive advantage[3].

E.B. Barbier, one of the founders of the green economy theory, considers it a new paradigm of economic growth. In his opinion, the traditional economic model has led to global crises due to its failure to take into account environmental constraints. Barbier scientifically substantiates the

possibility of achieving a balance between economic development, environmental protection and social equality through a green economy. He shows the global importance of the green economy as a systemic response to resource scarcity, environmental degradation and climate change, and emphasizes the need to prioritize green investments in public policy[4].

N. Stern's scientific views are based on the economic effectiveness of the green economy in combating climate change. In his research, he proves that the lack of environmental measures will lead to significant financial losses for the global economy. Stern evaluates the transition to a green economy not as an additional cost, but as an investment that reduces future economic risks. In his opinion, the development of green technologies and the reduction of carbon emissions in the global economy will ensure sustainable economic growth in the long term and form new rules for international economic relations[5].

J.D. Sachs sees the green economy as the main economic platform for achieving sustainable development goals. He emphasizes that poverty reduction, addressing environmental problems, and ensuring economic inclusion are inseparable processes in the global economy. According to Sachs, the green economy creates new opportunities for economic growth not only for developed but also for developing countries. He justifies the need to implement the green transformation through globally coordinated policies and international cooperation[6].

S.Yu. Glazyev interprets the green economy as an integral part of the new technological paradigm. In his opinion, new industries that are being formed in the global economy based on green technologies are becoming the main drivers of economic growth. Glazyev associates the development of the green economy with technological modernization, innovative policies, and the active participation of the state. He emphasizes that the green economy is changing the global economic structure and renewing the forms of competition between countries[7].

G.B. Kleiner assesses the green economy based on a systemic economic approach. He believes that the success of a green economy is determined not only by technological factors, but also by the quality of institutions, the effectiveness of governance, and the level of coordination between economic actors. Kleiner interprets the process of transition to a green model in the global economy as a complex, multi-level systemic transformation and emphasizes the importance of harmonizing the interests of the state, business, and society in this process[8].

Research Methodology

Economic research methods such as analyzing research conducted by world scientists on the modern development trends of the green economy concept and its role in the global economy, collecting and comparing all information on the topic, and logical thinking were used.

Analysis and Discussion of Results

Green finance is a rapidly growing segment of the global financial system. The green bond market is showing exponential growth - in 2023-2024, global green bond issuance reached hundreds of billions of dollars. ESG (Environmental, Social, Governance) investments remain a key criterion for institutional investors, encouraging companies to increase their environmental and social responsibility. Many banks are introducing "green lending" programs, which involve providing preferential loans to environmental projects. States are also supporting green projects through various tax breaks, subsidies and grant programs. Investment funds based on ESG metrics are also becoming

widespread in the private sector.

The Paris Agreement (2015) and subsequent international agreements form the basis of global action against climate change. By 2024, many countries have submitted updated nationally determined contributions (NDCs), reflecting their commitments to reduce carbon emissions and adapt to climate change. COP summits are underway, and important agreements are being signed between countries on the exchange of experience, financial assistance and technology transfer. Developed countries are allocating billions of dollars to help developing countries make the “green transition”. Instruments such as carbon pricing mechanisms, emissions trading systems and border carbon adjustments are being introduced globally.

The transition to a green economy is creating millions of new jobs. According to the International Labour Organization (ILO), the green economy could create 24 million new jobs globally by 2030. The demand for personnel in the renewable energy sector, green construction, eco-tourism, organic agriculture and waste management is growing. However, there is also a risk of job losses in traditional sectors, so the concept of a “just transition” is gaining importance. This includes retraining workers, strengthening social protection measures and creating new opportunities. Many countries are launching training programs in “green skills”.

The green economy also encompasses agriculture, where sustainable farming practices, organic production, and the development of climate-resilient varieties are of particular importance. Precision farming technologies, satellite monitoring, drones, and IoT devices are enabling more efficient use of water, fertilizers, and pesticides. Innovative methods such as vertical farming, hydroponics, and aquaponics are enabling the production of agricultural products even in urban environments. Reducing food waste is a major issue on the global agenda, and the principles of the circular economy are being applied to this sector as well. There is a growing demand for local food systems, short supply chains, and organic products.

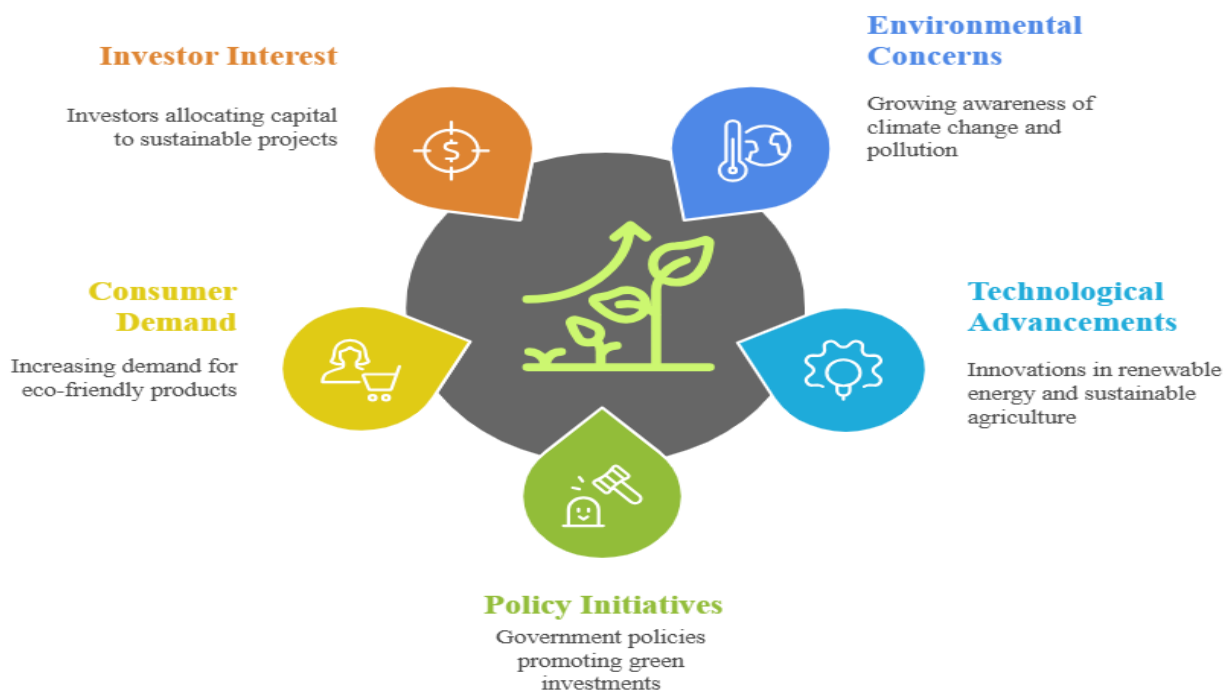


Figure 1. Factors driving the growth of the green economy[9]

As we can see in Figure 1, the concept of a green economy is becoming an important and integral direction of modern global economic development. The main driving forces of the green economy are the growing interest of investors, the growing environmental demands of consumers, the aggravation of environmental problems, and the rapid development of technological innovations. These factors, in combination, provide a qualitative renewal of the economic growth model. At the same time, the active participation of state policy and the improvement of institutional mechanisms are of decisive importance for the sustainable development of the green economy.

By encouraging green investments, the widespread introduction of renewable energy sources, and the strengthening of environmental standards, countries have the opportunity to strengthen economic stability at the national and global levels. As a result, the green economy, along with reducing environmental problems, serves to create new jobs, increase competitiveness, and ensure social well-being.

In general, the transition to a green economy is inevitable and has long-term strategic importance, determining the future direction of development of the global economy. In this process, effective cooperation between the state, business and society, the combination of innovative approaches and sustainable financing mechanisms are important factors. Therefore, in-depth study and consistent implementation of the principles of the green economy are one of the most important conditions for ensuring sustainable development.

Green Economy Sectors

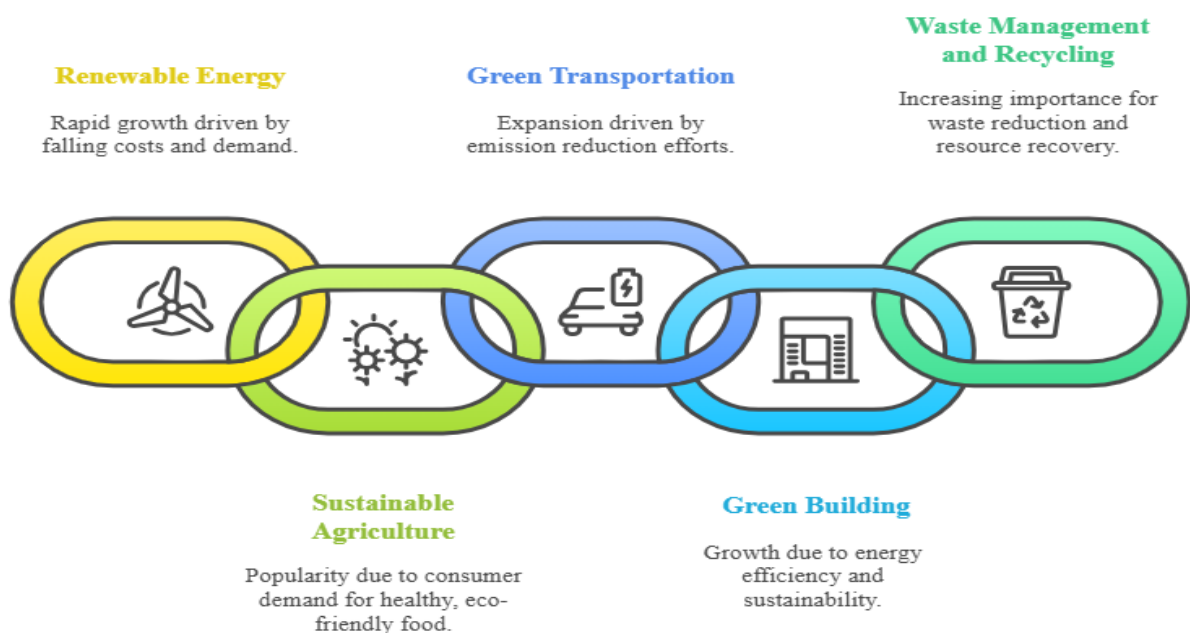


Figure 2. The impact of the green economy on various sectors of the global economy¹

As shown in the figure, renewable energy is one of the most important and rapidly growing sectors of the green economy. The expansion of the use of solar, wind and bioenergy sources is explained by the need to reduce energy production costs and reduce carbon emissions. This sector serves to strengthen

¹ The work was prepared by the author.

energy security, reduce import dependence and ensure environmental sustainability on a global scale. At the same time, investments in the renewable energy sector have a positive impact on economic growth by creating new jobs and accelerating technological innovation.

Sustainable agriculture and green transport networks also play an important role in the structure of the green economy. Sustainable agriculture is aimed at the rational use of natural resources, the production of environmentally friendly products and ensuring food security, and is developing further with the increasing demand of consumers for healthy and environmentally friendly food. At the same time, green transport systems, including electric vehicles and low-emission vehicles, are playing an important role in combating climate change by reducing greenhouse gas emissions. These sectors are key factors in creating sustainable infrastructure in the process of urbanization. Another important area is green construction and waste management and recycling. Green construction focuses on designing energy-efficient buildings, using resource-efficient materials, and reducing operating costs, which brings long-term environmental and economic benefits. Waste management and recycling, on the other hand, allow for resource recovery, waste reduction, and the introduction of circular economy principles. These sectors ensure the systematic development of a green economy and help turn environmental problems into economic opportunities.

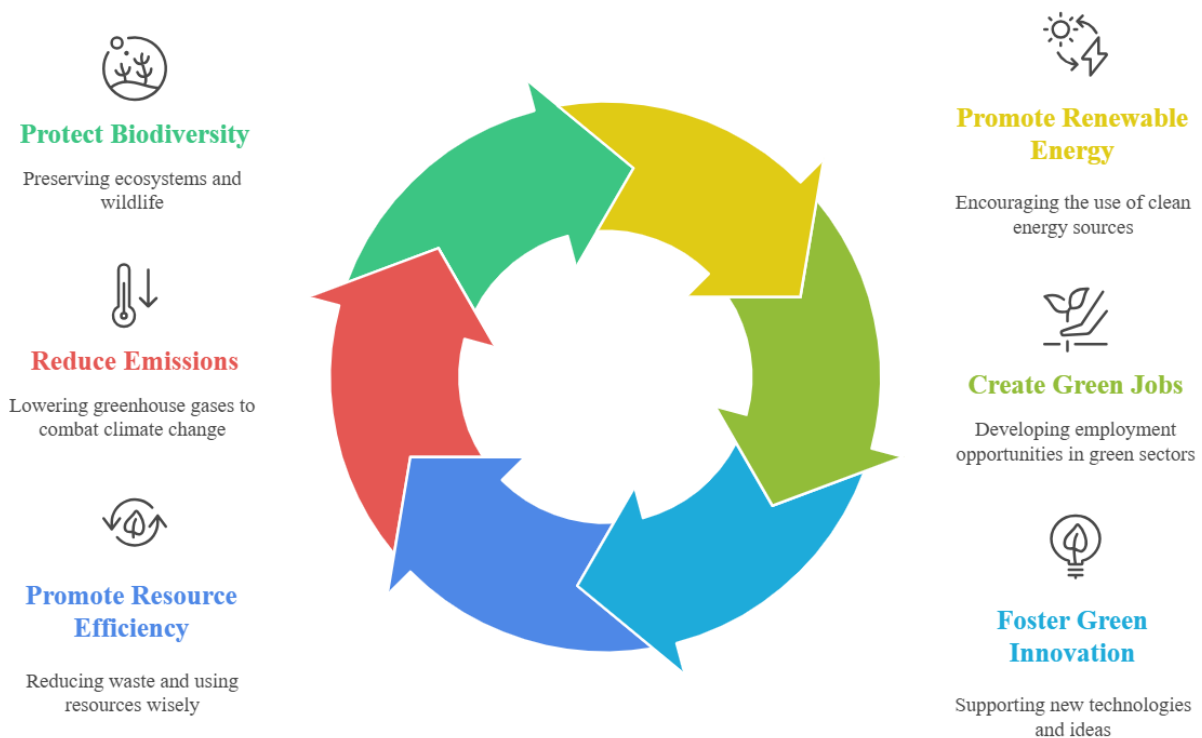


Figure 3. Contribution of the green economy to the Sustainable Development Goals²

As shown in the figure above, the green economy is based on a systematic approach that combines interrelated environmental, economic and social goals. Protecting biodiversity, reducing greenhouse gas emissions and using resources efficiently are essential for ensuring environmental sustainability. These areas, along with reducing the negative consequences of climate change, serve to preserve the natural resource base and ensure ecological balance for future generations. At the same time,

² The work was prepared by the author.

developing renewable energy, creating green jobs and supporting green innovations create a new quality of economic growth. Innovative solutions and technologies implemented within the framework of the green economy allow increasing economic efficiency, expanding employment and strengthening social well-being. As a result, the green economy, while solving environmental problems, becomes an important factor in sustainable and inclusive development, ensuring the long-term competitiveness of global and national economies.

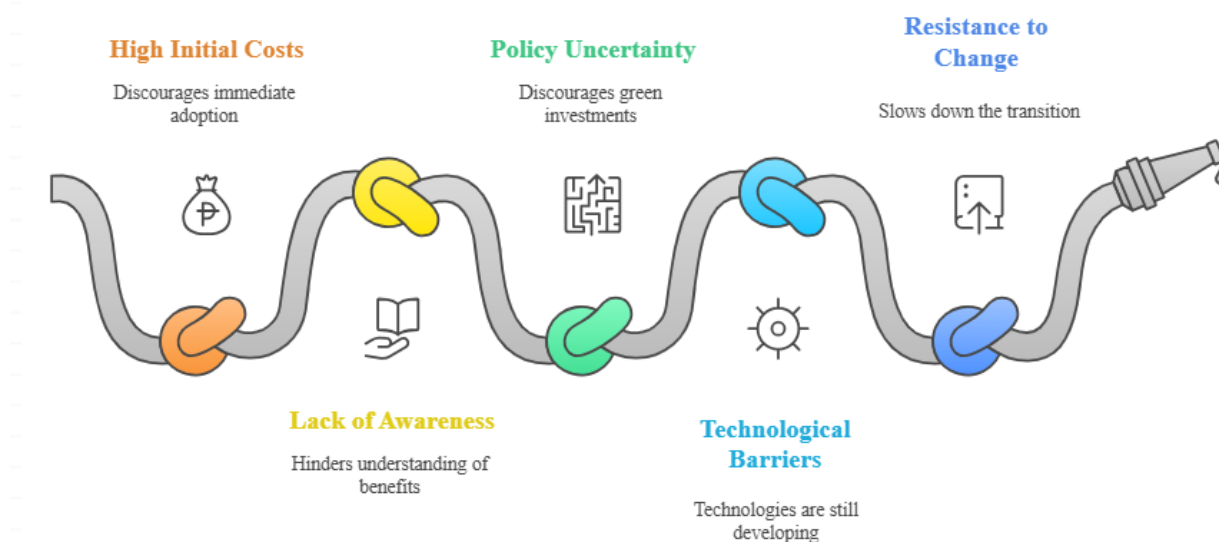


Figure 4. Main challenges in implementing a green economy³

In conclusion, the transition to a green economy is a complex and multifaceted process, and it is accompanied by a number of economic and institutional barriers. As the figure shows, the introduction of green technologies and infrastructure requires high initial costs, which is a significant barrier for entities seeking short-term financial benefits. In particular, in developing countries, the lack of capital and limited financial resources slows down the large-scale implementation of green projects.

At the same time, political and institutional uncertainties complicate the process of investing in the green economy. The lack of a stable and long-term environmental policy, frequent changes in the regulatory framework, and the lack of clearly defined incentive mechanisms reduce investor confidence. In addition, the low level of knowledge of the population and business entities about the benefits of a green economy also negatively affects this process and hinders the widespread implementation of environmental initiatives.

Technological barriers and resistance to change are emerging as factors slowing down the transition to a green economy. The lack of maturity of some green technologies, inadequate infrastructure, and limited human resources complicate the process of technological implementation. At the same time, dependence on traditional production and energy systems increases resistance to change. As a result, the transition to a green economy becomes a strategic task that requires a systematic approach, coordinated policies, and comprehensive institutional reforms.

³ The work was prepared by the author.

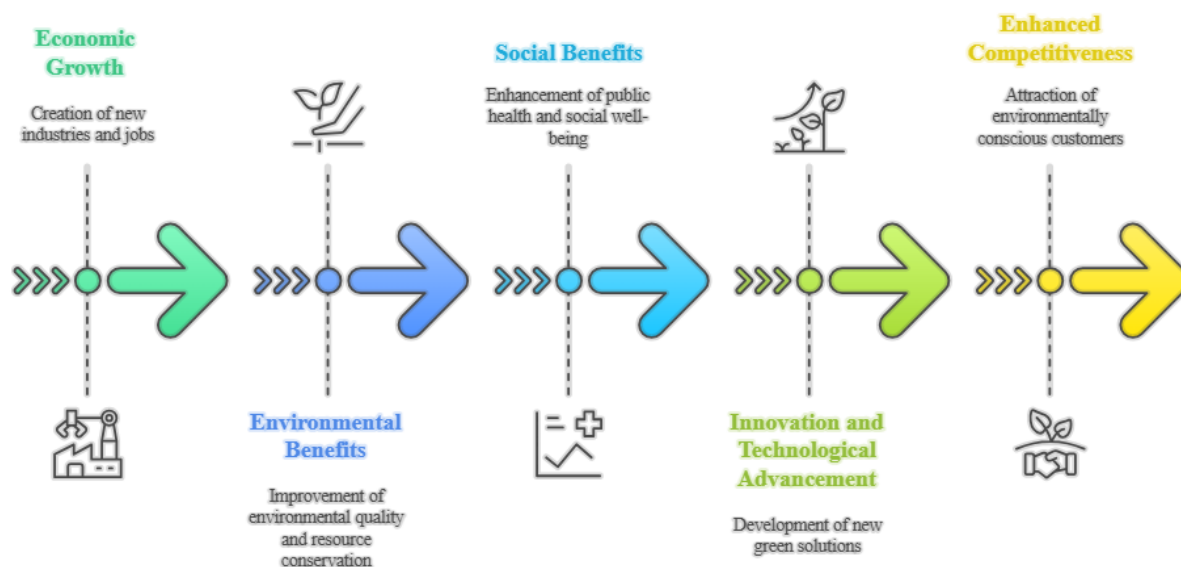


Figure 5. A range of green economy opportunities⁴

The green economy serves to form a new and qualitatively higher stage of economic growth. As shown in the figure, new industries, innovative activities and green jobs are created within the framework of the green economy. This process has a positive impact on the diversification of the economy, the expansion of the labor market and the increase in the employment rate of the population. As a result, economic growth becomes sustainable and long-term, taking into account environmental constraints. At the same time, the environmental and social benefits of the green economy are important in increasing the well-being of society. Improving the quality of the environment, protecting natural resources and reducing pollution have a direct impact on the health and quality of life of the population. Socially, the green economy serves to develop a healthy lifestyle, strengthen social stability and ensure social equality. This shows that the green economy is not only an ecological, but also a comprehensive socio-economic model.

The green economy is an important factor in stimulating innovation and increasing the global competitiveness of the economy. The introduction of new technologies and environmental solutions increases production efficiency and reduces the cost of resource use. At the same time, environmentally responsible business models strengthen the market position of enterprises by attracting environmentally conscious consumers. As a result, the green economy is becoming a strategic direction that ensures sustainable development, innovative progress and global economic competitiveness. More than half of the world's population lives in cities, and this proportion is increasing, so sustainable urban development is becoming increasingly important.

The concept of green cities includes smart transport systems, energy-efficient buildings, green spaces, waste processing infrastructure and rational use of water. Copenhagen, Singapore, Amsterdam and other cities are leading the way in green urbanization. In the urban planning process, environmental criteria, the development of public transport and bicycle infrastructure are coming to the fore. Smart city technologies are used to efficiently use resources, optimize transport flows and improve the quality of life of residents. Green building certification (LEED, BREEAM) is becoming a standard in the

⁴ The work was prepared by the author.

construction industry.

For developing countries, the transition to a green economy is both an opportunity and a challenge. On the one hand, they can immediately switch to modern green technologies, bypassing the negative consequences of the traditional development path (the "leapfrogging" effect). On the other hand, the lack of financial resources, technological lags and the need for economic growth complicate the green transition. Countries such as Uzbekistan are also developing the direction of the green economy - reforms are being carried out in areas such as renewable energy projects, the development of eco-tourism, water-saving technologies and organic agriculture. International cooperation, technology transfer and capacity building programs play an important role in the green transformation of developing countries.

The transition to a green economy involves many difficulties. The main obstacles are high initial investments, lobbying activities of traditional industries, the risk of unemployment and social resistance. The phenomenon of "greenwashing" – companies using false marketing techniques to portray themselves as environmentally responsible – is eroding consumer trust and making it difficult to identify truly green companies. There are also problems with the slow pace of technological change, inadequate regulatory frameworks and cooperation between countries. Some developing countries consider green technologies expensive and unsuitable for them. The complexity of global chain reactions and the need to balance different economic interests make political decisions difficult.

The future of the green economy looks promising, as technological innovation, increased social awareness and increased political will are accelerating the green transformation. Many countries plan to achieve carbon neutrality between 2030 and 2050. Artificial intelligence and quantum computing are opening up new opportunities for solving environmental problems. The hydrogen economy, carbon capture technologies and bio-innovations offer hope for the future. The younger generation is paying more attention to environmental issues and changing their consumption habits. Business model innovations, the sharing economy and the platform economy are helping to reduce pressure on resources. The green economy is seen not only as a means of solving environmental problems, but also as a source of new economic opportunities, increased competitiveness and improved quality of life. A sustainable future can be built through global cooperation, an inclusive approach and innovative solutions.

Conclusion and Suggestions

The concept of a green economy has become one of the most important directions of global economic development today, playing an important role in ensuring sustainable growth, mitigating environmental problems and promoting the rational use of natural resources. The results of the study show that by introducing the principles of a green economy, it is possible to increase production efficiency, reduce carbon emissions and improve social well-being.

Also, the transition to renewable energy sources on a global scale, the widespread introduction of green technologies and the promotion of environmental investments are one of the main factors increasing the competitiveness of countries. The green economy plays an important role not only in ensuring environmental sustainability, but also in creating new jobs, innovative development and economic security. Therefore, the gradual integration of this concept into national economies is a strategic necessity.

In addition, it is advisable to implement the following measures to expand the concept of a green economy in our country:

1. It is advisable to develop laws, strategies and state programs supporting the principles of a green economy and strengthen their implementation.
2. It is necessary to expand tax incentives, subsidies and financial support mechanisms for investments in renewable energy, environmentally friendly production and energy-saving technologies.
3. It is necessary to develop environmentally friendly technologies and implement them in industry through the development of scientific research and experimental design work (SRTD).
4. It is important to train qualified specialists through the development of green economy, sustainable development and environmental management in the education system.
5. It is recommended to introduce advanced practices in the field of green economy through global climate initiatives, exchange of experience with international financial institutions and developed countries.
6. It is necessary to develop specific indicators and monitoring mechanisms to assess the effectiveness of the transition to a green economy.

References

1. Kadyrov A.Kh. Fundamentals of sustainable development and green economy. – Tashkent: Economics, 2021. – 256 p.
2. Khudoyberdiyev Z.R. Green economy and environmental policy: theory and practice. – Tashkent: Science and technology, 2020. – 198 p.
3. Karimov B.T. Strategies for economic development in the context of climate change. – Tashkent: Yangi asr avlody, 2022. – 220 p.
4. Barbier E.B. The Green Economy: Rethinking Economic Growth. – Cambridge: Cambridge University Press, 2010. – 240 p.
5. Stern N. The Economics of Climate Change: The Stern Review. – London: HM Treasury, 2006. – 692 p.
6. Sachs J.D. The Age of Sustainable Development. - New York: Columbia University Press, 2015. - 544 p.
7. Glazev S. Yu. Strategy of operational development and conditions of global crisis. - M.: Ekonomika, 2011. - 255 p.
8. Клейнер Г.Б. Системная экономика. – М.: Наука, 2015. – 432 с.
9. Bobylev S.N., Zakharov V.M. Green economy and sustainable development. - Moscow: Faculty of Economics MGU, 2012. - 280 p.