

## PROSPECTS FOR THE DEVELOPMENT OF INVESTMENT IN THE GREEN ECONOMY

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### ARTICLE INFO.

**Keywords:** green economy, investment, foreign investment, green bond, financing, infrastructure, subsidy, green public procurement, green lending, subvention, subsidy.

### Abstract

The essence of the green economy and its importance today are revealed in the article. Possibilities of increasing investments in the green economy in the next stages of economic development are analyzed. Problematic aspects of investing in the green economy have been studied and proposals and recommendations aimed at their elimination have been developed.

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### Introduction

In accordance with the Strategy of the transition to a "green" economy of the Republic of Uzbekistan, the integration of the principles of the "green" economy into the structural reforms implemented in the country until 2030, the reduction of the level of greenhouse gas emissions, the introduction of low-carbon, resource- and energy-saving technologies, the climate in relation to green projects the issues of defining the criteria and expanding the financing of green investment projects are studied in this chapter.

The environment and ecological situation around the world is changing from year to year. In recent years, climate change has had a dramatic effect on all regions of the world. If we turn to the numbers, "since 1880, the air temperature on the earth's surface has increased by an average of 0.08 degrees Celsius per decade, and since 1981, this indicator has increased by 0.18 degrees. is forming, that is, there is a 2-fold increase compared to the previous 100 years <sup>1</sup>. It can be observed that the rate of climate change in the Central Asian region is higher than the global trend.

Global climate changes directly affect our region. At the 75th session of the UN General Assembly, the President of our country, Sh. Mirziyoyev, said, "One of the acute problems of our time is global climate change. Today, every country feels the negative impact of this process. "Unfortunately, such changes pose a great threat to the development of Central Asia <sup>2</sup>. "

As part of the Paris Agreement on Climate Change, the Republic of Uzbekistan has accepted obligations to reduce greenhouse gas emissions by 35 percent in comparison to 2010 by 2030 per unit

<sup>1</sup> Annual 2021 Global Climate Report, National Centers for Environmental Information, <https://www.ncei.noaa.gov> .

<sup>2</sup> Speech of the President of the Republic of Uzbekistan Sh. Mirziyoyev at the 75th session of the UN General Assembly. <https://president.uz/uz/lists/view/3851> .

of gross domestic product. Also, the Strategy of transition to a "green" economy was adopted, and targets related to reducing the level of greenhouse gas emissions and introducing low-carbon, resource- and energy-saving technologies until 2030 were set.

### Analysis of literature

Based on the analysis of programs and projects implemented in the European Union, Japan, Korea, UAE, CIS countries and other developing countries to achieve carbon neutrality by 2050 in terms of combating climate change, transition to a green economy, and green investments it should be noted that it is appropriate to pay special attention to the development of the system of preferences and financing mechanisms in order to encourage green investments.

The Law of the Republic of Uzbekistan on the ratification of the UN Framework Convention on Climate Change (Paris, December 12, 2015) was adopted <sup>3</sup>. In order to prevent the growing global threats related to climate change, the Paris Agreement was adopted at the 21st session of the UN Framework Convention on Climate Change in Paris on December 12, 2015, and entered into force on November 4, 2016. To date, this strategic document has been signed by 195 countries, including the EU countries, USA, Japan, Korea, Russia, Brazil, China, India, Turkey and Uzbekistan, and relevant commitments have been made.

In addition, at the 26th meeting of the UN Framework Convention on Climate Change (COR26) in November 2021, within the framework of the Paris Agreement, the Republic of Uzbekistan will reduce greenhouse gas emissions per unit of gross domestic product to 2010 levels by 2030. a statement was made that it will undertake an additional obligation to reduce by 35 percent. Also, the Republic of Uzbekistan has joined the global commitment initiative (Global Methane Pledge) for <sup>4</sup>countries to achieve a collective goal of reducing methane emissions by at least 30% compared to 2020 by 2030.

In our opinion, the effectiveness and efficiency of the transition to a green economy and the fight against climate change require the implementation of a comprehensive socio-economic, industrial and investment transformation in the economy and social life from the countries of the world, including the Republic of Uzbekistan. requires. This process requires special attention to structural reforms in the economy, investment in industrial production and green innovation.

Deal , which aims to achieve carbon neutrality by 2050, was presented by the European Commission <sup>5</sup>. Within the framework of this agreement, the 27 member states of the European Union undertook to make Europe the first carbon-neutral continent in the world by 2050. For this purpose, it is planned to reduce the volume of carbon emissions in the European Union by 55% compared to the level of 1990 until 2030.

In 2020, the Japanese government announced plans to achieve carbon neutrality by 2050, prioritizing structural reforms in the economy, industrial reforms, and investment in green innovation. Currently, Japan is one of the main emitters of greenhouse gases in the world, releasing 1,150 megatons of CO<sub>2</sub> into the atmosphere per year. Also, the UAE and Brazil have announced their goal of achieving carbon neutrality by 2050, emphasizing the development of alternative energy sources and a sharp increase in the share of alternative energy in the energy consumption balance.

It should be noted that similar goals and related programs related to achieving carbon neutrality are being implemented by more than 70 countries of the world, including large polluting economies - USA,

<sup>3</sup> "Law of the Republic of Uzbekistan on the ratification of the Paris Agreement (Paris, December 12, 2015)". October 2, 2018. O'RQ-491. <https://lex.uz/en/docs/3924460>.

<sup>4</sup>"The program of transition to a "green" economy until 2030 and ensuring "green" growth" of the President of the Republic of Uzbekistan dated December 2, 2022 No. PQ-436 "On the transition of the Republic of Uzbekistan to a "green" economy until 2030 Annex 1 to the Decision on measures to improve the effectiveness of reforms aimed at [www.lex.uz](http://www.lex.uz). <https://lex.uz/docs/6303230>.

<sup>5</sup>European Union Commission, <https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal>.

European countries, China and Russia.

The development of "green" economic sectors and green energy, investment in "green" technologies is prioritized and requires the utilization of a large amount of investment funds. According to estimates, in the next ten years "there is a need for additional investment funds of 260 billion euros per year in the European Union" <sup>6</sup>.

According to the strategy of the transition to a green economy of the Republic of Kazakhstan, "Additional investment funds in the amount of 1 percent of GDP annually or an average of 3-4 billion US dollars per year for the goals of transition to a green economy in the period until 2050 are required" <sup>7</sup>. Within this concept, there is a need to absorb more than 90 billion US dollars of investment funds, the main part of which will be directed to energy efficiency improvement, development of alternative energy sources and gas infrastructure projects.

According to the strategy of the transition to a green economy of the Republic of Korea, "funds allocated for green development goals are approximately 2 percent of GDP annually" <sup>8</sup>. " Also, the Low Carbon Green Fund was established by the government of the Republic of Korea to support research and development in the field of renewable energy, establish an emission trading system, and finance emission reduction projects.

According to McKinsey, an international consulting company, "green infrastructure financing in the G-20 or Big 20 countries averaged no more than \$160 billion per year over the 7-year period up to 2020, which is 0.2 percent of GDP. equal, although the existing need was estimated to be 5.0 percent" <sup>9</sup>. At the same time, the volume of private investments directed to infrastructure in medium and low-income countries is even lower, and 3/4 of the investments are financed by the public sector, development banks and export credit agencies.

### Research methodology

During the research, generalization, grouping, logical and comparative methods of analysis, comparative analysis, statistics, perspective forecasting and grouping methods of scientific methods of studying economic reality processes were widely used.

### Analysis and results

The transition to a green economy requires significant structural reforms in economic sectors. It can be seen from the international experience that the transition to a green economy is directly related to the use of the necessary economic and political levers by the state, the introduction of the system of preferences and ensuring their effectiveness.

Table 1 provides an analysis of economic and financial mechanisms aimed at regulating the processes of transition to the "green economy", and it is appropriate to use them in the conditions of Uzbekistan. It should be noted that the efficiency and effectiveness of efforts to transition to a green economy require the establishment of an appropriate incentive system by the state, financing of green projects, and development of public-private partnership mechanisms. Therefore, it is important to open a wide way for private investors to finance projects related to the transition to a green economy, and to further increase the scope of public-private partnership projects, not limited to state investments. For this, it is

<sup>6</sup>European Commission calculations, EU defines green investments to boost sustainable finance, [www.europarl.europa.eu](http://www.europarl.europa.eu)

<sup>7</sup> The concept of migration of the Republic of Kazakhstan to the "green economy", <https://adilet.woman.kz/rus/docs/U1300000577>.

<sup>8</sup> Republic of Korea National Green Growth Strategy of South Korea, <https://www.unep.org/resources/report/korea-environmental-policy-bulletin-koreas-national-green-growth-strategy>.

<sup>9</sup> Green infrastructure: Could public land unlock private investment? September 21, 2022, <https://www.mckinsey.com/industries/public-sector/our-insights/green-infrastructure-could-public-land-unlock-private-investment>.

necessary to clearly define sustainable, ecologically safe and green criteria for projects. Also, it is necessary to create a system of preferences for economic entities in the leading sectors of industry aimed at saving natural resources, reducing pollution and carbon emissions. It is necessary to organize management in industrial sectors based on the principles of environmental, social and corporate responsibility.

**Table 1. Analysis of economic and financial mechanisms aimed at regulating the "green economy".**

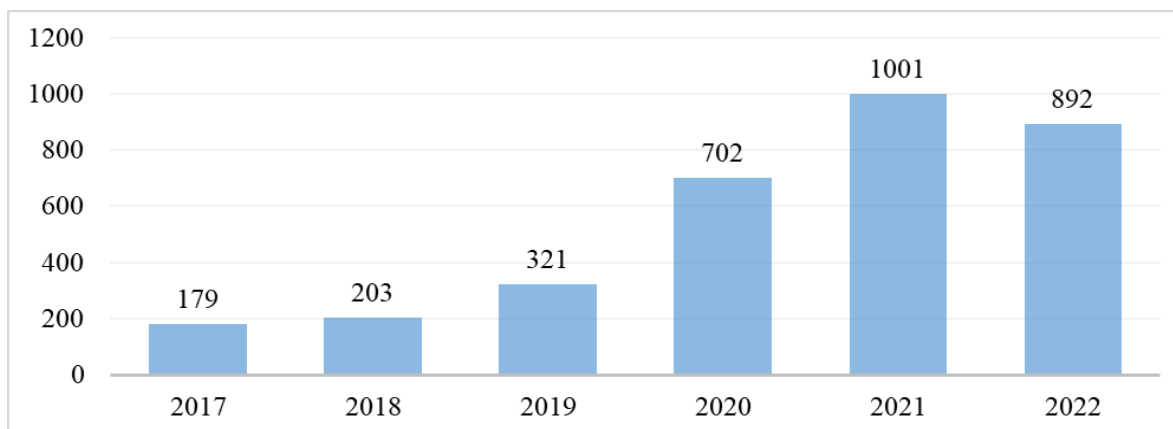
No	Instruments	Field of application of the instrument	The intended purpose
1.	Environmental taxes	Taxes aimed at preventing behavior that harms the environment	A financing of environmental protection works
2.	Carbon tax	and restoration of activities that harm the environment	Financing of measures aimed at environmental protection
3.	Trading of emission allowances	Quotas with fixed threshold parameters for greenhouse gas emissions	Financing of economic activities, including "green" projects
4.	Subsidies/ subsidies	Encouraging business entities that have reduced the amount of harmful waste to the environment and implemented environmental measures	Financing of economic activities, including "green" projects
5.	"Green" public procurement	Contract procurement with environmental criteria for evaluating suppliers of goods, works or services	Financing of programs and projects aimed at the development of "green economy".
6.	Green bonds	Bonds issued for the purpose of financing "green" projects	Financing of programs and projects aimed at the development of "green economy".
7.	Green lending	Loans allocated for the implementation of "green" projects and for the purpose of improving the environment	Financing of programs and projects aimed at the development of "green economy".

In the conditions of Uzbekistan, the population growth, the expansion of large cities and district centers require the introduction of an effective household waste management system. Based on the limitation of the lands where waste landfills are located and the need to improve their sanitary - epidemiological condition, it is necessary to encourage the implementation of projects related to waste processing. In particular, it is appropriate to provide compensations based on the "2+1" principle for a period of three years for partial compensation of commercial banks' loans in national currency within the framework of implementation of investment projects for sanitation enterprises.

We believe that all elements of this package of preferences (incentives) should be tested on the parameters of long-term economic growth, resilience to future stress situations and decarbonization.

In recent years, the transition to a "green" economy and the development of alternative energy sources have led to the large-scale introduction of environmentally sustainable financing mechanisms in international financial markets, including the large-scale issuance of sustainable bonds and green bonds. is creating an opportunity. The long-term proceeds from the issuance and placement of these bonds in the financial markets are used to finance projects based on green technologies, energy and resource efficiency, as well as investments related to sustainable transport and energy infrastructure.

According to the World Investment Report-2023, the volume of sustainable bonds placed in international financial markets will reach 892 billion USD by the end of 2022, from 179 billion USD in 2017, and more than half of them will be contributed by green bonds. will come. In our opinion, it is important that the placement of green bonds is carried out in accordance with the principles of the International Capital Markets Association (ISMA) on green bonds, to ensure transparency regarding the intended goals and environmental impact of the placement of securities, and to improve the reporting system. is important.

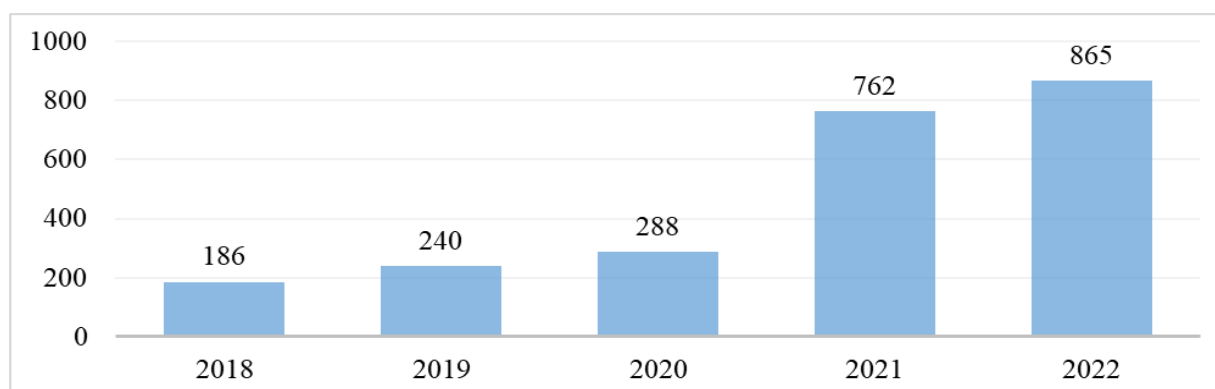


**Figure 1. Volume of issuance of sustainable bonds in international financial markets, billion US dollars<sup>10</sup>**

It should be noted here that in 2023, the Republic of Uzbekistan for the first time placed green sovereign international bonds in the amount of 4.25 trillion soums and international bonds in the amount of 660 million US dollars on the London Stock Exchange. According to the Ministry of Economy and Finance, sovereign international bonds issued in soums are the first "green" sovereign bonds of the CIS countries <sup>11</sup>.

Funds from green bonds are used to implement water-saving technologies, develop railway and subway transport, organize sanitary cleaning works, and plant surrounding trees against wind erosion and sand inundation of water management facilities. will be directed to finance green projects.

In our opinion, it is important to define the categories of the main directions of the "green" economy, to classify "green" projects financed by "green" bonds and loans, as well as state financial support (from subsidies, grants, credit lines, guarantees, etc.) and other sources. is appropriate.



**Figure 2. Size of the international carbon trading market (carbon-trading market), billion euros<sup>12</sup>**

<sup>10</sup> Compiled by the researcher based on the World Investment Report, 2023.

<sup>11</sup>The Republic of Uzbekistan for the first time placed sovereign international bonds with "green" status in the national currency, Ministry of Economy and Finance, 6.10.2023, <https://www.imv.uz/news/category/yangiliklar/post-1621>.

<sup>12</sup>Compiled by researcher based on Statista, 2023 data.

International carbon markets are critical to cost-effective global greenhouse gas emissions reductions. The number of carbon emission trading systems around the world is increasing. Countries such as the European Union, the United States, Canada, Japan, China, and South Korea have established national or regional carbon trading systems. According to Statista 2023, the size of the international carbon trading market is 186 billion in 2018. from EUR to EUR 865 billion by the end of 2022, with sharp growth rates observed in recent years.

It should be noted separately that the Paris Agreement creates a solid basis for the use of international markets and serves to increase transparency and accountability of the parties. In particular, recognizing the importance of international carbon markets, Article 6 of the Paris Agreement allows parties to use international carbon trading, introduce generally accepted accounting principles, and use market mechanisms to reduce carbon emissions.

According to experts, losses in the amount of 4.5% of the gross domestic product are observed in Uzbekistan due to the use of hydrocarbon energy - oil, gas, coal. Therefore, it is desirable to switch to "green energy" that is economically and ecologically efficient.

According to the World Bank, the amount of investments required for the scenario of transition to a "green economy" in Uzbekistan and achieving a zero emission balance by 2060 is 4.0% of GDP per year in the energy sector and 9.0% in the transport sector.. In general, the amount of investments required for decarbonization processes in the national economy is 262 billion. 341 billion from US dollars. It is forecasted to be up to USD (Table 5.2).

**Table 2. Amount of investments required for transition to "green economy" in Uzbekistan according to different scenarios<sup>13</sup>**

The scenario	Sectors	2023–2030. total discounted investment requirements for (billion USD)	2031–2060 total discounted investment requirements for (billion A QS \$)	2023–2060 total discounted investment needs (percentage of GDP per year) for
Inertial scenario	Residential and non-residential buildings	8.8	46.8	3.0%
	Electric power	7.3	34.2	1.6%
	Industry	2.7	6.8	0.5%
	Transportation	46.4	109.5	8.4%
A scenario of achieving a zero emission balance by 2060	Residential and non-residential buildings	8.9	49.2	3.1%
	Electric power and hydrogen industry	7.5	98.4	4.0%
	Industry	2.5	6.3	0.5%
	Transportation	46.2	122.1	9.0%

The analyzes show that the transition to a green economy in our country requires increasing energy efficiency in the leading sectors of the economy, developing renewable energy sources, and investing in "green" technologies. Funds in the amount of 3.8 percent are required.

<sup>13</sup> Мировой банк, Узбекистан: Страновой доклад о климате и развитии, [https://www.vsemirnyjbank.org/ru/country/uzbekistan/publication/ccdr\\_](https://www.vsemirnyjbank.org/ru/country/uzbekistan/publication/ccdr_)

Mobilizing such large amounts of investment will further increase the importance of foreign direct investment, requiring a pooling of funds from public and private investors. Private investors play an important role in financing investments in the transport, construction, industry and energy sectors.

At the same time, it is necessary to improve legislation in such areas as energy, transport and infrastructure, which are the basis of "green development". It should be noted that the mechanisms of electricity delivery to the consumer, pricing and payment are designed in accordance with the current traditional system. Legal norms that allow working with alternative energy sources are not enough.

Establishing environmental and climate criteria for projects related to the introduction of low-carbon, resource- and energy-saving technologies in our country, developing a new procedure for assessing the impact of investment projects on the environment, and creating a relevant database of such projects (including, the online database of environmental expertise conclusions given by the authorized body) is required to be integrated with financing organizations, that is, budget and tax authorities, banks and other financial and credit organizations.

In our opinion, in order to strengthen the confidence of foreign investors and encourage the implementation of green energy projects, investment contracts for green energy, including the production of alternative electricity from waste gas, include the terms of the implementation of the investment project and the utilization of investment funds, electricity. It is appropriate to determine the conditions of energy purchase and the procedure for ensuring full fulfillment of the obligations of the parties.

It should be noted that the Law "On Environmental Expertise" was adopted in our country in 2000, and it is revised based on today's requirements, as well as the impact of investment projects on the environment and climate change. It is considered appropriate to develop a package of national standards regulating privacy.

### **Conclusions and recommendations**

In conclusion, it should be noted that the transition to a green economy in our country, the implementation of projects and programs aimed at the introduction of energy and resource-saving technologies, the system of appropriate state preferences (incentives), the improvement of the legal basis for the development of public-private partnerships, the green investment attraction wide introduction of instruments, the state investment program and the system of public procurement require the inclusion of "green" criteria. Including:

It is necessary to strengthen the connection between the national strategy for "green economy" and the strategies for the development of sectors. In particular, it is appropriate to apply the requirement to introduce energy-efficient solutions in the fields of industry, production, trade and service, in addition to the construction sector. Also, it is required to train professionals working in the field of construction, construction, design and engineering in educational programs on green construction technologies, products and services.

The introduction of "green" criteria for public investment programs and budget-financed social and infrastructural projects is a first positive step, and it would be appropriate to develop this approach and apply it to private investments as well. It provides a favorable business environment, including legal and institutional support, and creates profitable business opportunities.

It would be appropriate to revise the "green" strategy for industrial sectors, in which subsidies and other public preferences are allocated in relation to the contribution of industrial projects to environmental improvement and overall sustainability. Also, in order to promote energy saving in the national economy and eliminate existing economic imbalances, it is necessary to switch to setting prices that reflect the market value of energy resources and, if necessary, allocate subsidies to socially vulnerable sections of the population.

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