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TRENDS AND CHALLENGES IN THE DEVELOPMENT OF GREEN FINANCE

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Abstract:

The directions aimed at the sustainable development of the "green" economy in the country through "green" financing are becoming an integral part of the global trend. The international financial system is developing towards the active growth of the "green" sector and responsible investments in global market finance. The investment paradigm itself is changing, more and more attention is being paid to transformative investments that have the potential not only to achieve a certain economic result, but also to have a positive social and environmental impact. The purpose of this article is to fully identify the general prospects and directions of the development of "green" finance and its theoretical aspects. This goal was achieved using systematic analysis methods, induction, graphical methods, as well as the study of systematic literature. The theoretical foundations of the concept of "green" finance are studied. The content of "green" financial instruments and institutions, their strengths and weaknesses are identified. Green financial instruments are intended not only to obtain economic benefits from their use, but also to protect the environment, solve ecological and climate problems.

Keywords: Green economy, green finance, low carbon economy, environmentally responsible investment, green bonds, green economy, greening the financial system, green technology.



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INTRODUCTION

Renewable energy systems located in or powered by the world's oceans are expected to make a significant contribution to the green energy transition in the coming decades. The offshore wind and its renewable energy sector have a 31% share, global value added has increased from US\$38 million in 2000 to US\$5 billion in 2020, and the global offshore wind market is projected to be valued at over US\$39.6 billion in 2024 and exceed US\$146 billion by 2031[1]. Countries around the world are committing to deploying offshore wind energy systems that will power 1.5 billion homes per year by 2050. For this reason, the energy crisis in the world economy, geopolitical instability, environmental degradation and the steady decline in natural resources have had a significant impact on the pace of global economic development in recent years. In this regard, special attention is being paid to improving the mechanisms of financing the efficiency of the economy of countries by financing the green economy[2].

International organizations such as the World Bank, the International Monetary Fund, and the United Nations Development Program, which are considered to be influential financial institutions in global practice, are paying special attention to scientific works aimed at stimulating the requirements of countries for green investments, expanding the resource base of green investments, increasing the volume of green investments as a result of creating sources of green financing, and thereby improving methodological recommendations for development. These studies were developed by prestigious scientific research centers, and on the basis of the requirements established by international standards, in the future, the countries made it possible to form sources of green investments and improve the mechanisms of their financing. However, in the future, the theoretical aspects of the green financing mechanism in ensuring the financial stability of regions through the development of a green economy oriented towards savings, the methodology for analyzing and assessing green financing sources, the creation of environmental conditions in the economy through green financing that are based

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on energy efficiency and do not affect the ecology of the region, investment policy aimed at ensuring the sustainability of the green economy, methods used to analyze the effectiveness of green financing, and ways to improve the assessment mechanism are still among the issues that have not lost their relevance and are awaiting their solution[3].

REVIEW OF LITERATURE ON THE SUBJECT

The first studies in this direction were reflected in the scientific works of T. Malthus and D. Ricardo. Research conducted prior to the emergence of the idea of a “green economy” mainly focused on the growing problems associated with the use of limited and non-renewable natural resources, environmental pollution and degradation, as well as the disruption of natural biological processes. To prevent environmental pollution, the terms “green economy” and “green finance” appeared during the 1980s–2000s[4]. In the scientific works of R. Solow and V. Leontiev, the concepts of sustainable development and economic growth were advanced, while mathematical and economic modeling was actively applied to analyze the interrelation between the economy and the environment [5].

Although foreign economists have provided numerous definitions of green finance, the number of definitions proposed by domestic researchers remains limited. The term “green finance” was first introduced in 1992 by Richard Sandor while teaching at Columbia University, where he provided an authorial definition of the concept. According to R. Sandor, green finance should be viewed as a core mechanism for promoting sustainable and environmentally responsible economic growth, primarily through prioritizing investments that reduce greenhouse gas emissions and mitigate climate change [6].

According to S. Khosla and other foreign economists, green financing sources are directed toward projects and initiatives focused on sustainable development, the production of environmentally friendly goods, industrial pollution and

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wastewater treatment, biodiversity protection, and the mitigation of climate change impacts [7].

The scientific team led by U. Walz defines green finance as encompassing all forms of investment and lending that generate positive environmental impacts and promote ecological sustainability [8]. Similarly, M. Ghoul conceptualizes green finance as a link that connects the financial industry, environmental protection, and economic growth [9].

Building on the results of extensive research, N. Lindenberg defines green finance as “a set of green investments, state policies, and the financial systems associated with them” [10].

Among local economists, A. Vakhabov and Sh. Khajibakiev define green finance as “all forms of investment and lending that take into account factors influencing the environment and ensure ecological sustainability” [11].

According to S. Pulatova, green finance represents investments that generate environmental benefits and, more broadly, contribute to the development of ecological sustainability. It aims to redirect financial flows from banks, microcredit institutions, insurance organizations, and investment companies to the public, private, and non-profit sectors in pursuit of sustainable economic development [12].

Meanwhile, Chinese economists Chi-Chuan Li and Chien-Chiang Li emphasize that, based on their research, there is no universally accepted definition of green finance as a new and evolving financial system [13].

RESEARCH METHODOLOGY

In this study, data were obtained from reports of international organizations (World Bank, OECD, UNDP), national legislative documents, and scientific publications to examine the theoretical foundations of green financing. The collected information was analyzed using systematic analysis, comparative, inductive, and deductive approaches to develop scientific conclusions.



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ANALYSIS AND RESULTS

If we look at the stage of historical development, the "green" economy is a direction in economics that emerged at the end of the 20th century, which implies the need to reduce the negative impact of economic activity on the environment. The concept of "green" economy was created in close connection with such areas of economics as ecological economics and environmental economics, and as a result of the introduction of the principles put forward on the basis of economic development into economic policy, the concept of "green economy" began to take shape. This term was first used in 1989 by leading economists for the British government in a report entitled "Plan for the Development of the Green Economy". The first scientific studies on the development of the "green" economy were considered in 1972 in Stockholm at the International Conference on Socio-Economic Development and Environmental Problems, which focused on environmental preservation and development. Kozhevnikova and Terakopov in their work "Green Economy as One of the Directions of Sustainable Development" substantiate the need to transition the economy to environmentally friendly production. In this work, the "green economy" is considered an important and leading modern basis for sustainable development, poverty reduction and social justice. Shodimetov and Airapetov in their article "Green Economy as a Path to Sustainable Development" studied the social, economic, and environmental aspects of the green economy in ensuring sustainable development in modern societies. The experience of developed countries and the Shanghai Cooperation Organization countries was studied and its beneficial aspects for Uzbekistan were shown.

V. Wyck's work "Green Economy and Sustainable Development" shows that in recent years, significant results have been achieved in world practice in terms of sustainable development, and that sustainable development is mainly focused on the environmental, social and economic aspects. In this work, the "green economy" was studied as a resource-efficient and environmentally friendly

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direction in the sustainable development of the world economy. Voymik and Hussain Shah's work "Green Economy as a Factor of Sustainable Development and Poverty Reduction" shows, using the example of the Republic of Bangladesh, that "the green economy is becoming an important direction in sustainable development and poverty reduction in the regions of the world.

In the context of attracting "green loans" and introducing ESG principles in the regulation of the financial market, a new ecosystem of global finance is being formed, that is, a system of responsible and "green" financing. In another way, it can also be called the "green" financing ecosystem. This ecosystem integrates the three factors included in the ESG framework, namely environmental, social and corporate governance issues. The "green" financing ecosystem is aimed at solving environmental pollution prevention projects by attracting funds from local and international financial markets. The "green" financing ecosystem includes 3 categories (Table 1). The first category includes participants who are directly or indirectly involved in the "green" financing process.

Table 1 "Green" financing ecosystem

Ecosystem structure	Components of the ecosystem structure
participants of the "green" financing ecosystem	government bodies regulating financial markets;
	• agencies responsible for environmental protection;
	• issuers of securities and recipients of financial funds;
	• investors, asset managers, financing organizations and other participants in financial markets;
	• consulting companies, rating agencies, registration and certification agencies;
financial instruments used in "green" financing	• scientific research institutions, expert organizations, etc.
	"Green" bonds (sovereign and corporate);
	• "Green" loans;
	• "Green" budget funds;
	• "Green" insurance;
	• "Green" sukuk (sovereign and corporate);
database on green financing	• other "green" financial instruments.
	Borrower creditworthiness ratings, indices, indicators, methodologies, research, analytical data, questionnaires; databases, registers.



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The second category includes financial instruments used in green financing, in particular, sovereign and corporate green bonds, green loans, green budget funds, green insurance, sovereign and corporate green sukuk and other green financial instruments. The third category includes a database of economic entities that aim to raise funds using green financing instruments, namely, borrower creditworthiness ratings, indices, indicators, methodologies, research, analytical data, questionnaires, databases and registers. It can be seen from this that the green financing ecosystem regulates and unites the activities of participants with different goals and directions. "green" financing ecosystem. For example, according to the experts of the long-term investment market expert council under the Bank of Russia, the "green" financing ecosystem consists of the following main elements from the point of view of registration and confirmation of compliance.

In order to implement the National Green Economy Taxonomy as an experiment to classify green projects financed through green bonds and loans, as well as other sources, our republic is taking measures to actively attract foreign investment, including funds from international financial institutions and foreign government financial organizations, for the implementation of investment projects, primarily projects aimed at improving the standard and quality of life of the population. At the same time, our republic is gaining sufficient experience in implementing international projects in cooperation with such prestigious international financial institutions as the World Bank Group, the Asian Development Bank and the Islamic Development Bank, and foreign government financial organizations.

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Table 1 Dynamics of green financing in Uzbekistan in 2020-2024, billion soums.

Year	Investments in fixed capital	Investments in fixed capital aimed at environmental protection and rational use of natural resources	Share of investments in MFSU and MFSU in total investments in fixed capital, in percent
2020	210195,1	356,1	0,2
2021	239552,6	569,8	0,2
2022	266240,0	897,3	0,3
2023	356071,4	1056,6	0,3
2024	507490,2	1923,4	0,4

Based on the data in Table 2, if we analyze the investments in fixed capital in the sectors of the economy, it had a growth trend in the period from 2020 to 2024. However, although the scale of investments in fixed capital, i.e. investments in green financing aimed at environmental protection and rational use of natural resources, has a growth trend, their share in the total fixed capital investments in 2020-2024 will be only 0.2-0.4 percent.

At the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) held in Glasgow (COP-26), the government of Uzbekistan announced an ambitious goal to reduce greenhouse gas emissions per unit of gross domestic product by 35 percent by 2030 compared to 2010 levels. To implement this plan, a number of strategic documents and decisions have been adopted and implemented over the past five years.

CONCLUSIONS

In conclusion, it can be said that in the current reality, environmental problems and problems associated with climate change cannot be ignored, which are of

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great importance on a national and international scale and concern almost every inhabitant of our planet. One of the important directions for improving the environment of human society is, of course, the transition to a «green» economy. In implementing this transition, it will be necessary to use «green» financial instruments. However, such global transitions are always accompanied by many problems that require their own solutions on an international and national scale. It is impossible to implement environmental protection measures without appropriate financing. Therefore, there is a need to create a separate «green» financing system, and in this regard, it is necessary to improve the theoretical aspects and methodological foundations of the «green» economy, «green» finance, «green» investments. «Green» financial instruments are intended not only to obtain economic benefits from their use, but also to solve environmental and climate problems while preserving the environment.

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