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CURRENT TRENDS AND PROSPECTS OF GREEN FINANCING MECHANISMS IN UZBEKISTAN

Alimkhonova Gavkhar

2nd year student of the master's degree in " Finance" TSUE

ORCID iD: 0009-0006-6561-2675

Scientific supervisor: **A.E. Anvarovna**
Associate Professor of the Department of Finance and Financial Technologies

Abstract: This article examines the development of green finance in Uzbekistan in the context of global efforts to combat climate change and promote sustainable economic growth. The study analyses the reasons and importance of the transition to green finance, as well as the current state and development of green financial instruments in the country, including green bonds and green loans. Particular attention is given to government initiatives aimed at supporting sustainable development and introducing environmentally oriented financial mechanisms.

Keywords: green finance, sustainable development goals (SDGs), climate finance, green investment, green bond, ESG.

Introduction

The IPCC Special Report on global warming of 1.5°C emphasizes the profound risks associated with temperature increases above pre-industrial levels and outlines potential pathways for reducing greenhouse gas emissions in line with the Paris Agreement [1]. Under this framework, countries committed to significantly cutting emissions in order to keep the rise in global average temperature well below 2°C, while striving to limit it to 1.5°C. Achieving these objectives requires a fundamental redirection of capital flows toward low-carbon and environmentally sustainable investments. According to UN estimates, emerging markets and developing economies will require between US$2.3 trillion and US$2.5 trillion annually by 2030 to remain on track with climate commitments—an amount approximately four times greater than the current level of investment [2]. These growing challenges of climate change, the increasing demand for renewable energy as a result of the global depletion of natural resources, and the worldwide shift toward sustainable development have significantly strengthened the role of green finance in the international financial system. In recent years, green bonds, green loans, and other sustainable financial instruments have become integral to global capital markets, as countries set ambitious goals to reduce greenhouse gas emissions and protect the ecological environment. According to the Climate Bonds Initiative, annual issuance in the global green bond market amounted to US$ 671.7 billion in 2024, with the cumulative market size expanding to approximately US$ 3.5 trillion. This reflects substantial growth from 2019, when total issuance stood at only US$ 754 billion [3]. Such rapid growth reflects both the rising awareness of environmental risks and the recognition of green finance as a key driver of sustainable economic transformation.

In this context, Uzbekistan has also identified the development of green finance as a strategic priority. Uzbek experts have engaged in workshops centred on advancing the country's commitments under the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). In the framework of the Strategy "Uzbekistan-2030" has been designated as a strategic priority aimed at advancing the country's transition

toward a low-carbon economy [4]. These reforms are expected to stimulate greater integration of green finance into the national economy, encourage private sector engagement in environmentally responsible initiatives, diversify the financial sector, and enhance Uzbekistan's overall investment attractiveness in line with sustainable development objectives.

Literature review

The concept of green finance has gained increasing academic and policy attention as financial markets have become central to addressing the global sustainability agenda. With the rising importance of financial institutions, various study groups and international organisations have aimed on developing a structured definition of green finance. Nevertheless, due to its relatively recent emergence, there remains a lack of consensus regarding a standardized definition of green finance.

Walid Bakry defines green finance as the allocation of financial resources and support directed toward tackling climate change and enhancing environmental quality and performance [6].

Green financing, as defined by UNEP, seeks to increase financial flows—from banking, microcredit, insurance, and investment sectors—coming from public, private, and non-profit actors toward sustainable development priorities [7].

According to Zhao, green finance facilitates the transition to a low-carbon economy by channeling capital toward sustainable industries, fostering technological innovation, and enhancing environmental governance [8].

Green investment is defined as capital allocation directed toward climate change mitigation and adaptation measures, including investments in energy efficiency, renewable and clean energy technologies, and environmental protection initiatives. Operationally, green investment refers to financial flows aimed at reducing greenhouse gas emissions and environmental externalities while maintaining overall economic output and consumption levels of non-energy goods [9].

Methodology Research

Green finance represents a strategic mechanism for transforming traditional financial systems by integrating environmental considerations into investment and lending practices. The development of green finance represents a crucial dimension in strengthening Uzbekistan's financial sector and aligning it with global sustainability trends, as it serves not only as a mechanism for mitigating environmental risks but also as a strategic driver of economic modernization, fostering renewable energy development and supporting the transition toward a low-carbon growth trajectory. The introduction of innovative financial instruments, the expansion of environmentally oriented investment opportunities, and the adoption of international best practices in sustainable finance contribute to enhancing the overall investment climate of the country.

Within this research, methods of induction and deduction, systematic and comparative analysis, as well as economic and statistical tools are employed to formulate evidence-based conclusions and policy recommendations for advancing the green finance framework in the Republic of Uzbekistan.

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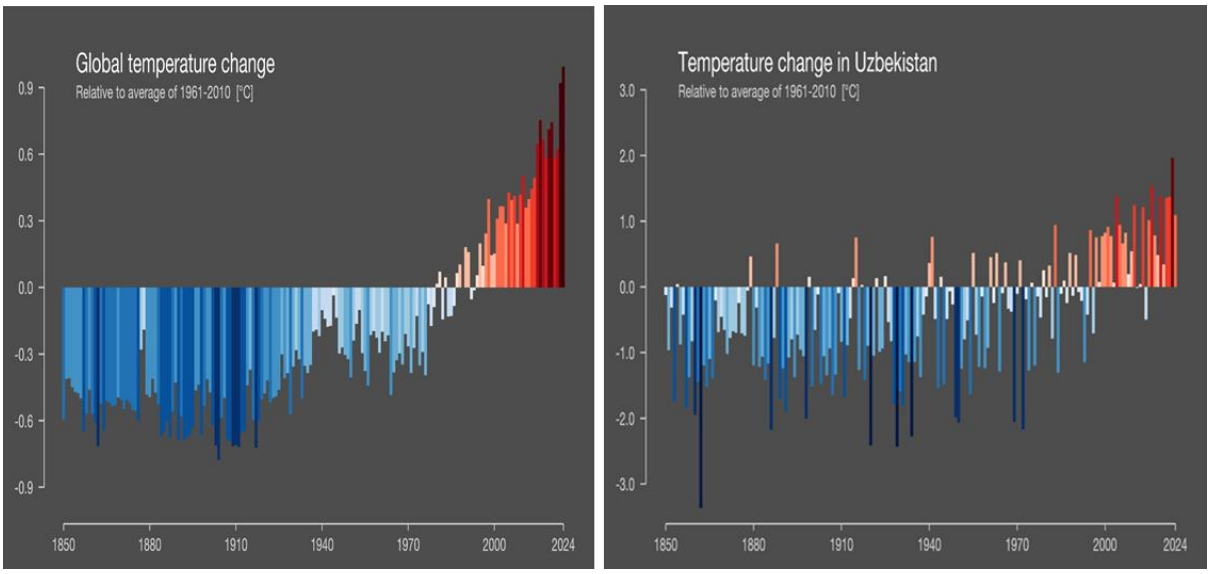
Analysis and Results

Globally, climate change has emerged as one of the most pressing challenges of the 21st century, marked by rising global temperatures, increasing frequency of extreme weather events, and worsening air quality in urban areas (Figure 3). Uzbekistan, as a landlocked country in Central Asia with a predominantly arid climate, is particularly vulnerable to the effects of climate change, including desertification, water scarcity, and air pollution.

Figure 1. Historical Temperature Anomalies in the World and Uzbekistan [10]



Over the past decade, Uzbekistan has experienced a noticeable deterioration in air quality (Table 1). The average PM2.5 concentrations — fine particulate matter that poses serious health risks — have increased sharply from moderate levels in 2018–2019 (averaging between 25–40 µg/m³) to very unhealthy and even hazardous levels by late 2023, exceeding 100 µg/m³ on multiple occasions. This trend highlights a growing environmental crisis driven by urbanization, industrial activity, and increased energy demand during winter months.

Table 1. PM2.5 Air Pollution Levels in Uzbekistan [11]

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Date	PM2.5	Indicator	Date	PM2.5	Indicator
01/11/2018	30	Moderate	01/05/2020	19	Moderate
01/12/2018	51	Unhealthy for Sensitive Groups	23/12/2023	106	Very Unhealthy
01/01/2019	25	Moderate	24/12/2023	46	Unhealthy for Sensitive Groups
01/02/2019	36	Unhealthy for Sensitive Groups	25/12/2023	103	Very Unhealthy
01/03/2019	27	Moderate	26/12/2023	109	Very Unhealthy
01/04/2019	19	Moderate	27/12/2023	111	Very bad Hazardous
01/06/2019	36	Unhealthy for Sensitive Groups	28/12/2023	57	Unhealthy
01/07/2019	49	Unhealthy for Sensitive Groups	29/12/2023	15	Moderate
01/08/2019	45	Unhealthy for Sensitive Groups	30/12/2023	130	Very bad Hazardous
01/09/2019	43	Unhealthy for Sensitive Groups	10/01/2024	1	Good
01/10/2019	40	Unhealthy for Sensitive Groups	11/01/2024	25	Moderate
01/11/2019	70	Unhealthy	12/01/2024	-54	Good (likely error)
01/12/2019	35	Unhealthy for Sensitive Groups	13/01/2024	25	Moderate
01/01/2020	45	Unhealthy for Sensitive Groups	14/01/2024	38	Unhealthy for Sensitive Groups
01/02/2020	38	Unhealthy for Sensitive Groups	15/01/2024	28	Moderate
01/03/2020	40	Unhealthy for Sensitive Groups	16/01/2024	88	Very Unhealthy
01/04/2020	22	Moderate	17/01/2024	113	Very bad Hazardous

Uzbekistan's total greenhouse gas (GHG) emissions rank second in the region after Kazakhstan, while its carbon intensity—measured as emissions per unit of GDP—places the country fifth globally [12]. According to the World Bank, analysis of emission sources reveals that the dominant contributors to PM2.5 pollution are residential and commercial heating (29%), transport (16%), and boundary/windblown dust (36%), while industrial activities — including heavy and light industry — collectively account for around 13% of total emissions (Figure 2). During the winter period heating-related emissions rise significantly, making up to 41% of total PM2.5, underscoring the urgent need for cleaner and more efficient energy sources.

Figure 2. Major Contributors to PM2.5 Air Pollution in Uzbekistan [13]

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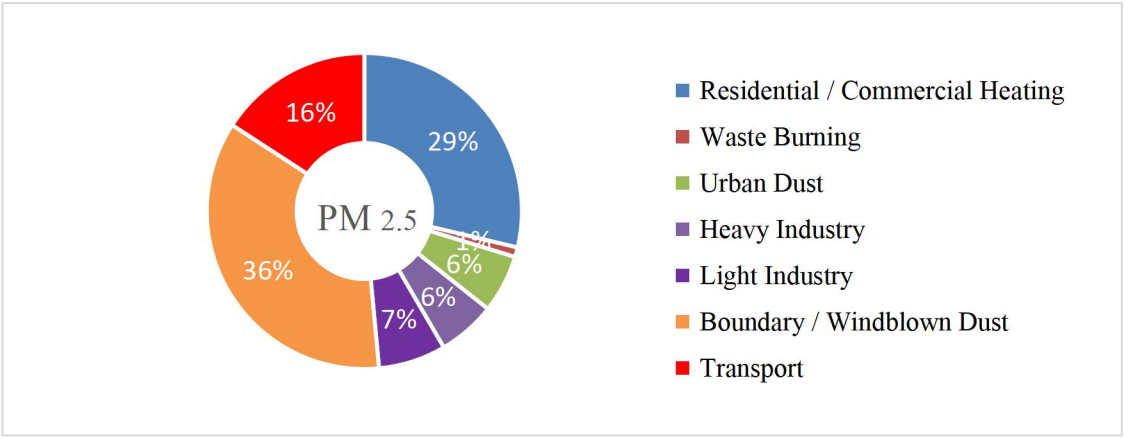

Recognizing these growing environmental risks, Uzbekistan has taken decisive steps to align its national development with global sustainability objectives. In 2018, Uzbekistan ratified the Paris Agreement, committing to reduce greenhouse gas emissions and transition toward a low-carbon development path [14]. To advance green initiatives within the framework, several national strategies and policy documents have been adopted to promote renewable energy, improve energy efficiency, and attract green investment (Table 2).

Table 2. National Green Economy Strategies [15,16]

Strategy	Period	Main Objectives
"Uzbekistan-2030" Strategy	By 2030	Increase renewable energy capacity to 25,000 MW and its share to 40%.
		Develop a green certificate market and introduce eco-labelling.
		Modernize three 3 GW thermal power plants to cut gas use.
		Launch energy audits for residential buildings.
		Shift public transport to clean fuels.
Revised Nationally Determined Contribution (NDC)	By 2030	35% reduction in greenhouse gas (GHG) emissions per unit of GDP compared to 2010 levels.
"New Uzbekistan" Development Strategy	2022–2026	Achieve 25% share of renewable energy sources in total primary energy supply (TPES).
		Increase energy efficiency by 20%.
		Electrify 60% of railways and promote electric vehicle (EV) production and adoption.
		Develop domestic capital markets — raise stock market turnover from USD 200 million to USD 7 billion.

		Attract USD 120 billion in investments, including USD 70 billion from foreign sources.
		Increase the private sector's share in the banking system to 60%.
Strategy for the Transition to a Green Economy	2019–2030 (updated in 2022)	Reduce energy intensity by 30% compared to 2021 levels.
		Achieve 30.5% renewable energy share in TPES and install 1500 MW of small-scale solar panels.
		Increase industrial energy efficiency by 20%.

In addition, several key green financial instruments have been implemented to promote sustainable growth. In 2023, the government issued its first sovereign green bonds worth UZS 4.25 trillion on the London Stock Exchange, supporting projects in renewable energy, transport, and environmental protection [17]. Alongside this, commercial banks introduced green loan programmes that provided over UZS 1 trillion in financing for renewable energy and energy efficiency projects [18]. Separately, in 2025, the "Green Renovation" programme was launched to fund eco-friendly building renovations using energy-saving technologies and sustainable materials, while the newly introduced green mortgage scheme offers preferential financing for purchasing or constructing energy-efficient housing. [19].

Despite all of the above, green finance in Uzbekistan is still in its infancy and faces a number of challenges. One of the main issues is the limited availability of financial resources and the lack of a developed market for green financial instruments. Currently, domestic banks offer only a small number of products, primarily green loans and green mortgages, which carry relatively high interest rates of around 20 percent. This makes them less accessible to many borrowers and limits investment in environmentally sustainable projects. Furthermore, mechanisms such as green bonds and specialized investment funds are still underdeveloped, creating a financing gap for renewable energy and eco-modernization projects [20].

Despite these challenges, the outlook for green finance in Uzbekistan remains positive as the government increasingly focuses on sustainable development, renewable energy, and environmental protection. To further advance this concept, the regulatory framework should be improved, clear standards for green projects should be developed, and the availability of financial instruments should be expanded. Strengthening institutional support, raising awareness among businesses and investors, and attracting international cooperation can also help accelerate the development of green finance and support the transition to a more sustainable economy.

Conclusion

Green finance has emerged as a critical instrument for addressing climate change and promoting sustainable economic transformation at both the global and national levels. In the context of Uzbekistan, the development of green financing mechanisms reflects the country's broader commitment to environmental sustainability, energy transition, and integration into the

global climate agenda. Over recent years, significant progress has been achieved through the adoption of strategic policy frameworks, the issuance of sovereign green bonds, the introduction of green banking products, and the expansion of cooperation with international financial institutions.

However, the analysis demonstrates that the green finance market in Uzbekistan remains at an early stage of development. Nevertheless, while challenges remain, Uzbekistan possesses both the strategic vision and the structural potential to transform green finance into a key driver of economic modernization and low-carbon growth. With consistent policy reforms, institutional strengthening, and sustained international cooperation, green financing mechanisms can play a central role in supporting the country's transition toward a resilient and sustainable development model.

References

1. IPCC (2018). Global Warming of 1.5 °C: An IPCC Special Report on the Impacts of Global Warming of 1.5 °C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways. Available at: https://www.ipcc.ch/sr15/

2. United Nations (2025) Climate Finance – Raising Ambition. Available at: https://www.un.org/en/climatechange/raising-ambition/climate-finance

3. Climate Bonds Initiative (2025) Global State of the Market 2024, 2019: Sustainable Debt. Available at: https://www.climatebonds.net/files/documents/publications/Climate-Bonds_Sustainable_Debt_2024_Global-State-of-the-Market_24-Sep-2025.pdf

4. Presidential Decree No. UP-158 of September 11, 2023, "On the Strategy 'Uzbekistan – 2030'." Lex.uz. Available at: https://lex.uz/docs/6600404

5. Bakry, W. (2023). Is green finance really "green"? Examining the long-run relationship between green finance, renewable energy and environmental performance in developing countries. Renewable Energy, 208, pp.341–355. Elsevier.

6. Bakry, W. (2023). Is green finance really "green"? Examining the long-run relationship between green finance, renewable energy and environmental performance in developing countries. Renewable Energy, 208, pp.341–355. Elsevier.

7. UNEP (2018) Green financing. United Nations Environment Programme. Available at: https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-financing

8. Zhao, X. (2024). The charm of green finance: Can green finance reduce corporate carbon emissions? Energy Economics, 134, p.107574. Elsevier.

9. D. Pearce, A. (2018). Blueprint 1: For a Green Economy (1st ed.)

10. Hawkins, E. (2024) Show Your Stripes – warming stripes for Uzbekistan. Available at: https://www.showyourstripes.info/c/asia/uzbekistan/all/

11. Pollution Alert (2024). Air Pollution in Uzbekistan: Real-time Air Quality Index and Smog Alert. Available at: https://www.pollution-alert.com/en/uzbekistan/pollution

12. OECD (2023) Green Finance and Investment: Financing Uzbekistan's Green Transition. Paris: OECD Publishing, pp 23-24.

13. World Bank (2024) Air Quality Assessment for Tashkent and the Roadmap for Air Quality Management Improvement in Uzbekistan.

14. UNDP (2022) Contributions of Uzbekistan's Private Sector to Reducing Greenhouse Gas Emissions. Available at: https://www.undp.org/uzbekistan/press-releases/contributions-uzbekistans-private-sector-reducing-greenhouse-gas-emission

15. OECD (2023) Green Finance and Investment: Financing Uzbekistan's Green Transition. Paris: OECD Publishing, pp 23-24.

16. Presidential Decree No. UP-158 of September 11, 2023, "On the Strategy 'Uzbekistan – 2030'." Lex.uz. Available at: https://lex.uz/docs/6600404

17. UNDP (2023) Uzbekistan lists its first sovereign "green" eurobonds on the London Stock Exchange worth 4.25 trillion soms. Available at: https://www.undp.org/ru/uzbekistan/press-releases/uzbekistan-razmestil-na-londonskoy-fondovoy-birzhe-pervye-zelenye-suverennye-evroobligacii-na-summu-425-trln-sumov

18. Kursiv Media (2023) Uzbekistan's banks have issued "green" loans worth 1 trillion UZS. How many green loans were issued in Uzbekistan? Available at: https://kursiv.media/ru/2023/10/27/banki-uzbekistana-razdali-zelenye-kredity-na-1-trln-sumov/

19. Gazeta.uz (2025) «Зелёные кредиты». Available at: https://www.gazeta.uz/ru/2025/04/02/green-credits

20. Decree of the President of the Republic of Uzbekistan (2025) No. UP-63 on measures to improve public administration in the field of energy efficiency and to develop the market for energy service companies. Available at: https://lex.uz/docs/7455525