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FINANCING THE FUTURE: HOW UZBEKISTAN'S GREEN AND SDG BONDS ARE POWERING SUSTAINABLE ECONOMIC TRANSFORMATION

ANNOTATION. Green and Sustainable Development Goal (SDG) bonds are increasingly important instruments for aligning public financing with global sustainability priorities. By directing capital toward renewable energy, climate-resilient infrastructure, and inclusive social development, these thematic bonds help governments support structural transformation while advancing environmental and development commitments. This paper examines Uzbekistan's early experience in issuing green and SDG-linked bonds and evaluates their contribution to sustainable economic growth, fiscal diversification, and progress toward the United Nations SDGs. It assesses how credible frameworks, transparent use-of-proceeds management, and robust allocation and impact reporting can strengthen investor confidence and deepen domestic and international capital-market participation. The analysis also considers the role of sustainable finance in improving market infrastructure, broadening the investor base, and enhancing policy coherence by linking bond-financed projects to national development strategies and climate objectives. Uzbekistan's case offers practical lessons for emerging economies seeking to mobilize long-term capital for a green transition, reduce reliance on traditional funding sources, and embed sustainability into sovereign and quasi-sovereign debt management.

KEYWORDS. Green bonds, SDG bonds, sustainable finance, UN Sustainable Development Goals (UN SDGs), green economy, sustainable development, climate finance.

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АННОТАЦИЯ. Зелёные облигации и облигации, ориентированные на Цели устойчивого развития (ЦУР), становятся всё более важными инструментами согласования государственного финансирования с глобальными приоритетами устойчивого развития. Направляя капитал в возобновляемую энергетику, климатоустойчивую инфраструктуру и инклюзивное социальное развитие, эти тематические облигации помогают правительствам поддерживать структурную трансформацию экономики, одновременно выполняя экологические и социально-развитийные обязательства. В статье рассматривается ранний опыт Узбекистана по выпуску зелёных и связанных с ЦУР облигаций и оценивается их вклад в устойчивый экономический рост, фискальную диверсификацию и продвижение к достижению Целей устойчивого развития ООН. Анализируется, как надёжные рамочные документы, прозрачное управление использованием поступлений и качественная отчётность по распределению средств и достигнутому воздействию способны укреплять доверие инвесторов и углублять участие внутренних и международных участников рынка капитала. Кроме того, исследуется роль устойчивого финансирования в развитии рыночной инфраструктуры, расширении базы инвесторов и повышении согласованности политики за счёт увязки проектов, финансируемых за счёт облигаций, с национальными стратегиями развития и климатическими целями. Опыт Узбекистана предлагает практические уроки для развивающихся экономик, стремящихся мобилизовать долгосрочный капитал для «зелёного» перехода, снизить зависимость от традиционных источников финансирования и интегрировать устойчивость в управление суверенным и квазисуверенным долгом.

КЛЮЧЕВЫЕ СЛОВА. Зелёные облигации, облигации ЦУР, устойчивое финансирование, Цели устойчивого развития ООН (ЦУР ООН), зелёная экономика, устойчивое развитие, климатическое финансирование.

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ANNOTATSIYA. Yashil va Barqaror Rivojlanish Maqsadlari (SDG) obligatsiyalari davlat moliyalashtirishini global barqarorlik ustuvor yo‘nalishlari bilan uyg‘unlashtirishda tobora muhim vositaga aylanmoqda. Qayta tiklanuvchi energiya, iqlimga chidamli infratuzilma hamda inklyuziv ijtimoiy rivojlanish yo‘nalishlariga kapitalni yo‘naltirish orqali ushbu tematik obligatsiyalar hukumatlarga tarkibiy transformatsiyani qo‘llab-quvvatlash, shu bilan birga ekologik va rivojlanish majburiyatlarini bajarishga xizmat qiladi. Mazkur maqola O‘zbekistonning yashil va SDG bilan bog‘langan obligatsiyalarni chiqarish bo‘yicha dastlabki tajribasini tahlil qiladi hamda ularning barqaror iqtisodiy o‘sish, fiskal diversifikatsiya va BMTning Barqaror Rivojlanish Maqsadlariga erishishga qo‘shgan hissasini baholaydi. Tadqiqot ishonchli “metodalogik asoslar”, mablag‘lardan foydalanishning shaffof boshqaruvi hamda taqsimot va ta’sir bo‘yicha kuchli hisobot yuritish investorlar ishonchini mustahkamlashi va ichki hamda xalqaro kapital bozorlari ishtirokini chuqurlashtirishini ko‘rsatadi. Shuningdek, barqaror moliyaning bozor infratuzilmasini rivojlantirish, investor bazasini kengaytirish va obligatsiyalar orqali moliyalashtirilayotgan loyihalarni milliy rivojlanish strategiyalari hamda iqlim maqsadlari bilan bog‘lash orqali siyosiy uyg‘unlikni kuchaytirishdagi roli ko‘rib chiqiladi. O‘zbekiston tajribasi “yashil o‘tish” uchun uzoq muddatli kapitalni safarbar etish, an’anaviy moliyalashtirish manbalariga qaramlikni kamaytirish va barqarorlikni suveren hamda kvazi-suveren qarz boshqaruviga integratsiya qilishga intilayotgan rivojlanayotgan iqtisodiyotlar uchun amaliy tajribalar beradi.

KALIT SO‘ZLAR. Yashil obligatsiyalar, SDG obligatsiyalari, barqaror moliya, Birlashgan Millatlar Tashkilotining Barqaror Rivojlanish Maqsadlari (BMT BRM), yashil iqtisodiyot, barqaror rivojlanish, iqlim moliyasi.

INTRODUCTION. Nowadays, Uzbekistan’s shift toward Green and SDG bonds is no longer a discretionary policy option; it is becoming an inevitable financing pathway under the combined pressure of large development investment

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needs, climate and resource constraints, and the requirement to maintain fiscal sustainability. The country faces a structurally high demand for long-term capital to modernize energy, water, transport, and social infrastructure – sectors that directly determine productivity, competitiveness, and living standards – while simultaneously meeting the decarbonization agenda embedded in the **"Uzbekistan – 2030" Strategy** (PF-158), particularly **Goal No. 51** on **the transition to a green economy**. In this setting, conventional budget financing and traditional borrowing are insufficient to deliver transformational investments at scale without increasing macro-financial vulnerabilities. Green and SDG bonds provide a disciplined mechanism to mobilize domestic and international savings, channel proceeds to clearly defined sustainable projects, and strengthen market confidence through transparency and impact reporting. For Uzbekistan, therefore, sustainable bond issuance is **a "must-do" instrument**: it aligns public finance with strategic national priorities, reduces reliance on foreign-currency risk when structured in local currency, and accelerates the creation of a modern capital market capable of funding the country's green economic transformation.

Green and Sustainable Development Goal (SDG) bonds have become central to emerging-market finance, enabling countries to align capital-raising with climate and social objectives. Globally, the green bond market has grown exponentially over the last decade – rising to roughly $2.9 trillion by 2021 – as governments, multilateral institutions and corporations mobilize debt for clean energy, infrastructure and social programs. Uzbekistan has emerged as a regional pioneer in this trend. After issuing its first sovereign SDG bond in July 2021 – approximately USD 235 million with a three-year maturity and a 14 percent coupon – the government followed in late 2023 with its first sovereign green bond of 4.25 trillion UZS, also with a three-year maturity and a 16.25 percent coupon. In addition, a large state-owned bank, SQB, issued the country's first corporate green/sustainability bond in July 2024, amounting to USD 400 million plus 2.25 trillion UZS. These milestones make Uzbekistan one of the first countries in the

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Central Asia/Caucasus region to deploy thematic sustainable debt instruments on a significant scale.

These developments are timely given Uzbekistan's ambitious sustainable development agenda. The country faces large investment needs in water management, energy transition and social infrastructure, with an estimated annual financing gap of around $6 – 8 billion. The state is committed to ambitious climate objectives, including reducing greenhouse-gas emissions intensity by 35 percent relative to 2010 levels by 2030, alongside advancing key Sustainable Development Goals in areas such as education, health, and access to clean water. Yet public budgets cannot cover all projects. Green and SDG-labeled bonds thus offer a way to tap both domestic and international capital for priority projects while deepening the nascent Uzbek capital market. This article analyzes how Uzbekistan's SDG and green bonds have performed in 2024–2025 and their role in financing the sustainable transition. The core problem is to evaluate whether and how thematic bonds in Uzbekistan are mobilizing new finance for development goals, relative to traditional funding sources, and to derive policy lessons for further market development.

METHODS AND LITERATURE REVIEW. This study combines quantitative data analysis with a qualitative review of policy documents and reports, complemented by a structured literature synthesis that draws on international evidence and best practices from peer-reviewed research and major policy institutions to benchmark Uzbekistan's experience against global approaches to green and SDG bond market development. Primary data were collected from official releases issued by the Ministry of Economy and Finance of Uzbekistan and the Central Bank, complemented by international and multilateral sources including IMF and World Bank country reports, the OECD assessment of green finance in Uzbekistan, and bond-related reports from the United Nations and the Global Green Growth Institute. Corporate disclosures, such as annual reports of

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SanoatQurilish Bank and Agrobank, were used to document the use of proceeds and reported outcomes. In addition, climate finance databases, including Climate Bonds Initiative resources, and relevant news materials were consulted to provide market context.

For analysis, a dataset of Uzbekistan's sovereign and corporate bond issuances was constructed for 2019–2025, covering issuance dates, volumes, currencies, coupons, and maturities. Macroeconomic and fiscal indicators, including public debt stocks and budget deficit measures, were obtained from IMF and World Bank databases. Domestic market dynamics were assessed through trends in issuance volumes, yields, and investor demand, and yields on international placements were compared with local-currency issues. The impact assessment of green and SDG bonds, including indicators such as energy savings and emissions reductions, relied on issuers' allocation and impact reports. Qualitative analysis comprised a review of bond market reforms – such as the development of a green taxonomy and related regulatory changes – and a synthesis of international best practices from the academic literature and policy guidance. The study applied descriptive statistics and visual analytics. No primary survey methods or econometric modelling were employed; the analysis prioritizes descriptive financial assessment and case-study evidence consistent with established approaches in sustainable finance research.

Over the last five years, the sustainable debt market – particularly green bonds, social and SDG bonds, sustainability bonds, and sustainability-linked bonds – has been increasingly examined as a strategic mechanism for financing the climate transition and inclusive growth in emerging economies. Most recent studies cluster around **three interrelated strands**:

- **pricing and market efficiency**, including the existence and determinants of the "greenium" and broader effects on the cost of capital;

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- **real-economy and environmental outcomes**, such as impacts on emissions, investment allocation, and progress toward SDG targets;
- **institutional credibility and governance**, emphasizing the role of framework quality, transparency of reporting, and the strength of external verification in sustaining investor confidence and market integrity.

A significant stream of recent peer-reviewed work focuses on **pricing and the green bond premium (greenium)**. Comprehensive reviews and empirical analyses find that green bonds often price at slightly lower yields than comparable conventional bonds, but the magnitude varies by region, issue characteristics, and market conditions. Liu (2025) synthesizes findings across markets and reports a consistent negative premium on average while noting that more recent datasets often show smaller premiums, suggesting a maturing and more efficiently priced market. [1] Complementing review evidence, Wongaree (2025) tests the existence and drivers of the green premium in both primary and secondary markets across Asia-Pacific and Europe, emphasizing that pricing benefits are linked to investor demand for credible green assets and to bond design features. [2] At the country level, Wahyuningsih et al. (2025) show that yields in a developing market context are shaped by both bond-specific and macroeconomic factors, reinforcing the view that green bond pricing is not purely “label-driven” but embedded in broader monetary and risk conditions. [3]

A second literature cluster assesses whether green bonds generate **measurable environmental and performance outcomes**. A meta-analysis by Khan (2025) synthesizing a large body of estimates finds strong evidence that green bonds improve environmental performance, while the impact on financial performance is mixed and context-dependent – an important result for policymakers seeking both sustainability and market development objectives. [4] Macro-financial evidence also points to potential climate benefits: the BIS Quarterly Review (March 2025) reports that the development of green bond markets is associated with subsequent

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reductions in emissions, and that stricter climate policies can be linked with stronger green bond market development, highlighting how policy credibility and market growth may reinforce each other. [5] These findings provide a scientific basis for evaluating sustainable bonds not merely as funding labels but as instruments capable of shifting capital allocation toward lower-carbon outcomes.

A third and increasingly prominent strand examines **sovereign ESG/SDG bonds** as a public finance innovation – especially relevant for emerging economies where fiscal space is constrained and infrastructure gaps are large. Lindner (2023) provide guidance on sovereign ESG bond issuance in EMDEs, stressing operational requirements, transparency costs, and the importance of governance structures that ensure credible project selection and reporting. [6] More practice-oriented evidence emphasizes design discipline: the Global Investors for Sustainable Development (GISD) Alliance (2024) summarizes experiences of developing countries issuing sovereign SDG bonds, distinguishing "use-of-proceeds" structures from performance-linked approaches and underlining the need for clear alignment with national SDG priorities and credible reporting to avoid reputational risk. [7] Recent work also evaluates sovereign green bonds "in practice" and assesses effectiveness as a climate finance instrument across multiple emerging economies, reinforcing the view that outcomes depend critically on project pipelines, institutional capacity, and the integrity of monitoring frameworks. [8]

Closely connected to sovereign issuance, recent literature emphasizes the **credibility problem** in sustainable finance: the market rewards transparency and ambition, but penalizes weak targets and poor verification. Machado (2025) maps the research landscape on sustainability-linked bonds and highlights unresolved issues around KPI materiality, ambition, and post-issuance accountability – topics that remain central to investor confidence. [9] Parallel policy work from Climate Bonds Initiative stresses that SLB market growth requires stronger quality

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safeguards and clearer performance measurement to sustain credibility. [10] These insights reinforce a broader conclusion across the last five years: sustainable debt instruments can mobilize capital at scale only when supported by robust frameworks, disclosure, external review, and consistent post-issuance reporting.

Finally, evidence from emerging markets highlights **institutional quality and market infrastructure** as decisive determinants of green bond development. A recent emerging-economy study (2025) argues that weak institutional quality and macro-financial constraints can hinder green bond market takeoff, implying that reforms in governance, market development, and investor protection are prerequisites for scaling sustainable finance. [11] Development finance institutions also document that emerging market sustainable bond issuance is sensitive to eligibility standards, project pipelines, and financing conditions, underscoring the need for investable, verifiable green/SDG projects and stable policy frameworks. [12]

For Uzbekistan, this global literature provides a clear analytical lens: sustainable bonds can support economic transformation when **(i)** issuance is embedded in national development priorities, **(ii)** governance ensures credible project selection and reporting, and **(iii)** market reforms broaden the investor base and deepen domestic capital markets. Uzbekistan's SDG Bond Framework (2021) and subsequent allocation and impact reporting by UNDP provide an applied foundation for evaluating how sovereign SDG and green issuances can translate into SDG-aligned expenditures and measurable outcomes, consistent with the international best-practice emphasis on transparency and impact reporting. [13] In this way, Uzbekistan's case contributes to the emerging empirical discussion on how sovereign SDG/green bonds can function not only as financing tools but as instruments of **policy coherence and accountability** in the sustainable development transition.

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RESULTS. Between 2021 and 2024, Uzbekistan issued approximately USD 1.2 billion in sovereign thematic bonds under its SDG and green financing framework. In July 2021, the government placed a USD-denominated SDG bond, nominally structured in soums, raising USD 235 million to finance projects in education, healthcare, transport, and other SDG-aligned categories. In late 2023, it launched a multi-tranche sovereign green bond totaling 4.25 trillion UZS to support climate-friendly investments, including water and waste management and renewable energy. These issuances were among the first of their kind in the CIS region. Corporate issuers subsequently followed: SanoatQurilishBank placed a landmark sustainability bond on the London Stock Exchange in July 2024, consisting of a USD 400 million five-year tranche priced at an 8.95 percent coupon and a 2.25 trillion UZS three-year tranche at 21 percent. Similarly, Agrobank issued a USD 400 million Eurobond and a 0.7 trillion UZS local green bond in September 2024 (Table 1).

Table 1.

Key sustainable bond issuances in Uzbekistan (2021–2025).

Issuer / Instrument	Date	Currency	Amount	Coupon / Maturity	Use of Proceeds / Notes
Republic of Uzbekistan (SDG Sovereign)	Jul 2021	UZS (USD equiv.)	$235 million	14%, 3-year	Education, health, water, green transport, natural resources
Republic of Uzbekistan (Green Sovereign)	Oct 2023	UZS	4.25 trillion UZS	16.25%, 3-year	General budget/upgrade projects; facilitated early refinancing
SanoatQurilishBank (Sustainability)	Jul 2024	USD, UZS	$400M + UZS 2.25T	8.95% (USD, 5y) / 21% (UZS, 3y)	Energy efficiency, green buildings, renewables
Agrobank (Green Bond)	Sep 2024	USD, UZS	$400M + UZS 0.7T	(Eurobond/Uzs coupons not disclosed)	Climate-smart agriculture, water-saving agri projects

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Uzbekistan (SDG/Green)	Feb 2025	USD, EUR, UZS	$500M + €500M + UZS 6T	6.95% (USD,7y); 5.10% (EUR,4y); 15.50% (UZS,3y)	SDG "Green" tranche (EUR) for water/waste tech; USD/UZS for housing, schools

Source: The table prepared by the author using official reports of the Ministry of Finance and Economy of the Republic of Uzbekistan.

Between 2021 and 2024, international demand for Uzbekistan's SDG and green bonds exceeded the amount issued by approximately two to three times, demonstrating strong foreign investor interest. Overall, these new green and SDG-linked instruments have complemented traditional borrowing methods, broadening the country's access to diverse and sustainable financing sources.

Use and Impact of Green/SDG Bonds. The proceeds of Uzbekistan's sustainable bond issuances have been allocated to projects with measurable environmental and social outcomes. In 2024, SanoatQurilishBank's sustainability bond financed 30 initiatives in energy efficiency, renewable energy, and green buildings, delivering approximately 121,432 MWh of annual energy savings and avoiding around 16,237 tonnes of CO_2 emissions; the program also supported solar generation of about 220 MWh per year and the installation of 800,603 smart meters. Similarly, Agrobank's 2024 green bond, supported by multilateral partners, channelled more than USD 357 million into 19,061 climate-smart agricultural loans for irrigation modernization, machinery upgrades, and solar pumping solutions, with estimated annual savings of roughly 1.02 billion cubic meters of water and a reduction of about 175,500 tonnes of CO_2 equivalent. From a sovereign perspective, SDG and green bond proceeds have been earmarked for priority public expenditures in education, health, and green infrastructure; UNDP reporting on the 2021 SDG bond indicates that approximately 54 percent of allocations supported education and public transport – directly aligned with **SDG 4 (Quality Education)** and **SDG 11 (Sustainable Cities and Communities)** – while 22 percent financed health-related expenditures aligned with **SDG 3 (Good Health**

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and Well-being), with smaller shares directed to water and sanitation and targeted social support programs.

❖Wind turbines. It is a core category of renewable energy infrastructure supported through Uzbekistan's green and sustainability bond financing. In particular, the green bond programs of SanoatQurilishBank and Agrobank have directed capital toward renewable energy and energy-efficiency investments, including wind and solar installations, thereby contributing to **SDG 7 (Affordable and Clean Energy)** and **SDG 13 (Climate Action)**. The practical impact of these investments is evidenced by the 30 projects financed under SanoatQurilishBank's sustainability bond, which generated substantial energy savings and associated reductions in CO_2 emissions (Figure 1).



Figure 1. Wind Turbines and Solar Panels as Renewable Energy Investments Financed by Uzbekistan's Green and SDG Bonds.

Source: The figure prepared by the author using official reports.

❖Solar panels. Through sustainability bonds and related thematic issuances, capital has been channelled into solar generation and energy-efficiency projects with measurable outcomes. For instance, SanoatQurilishBank's sustainability bond

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financed solar photovoltaic installations and green building upgrades, generating approximately 121 GWh of annual energy savings, while Agrobank's green financing supported solar-powered irrigation systems and resource-efficient greenhouses, delivering water savings exceeding 1 billion cubic meters per year (Figure 1). These results reinforce Uzbekistan's progress toward **SDG 7 (Affordable and Clean Energy)**, **SDG 11 (Sustainable Cities and Communities)**, and **SDG 13 (Climate Action)**, as evidenced through issuer impact assessments and external reviews.

These results directly reflect the implementation of the **"Uzbekistan–2030" Strategy (Presidential Decree No. 158), particularly Goal No. 51,** under which the expansion of domestic capital markets and the mobilization of sustainable financing instruments – especially local-currency, green, and SDG bonds – are identified as core mechanisms for advancing the transition to a green economy, strengthening fiscal sustainability, and ensuring long-term public welfare.

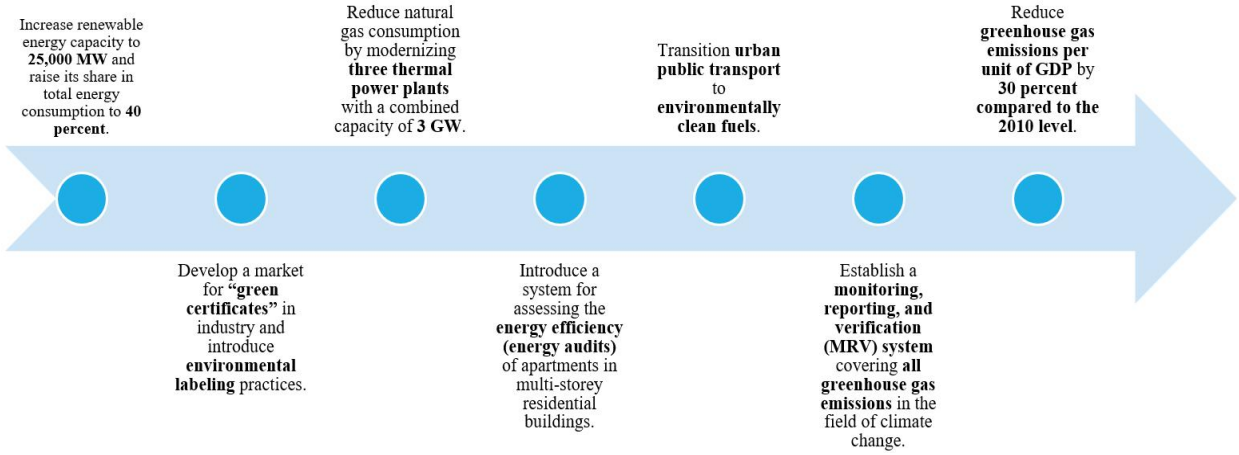


Figure 2. Goal No. 51. To transition to a "green economy" by significantly increasing the use of renewable energy, which forms its core foundation.

Source: Decree of the President of the Republic of Uzbekistan No. PF-158 dated September 11, 2023, **"On the Strategy 'Uzbekistan – 2030'**, Section II: Ensuring Public Welfare through Sustainable Economic Growth.

Figure 2 above illustrates the integrated policy pathway of Goal No. 51 under

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the "Uzbekistan–2030" Strategy, demonstrating how the expansion of renewable energy capacity, energy efficiency measures, green certification mechanisms, clean urban transport, and an economy-wide MRV system collectively support the transition to a green economy and the reduction of greenhouse gas emissions by 30 percent relative to 2010 levels.

Table 2 below presents an analytical framework explaining how green bonds and SDG-linked/thematic bonds translate sustainable finance into measurable economic transformation. The table identifies six transmission channels – capital mobilization, fiscal sustainability, market development, policy coherence, environmental impact, and social outcomes – showing the mechanism through which each channel operates and the resulting structural effect on the economy.

Table 2

Channels through Which Green and SDG Bonds Drive Sustainable Economic Transformation

Channel	Mechanism	Economic Transformation Effect
Capital Mobilization	Directs long-term funds to renewable energy, clean transport, water, and social infrastructure	Expands productive capacity and green investment
Fiscal Sustainability	Local-currency issuance reduces FX risk and refinancing pressure	Strengthens public debt resilience
Market Development	Establishes benchmarks and catalyzes corporate green bond issuance	Deepens domestic capital markets
Policy Coherence	Requires clear use-of-proceeds and MRV frameworks	Improves transparency and policy discipline
Environmental Impact	Finances low-carbon and energy-efficient projects	Reduces emissions and resource intensity
Social Outcomes	Supports education, health, housing, and public services	Enhances public welfare and inclusive growth

Source: The table prepared by the author studying international best practices of countries.

Taken together, the six channels show that green and SDG bonds are not merely financing tools; they are institutional mechanisms that can improve capital allocation, strengthen fiscal risk management, deepen markets, and tighten

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governance through transparency and MRV. The table therefore supports the conclusion that sustainable bonds can drive structural transformation when issuers (i) maintain credible frameworks and reporting, (ii) align eligible expenditures with national development and climate priorities, and (iii) use issuance strategically to build benchmarks and broaden the investor base.

DISCUSSION AND CONCLUSION. Uzbekistan's experience shows that thematic bonds can serve as powerful tools for directing financial resources toward sustainable development while simultaneously fostering the growth of domestic capital markets. The country's bond issuance strategy is particularly significant for its integrated approach: sovereign SDG and green bonds have been closely aligned with national development priorities through a framework validated by the United Nations Development Programme, while corporate green bonds have involved active participation from state-owned banks and environmentally oriented companies. This dual-level engagement has helped broaden the investor base, drawing international institutional investors with mandates to allocate capital to ESG-compliant assets. Early results suggest that the "green" designation contributes to greater transparency and market confidence, as bond impact reports are independently verified by external evaluators such as Sustainalytics, thereby strengthening the overall credibility of Uzbekistan's sustainable finance ecosystem.

The novelty of this research lies in documenting a comprehensive set of outcomes and policy indicators for Uzbekistan's sustainable bond initiatives, utilizing the most recent data available for 2024–2025. Unlike many countries where green bonds remain a niche segment, Uzbekistan has rapidly integrated these instruments into its broader macro-financial planning framework. Notably, the February 2025 international issuance of €500 million in "Green/SDG" bonds was explicitly designed to finance water and waste management projects, marking a deliberate policy decision to align public borrowing with environmental and social objectives. Concurrently, domestic authorities have expanded local bond

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issuance from 0.4 trillion to 33 trillion UZS over the past seven years, with thematic instruments now accounting for approximately 16 percent of total state debt. This simultaneous advancement of onshore market development and offshore sustainability finance reflects a distinctive and robust governmental commitment to embedding sustainable finance within the national economic strategy.

This table 3 below synthesizes the principal constraints limiting the scale and credibility of Uzbekistan's local-currency green and SDG bond market and pairs each constraint with a targeted policy response and a relevant international reference case.

Table 3

Key Sustainable Bond Market Constraints in Uzbekistan and Adaptable International Policy Solutions

Problem in Uzbekistan	Solution for Uzbekistan	Country example(s) to adapt
1) Shallow domestic capital market & limited liquidity (weak price discovery, constrained scaling of local-currency thematic debt)	Build secondary-market infrastructure: benchmark consolidation, market-making/primary dealer incentives, repo/securities lending roadmap.	**Chile** (institutionalised sovereign ESG program with strong framework and reporting that supports repeat issuance and market development).
2) State dominance & contingent liability risk (SOEs/state banks) (risk concentration, potential crowding-out, credibility/sovereign-risk premium effects)	Gradually crowd-in private issuers/investors: transparent SOE fiscal risk reporting; bank/SOE governance reforms; use credit enhancements for private green projects.	**Chile** (clear sovereign framework + disciplined reporting attracts broader investor base).
3) Verification limits and reliance on issuer-provided documentation (investors may discount "greenium" if assurance is weak)	Upgrade assurance: move from documentation-based review toward **limited assurance** for key allocation/impact metrics; strengthen audit trails and project-level evidence.	**Indonesia**: green sukuk reporting has used **limited assurance** (e.g., EY referenced in official materials), strengthening credibility.
4) Taxonomy implementation complexity (uncertainty for	Publish taxonomy guidance notes, thresholds, "do-no-	**Poland** updated its sovereign green bond

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Problem in Uzbekistan	Solution for Uzbekistan	Country example(s) to adapt
issuers: what qualifies, thresholds, proof)	significant-harm" checks, and sector templates; phase in requirements to avoid blocking issuance.	framework aligned with ICMA principles and expanded eligible categories – illustrating iterative improvement to keep the market credible and scalable.
5) Disclosure and anti-greenwashing safeguards not fully standardised (increases reputational risk and investor caution)	Adopt mandatory green/SDG bond disclosure rules: use-of-proceeds, project selection, management of proceeds, post-issuance reporting timetable, external review requirements.	**India (SEBI)** issued detailed disclosure requirements for green debt securities, including additional offer document disclosures and ongoing reporting expectations.

Source: The table prepared by the author studying international best practices of countries.

Several practical lessons can be drawn from Uzbekistan's experience with sustainable finance. First, the establishment of a **clear project framework** and the use of **independent second-party opinions** are essential for credibility. Uzbekistan's SDG bond framework was prepared under the supervision of the United Nations Development Programme, while impact reporting adheres to the International Capital Market Association (ICMA) principles. This methodological rigor has likely contributed to enhanced investor confidence and broader market participation.

Second, **macroeconomic stability and policy continuity** are fundamental in sustaining investor trust. Uzbekistan has strategically utilized bond proceeds to **pre-pay high-cost debt**, such as the early repurchase of older ruble-denominated bonds, and to **finance budget deficits** in accordance with pre-approved fiscal plans. These actions underscore a disciplined and transparent approach to public debt management, reinforcing market credibility.

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Third, there is a notable **synergy between green finance initiatives and structural economic reforms**. The introduction of thematic bonds has coincided with significant regulatory developments, including the adoption of a **national green taxonomy in October 2023** and a series of capital market reforms aimed at strengthening governance, disclosure, and standardization. These measures are expected to institutionalize the definition of "green" assets, streamline verification processes, and enable the **scalable issuance of sustainable financial instruments** in the years ahead.

Policy Recommendations. To sustain the momentum achieved in recent years, Uzbekistan should continue strengthening its sustainable finance ecosystem through a combination of regulatory, fiscal, and market-oriented measures. The **finalization and refinement of the national green taxonomy**, currently under pilot implementation since October 2024, is a critical next step to ensure the consistency, comparability, and credibility of future green and SDG bond issuances. Establishing clear sectoral definitions and eligibility criteria will minimize the risk of greenwashing and enhance investor confidence.

In parallel, **mandatory impact reporting** and the promotion of **voluntary ESG disclosures** across both public and private issuers would further increase transparency and accountability. Encouraging domestic institutional investors—such as pension funds and insurance companies—to invest in sustainable instruments through targeted incentives, including tax benefits or minimum investment quotas, could deepen local demand and reduce reliance on foreign capital.

Uzbekistan could also **diversify its sustainable finance instruments** by introducing **Islamic green sukuk** and **credit enhancement mechanisms**, such as partial guarantees or blended finance structures, to attract new pools of domestic and international capital. These innovations would expand the range of financing options available for climate-resilient and socially inclusive projects.

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In conclusion, Uzbekistan's green and SDG bonds are already mobilizing substantial financing for sustainable infrastructure and social development while simultaneously strengthening the domestic debt market. These instruments align national financial flows with global climate and development goals, yielding both **foreign exchange savings** through local-currency issuances and **greater fiscal transparency**. The country's experience illustrates how emerging economies can effectively "finance the future" by integrating sustainability principles into debt management and capital market development. With consistent policy design, institutional capacity building, and continued reform, Uzbekistan is well-positioned to fully mainstream sustainable finance – generating durable environmental benefits, fostering inclusive growth, and reinforcing long-term economic resilience.

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