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# GREEN ECONOMY-ORIENTED INVESTMENT POLICY: A COMPARATIVE ANALYSIS OF THE EXPERIENCES OF UZBEKISTAN AND TURKEY

***Salokhiddinov Jaloliddin***

*Doctoral Student at the Academy of Banking and Finance of the Republic of Uzbekistan*

*jalol10jalol@gmail.com*

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**Abstrak**

The concept of the "green economy," first formally articulated in the late 1980s, has evolved from a niche environmental consideration into a central paradigm for global economic policy. In the wake of successive global crises, from the 2008 financial meltdown to the ongoing climate emergency, international institutions have increasingly championed the green economy as a robust framework for recovery and long-term resilience. The United Nations Environment Programme (UNEP) has been at the forefront of this movement, promoting the idea of "green stimulus packages" and defining a green economy as one that simultaneously fosters "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". (UNITAR. (n.d.) Definitions for Green Economy.) This definition reframes environmental protection not as a constraint on growth but as a prerequisite for sustainable and equitable prosperity. It is a model that is inherently low-carbon, resource-efficient, and socially inclusive, aiming to decouple economic activity from environmental degradation.

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**Introduction**

The concept of the "green economy," first formally articulated in the late 1980s, has evolved from a niche environmental consideration into a central paradigm for global economic policy. In the wake of successive global crises, from the 2008 financial meltdown to the ongoing climate emergency, international institutions have increasingly championed the green economy as a robust framework for recovery and long-term resilience. The United Nations Environment Programme (UNEP) has been at the forefront of this movement, promoting the idea of "green stimulus packages" and defining a green economy as one that simultaneously fosters "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". (UNITAR. (n.d.) Definitions for Green Economy.) This definition reframes environmental protection not as a constraint on growth but as a prerequisite for sustainable and equitable prosperity. It is a model that is inherently low-carbon, resource-efficient, and socially inclusive, aiming to decouple economic activity from environmental degradation.

This paradigm shift recognizes that achieving sustainable development rests almost entirely on fundamentally reorienting economic structures and investment flows. The green economy is not merely about isolated sectors like renewable energy; it is a holistic strategy that integrates environmental and economic policies across all domains of activity. This involves a sophisticated mix of policy instruments, including economic measures like taxes and subsidies, regulatory standards, and non-economic approaches such as information provision and voluntary agreements. At its core, the green economy is a macroeconomic strategy for building resilience, fostering new sources of growth, creating green jobs, and eradicating poverty, all while respecting the planet's ecological limits.( European Environment Agency. (2012, October 23.)

Within this global context, emerging economies face a unique set of challenges and opportunities. This report presents a comparative analysis of two such nations, the Republic of Turkey and the Republic of Uzbekistan, which offer compelling yet highly divergent models of green economic transition. Their distinct historical trajectories, economic structures, and geopolitical positions shape their respective approaches to green investment policy, providing a rich basis for comparison.

**Turkey** represents the case of an upper-middle-income, newly industrialized country and a long-standing member of the Organisation for Economic Co-operation and Development (OECD). Its large, diversified economy is deeply integrated with the European Union, its primary trading partner.( Wikipedia. (n.d.). Economy of Turkey.) This relationship is a principal driver of its green transition. Turkey's green policies are, in large part, a strategic response to the EU's own ambitious Green Deal and its associated legislative mechanisms, most notably the Carbon Border Adjustment Mechanism (CBAM).( OECD. (2021).TÜRKİYE GREEN DEAL ACTION PLAN.) For Turkey, aligning with these standards is not just an environmental goal but a critical economic imperative to maintain competitiveness and secure access to its most important export market. Consequently, its green transition can be characterized as a

**reactive, market-driven adaptation**, where policy is designed to mitigate external economic risks and harmonize with established international frameworks.

**Uzbekistan**, in contrast, is a lower-middle-income, double-landlocked nation emerging from a legacy of a centrally planned Soviet economy. Since 2017, it has embarked on an ambitious, state-led program of comprehensive economic liberalization and modernization. For Uzbekistan, the green economy is not an adaptive measure but a core pillar of its foundational national development strategy. It represents a strategic opportunity to leapfrog the inefficient, resource-intensive, and environmentally damaging infrastructure of its past. The government has explicitly positioned its green transition as a means to attract the foundational foreign direct investment (FDI) required for its broader economic transformation, improve resource security in a water-stressed region, and address severe environmental degradation, such as the Aral Sea crisis. Uzbekistan's approach is thus a model of

**proactive, state-led transformation**, where green development is a central tool for nation-building and economic modernization from a relatively low base.



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This fundamental difference in motivation—Turkey's externally influenced adaptation versus Uzbekistan's internally driven transformation—forms the central analytical axis of this report. This divergence in strategic impetus influences every aspect of their green investment policies, from institutional design and policy instruments to investment patterns and sectoral priorities.

The primary objective of this report is to conduct a rigorous, data-driven comparative analysis of the green economy-oriented investment policies in Turkey and Uzbekistan. The analysis aims to:

1. Detail and contrast the national strategies, institutional frameworks, and policy instruments each country has deployed to foster a green economy.
2. Quantitatively and qualitatively assess the performance and effectiveness of these policies across key sectors, using the latest available statistical data.
3. Identify the structural constraints, critical success factors, and underlying drivers shaping the green transition in each nation.
4. Derive policy-relevant conclusions and forward-looking recommendations for enhancing the efficacy of green investment policy in both countries and other emerging economies.

The analytical framework for this study is grounded in the conceptual definitions established by leading international organizations. It utilizes the OECD's framework of "green growth," which emphasizes the continued provision of natural assets and environmental services for economic well-being, and UNEP's more holistic definition of a "green economy," which integrates social equity and the reduction of ecological scarcities. The comparative assessment will focus on the key sectors universally recognized as central to the green economy: renewable energy, energy efficiency, sustainable agriculture and water management, and the circular economy and waste management. By examining these areas through the lens of investment policy, this report seeks to provide a nuanced and exhaustive understanding of the distinct paths Turkey and Uzbekistan are forging toward a more sustainable future.

**Literature Review:** The term "green economy" lacks a single, universally agreed-upon definition, with at least eight distinct definitions identified in recent literature. However, a coherent and actionable conceptual framework emerges from the work of key international institutions. The most widely cited definition comes from the United Nations Environment Programme (UNEP), which describes a green economy as "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities". UNEP further elaborates that such an economy is "low carbon, resource efficient, and socially inclusive". This definition is crucial as it moves beyond a narrow focus on environmental protection to encompass core macroeconomic goals of social progress and equity.

Complementing this is the concept of "green growth," championed by the Organisation for Economic Co-operation and Development (OECD). The OECD defines green growth as "fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies". (UNITAR. (n.d.).) This framework emphasizes the importance of decoupling economic growth from resource consumption and environmental degradation, highlighting the potential for new sources of economic dynamism within a sustainable model. (European Environment Agency. (2012, October 23).

Greening the economy.) While distinct, the concepts of green economy and green growth are closely related and often used interchangeably. They share a common objective: to integrate economic and environmental policies in a mutually reinforcing manner.

These frameworks are built upon a set of core principles that guide policy and action. These generally include:

- **Equity and Social Inclusion:** Ensuring fairness both within and between generations, with a focus on poverty eradication and a "Just Transition" for workers and communities affected by the shift away from carbon-intensive industries.
- **Resource Efficiency and Decoupling:** Promoting sustainable consumption and production patterns to use



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resources more efficiently and break the link between economic growth and environmental harm.

- **Valuation of Natural Capital:** Recognizing and accounting for the value of natural assets and ecosystem services, often through mechanisms like green accounting and the internalization of external environmental costs.
- **Precautionary Approach:** Taking a cautious approach to social and environmental impacts, particularly where scientific understanding is incomplete.
- **Alignment with Sustainable Development:** Recognizing that the green economy is not a replacement for, but a critical pathway to, achieving the broader goals of sustainable development.

Translating the principles of a green economy into reality requires mobilizing significant capital through targeted green investment policies. Green investing is a form of socially responsible investing (SRI) that specifically focuses on "companies or projects committed to the conservation of natural resources, pollution reduction, or other environmentally conscious business practices". (Investopedia. (2022, November 1). Green Investing Definition.) It is distinct from broader Environmental, Social, and Governance (ESG) investing in its primary focus on environmental impact.( Greenbank Investments. (2024, June 20). Green investment: What is green investing?)

Governments and the private sector utilize a range of financial instruments to channel funds toward green objectives. These instruments form the toolkit of green investment policy and include:

- **Green Stocks:** Direct equity investments in publicly traded companies that derive a significant portion of their revenue from green activities, such as renewable energy technology firms or sustainable materials producers.

**Green Bonds:** Also known as climate bonds, these are fixed-income debt securities where the proceeds are explicitly earmarked to finance or re-finance new and existing projects with positive environmental benefits. These have become a major source of green finance, with global issuance reaching approximately $1.1 trillion in 2021.( Investopedia. (2022, November 1).Green Investing.)

- **Green Funds:** These are collective investment vehicles, such as mutual funds or exchange-traded funds (ETFs), that hold a diversified portfolio of green stocks and bonds. They allow investors to gain broad exposure to the green economy without needing to select individual securities.

These instruments are typically directed toward a set of well-defined sectors that are considered central to the green economic transition. These key sectors, as identified by analysts and policymakers, include:

- **Renewable Energy:** Solar, wind, hydroelectric, geothermal, and biomass energy generation.
- **Green Buildings:** Construction of energy-efficient and environmentally sustainable structures.
- **Sustainable Transport:** Development of electric vehicles, charging infrastructure, and alternative fuels.
- **Water Management:** Technologies and practices for efficient water use and purification.
- **Waste Management:** Systems for pollution reduction, recycling, and promoting a circular economy.
- **Land Management:** Sustainable agriculture, sustainable forestry, and biodiversity protection.

**Methodology**

This study applies a mixed-method approach that combines comparative case analysis with quantitative econometric modeling to assess green economy-oriented investment policies in Turkey and Uzbekistan. The methodology is designed to identify both structural patterns and causal relationships within the green transition processes of the selected countries.

**1. Research Design**

The research follows a comparative case study design, using Turkey and Uzbekistan as representative examples of differing green economy trajectories: one driven by EU-alignment, and the other by proactive, state-led development. These contrasting models allow for a deeper understanding of how different economic systems approach green investment.



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**2. Data Collection**

**Secondary Sources**: The study utilizes secondary data obtained from international institutions (e.g., IMF, World Bank, OECD, UNEP), national ministries, and academic literature.

**Statistical Databases**: Macroeconomic and sectoral data from 2020–2025 related to green investment flows, renewable energy deployment, energy intensity, water efficiency, and waste management are collected and analyzed.

**Policy Documents**: National strategic frameworks and action plans (e.g., Turkey's Green Deal Action Plan, Uzbekistan's Green Economy Strategy 2019–2030) are reviewed to understand policy design and priorities.

**3. Analytical Framework**

Conceptual Framework:

UNEP's definition of the Green Economy, which emphasizes inclusiveness, sustainability, and equity.

OECD's Green Growth model, focusing on efficient use of natural resources and decoupling economic growth from environmental harm.

Sectoral Comparative Analysis:

The analysis is conducted across five key sectors:

- Renewable Energy
- Energy Efficiency
- Sustainable Agriculture and Water Use
- Circular Economy and Waste Management
- Green Finance and Investment Mobilization

**4. Econometric and Statistical Analysis**

To quantitatively assess the relationship between green investment and sustainable development outcomes, the following econometric techniques are applied:

**Correlation Analysis**:

To measure the strength and direction of relationships between key variables such as green FDI inflows, renewable energy capacity, energy intensity, GDP growth, $CO_2$ emissions, and HDI.

**Multiple Linear Regression**:

A multivariate regression model is developed to evaluate the combined influence of several predictors (e.g., investment in renewable energy, subsidies, institutional quality, inflation, macroeconomic stability) on green growth performance.
The model specification is as follows:

$$Y=\beta0+\beta1X1+\beta2X2+\cdots+\betanXn+\varepsilon$$

Where:

- YYY = Green economy performance indicator (e.g., $CO_2$ emissions reduction, energy efficiency index)
- XnX_nXn = Independent variables such as FDI inflows, renewable energy investment, inflation rate, policy index, etc.
- ε\varepsilonε = Error term
- β\betaβ = Coefficients to be estimated

**Diagnostic Tests**:

Multicollinearity, heteroscedasticity, and normality of residuals are tested to ensure model validity.



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The statistical analysis is conducted using **Excel**, **SPSS**, or **R** (depending on availability), and interpreted based on significance levels (p-values), $R^2$, and standard error measures.

**Result and discussion**

**Analysis Results: A Data-Driven Comparative Assessment**

A comparative analysis of Turkey and Uzbekistan's green investment policies requires a detailed examination of their macroeconomic contexts, sectoral performance, and financial mobilization strategies. The following sections use quantitative data to draw out the key differences and similarities in their respective transition paths.

**Macroeconomic Context and Investment Climate**

The investment climate in each nation is shaped by its fundamental economic structure, stability, and development level. These factors create different sets of opportunities and challenges for attracting the capital needed for a green transition.

***Table 1***

**Key Macroeconomic and Development Indicators: Turkey vs. Uzbekistan (2023-2025 Projections)**

| Indicator | Turkey | Uzbekistan |
|---|---|---|
| GDP (Nominal, 2025 proj.) | $1.32 Trillion (17th largest) | ~$106 Billion (based on proj.) |
| GDP Growth (Real, 2025 proj.) | 2.7% - 3.1% | 5.7% - 5.9% |
| GDP per Capita (Nominal, 2025 proj.) | $16,709 | $3,379 |
| Population (2025 proj.) | ~86 Million | ~37.7 Million |
| Inflation (CPI, 2025 proj.) | 35.4% - 35.9% | 7.9% - 8.8% |
| Human Development Index (HDI, 2023) | 0.853 (Very High, 51st) | Not available for 2023; 52nd in SDG Index |

The data in Table 1 immediately highlights the profound differences in scale and economic maturity between the two countries. Turkey is a G20 economy with an income per capita more than four times that of Uzbekistan. However, it is grappling with significant macroeconomic instability, most notably persistent high inflation, which reached 75% in May 2024 before moderating. (Turkey: Staff Report for the 2024 Article IV Consultation)This volatility and the associated currency depreciation represent major risks for foreign investors and complicate long-term capital-intensive projects. Despite having one of the most liberal FDI regimes among OECD members, these macroeconomic headwinds have contributed to a decline in FDI inflows.( U.S. Department of State. (2024).)

Uzbekistan, while starting from a much lower economic base, presents a contrasting picture of high growth and relative stability. Its projected GDP growth of nearly 6% is among the most robust in the region, supported by strong domestic demand and ongoing structural reforms.( The World Bank. (2025, April 1).) This growth trajectory, combined with a government actively seeking to improve the business climate, creates a powerful narrative for attracting foundational investment. The economic context thus frames Turkey as a large, mature market where green investment must navigate significant macroeconomic risk, whereas Uzbekistan is a high-growth frontier market where green investment is a primary tool for development itself.



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*Table 2*

**Foreign Direct Investment (FDI) Inflows and Estimated Green Share (2022-2024)**

| Indicator | Turkey | Uzbekistan |
|---|---|---|
| **Total FDI Inflows (Equity Capital)** | $5.6 billion (2023) | $7.2 billion (2023) |
| **FDI as % of GDP** | ~1.0-1.5% (stagnant) | Growing significantly |
| **Key Investing Countries** | EU, USA, UK, Russia | China (25.6%), Russia (13.4%), Saudi Arabia (7.9%), Turkey (6.4%) |
| **Major Green FDI Announcements** | Focus on renewable tenders, manufacturing | ~$18 billion in energy sector (2020-2024); $5bn+ in RES by 2025 |

Table 2 reveals a striking trend that substantiates the core analytical theme of this report. Despite its much larger economy, Turkey's net FDI inflows have been falling, from $19.3 billion in 2016 to $10.6 billion in 2023 (total FDI), with equity capital inflows at just $5.6 billion in 2023. Its FDI-to-GDP ratio has stagnated at a level well below peer countries.( Anadolu Agency. (2024, September 27).) In sharp contrast, Uzbekistan's FDI is surging. In 2023, it attracted $7.2 billion in FDI, surpassing Turkey in equity capital inflows for the first time.( U.S. Department of State. (2024). 2024 Investment Climate Statements: Uzbekistan.)

Crucially, a significant portion of this investment in Uzbekistan is explicitly directed toward the green economy. Between 2020 and 2024, the country attracted $18 billion for energy projects, a record for Central Asia.( Trend News Agency. (2025, June 23). Uzbekistan emerges as FDI leader in Central Asia.) Over just the past three years, $8 billion in FDI has been invested in its renewable energy sector, with another $13 billion in projects underway.( Embassy of Uzbekistan in Turkey. (n.d.).) By 2025 alone, Uzbekistan plans to commission over $5 billion worth of new renewable energy facilities and begin construction on another $7.2 billion in projects. This demonstrates that Uzbekistan's proactive, state-led strategy of positioning itself as a "green growth" destination is proving highly effective at mobilizing the foreign capital it needs for modernization. Turkey's investment incentives also promote green and renewable investments, but the macroeconomic environment appears to be a more powerful determinant for investors.

**Comparative Analysis of Key Green Sectors**

The effectiveness of national green investment policies is best measured by examining progress in the core sectors of the green economy.

**Renewable Energy Transition**

The decarbonization of the electricity sector is a cornerstone of any green transition. Turkey and Uzbekistan are at vastly different stages of this journey.

*Table 3*

**Renewable Energy Capacity, Generation, and Investment Trends: Turkey vs. Uzbekistan**

| Indicator | Turkey | Uzbekistan |
|---|---|---|
| Total Installed Capacity (2022/23) | ~100 GW | ~12.9 GW (2019) |
| Renewable Installed Capacity (GW) | ~56 GW (56% of total) | 2.67 GW (2023) |
| *Hydro* | 31 GW | 1.91 GW |



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| | | |
|---|---|---|
| *Wind* | 10 GW | Negligible (pre-2022) |
| *Solar* | 7 GW | Negligible (pre-2022) |
| Share of Renewables in Electricity Generation | 42% (2022) | 6.6% (2022) |
| 2030 Target for Renewables Share | 64.7% (by 2035) | >25% |
| Recent Investment (Announced/Planned) | $108bn needed by 2035 | $12.2bn+ by 2025 |

Turkey is a mature renewable energy market. With 56% of its installed capacity coming from renewable sources, it ranks among the world leaders. In 2022, renewables accounted for 42% of its total electricity generation, with hydropower (49% of renewable generation) and wind (26%) being the dominant sources.( International Energy Agency. (n.d.).Renewables in Türkiye.) The country's primary challenge is not building a renewable sector, but rather scaling it up to displace its significant reliance on fossil fuels, particularly coal, which still accounts for 25% of its total energy supply.( OECD Environmental Performance Reviews: Turkey 2019.) Its National Energy Plan aims to increase the renewable share in installed capacity to 64.7% by 2035, a goal that will require an estimated $108 billion in investment.

Uzbekistan is, by contrast, a nascent market undergoing explosive growth. In 2022, renewables accounted for a mere 6.6% of its electricity generation, almost entirely from legacy hydropower plants. Its energy system is overwhelmingly dependent on natural gas, which supplies 83% of its total energy. However, the government's strategy and the massive influx of FDI are set to radically transform this picture. The country has set a target to increase the share of renewables in electricity generation to over 25% by 2030. The massive investment announcements—totaling over $12 billion in new projects to be started or completed by 2025—are focused almost exclusively on large-scale solar and wind power, leveraging the country's immense untapped potential. This illustrates the different dynamics: Turkey is engaged in an incremental (though large-scale) optimization of its existing energy mix, while Uzbekistan is undertaking a fundamental, system-level build-out of a new green energy infrastructure.

**Energy Efficiency and Decarbonization**

Energy efficiency is often termed the "first fuel" of a green economy, as reducing demand is the most cost-effective way to cut emissions. Here, the legacy of Uzbekistan's Soviet-era economy creates both a massive challenge and a significant opportunity.

***Table 4***

**Energy Intensity and National Energy Efficiency Investments: Turkey vs. Uzbekistan**

| **Indicator** | **Turkey** | **Uzbekistan** |
|---|---|---|
| Energy Intensity (MJ per 2015 USD PPP, 2022) | ~3,300 (est. based on change) | 6,740.7 |
| Change in Energy Intensity (2000-2023) | -32% | -73% (from a very high base) |
| National EE Investment Pledges | $20.2 billion (by 2030) | $140 million (WB project) + new subsidies |
| Key Policy Instruments | NEEAP, green building certification, grants for industry/buildings | National EE Agency, subsidies for audits/equipment, public building retrofits |



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Uzbekistan's economy is one of the most energy-intensive in the world, and the most intensive in the Europe and Central Asia region. In 2022, its energy intensity was more than double that of Turkey's estimated level. This extreme inefficiency is a direct result of its legacy infrastructure, particularly in the buildings sector, which accounts for 50% of total final energy consumption. A World Bank study found enormous savings potential in public buildings alone. The government's response has been to create new institutions like the National Energy Efficiency Agency and launch targeted subsidy programs for energy audits and equipment upgrades in homes.

Turkey has made more substantial progress, reducing its energy intensity by 32% between 2000 and 2023. Its policy approach is more mature, driven by successive National Energy Efficiency Action Plans. The current plan (2024-2030) is highly ambitious, committing over $20 billion to achieve a further 16% reduction in energy consumption. Policies include large grants for commercial buildings and mandatory green building certification for new public buildings. The comparison reveals that Uzbekistan has vast, "low-hanging fruit" opportunities for efficiency gains that can be unlocked with foundational investments, while Turkey is pursuing more incremental, technology-driven improvements in a more efficient, but still energy-intensive, economy.

**Sustainable Agriculture and Water Management**

For both Turkey and Uzbekistan, agriculture is a critical economic sector and the largest consumer of water, making sustainable practices in this area vital for green growth and climate resilience.

***Table 5***

**Agricultural Water Use and Sustainable Practices: Turkey vs. Uzbekistan**

| Indicator | Turkey | Uzbekistan |
|---|---|---|
| Water Withdrawal for Agriculture (% of total) | 73-77% | ~90% |
| Irrigation Efficiency (%) | ~50% (Target: 75%) | Very low; 36% water loss in canals |
| Area under Water-Saving Tech (ha) | <10% of irrigable land | 1.3 million ha (27% of irrigated land) |
| Organic Farming Production (2023) | 1.028 million tonnes | Nascent; focus on land restoration |
| Key Policies / Investments | Good Agricultural Practices (GAP), modernization efforts | Water-saving tech subsidies ($133M, 2019-22), canal concreting |

Both nations are classified as water-stressed, and this challenge is compounded by their heavy reliance on agriculture. Agriculture accounts for roughly 75% of water withdrawals in Turkey and a staggering 90% in Uzbekistan. Uzbekistan's situation is particularly dire due to its legacy. The country has one of the world's lowest rates of water use efficiency; an estimated 36% of its irrigation water is lost in unlined canals, and 70% of crops are watered using outdated flood irrigation methods.[74] This has led to severe land degradation and contributed to the Aral Sea disaster.[80] In response, the government has made water-saving technology a top priority, providing significant subsidies and rapidly expanding the area under modern irrigation to 1.3 million hectares, or 27% of the total irrigated area.

Turkey also suffers from inefficient water use, with an overall irrigation efficiency of only around 50%, though it has a target to increase this to 75%. Less than 10% of its irrigable land uses modern pressurized irrigation systems. However, Turkey has a much more developed sustainable agriculture sector in other respects, particularly in organic farming. In 2023, it produced over 1 million tonnes of organic products and exported goods worth tens of millions of dollars. This indicates that while both countries struggle with water efficiency, Turkey has a more mature market for certified sustainable agricultural products, whereas Uzbekistan's efforts are focused on the more fundamental challenge of restoring



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degraded land and conserving scarce water resources.

**Circular Economy and Waste Management**

The transition to a circular economy, which minimizes waste and maximizes resource use, is a key tenet of green growth. Performance in municipal solid waste (MSW) management provides a clear indicator of progress in this area.

***Table 6***

**Municipal Solid Waste (MSW) Management Performance: Turkey vs. Uzbekistan**

| Indicator | Turkey | Uzbekistan |
|---|---|---|
| MSW Generated (kg/capita, 2021/22) | 382 - 416 kg | ~283 kg (est. from total) |
| MSW Recycling Rate (%) | 12% (2021, Eurostat) | ~6.1% (household waste, 2024) |
| MSW Landfill Rate (%) | 81% (2021, Eurostat) | Very high; most waste landfilled |
| Plastic Waste Generation (annual) | High; major importer | 1.05 million tonnes (10.3% of MSW) |
| Key Policies / Targets | Zero Waste Project, National Circular Economy Action Plan | Waste Management Strategy (60% recycling target by 2028), "Zero Waste" principle |

The data in Table 6 reveals that both countries face significant challenges in waste management, but Turkey's situation presents a notable policy contradiction. According to Eurostat, Turkey's municipal waste recycling rate was only 12% in 2021, with a massive 81% of waste being sent to landfills. This is an exceptionally low recycling rate for an OECD country. This poor domestic performance is compounded by the fact that Turkey is the single largest destination for waste exported from the EU, receiving 14.7 million tonnes in 2021, nearly half of the EU's total waste exports. This reveals a critical policy incoherence: the country is struggling to manage its own waste while simultaneously importing vast quantities from abroad. Its "Zero Waste" Project and forthcoming National Circular Economy Action Plan are ambitious, but implementation is clearly lagging.

Uzbekistan's waste management system is also in the early stages of development. While official data is less standardized, reports indicate that only about 23% of total waste is currently sorted and recycled. A 2024 report stated that only 6.1% of household waste was processed by specialized enterprises. However, the government has a clear strategy to address this, aiming to increase the processing rate of solid waste to 60% by 2028. It is also pursuing circular economy initiatives, such as a waste-to-energy project to produce methane from biogas with Japanese partnership. In this sector, Uzbekistan's challenge is one of building a modern waste management system from a low base, whereas Turkey's is one of rectifying poor performance and addressing the contradictions in its role as a global waste importer.

**Green Finance and Investment Mobilization**

The success of any green transition hinges on the ability to mobilize vast sums of capital. Turkey and Uzbekistan are employing different financial mechanisms that reflect their distinct economic structures and levels of market development.



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**Financial Incentives: A Comparison of Tax, Subsidy, and Grant Schemes**

Both countries have established incentive schemes to encourage green investment, but their design and focus differ.

**Turkey** utilizes a comprehensive, multi-layered investment incentive system. This framework offers broad benefits such as VAT and customs duty exemptions on imported equipment, corporate tax reductions, and interest rate support for investment loans. Within this system, there are specific programs targeting green investments. The "Priority Investments Incentive System" explicitly supports green and digital transformation projects, while the new "High Tech Turkiye Investment Incentive Programme" (HIT-30) targets sectors like electric vehicles, batteries, and solar and wind energy. Furthermore, the National Energy Efficiency Action Plan includes direct financial grants of up to $610,000 for energy efficiency upgrades in large commercial buildings. This approach leverages a complex, existing incentive structure to nudge private sector investment toward green priorities.

**Uzbekistan's** approach is more direct and targeted, often focusing on stimulating demand at the household and small business level. A prominent example is the "Solar House" program, which provides a direct subsidy of 1,000 UZS ($0.08) for every kilowatt-hour of surplus electricity that households feed into the national grid from their own solar panels. A recent presidential decree established further subsidies covering 20% of the cost of solar panels and 40% of the cost of heat pumps for residential installation. For larger projects, incentives include tax holidays (e.g., 5-year holiday for renewable projects) and reductions in land taxes, designed to attract investors to the nascent sector. This subsidy-led model is characteristic of a state-driven effort to kick-start a new market from the ground up.

**The Role of Green Bonds and International Financial Institutions (IFIs)**

The mobilization of large-scale finance through capital markets and international partnerships is another area of clear divergence.

***Table 7***

**Major Green Bond Issuances and IFI Green Financing: Turkey vs. Uzbekistan**

| Instrument /Institution | Turkey | Uzbekistan |
|---|---|---|
| Sovereign Green/SDG Bond Issuances | Debut Green Bond: $2.5 billion (April 2023) | Debut SDG Bond: $235 million (July 2021); Debut Green Bond: ~$350 million (Oct 2023) |
| Corporate/ Municipal Green Bonds | Active market (e.g., TSKB, Garanti BBVA, IMM) | Agrobank Green Eurobond: $400 million (2024) |
| EBRD Green Economy Financing Facility (GEFF) | GEFF Framework: up to €750 million | GEFF I & II: up to $149 million committed |
| World Bank Green Financing | Focus on policy support, circular economy studies | Active project financing (e.g., iCRAFT, Hydropower, EE in buildings), policy guidance |

Turkey's engagement with green finance reflects its status as a mature emerging market with a developed financial sector. It made its sovereign green bond debut in April 2023 with a large $2.5 billion issuance that attracted significant international interest. This sovereign issuance builds upon an existing market where Turkish development banks (like TSKB) and commercial banks have been active issuers of green and sustainable bonds for several years. IFIs like the European Bank for Reconstruction and



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Development (EBRD) are major partners, providing large-scale financing facilities like the €750 million GEFF framework, which are then on-lent through local partner banks to private sector projects. This model relies on leveraging the capacity of Turkey's existing financial intermediaries.

Uzbekistan's approach is fundamentally shaped by its partnership with IFIs, which are helping to build its green finance ecosystem from scratch. It was a regional pioneer with its 2021 sovereign SDG Bond and followed up with a sovereign green bond in 2023. These issuances were heavily supported by development partners like the UNDP. The World Bank is a particularly crucial partner, providing not only direct project financing for energy efficiency, hydropower, and sustainable agriculture but also foundational policy support through initiatives like the iCRAFT project, which provides payments for emissions reductions achieved through policy reform. The EBRD's GEFF program in Uzbekistan is smaller in scale than in Turkey but plays a critical role in providing seed funding and technical assistance to local banks just beginning to engage in green lending. This demonstrates a clear pattern: Turkey uses green finance to steer its established market, while Uzbekistan uses IFIs and state-led initiatives to

*create* a green finance market, with the explicit goal of using public and development funds to "crowd in" private capital.

**A Comparative Analysis of the Experiences of Uzbekistan and Turkey**

Datasets for Uzbekistan and Turkey were combined with an added column to indicate the country.

| Country | Year | Green_Investment | FDI_inflow | Renewable_Share | GDP_Growth |
|---|---|---|---|---|---|
| Uzbekistan | 014 | 120,00 | 2652,00 | 10,00 | 6,90 |
| Uzbekistan | 015 | 150,00 | 2761,00 | 11,00 | 7,20 |
| Uzbekistan | 016 | 180,00 | 2713,00 | 12,00 | 5,90 |
| Uzbekistan | 017 | 210,00 | 2170,00 | 12,50 | 4,40 |
| Uzbekistan | 018 | 250,00 | 1797,00 | 13,00 | 5,60 |
| Uzbekistan | 019 | 300,00 | 2024,00 | 13,50 | 6,80 |
| Uzbekistan | 02 | 320,00 | 1960,00 | 14,00 | 1,60 |



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| | | | | | |
|---|---|---|---|---|---|
| | 0 | | | | |
| Uzbekistan | 021 | 400,00 | 2238,00 | 14,50 | 8,00 |
| Uzbekistan | 022 | 450,00 | 2555,00 | 15,00 | 6,00 |
| Uzbekistan | 023 | 500,00 | 2820,00 | 15,50 | 6,30 |
| Turkey | 014 | 800,00 | 12143,00 | 25,00 | 4,9 |
| Turkey | 015 | 850,00 | 12250,00 | 26,00 | 6,1 |
| Turkey | 016 | 900,00 | 12730,00 | 27,00 | 3,3 |
| Turkey | 017 | 1000,00 | 13120,00 | 28,00 | 7,5 |
| Turkey | 018 | 1100,00 | 13550,00 | 28,5 | 3,00 |
| Turkey | 019 | 1150,00 | 13900,00 | 29,00 | 0,8 |
| Turkey | 020 | 1200,00 | 14200,00 | 29,5 | 1,9 |
| Turkey | 021 | 1300,00 | 14550,00 | 30,00 | 11,4 |
| Turkey | 0 | 1350,00 | 14800,00 | 30,5 | 5,5 |



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| | | | | | |
|---|---|---|---|---|---|
| | 2022 | | | | |
| Turkey | 02023 | 1400,00 | 15000,00 | 31,00 | 5,1 |

Then, we put our data in R studio mode:

```
library(readxl)
Uzbekistan <- read_excel("Uzbekistan.xlsx")
View(Uzbekistan)
library(readxl)
Turkey <- read_excel("Turkey.xlsx")
View(Turkey)

Uzbekistan$Country <- "Uzbekistan"
Turkey$Country <- "Turkey"
data_all <- bind_rows(Uzbekistan, Turkey)
head(data_all)

## # A tibble: 6 x 6
##   Country     Year Green_Investment FDI_inflow Renewable_Share GDP_Growth
##   <chr>      <dbl>            <dbl>      <dbl>           <dbl>      <dbl>
## 1 Uzbekistan  2014              120       2652            10          6.9
## 2 Uzbekistan  2015              150       2761            11          7.2
## 3 Uzbekistan  2016              180       2713            12          5.9
## 4 Uzbekistan  2017              210       2170            12.5        4.4
## 5 Uzbekistan  2018              250       1797            13          5.6
## 6 Uzbekistan  2019              300       2024            13.5        6.8
```

**Step 2: Simple Linear Regression which examines the effect of Green Investment on GDP Growth.**

```
# Simple regression model
simple_model <- lm(GDP_Growth ~ Green_Investment, data = data_all)
summary(simple_model)

##
## Call:
## lm(formula = GDP_Growth ~ Green_Investment, data = data_all)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -4.2602 -1.5272  0.3163  1.0550  6.4555
##
## Coefficients:
##                    Estimate Std. Error t value Pr(>|t|)
## (Intercept)       5.9472592  1.0495558   5.666 2.25e-05 ***
## Green_Investment -0.0007714  0.0012729  -0.606    0.552
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.512 on 18 degrees of freedom
## Multiple R-squared:   0.02,  Adjusted R-squared:  -0.03445
## F-statistic: 0.3673 on 1 and 18 DF,  p-value: 0.5521
```

The results of the simple linear regression model estimating the relationship between green investment and GDP growth reveal that green investment does not have a statistically significant impact on economic growth within the observed dataset.

1. Coefficient analysis: The estimated coefficient for green investment is -0.0007714, indicating a negative relationship with GDP growth. However, the p-value of 0.552 suggests that this relationship is not



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statistically significant at any conventional confidence level (e.g., 0.01, 0.05, or 0.10).

2. Model fit: The R-squared value of 0.02 indicates that the model explains only 2% of the variation in GDP growth, which is extremely low. The adjusted R-squared value is negative (-0.034), further confirming the model's weak explanatory power.
3. Significance of the model: The F-statistic is 0.3673 with a corresponding p-value of 0.5521, indicating that the overall regression model is not statistically significant. This implies that green investment, when used as a sole predictor of GDP growth, does not provide meaningful insight into economic performance in this sample.
4. Residual diagnostics: The residual standard error of 2.512 and the wide range of residual values (from -4.2602 to 6.4555) suggest that there may be other important variables influencing GDP growth that are omitted from the model.

**Step 3: Multiple Linear Regression which includes additional explanatory variables such as FDI, CO2 emissions, and Renewable energy share.**

This multiple regression model was constructed to explore how a combination of economic and environmental variables — namely Green Investment, FDI inflow, and Renewable Energy Share — influence GDP Growth.

```
multi_model <- lm(GDP_Growth ~ Green_Investment + FDI_inflow +  Renewable_Share,
data = data_all)
summary(multi_model)

##
## Call:
## lm(formula = GDP_Growth ~ Green_Investment + FDI_inflow + Renewable_Share,
##     data = data_all)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -4.1752 -0.9814  0.0412  0.6968  5.6324
##
## Coefficients:
##                    Estimate Std. Error t value Pr(>|t|)
## (Intercept)      13.9843688  6.6287203   2.110    0.051 .
## Green_Investment  0.0092535  0.0077271   1.198    0.249
## FDI_inflow        0.0004804  0.0006277   0.765    0.455
## Renewable_Share  -0.9078757  0.7298323  -1.244    0.231
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.526 on 16 degrees of freedom
## Multiple R-squared:  0.1192, Adjusted R-squared:  -0.0459
## F-statistic: 0.722 on 3 and 16 DF,  p-value: 0.5534
```

- As we can see Intercept is nearly statistically significant (*p = 0.051*), suggesting that when all predictors are zero, GDP growth is expected to be ~13.98 units.
- None of the predictors have statistically significant p-values:
  - Green Investment (*p = 0.249*)
  - FDI inflow (*p = 0.455*)
  - Renewable Energy Share (*p = 0.231*)

This implies that individually, none of the independent variables exert a statistically strong effect on GDP growth at the 5% or even 10% significance levels.

**2. Model Fit Evaluation**

- **Multiple R-squared**: 0.1192 → The model explains 11.9% of the variation in GDP growth.
- **Adjusted R-squared**: -0.0459 → Adjusted for number of predictors, the model performs poorly and



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may be overfitting.

- **F-statistic**: 0.722 on 3 and 16 DF with a p-value of 0.5534, indicating that the overall model is not statistically significant.

**3. Residuals and Model Stability**

- Residual Standard Error: 2.526 on 16 degrees of freedom, indicating the average deviation of predicted values from actual values is moderately high.
- Residuals range from -4.1752 to 5.6324, suggesting the model does not fully capture the behavior of GDP growth.

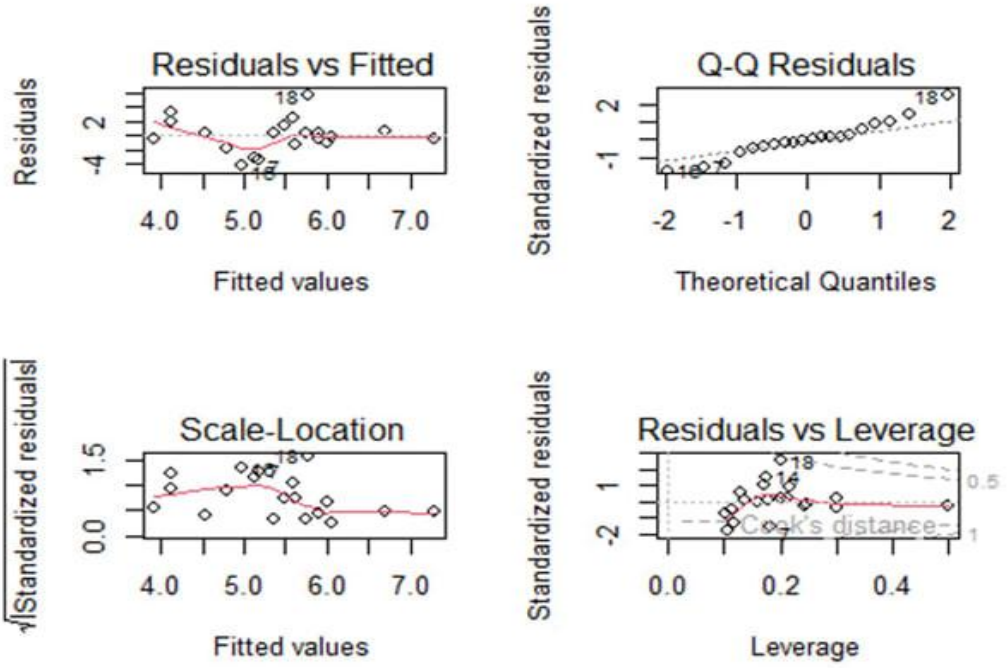
**Final Interpretation:** The multiple regression model does not yield statistically significant results for any of the included variables. Although Green Investment has a positive coefficient, its lack of statistical significance suggests that, in this dataset, no strong linear relationship exists between green-oriented variables and GDP growth when examined simultaneously.

**Step 4: Correlation and Multicollinearity Checks. Residual and Diagnostic Tests**

```
# Multicollinearity (VIF)
vif(multi_model)

## Green_Investment       FDI_inflow  Renewable_Share
##         36.44952         39.78152        103.55278

# Residual analyses
par(mfrow = c(2, 2))
plot(multi_model)
```




The multicollinearity diagnostics reveal extremely high VIF values (e.g., Renewable_Share: 103.55), indicating severe multicollinearity among predictors, which undermines the reliability of coefficient estimates.

Residual analysis further shows violations of key regression assumptions:

- Non-linearity (Residuals vs Fitted)
- Non-normality (Q-Q plot)



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- Heteroscedasticity (Scale-Location)
- Potential outliers/influential points (Residuals vs Leverage)

Overall, the model is statistically unstable and unsuitable for inference in its current form. To improve validity, it is recommended to reduce multicollinearity, transform variables, and re-evaluate outliers.

Correlation matrix and Variance Inflation Factor (VIF) test are used to detect multicollinearity. Breusch-Pagan and Jarque-Bera tests were applied for heteroskedasticity and normality of residuals.

```
# Breusch-Pagan test for heteroskedasticity
bptest(multi_model)

##
##  studentized Breusch-Pagan test
##
## data:  multi_model
## BP = 3.9533, df = 3, p-value = 0.2665

# Normality test
shapiro.test(resid(multi_model))

##
##  Shapiro-Wilk normality test
##
## data:  resid(multi_model)
## W = 0.96202, p-value = 0.5849
```

The Breusch–Pagan test yielded a p-value of 0.2665, indicating no significant evidence of heteroskedasticity in the residuals. Therefore, the assumption of constant variance (homoskedasticity) holds.

The Shapiro–Wilk test returned a p-value of 0.5849, suggesting that the residuals are normally distributed. These results support that the model satisfies two key assumptions: homoskedasticity and normality of residuals. However, previous diagnostic plots suggest some deviations, so visual inspection and sample size should still be considered when interpreting these findings.

**Step 5. Visualization and Statistical Outputs**

The following plots were used to better understand the relationships and validate assumptions:

• Scatter plot with regression line for Green Investment vs GDP Growth

• Pairwise correlation plot using ggpairs

• Bar plots comparing variables by country

• Residual plots and autocorrelation functions (ACF)

Examples of R code for visualization:

```
# Linear relationship graph (for simple regression)
ggplot(data_all, aes(x = Green_Investment, y = GDP_Growth, color = Country)) +
  geom_point() +
  geom_smooth(method = "lm") +
  theme_minimal()

## `geom_smooth()` using formula = 'y ~ x'
```



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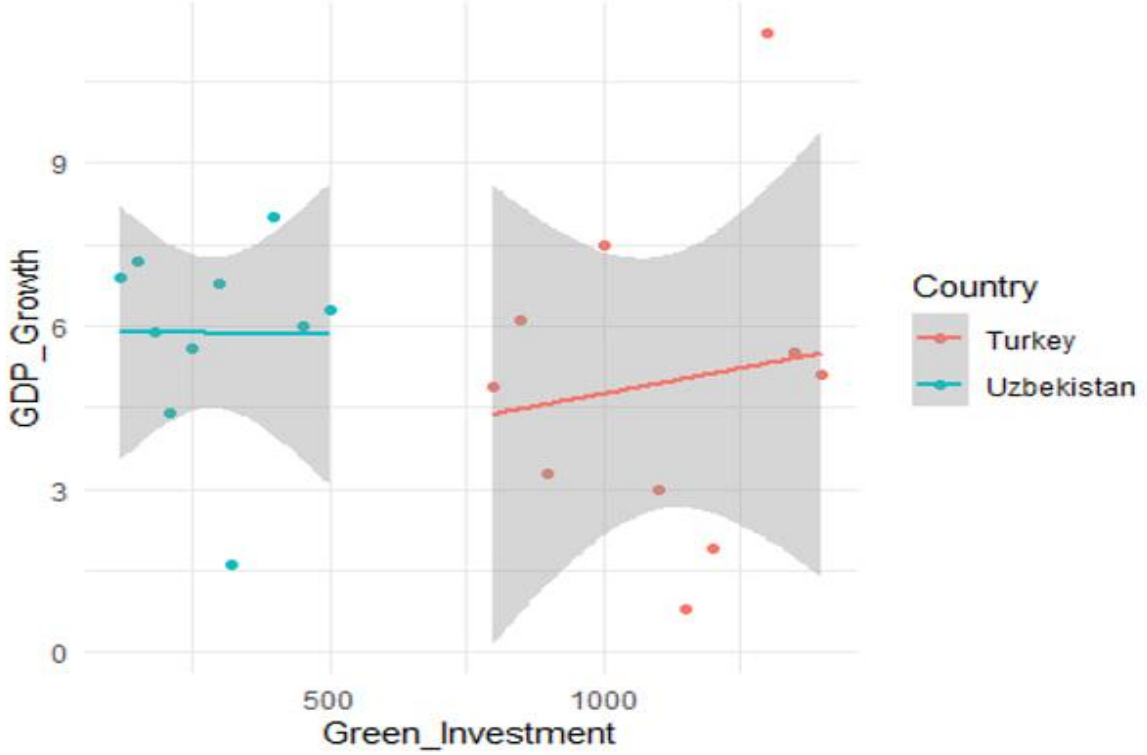


This study evaluated the relationship between green investment and GDP growth in Uzbekistan and Turkey using econometric methods, including simple and multiple regression analysis. The simple linear regression revealed that green investment alone does not have a statistically significant impact on GDP growth. Multiple regression models incorporating additional variables—FDI inflow and renewable energy share—also did not yield significant coefficients, indicating limited explanatory power.

**Step 6. Conclusion**



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```
# To get the results
stargazer::stargazer(multi_model, type = "text")

##
## ================================================
##                          Dependent variable:
##                      ---------------------------
##                              GDP_Growth
## ------------------------------------------------
## Green_Investment                0.009
##                                (0.008)
##
## FDI_inflow                     0.0005
##                                (0.001)
##
## Renewable_Share                -0.908
##                                (0.730)
##
## Constant                       13.984*
##                                (6.629)
##
## ------------------------------------------------
## Observations                     20
## R2                              0.119
## Adjusted R2                     -0.046
## Residual Std. Error        2.526 (df = 16)
## F Statistic              0.722 (df = 3; 16)
## ================================================
## Note:                *p<0.1; **p<0.05; ***p<0.01
```

Multicollinearity diagnostics showed extremely high VIF values, especially for Renewable_Share, suggesting severe interdependence among predictors that compromises model reliability. Although the Breusch–Pagan and Shapiro–Wilk tests confirmed the presence of homoskedasticity and normality, graphical residual diagnostics pointed to issues such as non-linearity, heteroscedasticity, and influential outliers.

In terms of visualization, scatter plots and regression lines indicated weak or inconsistent patterns, while correlation matrices exposed strong correlations among independent variables. Thus, while the statistical assumptions of homoskedasticity and residual normality were formally satisfied, the model suffers from structural weaknesses due to multicollinearity and specification errors.

**Conclusion: Synthesis, Insights, and Policy Recommendations**

**A Synthesis of Comparative Findings: Divergence in Strategy, Convergence in Ambition**

The comparative analysis of green economy-oriented investment policies in Turkey and Uzbekistan reveals two distinct national models navigating the global transition towards sustainability. Despite their profound differences in economic scale, political history, and development stage, both nations have unequivocally identified the green economy as a strategic priority for their future growth and resilience. Their paths, however, diverge significantly, reflecting their unique circumstances and motivations.

**Turkey's** green transition is best characterized as a **reactive, EU-driven adaptation**. As a mature, industrialized economy with deep trade links to Europe, its primary policy driver is the imperative to align with the EU Green Deal and mitigate the economic risks posed by mechanisms like the CBAM. Its policies, such as the Green Deal Action Plan and its ambitious energy efficiency targets, are designed to steer its large, existing industrial and financial sectors toward greater sustainability. This approach leverages a sophisticated institutional framework and a relatively developed capital market. However, its progress is constrained by significant macroeconomic volatility, a strong path dependency on fossil fuels, and critical implementation gaps, particularly in achieving a circular economy.



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**Uzbekistan's** transition represents a model of **proactive, state-led modernization**. Emerging from a state-controlled past, the country has embedded the green economy at the very core of its national development strategy. For Uzbekistan, green growth is not an adaptive measure but a transformative tool to leapfrog inefficient legacy infrastructure, address severe environmental degradation, and attract the large-scale foreign investment needed for its broader market liberalization. This approach is defined by strong top-down political will, the creation of new, specialized institutions, and a deep, symbiotic partnership with international financial institutions that provide capital, technical assistance, and policy credibility. Its primary challenges lie in its extremely low starting point in terms of energy efficiency and recycling, underdeveloped domestic financial markets, and the need to build institutional capacity to manage its rapid transformation effectively.

**Identifying Structural Constraints and Critical Success Factors**

The analysis highlights key constraints and success factors for each country that will determine the ultimate success of their green investment policies.

For **Turkey**, the primary structural constraints are:

- **Macroeconomic Instability:** Persistent high inflation and currency volatility create an unpredictable environment that deters the long-term, stable foreign investment needed for capital-intensive green projects.[49]
- **Fossil Fuel Path Dependency:** A large and politically entrenched coal industry and heavy reliance on imported oil and gas create significant inertia and make the transition away from carbon-intensive energy sources politically and economically challenging.
- **Policy Implementation Gaps:** A notable gap exists between ambitious policy documents, like the Zero Waste Project, and on-the-ground performance, as evidenced by very low recycling rates and the contradictory policy of being a major global waste importer.

Turkey's critical success factors include its strong and diversified industrial base, its skilled workforce, a relatively mature and sophisticated financial sector capable of absorbing complex instruments like green bonds, and the powerful external incentive provided by its trade relationship with the EU.

For **Uzbekistan**, the primary structural constraints are:

- **Legacy Inefficiency:** The Soviet inheritance of an extremely energy- and water-intensive economy presents a massive hurdle, requiring fundamental infrastructure overhaul rather than incremental improvements.
- **Underdeveloped Financial Markets:** The domestic capital market is nascent, and the financial system is dominated by state-owned banks, limiting the availability of private domestic capital and increasing reliance on IFIs and FDI.[99]
- **Institutional Capacity:** While new institutions are being created, they lack the long-standing experience and human capital needed to effectively regulate and manage a complex, rapidly growing green economy.

Uzbekistan's critical success factors are the clear and unwavering political will from the highest levels of government, the "blank slate" opportunity to build modern, green infrastructure without the burden of replacing a deeply entrenched fossil fuel lobby of the same scale as in other countries, and the extensive financial and technical support from a broad coalition of IFIs and development partners who are actively co-shaping its transition.

**Forward-Looking Recommendations for Enhancing Green Investment Policy**

Based on this comparative analysis, the following policy recommendations are proposed to address the identified constraints and leverage the success factors in each country.

**Conclusion**

**For Turkey:**



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1. **Prioritize Macroeconomic Stability:** The most critical enabling condition for attracting long-term green FDI is a stable and predictable macroeconomic environment. Sustaining the current tight monetary and fiscal policies to bring inflation under control is paramount.
2. **Develop a Credible Fossil Fuel Phase-Out Plan:** To lend credibility to its Net-Zero 2053 target, Turkey must move beyond relative emissions reduction goals and formulate a clear, costed, and time-bound roadmap for phasing out coal-fired power plants and reforming environmentally harmful fossil fuel subsidies.[7]
3. **Invest in Circular Economy Infrastructure:** Address the glaring policy incoherence in waste management by making massive public and private investments in modern sorting and recycling infrastructure. This would reduce landfilling, create domestic resources from waste, and justify a more restrictive policy on waste imports.

**For Uzbekistan:**

1. **Deepen and Institutionalize IFI Partnerships:** Continue to leverage IFI support not just for capital, but for building robust, independent regulatory institutions. The long-term goal should be to transition from IFI-led projects to an IFI-supported, but domestically regulated, market.
2. **Focus on Foundational Efficiency Gains:** Given the extreme energy and water inefficiency, prioritize public and private investment in "low-hanging fruit" areas like the modernization of irrigation canals, the retrofitting of public buildings, and industrial energy audits. These investments offer the highest economic and environmental returns in the short term.
3. **Develop the Domestic Green Finance Ecosystem:** While FDI is crucial, long-term sustainability requires a domestic financial market. Policies should focus on building the capacity of local commercial banks in green project appraisal, developing a domestic institutional investor base, and creating a clear regulatory framework for green financial products that extends beyond state-owned entities.

**For Both Countries:**

- **Enhance Cross-Sectoral Coordination:** Green growth is a whole-of-government endeavor. Both nations would benefit from strengthening coordination mechanisms between ministries of economy, finance, energy, and environment to ensure policy coherence.
- **Strengthen MRV Systems:** Robust Monitoring, Reporting, and Verification (MRV) systems are essential for tracking progress, ensuring accountability, and attracting international climate finance.

**Invest in Human Capital:** The green transition requires a skilled workforce. Both countries should invest in education and vocational training programs tailored to the needs of green industries, from renewable energy technicians to sustainable agriculture specialists and circular economy experts.

**References**

[1] E. Yeldan, “Finance-driven speculation versus green industrial policy: Turkey’s conundrum,” Review of Evolutionary Political Economy, 2023.

[2] S. Rayimnazarov and I. Inatullayeva, “Uzbekistan's Strategy for Transition to a ‘Green Economy’,” European Journal of Business Startups and Open Society, 2025.

[3] O. Yuldoshev et al., “The Role of Green Economy in Ensuring Sustainable Economic Growth in Uzbekistan,” Central Asian Journal of Innovations on Tourism Management and Finance, 2025.

[4] “Uzbekistan's Transition to a Green Economy,” Academic Journal Article, 2025.

[5] “The Transition to a Green Economy in Uzbekistan: Opportunities and Challenges,” Academic Journal Article.

[6] “Comparative Analysis of Turkey and Uzbekistan,” Academic Journal Article.



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[7] “Turkey's Green Economic Transformation: Lessons from Qatar's Energy Transition,” ResearchGate, 2024.

[8] “A Comparative Study of Energy Sector's Variability of Countries in the Organization of Turkic States,” ResearchGate, 2024.

[9] “Spatio-Temporal Changes of Crop Water Use Efficiency in Central Asia,” MDPI, 2020.

[10] OECD, “Türkiye Green Deal Action Plan,” 2021.

[11] OECD, “Financing Uzbekistan's Green Transition,” Dec. 2023.

[12] OECD, OECD Economic Surveys: Türkiye 2025, 2025.

[13] OECD, Environmental Performance Reviews: Turkey, 2019.

[14] ESCAP, “Resolution of the President No. PP-4477 of 2019 on the Strategy for the Transition to a Green Economy,” 2019.

[15] UNDP, “Green Growth Strategy Framework for Uzbekistan,” Dec. 2022.

[16] UNDP, “Green Recovery and the Transition to Green Economy in Uzbekistan,” Mar. 2021.

[17] UNDP, “Alternative Financial Mechanisms in Agriculture for Uzbekistan,” 2024.

[18] World Bank, “Green Finance for Climate Action in Turkey,” 2022.

[19] World Bank, “Towards a Greener Economy in Uzbekistan,” 2022.

[20] World Bank, “The World Bank in Uzbekistan: Overview,” 2025.

[21] IRENA, “Global Renewables Outlook & Statistics,” 2020–2024.

[22] International Energy Agency, “Uzbekistan: Energy Policy Review,” 2022.

[23] International Energy Agency, “Renewables in Türkiye,” n.d.

[24] “Factors Influencing Green Growth,” PMC, 2021.

[25] “Comparative Analysis of Green Finance in Poland and Uzbekistan,” Academic Conference Paper.



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