



## Securing sustainable development through green economy in Uzbekistan

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### Abstract

Uzbekistan's impressive economic growth over recent decades has come at a significant environmental cost, making the country one of the most greenhouse gas (GHG) emissions-intensive economies globally. This paper explores Uzbekistan's journey toward sustainable development and green growth, examining the challenges posed by its current economic practices and the initiatives undertaken to address them. The concept of green growth is presented as an evolution of sustainable development, emphasizing economic growth derived from environmental sustainability. Key areas of focus include energy reform, renewable energy deployment, and resilience to climate change. The paper also highlights the support from international development partners and the strategies for a low-carbon future.

**Keywords** sustainable development, green growth, greenhouse gas emissions, climate change, energy reform

### Introduction

Over the last few decades, Uzbekistan's impressive economic growth has primarily been driven by resource extraction, mining, and manufacturing. However, this progress has come with significant environmental costs. The country now ranks as the fifth most greenhouse gas (GHG) emissions-intensive economy globally and the most intensive in Europe and Central Asia. This is due to a fossil-fuel-heavy energy mix, an energy-intensive industrial sector, and low energy efficiency across various sectors, with inefficient housing stock contributing nearly half of all energy-related GHG emissions.

Like other Central Asian nations, Uzbekistan is highly vulnerable to climate change, which threatens its natural resources, agriculture, land, and water productivity, and increases the risk of natural disasters. The country is ranked 96th out of 191 in climate vulnerability (ND-GAIN 2019) and is prone to earthquakes and floods, affecting an average of 1.4 million people and causing nearly \$3 billion in losses annually. A regional study estimates that approximately 70% of developmental challenges in Central Asia are due to



freshwater shortages. According to the World Resources Institute, Uzbekistan is among the 25 countries most exposed to water stress, and climate change is likely to worsen water scarcity further. Severe water shortages and land degradation pose significant threats to agricultural productivity and food security.

Recently, several regions in Uzbekistan, including Tashkent, experienced an unprecedented sand and dust storm—the worst in 150 years of recorded history. President Mirziyoyev highlighted that this storm underscored the increasing negative impacts of environmental threats facing Uzbekistan and underscored the urgent need for a transition to a green economy. Delaying the shift to greener energy production risks locking the country into outdated technologies and investments that are expensive to reverse and may limit access to valuable export markets.

#### **Literature review**

At the beginning of the new millennium, the global momentum towards sustainable development significantly slowed. The practical measures implemented by governments were inadequate to prevent global environmental changes, relegating sustainable development to one of many governmental obligations. In this context, there arose an informal recognition of the need for a "new way" (Satbyul et al., 2014).

In 2005, the concept of green growth emerged and was promoted as a potential approach to implementing a new, low-emission model of sustainable development, particularly for rapidly developing Asian countries (UNESCAP, 2005). Institutions advocating for green growth emphasize that it is not a replacement for sustainable development but a means to achieve it (OECD, 2011; UNEP, 2011; World Bank, 2012).

Like sustainable development, the concept of green growth seeks to show that environmental protection does not have to come at the expense of economic welfare. However, unlike sustainable development, green growth directly addresses the issue of economic growth. Sustainable development often overlooked the compatibility between growth and environmental protection and the reassessment of the primary economic objective, "development." Green growth not only emphasizes this compatibility but also asserts that environmental protection can enhance growth metrics.

Sustainable development is often described as a broad concept encompassing numerous, sometimes poorly defined, objectives. This ambiguity



has led to varied interpretations by different interest groups, ranging from conservative to radical (Jacobs, 1999). In contrast, green growth presents a more focused concept with a clearer meaning, although it may attract a smaller group of supporters and face criticism from some environmental advocates. Green growth can be viewed as an evolution of sustainable development, addressing its shortcomings by concentrating specifically on climate change and economic growth, which have become central to public discourse (Jacobs, 2012).

According to Zervas (2012), there are several distinctions between green growth and sustainable development. Firstly, sustainable development encompasses a wider range of goals, including social, environmental, and economic dimensions. Green growth, however, tends to omit the social component, focusing primarily on environmental and economic aspects. Secondly, as its name suggests, green growth emphasizes economic growth derived from environmental sustainability, rather than growth in a general sense. This can sometimes lead to significant environmental impacts. Furthermore, green growth has emerged as one of the responses to recent economic crises, often paired with other economic or social initiatives.

S. Konstanczak argues that entirely dismissing the concept of sustainable development is unreasonable. Sustainable development remains a logical pathway for the progress of our civilization. This perspective leads to the idea of a new world order that does not aim to halt civilization's progress but rather to steer it towards a "green" culture (Konstanczak, 2014). In November 2010, the G20 Summit in Seoul recognized green growth as an integral component of sustainable development (Barbier, 2011).

### **Results and discussions**

Uzbekistan has accelerated policy reforms toward a market-based system and has opened the country to economic partnerships in the region. Energy reform stands among the highest priorities for the Government of Uzbekistan. Key areas of this reform include enhancing the operational and financial performance of state-owned energy enterprises, removing infrastructure bottlenecks, restructuring the sector to transition to a competitive market, decarbonizing the energy value chain, promoting renewable energy and energy efficiency, engaging the private sector, and improving the institutional and market structure.

In its updated nationally determined contribution (NDC), the Republic of Uzbekistan has increased its commitments to reducing specific greenhouse gas



emissions per unit of GDP by 35% by 2030 from the 2010 levels. The NDC highlights the critical role of structural reforms in enabling long-term strategic changes, with a high priority given to energy efficiency and renewable energy measures. The key initiatives include:

1. Upgrading power generation capacities with the introduction of efficient and low-carbon technologies.
2. Large-scale deployment of renewable energy sources (solar, wind, small and micro-hydro, biogas, etc.).
3. Greater use of energy-efficient technologies in energy-intensive sectors, civil construction, and buildings.
4. Eliminating natural gas leakages and flaring in the oil and gas sector.
5. Reducing losses in transmission and distribution networks.

International development partners such as the World Bank Group (IBRD, IDA, IFC, and MIGA), the European Bank for Reconstruction and Development (EBRD), the Asian Development Bank, and others are supporting reforms and investments in the country's energy sector decarbonization. The World Bank Group, in particular, has supported competitive tendering and procurement for Uzbekistan's first photovoltaic power plant (PPP), integrated power plant (IPP), and grid-scale solar energy project, Nur Navoi Scaling Solar IPP (100 MW), as part of a 1,000 MW assignment. This support aligns with the Government of Uzbekistan's Energy Sector Concept, which calls for the development of about 16 GW of net generation capacity by 2030, including 7 GW from solar power and 5 GW from wind power.

Recently, the World Bank initiated an integrated Energy Sector Decarbonization Pathway Assessment to inform the government's strategy, policies, actions, and investments in clean energy transition and climate targets. These efforts underscore Uzbekistan's commitment to transitioning to a greener, more sustainable energy system while fostering economic growth and regional partnerships.

The Government of Uzbekistan prioritizes an economic growth model focused on sustainable and efficient use of natural resources, low-carbon energy, pollution reduction, and enhanced resilience to disasters and climate change. Several international development partners are supporting Uzbekistan in its 2030 green transition framework and its long-term 2050 decarbonization strategy. The agreed priorities on green growth include:



**Resilience to Natural Disasters and Climate Change:** This involves reducing impacts, protecting the population, and providing recovery and financial assistance to disaster-affected areas, communities, and sectors.

**Sustainable and Effective Use of Natural Resources:** This will be achieved through market reforms and inclusive policies in agriculture and water management, along with stronger private sector engagement.

**Green Industrial and Economic Development:** This includes reducing waste, upgrading enterprises, improving energy efficiency, and curbing carbon emissions.

**Green Investments and Innovations:** Supporting the green transition across various sectors.

**Sustainable and Inclusive Urbanization:** Supporting the people and localities most affected by the green economy transition through skills development, capacity building, and creating green jobs.

The World Bank supports Uzbekistan in elaborating a long-term decarbonization strategy for 2050. In a similar effort, Chile took 1.5 years to develop its strategy, which included extensive multi-stakeholder consultations, workshops, and roundtables to forge the country's climate vision, formulate the strategy, set goals and objectives, and design robust sector-specific targets and indicators. This process gave due consideration to greenhouse gas emission projections, mitigation potential in key economic sectors, and Chile's commitments under the Paris Climate Agreement.

In neighboring Kazakhstan, the coal sector contributes to 50% of carbon emissions, but the social aspects of the transition away from coal are challenging. Reaching carbon neutrality is a complex and long-term process. Recognizing Uzbekistan's rapidly growing energy demand, the World Bank has partnered with the Ministry of Energy, Ministry of Investments and Foreign Trade, and other authorities to design a strategy to decarbonize the country's energy sector. The European Bank for Reconstruction and Development assists in designing a roadmap for zero-carbon power development by 2050. In 2019, Uzbekistan adopted the Law on the Use of Renewable Energy Sources and the Law on Public-Private Partnership, establishing a new legal framework to accelerate clean energy deployment across the country.

Transportation, a major climate and air polluter both in Uzbekistan and globally, has thus far received little attention. A new OECD project funded by



Germany and Switzerland will conduct a feasibility study and propose recommendations for greening Uzbekistan's transport sector.

According to Uzbekistan's first biennial update report under the UN Framework Convention on Climate Change (2021), the agriculture sector is the second-largest carbon emitter, responsible for more than 17% of total emissions or 33 million tonnes of CO<sub>2</sub> equivalent. As Uzbekistan's agriculture sector grows due to domestic demand and exports, greenhouse gas emissions increase. Expanding organic farming and horticulture, installing greenhouses, and introducing energy-efficient pumping and drip irrigation will help restrain agricultural emissions and accelerate the green transition.

## **Conclusion**

Uzbekistan has made significant strides in addressing its environmental challenges through accelerated policy reforms and the adoption of a green growth model. The country's focus on sustainable and efficient use of natural resources, low-carbon energy, and pollution reduction is crucial for its long-term economic and environmental health. By prioritizing energy reform, promoting renewable energy, and improving energy efficiency, Uzbekistan aims to reduce its GHG emissions and enhance its resilience to climate change.

The involvement of international development partners, such as the World Bank, the European Bank for Reconstruction and Development, and the Asian Development Bank, has been instrumental in supporting Uzbekistan's decarbonization efforts. Initiatives like the development of photovoltaic power plants and the adoption of renewable energy laws demonstrate the country's commitment to transitioning to a green economy.

Despite these efforts, challenges remain, particularly in sectors like agriculture and transportation, which contribute significantly to GHG emissions. Addressing these challenges will require continued investment in green technologies, infrastructure, and capacity building. Additionally, ensuring the social and economic inclusion of communities affected by the green transition is vital for its success.

Overall, Uzbekistan's journey towards green growth and sustainable development is a testament to its commitment to environmental stewardship and economic resilience. By leveraging international support and implementing



robust policies, Uzbekistan can pave the way for a sustainable future that benefits both its people and the planet.

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