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UZBEKISTAN'S GREEN TRANSFORMATION: PATHWAYS TO SUSTAINABLE DEVELOPMENT AND REGIONAL LEADERSHIP

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Abstract: This article examines the worldwide shift towards green transformation and its ramifications for emerging economies, specifically highlighting Uzbekistan. The green transition has become a strategic focus as the world acknowledges the limitations of previous development paradigms resulting from environmental degradation and resource depletion. Uzbekistan has embarked on an ambitious voyage toward a green economy in response to ecological challenges and economic modernization requirements. The essay examines the country's current strategies, sectoral potential, investment dynamics and regional environmental cooperation. Uzbekistan has the potential to become a regional leader in green energy if it effectively mobilizes private money, executes governmental changes, and capitalizes on its geographical and natural advantages, despite the immense obstacles it faces.

Key words: green transformation, energy transition, ecological challenges, sustainability, environmental impact, regulation, climate diplomacy.

Аннотация: В данной статье рассматривается глобальный переход к «зеленой» трансформации и его последствия для развивающихся экономик, в частности для Узбекистана. Зеленый переход стал стратегическим направлением, поскольку мир признает ограниченность прежних парадигм развития, вызванных деградацией окружающей среды и истощением ресурсов. Узбекистан начал амбициозное путешествие к «зеленой» экономике в ответ на экологические вызовы и требования экономической модернизации. В эссе рассматриваются текущие стратегии страны, отраслевой потенциал, динамика инвестиций и региональное экологическое сотрудничество. Узбекистан имеет потенциал стать региональным лидером в области «зеленой» энергетики, если он эффективно мобилизует частные средства, проведет государственные преобразования и использует свои географические и природные преимущества, несмотря на огромные препятствия, с которыми он сталкивается.

Ключевые слова: "зеленая" трансформация, энергетический переход, экологические вызовы, устойчивость, воздействие на окружающую среду, регулирование, климатическая дипломатия.

Annotatsiya: Ushbu maqolada "yashil" transformatsiyaga global o'tish va uning rivojlanayotgan iqtisodiyotlarga, xususan O'zbekistonga ta'siri ko'rib chiqiladi. Yashil o'tish strategik yo'nalishga aylandi, chunki dunyo atrof-muhitning buzilishi va resurslarning kamayishi natijasida yuzaga kelgan oldingi rivojlanish paradigmalarining cheklanganligini tan oladi. O'zbekiston ekologik muammolar va iqtisodiy modernizatsiya talablariga javoban "yashil" iqtisodiyotga ulkan sayohatni boshladi. Inshoda mamlakatning joriy strategiyalari, sanoat salohiyati, investitsiyalar dinamikasi va mintaqaviy ekologik hamkorlik ko'rib chiqiladi. Agar u xususiy mablag'larni samarali safarbar qilsa, davlat o'zgarishlarini amalga oshirsa va duch kelayotgan ulkan to'siqlarga qaramay o'zining geografik va tabiiy afzalliklaridan foydalansa, O'zbekiston "yashil" energetika sohasida mintaqaviy yetakchi bo'lish imkoniyatiga ega.

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Kalit sozlar: yashil transformatsiya, energiyaga o'tish, ekologik muammolar, barqarorlik, atrof-muhitga ta'sir, tartibga solish, iqlim diplomatiyasi.

Introduction. The world has experienced a significant awakening in recent decades to the fact that the economic development models of the past, which were driven by fossil energy, linear resource use, and unrestrained industrialization, are not only unsustainable but also perilously out of tune with the limits of our planet. Climate change, ecological degradation, resource shortages, and the rising frequency of natural disasters have spurred world leaders to seek alternative developmental paradigms. In this setting, the notion of a "green transformation" has developed as both a requirement and an opportunity, aiming to balance economic growth with environmental stewardship and long-term sustainability. For the central Asian country of Uzbekistan, this shift comes at a pivotal time.[1] The Soviet industrial model, which prioritized resource extraction and centralized planning, left the country with a challenging environmental legacy. The drying up of the Aral Sea is one of the world's worst ecological catastrophes. Instead of passively consuming global climate discourse, Uzbekistan is now increasingly portraying itself as an active builder of its own green future.

There is more to the global green transition than simply switching from coal to solar energy and planting trees to reduce emissions. It entails a systematic reevaluation of how cultures create, consume, and engage with nature. Globally, significant changes are occurring in energy systems, transportation networks, agricultural methods and industrial design in an attempt to lessen environmental impacts and reach carbon neutrality.[2]

While growing economies like India and Brazil are investigating how green innovation may support both social development and climate objectives, countries like Germany, Sweden, and South Korea have led the way in implementing strong green policies that divorce economic growth from environmental degradation.[3] In this larger global context, where sustainability is increasingly being used as a gauge of national competitiveness and as a requirement for foreign

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[1] **https://theasiatoday.org/topics/energy-sustainability/new-uzbekistan-the-green-path-of-development/ New Uzbekistan: The "Green" Path of Development**

[2]https://maaal.com/2025/02/%D8%A7%D9%84%D8%AA%D8%AD%D9%88%D9%8F%D9%91%D9%84-%D8%A7%D9%84%D8%A3%D8%AE%D8%B6%D8%B1-green-transition-%D9%82%D8%B1%D8%A7%D8%A1%D8%A9-%D9%81%D9%8A-%D8%A2%D9%81%D8%A7%D9%82-%D8%A7/

العملالمستدامة وفرص العالمي الاقتصاد آفاق في قراءة .."Green Transition" الأخضر التحوُّل

[3]https://gisarabi.com/%D8%A7%D9%84%D8%A7%D9%82%D8%AA%D8%B5%D8%A7%D8%AF-%D8%A7%D9%84%D8%A3%D8%AE%D8%B6%D8%B1-%D9%88%D8%A7%D9%84%D8%AA%D9%86%D9%85%D9%8A%D8%A9-%D9%88%D8%AA%D8%AC%D8%A7%D8%B1%D8%A8-%D8%A8%D8%B9%D8%B6-%D8%A7/

كمدخل الأخضر الاقتصاد إلى الانتقال متطلبات بعنوان بحث

investment and collaboration, Uzbekistan's green initiatives must be examined. The government of Uzbekistan has made significant efforts in the last five years to match sustainability goals with national development ambitions. Adopting the Green Economy Strategy for 2019–2030, which outlines a thorough plan for shifting to a growth model that is resource-efficient, socially inclusive, and ecologically sound, is essential to this endeavor.

The goals of this plan are to lower greenhouse gas emissions, increase the capacity of renewable energy sources, improve energy and water efficiency, restore damaged lands, and promote climate-smart agriculture. Equally important is Uzbekistan's climate change strategy. It outlines national goals for climate adaptation and mitigation and reaffirms the nation's commitment to international frameworks like the Paris Agreement. These regulations mark a change from spur-of-the-moment environmental projects to a comprehensive, long-range strategy for sustainability. The energy industry is arguably the most ambitious and visible aspect of Uzbekistan's green development. The nation has historically relied on fossil fuels, especially natural gas, to generate electricity, but it is currently quickly diversifying its energy portfolio with a focus on wind and solar power.

Geographically endowed with a wealth of sunlight and expansive steppes that are ideal for wind farms, Uzbekistan is drawing a lot of foreign investment in renewable energy. Notably, collaborations with Masdar (UAE) and ACWA Power (Saudi Arabia) have resulted in the development of extensive wind and solar projects, several of which are approaching completion or already operating.[4] These initiatives are more than simply clean energy; they are a calculated move to establish Uzbekistan as a possible supplier of green energy in an area that is becoming more aware of environmental effects and energy security.

The nation could produce several times as much renewable energy as it uses domestically, according to government estimates. Future cross-border power commerce is made possible by this, particularly if other nations look to green their systems as well. Under prudent management, Uzbekistan has the potential to emerge as a renewable energy powerhouse in the region, propelling both economic expansion and climate diplomacy. Beyond electricity, Uzbekistan's agricultural and water management systems provide one of its biggest sustainability concerns. With millions of workers and a major export contribution, agriculture continues to be an important part of the national economy. But it also uses the most water, which is a serious issue in a nation already dealing with water scarcity and the long-term effects of upstream glacier melt brought on by climate change.

The government has acknowledged the pressing need to promote drought-resistant agricultural types, modernize irrigation infrastructure, and cut down on water wastage. Drip irrigation technology investments are growing quickly. Extending these technologies to more than a million hectares of arable land is the goal. In addition to increasing agricultural yields and farmer earnings, this will save billions of cubic meters of water annually.

Uzbekistan is firmly adopting climate-smart farming methods. These methods include carbon sequestration, biodiversity preservation, and soil conservation into conventional farming. Food security and the preservation of rural livelihoods—which are particularly vulnerable to climate shocks like droughts, salinization, and land degradation—depend on these shifts. Green goals are also being reflected in the evolution of industrial policy. Uzbekistan is starting to shift its focus

[4] Uzbekistan Country Climate and Development Report

from traditional heavy industry to green value chains and resource-efficient manufacturing. There are programs in place to facilitate the recycling and reuse of materials across industries, encourage cleaner manufacturing techniques, and lower industrial emissions.[5]

Though it is still relatively new in Uzbekistan, the circular economy idea is becoming more popular among businesses and authorities. From recycling textiles to developing sustainable packaging options, new business models are appearing that not only lessen their negative effects on the environment but also generate employment and encourage creativity. These advancements suggest that ecological stability need not be sacrificed for economic expansion in the future.

Though few partners have been as active or significant as the nations of the Gulf Cooperation Council (GCC), Uzbekistan's green initiatives are drawing interest and investment from all around the world. Two important friends in Uzbekistan's shift to renewable energy are the United Arab Emirates and Saudi Arabia.

It is obvious that both parties gain from this collaboration. The alliance between Uzbekistan and the Gulf states is obviously advantageous. The Gulf nations contribute money, state-of-the-art technology and extensive knowledge in building extensive infrastructure. For Gulf investors, Uzbekistan is the logical choice. The nation has favorable investment conditions, unrealized potential for renewable energy, and a strategic location at the intersection of Asia.

Moreover, these collaborations go beyond energy. They include collaborative ventures in industries including banking, logistics, and transportation as well as technology transfer and education. Uzbekistan places itself within a larger network of sustainability-driven economies looking to diversify away from hydrocarbons and embrace businesses suitable for the future by joining Gulf countries that are also going through green reforms. [6]

Uzbekistan's green transition is not without challenges, despite its ambitious objective. Financing is still quite difficult, particularly in industries that demand large initial investments and sustained profits. Even while development banks and international organizations have provided assistance, increasing institutional capacity, risk management, and regulatory openness will be necessary to draw in long-term private investment. To educate a new generation of workers for green occupations in technology, agriculture, and energy, the nation's educational and vocational training institutions must change. The success of every project, regardless of its level of funding, depends critically on having a qualified crew.

Strengthening environmental governance is also necessary. To guarantee that green policies are applied equitably and successfully and that local communities are not left behind, effective monitoring, data openness, and public involvement are crucial. In terms of its national development, Uzbekistan is currently at a turning point. Pursuing a green economy is a daring rethink of how the nation might develop, thrive and contribute to the globe in the twenty-first century, not only a response to climate change.

Uzbekistan is well-positioned to become a regional leader in sustainability because to its innovative policies, wealth of natural resources and expanding network of foreign partners,

[5] https://www.undp.org/eurasia/blog/climate-land-and-security-risks-central-asia

[6] **Morena Skalamera** - Untangling Green Energy Contradictions in Central Asia https://hagueresearch.org/untangling-green-energy-contradictions-in-central-asia/

particularly from the Gulf.[7]Transforming goals into action, pilots into systems, and ambition into long-lasting effect is the true test that lies ahead. If Uzbekistan can overcome this obstacle, it would provide a more resilient and just future for its citizens and serve as a motivating example for other countries negotiating the challenging landscape of green growth.

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