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Priority Directions for the Development of the Green Economy in the Commonwealth of Independent States(CIS) in the Context of Achieving the Sustainable Development Goals(SDGs)

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Abstract. The article examines the key strategic guidelines, statistical indicators, and practical results of the transition of the CIS member states to a green growth model. The author conducts a systemic comparative analysis of national environmental programs and low-carbon strategies of the Commonwealth countries adopted for the periods up to 2026–2030, in direct connection with the global agenda of the UN Sustainable Development Goals (SDGs). The paper identifies and methodically systematizes the main technological, regulatory, and sectoral priorities for various sub-structural groups of the CIS countries (major hydrocarbon exporters and climate-vulnerable states). Particular attention is paid to the instruments of ESG financing, carbon regulation, and harmonization of national taxonomies. Based on the analysis, a set of specific recommendations and practical proposals is proposed to deepen interstate cooperation within the CIS to minimize the technological gap and form unified standards for sustainable development. Additionally, the study highlights the socio-economic challenges of this ecological transformation and offers strategic solutions for establishing long-term regional environmental stability and shared prosperity across member states.

Keywords: green economy, CIS countries, Sustainable Development Goals (SDGs), renewable energy sources (RES), circular economy, ESG transformation, low-carbon development, carbon neutrality, environmental taxonomy.

Introduction

The integration of green economy principles into the national long-term strategies of the Commonwealth of Independent States (CIS) is currently the only option for ensuring macroeconomic stability, national security, and global competitiveness. The CIS geoeconomic space is currently facing dual climate, trade, and economic challenges. On the one hand, global cross-border carbon regulation mechanisms require accelerated decarbonization of export-oriented industries in the major economies of the Commonwealth. On the other hand, the regions of Central Asia and the Caucasus are under increasing pressure from direct climate risks: climate aridity, soil degradation, critical glacier melting, and growing water shortages directly threaten the food and energy security of local states [5; 8].

According to the UN Sustainable Development Goals Report, CIS economies are undergoing a profound institutional and technological transition in key environmental areas, requiring a large-scale relocation of domestic and foreign capital into sustainable infrastructure. The Commonwealth states have developed a new-generation regulatory framework. This includes comprehensive national documents—the Development Strategy of the New Uzbekistan and the Green Economy Development Program in the Kyrgyz Republic until 2029—as well as specialized long-term low-carbon development strategies for the Russian Federation and the Republic of Kazakhstan. The purpose of this article is to provide a comprehensive scientific and theoretical analysis, classification, and critical assessment of priority vectors of "green" development in the CIS in the context of the implementation of the 2030 SDG agenda, as well as to develop recommendations for deepening their integration.

Research Methodology

The theoretical and methodological basis of the work is formed by the conceptual provisions of the theory of sustainable development, green growth and ecological modernization. The information and empirical base of the study was formed by the program and forecast documents of the CIS Executive Committee, national voluntary reviews (NVRs) of countries on the achievement of the SDGs, analytical and statistical materials of the Interstate Statistical Committee of the CIS, the World

Bank, as well as fundamental scientific works of leading economists of the Commonwealth studying the processes of greening of macroeconomic systems [5; 6; 7]. The research utilized methods of comparative, structural-functional and trend analysis, as well as the method of logical-structural modeling.

Research results and discussion

Systematization of national strategies and actual macroeconomic indicators allows us to identify five key priorities for green growth in the CIS region, each of which is organically integrated into the architecture for achieving the global SDGs by 2030:

1. Diversification of fuel and energy complexes and accelerated development of renewable energy sources (SDG 7: Affordable and clean energy, SDG 13: Climate action)

Reformatting national energy balances is a cross-cutting priority for all Commonwealth states, but approaches to its implementation vary depending on the structure of the national economy. As S. M. Nasirdinova notes, overcoming dependence on fossil fuels is not only an environmental but also a critical economic driver of regional development [10].

A group of countries—the largest hydrocarbon exporters (the Russian Federation, Kazakhstan, and Azerbaijan)—are focusing on gradually reducing the share of coal-fired generation and capturing greenhouse gases. Kazakhstan has officially declared a goal of achieving carbon neutrality by 2060. Russia is focusing on developing nuclear energy as a low-carbon option, large-scale hydropower generation, and the creation of pilot clusters of hydrogen technologies and carbon capture and storage (CCS) systems.

A group of climate-vulnerable countries (Uzbekistan, Kyrgyzstan, Tajikistan): Demonstrating high rates of alternative generation implementation. Uzbekistan is implementing a large-scale program to increase the share of renewable energy sources in its overall energy mix to 40% by 2030. Kyrgyzstan and Tajikistan are accelerating the construction of small and medium-sized hydroelectric power plants (SDG 7.2) to overcome domestic winter power shortages [3; 8].

The actual state and target guidelines for the strategic development of the fuel and energy complex in the CIS countries are systematized by the author in Table 1.

Table 1

Indicators of green energy and decarbonization development in key CIS countries

State	Current share of renewable energy sources in the energy balance, %	Target for the share of renewable energy sources by 2030, %	Strategic target year for achieving carbon neutrality	Main technological priority within the fuel and energy complex
Russian Federation 10.0 2060	~3.5 (excluding large hydroelectric power plants)	10,0	2060	Nuclear energy, hydrogen technologies, CCS systems
Republic of Kazakhstan	~5,2	15,0	2060	Reduction in the share of coal, large-scale construction of wind and solar power plants
Republic of Uzbekistan	~10,0	40,0	2050 (target)	Solar energy, modernization of grid infrastructure
Kyrgyz Republic	~90,0 (based on large hydroelectric power plants)	Development of small renewable energy sources	At the development stage	Construction of small and micro hydroelectric power plants, development of solar power plants [3; 10]
Republic of Belarus ~8.1 12.0	~8,1	12,0	At the development stage	Development of bioenergy, integration of nuclear power plant capacities

Source: compiled by the author based on national development strategies of the CIS countries until 2030 and data from the Interstate Statistics Service of the CIS.

2. Transition to circular models and waste management (SDG 12: Responsible consumption and production)

The problem of municipal solid waste (MSW) and industrial waste accumulation is critical for industrialized and urbanized areas of the CIS. Current national plans (for example, the National Circular Economy Strategy of the Republic of Belarus) are shifting from landfill disposal to a closed-loop model through the legislative implementation of the extended producer responsibility (EPR) principle, as well as the construction of high-tech automated waste sorting facilities and eco-technoparks (Russia, Kazakhstan, Belarus).

3. Sustainable, adaptive and organic agriculture (SDG 2: No Hunger, SDG 15: Terrestrial Ecosystem Conservation)

In the agricultural sector of the CIS countries, the key focus has shifted to adapting production to progressive droughts and soil degradation. As A. B. Karbekova emphasizes, the degradation of pastures and arable lands in Central Asia requires urgent institutional regulation and financial support for resource-saving technologies [11]. In the Central Asian subregion, the priority is the implementation of digital precision water distribution systems and drip irrigation (SDG 6.5) as a response to the hydrological crisis of the transboundary Syr Darya and Amu Darya rivers. In the European part of the CIS (Belarus, Moldova), the sector of strictly certified organic agriculture (Organic Agriculture) is actively scaling up for export markets.

4. Decarbonization of the transport framework and the concept of “Smart Cities” (SDG 11: Sustainable Cities and Communities)

Urbanized centers of the Commonwealth countries are the main sources of fine particle and greenhouse gas emissions [9]. Comprehensive greening of transport systems includes the conversion of public transport to electric buses, stimulation of the domestic electric vehicle market through tariff and customs regulation within the EAEU/CIS, and the development of an interstate infrastructure of high-speed electric charging stations (ECS) along key international transport corridors (ITCs).

5. Green Finance Institutions and ESG Transformation (SDG 17: Partnerships for Sustainable Development)

The development of national markets for green, social, and adaptation bonds is the primary investment driver for change. A key achievement of the current stage has been the development and launch of processes to harmonize national green taxonomies. Kazakhstan (through the Astana International Financial Center (AIFC) and Russia have created a developed infrastructure for deploying ESG instruments, attracting sovereign and private financing for climate projects. Statistical parameters for green and sustainable bond issuance are presented in Table 2.

Table 2

Volume and structure of issuance of green and sustainable financing instruments in the CIS countries

Country / Venue	**Green/Sustainable Bond Market Size (Estimate)**	**Key financing sectors**	**Taxonomy standards used**	**Key institutional participants**
Russian Federation	~450 billion rubles.	Transport infrastructure, energy, housing and utilities.	National Taxonomy of the Russian Federation (VEB.RF), ICMA	VEB.RF, Sberbank, Moscow Government.
Republic of Kazakhstan (AIFC),	~$1.2 billion	Construction of renewable energy sources, energy efficiency, eco-transport	Taxonomy of the AIFC, CBI (Climate Bonds Initiative)	EDB, Damu, Samruk-Kazyna
Republic of Uzbekistan	~$850 million	Water conservation, energy efficiency, solar power plants	International standards (ICMA), sovereign ESG bonds	Ministry of Economy and Finance of the Republic of Uzbekistan
Republic of Belarus	~15 billion Belarusian rubles.	Modernization of industrial enterprises, forestry.	Belarus EAEU standards (at the harmonization stage).	Belarusbank, Ministry of Finance of the Republic of Belarus.

Source: compiled by the author based on analytical reports from the Eurasian Development Bank and Expert RA.

Constraints and barriers to integration. Despite the pronounced positive dynamics, a number of systemic limitations hindering "green" transit in the CIS can be identified. I. P. Glazyrina and I. A. Zabelina point to institutional asymmetry and uneven distribution of environmental costs between the countries of the region [5]. The main barriers include technological asymmetry of states, a shortage of long-term "cheap" borrowed capital, and the absence of a single cross-border carbon market, which hinders the mutual recognition of carbon units obtained in various jurisdictions of the Commonwealth [6; 7]. Ch. M. Ergeshova rightly states that sustainable regional development and overcoming institutional barriers are impossible without a thorough modernization of local infrastructure [8].

Recommendations and practical proposals for the development of a green economy in the CIS countries

Based on a comprehensive structural and comparative analysis of the national development strategies of the Commonwealth countries, the author has developed and proposes for implementation a set of practical recommendations and proposals aimed at deepening interstate cooperation and accelerating the achievement of the SDGs by 2030:

Establishment of a Unified Climate Platform and a Common Carbon Market for the CIS. An interstate agreement on the mutual recognition of national systems for the validation and verification of carbon units is needed. A practical proposal: establish a Carbon Regulation Coordination Center under the auspices of the CIS Interstate Environmental Council. This will reduce business costs in cross-border trade and protect exporters from discriminatory tariff barriers imposed by third countries.

Synchronization and mutual recognition of green taxonomies. It is recommended to accelerate the process of harmonizing criteria for classifying projects as "green" or "adaptive." A practical proposal: develop a Unified Model Taxonomy of Sustainable Finance at the CIS Interstate Council for Standardization, Metrology, and Certification, building on the methodological developments of the EAEU and VEB.RF. This will ensure the seamless flow of environmental investments between the exchanges of Moscow, Astana (AIFC), and Tashkent.

Formation of a Commonwealth Green Technology Bank. To overcome sanctions restrictions and reduce dependence on Western equipment, it would be beneficial to pool the scientific potential of countries. A practical proposal: launch an Interstate Technology Consortium (involving institutes from the National Academies of Sciences of Belarus, Russia, Kazakhstan, and Kyrgyzstan) for the joint development and commercialization of technologies in industrial waste disposal, wastewater treatment, and digital precision irrigation control.

Launching regional programs for targeted ESG funding for climate-vulnerable areas. Large supranational development financial institutions (the Eurasian Development Bank (EDB) and the CIS Interstate Bank) are encouraged to diversify their investment portfolios. A practical proposal: introduce a specialized line of subsidized credit lines (with a reduced interest rate of 3-4% per annum in national currencies) for small and medium-sized enterprise projects implementing resource-saving technologies in climate-vulnerable regions (including the Batken and Naryn regions of Kyrgyzstan and the arid Aral Sea region in Uzbekistan and Tajikistan).

Conclusion

The implementation of the green agenda in the CIS countries in the context of achieving the SDGs demonstrates a qualitative shift from declarative, targeted initiatives to systemic structural reforms of national economies. The success of long-term environmental transition in the Commonwealth directly depends on the depth and speed of institutional integration. Priority steps for the medium term should include the creation of a single CIS carbon market, mutual recognition of organic certification systems, unification of national green taxonomies, and the joint development of clean technologies through scientific and industrial partnerships, which will enable the countries of the region to build a sustainable framework for economic sovereignty.

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