

L.S. Shoshayeva *, A.A. Nukusheva 

Karaganda Buketov University, Karaganda, Kazakhstan

(E-mail: keukonf2012@mail.ru, akuka007@mail.ru)

ORCID ID: <https://orcid.org/0000-0003-1019-9562>

ORCID ID: <https://orcid.org/0000-0001-8018-6666>, Scopus Author ID: 57193229324,

Researcher ID WOS: AAK-2173-2021

Kazakhstan's engagement in international climate agreements: legal dimensions and domestic implementation

Majority of states, including the Republic of Kazakhstan, face the need to transform their economic and legal models in response to the growing climate and environmental challenges. The endorsement of key strategic frameworks, the Strategy for Achieving Carbon Neutrality by 2060 and the updated Nationally Determined Contribution (UNDC) under the Paris agreement underscores the importance of legal analysis of climate policy and evaluation of the effectiveness of implemented mechanisms. The purpose of this study is to conduct a comprehensive analysis of national and international legislation in the field of climate change, as well as to examine the positions and materials of leading international organizations, including the Conferences of the Parties (COP) to the UNFCCC and the Climate Ambition Summit. The methodological framework includes systematic, comparative and formal legal methods, as well as political and legal analysis, which made it possible to assess the state of the legislative framework and identify key legal challenges. The study identified the main institutional and regulatory barriers hindering the implementation of the climate agenda: the lack of clear mechanisms for implementing strategies, fragmented legal regulation, weak coordination between government agencies, and the conflict between climate policy and current economic priorities, in particular in the field of hydrocarbon production. It is concluded that it is necessary to improve national legislation and strengthen the institutional foundations of climate governance.

Keywords: climate change, Paris Agreement, updated National Determined Contribution, global response, carbon neutrality, greenhouse gas emissions, sustainable development, climate legislation, international commitment, UN Framework Convention.

Introduction

Global climate change is one of the key threats to the modern world, affecting the environmental stability, economic sustainability and legal systems of states. The international community has responded to these challenges by creating a legal architecture for climate policy, the core of which is the United Nations Framework Convention on Climate Change (1992) [1], the Kyoto Protocol (1997) [2] and the Paris Agreement (2015) [3]. These foundational documents define the legal mechanisms for global cooperation in reducing greenhouse gas emissions, adapting to climate-related risks, and achieving sustainable development.

The Republic of Kazakhstan, as a party to the aforementioned agreements, has declared its commitment to international climate obligations and is implementing relevant policies at the national level through strategic documents and legislative reform. The Nationally Determined Contribution adopted in recent years (hereinafter referred to as the NDC) [4], the Strategy for Achieving Carbon Neutrality by 2060 [5], as well as the updated Environmental Code (2021) [6] reflect the desire to reduce the carbon intensity of the economy, develop renewable energy sources, implement emissions trading systems and adaptation mechanisms. However, practice shows that the availability of policy documents does not always lead to the effective implementation of climate commitments. Challenges, such as the coordination between government agencies, the lack of a single body on renewable energy sources (hereinafter referred to as RES), gaps in the regulation of hydrogen energy and insufficient financial incentives, reduce the effectiveness of the measures undertaken.

The significance of this study stems from Kazakhstan's obligation to meet the international commitments outlined in the Paris Agreement, necessitating a thorough analysis of national legislation to ensure its alignment with international standards. Special emphasis is placed on the legal mechanisms for integrating international norms into national law, alongside evaluating the practical implementation of climate commitments amid ongoing reliance on carbon-intensive industries.

* Corresponding author. E-mail: keukonf2012@mail.ru

Although international climate law and sustainable development have been extensively covered in scholarly literature, there remains a notable lack of comparative studies focused on the legal frameworks for implementing agreements in transition economy countries. Existing work often focuses either on international regulation or on general strategic approaches, without affecting the deeply legal instruments of national implementation. In this context, the present article suggests conducting a comparative legal analysis, in particular, with the experience of the Republic of Korea, which demonstrates effective legislative support for the climate agenda and the development of mechanisms for accountability, monitoring and financing.

The purpose of this study is to analyze the participation of the Republic of Kazakhstan in international climate agreements and to identify the specifics of their implementation in national legislation, taking into account international approaches and the comparative legal context.

Within the framework of achieving this goal, the following tasks are addressed, corresponding to the structure and content of the study:

- to analyze the international climate agreements in which Kazakhstan participates, and to assess the commitments undertaken;
- to explore national legal and strategic measures to implement these commitments, including the development of renewable energy, hydrogen energy, emissions trading and climate finance;
- to conduct a comparative legal analysis with the legislative model of the Republic of Korea, identifying strengths and borrowed practices;
- to summarize the results of the legal analysis and formulate recommendations for improving national climate legislation, taking into account international standards.

The authors' position is based on the approach that successful implementation of international climate agreements is possible only if there is a clear and consistent legal implementation. National law, institutional coordination and financial mechanisms should form sustainable climate policy architecture capable of effectively responding to global and local challenges.

Methods and materials

The methodological basis of this study is a combination of general scientific and specialized legal methods that provide an integrated and interdisciplinary approach to the study of the legal aspects of the Republic of Kazakhstan's participation in international climate agreements and their implementation mechanisms. The work uses a systematic analysis that makes it possible to consider Kazakhstan's climate policy as an integral part of the international legal architecture aimed the goals of sustainable development.

Particular importance in this study is the comparative legal method, which is used to compare legal mechanisms and institutions operating in Kazakhstan and abroad, specifically in the Republic of Korea. This makes it possible to identify similarities and differences in approaches to the implementation of international obligations and identify opportunities for borrowing best practices. Along with this, a formal legal method is used aimed at analyzing the content of regulatory legal acts, strategic documents and official sources regulating the field of climate change. The empirical method is also applied to summarize and interpret evidence, including reports from international organizations, information from state authorities, and analytical research results.

The materials for this research encompass a broad range of sources, including international treaties and agreements, scientific and educational literature, analytical reviews, law enforcement practices, and official documents from the UNFCCC Conferences of the Parties, particularly COP26–COP29, as well as materials from the 2023 Climate Ambition Summit. Reports from the Intergovernmental Panel on Climate Change (IPCC), the United Nations Environment Programme (UNEP), the International Energy Agency (IEA), the Organization for Economic Cooperation and Development (OECD), and reports from relevant ministries and agencies of Kazakhstan served as the empirical foundation.

The legal framework for this study is grounded in international climate change treaties, primarily the United Nations Framework Convention on Climate Change (1992) and the Paris Agreement (2015), alongside regulatory legal acts from Kazakhstan. Key documents include the Decree of the President of Kazakhstan, dated February 2, 2023, No. 121, "On Approval of the Strategy for Achieving Carbon Neutrality by 2060", and the Resolution of the Government of Kazakhstan, dated April 19, 2023, No. 313, "On Approval of the Updated National Contribution of Kazakhstan to the Global Response to Climate Change". The incorporation of these sources ensures the analysis is reliable, objective, and comprehensive.

Results

Under contemporary conditions, most states attach special importance to climate protection issues, implementing legal and institutional measures aimed at preventing the negative effects of climate change. The international foundation in this area is the United Nations Framework Convention on Climate Change of 1992 (hereinafter referred to as the UNFCCC), which established the obligations of states to reduce greenhouse gas emissions and adapt to climate change [1].

The adoption of the Convention has become an important stage in the international recognition of the threat of climate change as a global issue requiring legal regulation. One of the significant provisions of the Convention is the precautionary principle, according to which states are obliged to take measures to prevent negative impacts on the climate system, despite the presence of scientific uncertainty in risk assessment (Article 3) [1]. The goal of the UNFCCC is to stabilize greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic influence on the climate system.

The Republic of Kazakhstan joined the UNFCCC in 1995 and assumed international obligations, including the development of national strategies for adaptation to climate change, the inventory of emissions and the formation of an appropriate legal framework. Kazakhstan annually collects, systematizes and reports data on emissions and uptake of greenhouse gases, including carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), in accordance with the requirements of the Convention [7].

Kazakhstan has established a Monitoring, Reporting and Verification (MRV) system in accordance with its ratified international commitments, which enables accurate tracking of greenhouse gas emissions and promotes transparency in the implementation of climate policy. Furthermore, the country has adopted a National Climate Change Action Plan that outlines legal and institutional measures focused on enhancing energy efficiency, promoting the use of renewable energy sources, and addressing energy inefficiencies within the industrial and construction sectors [8].

Additionally, Kazakhstan regularly prepares reports for the UNFCCC Secretariat, which reflect the dynamics of emissions, the measures implemented to reduce them and the results achieved. This indicates progress in the formation of mechanisms for the internal legal implementation of international climate agreements.

To fulfill its international climate policy commitments, Kazakhstan engages in active collaboration with major international organizations, such as the Global Environment Facility (GEF), the United Nations Development Programme (UNDP), and other specialized agencies. Through this cooperation, various projects are being implemented that focus on reducing the impacts of climate change and strengthening the country's capacity for adaptation [9].

Kazakhstan stands out as the first country in Central Asia to implement a greenhouse gas emissions trading system, a key market mechanism outlined by the UNFCCC, which enables the achievement of emission reduction targets through flexible economic instruments.

The adoption of the Paris Agreement on December 12, 2015, which came into force on November 4, 2016, marked a significant milestone in global climate governance. Kazakhstan became a party to the Paris Agreement in 2016, pledging to cut greenhouse gas emissions by 15 % by 2030 compared to 1990 levels, with the potential to increase this target to 25 % contingent on receiving international support.

The Paris Agreement, comprising 29 articles and a preamble, serves as an international treaty aimed at advancing the objectives of the UNFCCC. In contrast to the Kyoto Protocol, which primarily imposed binding quantitative targets on developed countries, the Paris Agreement broadened the concept of climate responsibility to include all nations, regardless of their socio-economic status.

The agreement focuses on transparency, monitoring the implementation of national commitments, financing climate initiatives and adaptation measures. The central feature of the agreement is to grant states the right to independently formulate an emission reduction strategy, taking into account national priorities, which is enshrined in the mechanism for determining the national contribution (NDC).

The ratification of the Paris Agreement contributed to the transformation of Kazakhstan's climate policy and the intensification of norm-setting activities. In line with the international commitments made, a modern regulatory framework has been established, including the Environmental Code of the Republic of Kazakhstan, adopted on January 2, 2021, the approval of the "Strategy for Achieving Carbon Neutrality by 2060" in 2023, and an updated National Policy Framework that reflects Kazakhstan's obligations to implement a long-term climate policy.

Kazakhstan presented its first Nationally Determined Contribution (NDC) in 2015, outlining a long-term strategy to reduce greenhouse gas emissions and adapt to climate change impacts. This document became a key part of the Paris Agreement implementation mechanisms and includes both quantitative targets and measures for their achievement. The NDC is subject to regular review every five years and includes emission reduction indicators, legal and economic instruments, as well as climate finance components [10].

The execution of the NDC in Kazakhstan involves translating international climate commitments into national legal, institutional, and managerial frameworks. The adopted strategic directions are incorporated into legislative acts, government programs, and investment plans. The presentation of the initial NDC in 2015, followed by its update in 2023, highlights Kazakhstan's commitment to fulfilling its international obligations and reinforces its intent for global cooperation in sustainable development [10].

The NDC also acts as a central strategic document defining the obligations of the Republic of Kazakhstan under the Paris Agreement. It sets quantitative targets for reducing greenhouse gas emissions and forms a systematic approach to the implementation of climate policy at the national level.

Kazakhstan's NDC contains two levels of climate commitments:

1. The absolute goal is to reduce emissions by 15 % by 2030 from 1990 levels, regardless of external factors;
2. The conditional goal is to reduce emissions by up to 25 %, subject to the provision of international financial and technological support, including the transfer of advanced low-carbon technologies.

The execution of the NDC provisions is supported by a combination of legal, economic, and institutional mechanisms:

- Decarbonizing the energy sector, which involves increasing the share of renewable energy sources (RES) and adopting energy-efficient technologies in industries and construction;
- Advancing the emissions trading system (ETS), including refining the quota allocation process and enhancing MRV (Monitoring, Reporting, and Verification) mechanisms;
- Encouraging businesses to adopt "green" technologies through tax and financial incentives, such as subsidies, benefits, and government support programs [10].

Kazakhstan is developing, creating sustainable climate finance mechanisms to achieve these goals. Priority areas include the creation of a National Climate Finance Fund, the mobilization of domestic resources, as well as attracting international investments, credit lines and grants from the Global Environment Facility, the World Bank, UNDP and other international institutions [11].

The NDC also provides for the implementation of a system for monitoring the fulfillment of climate commitments in order to ensure transparency and compliance with international standards. Main mechanisms include:

- Performing yearly evaluations of progress, utilizing data from governmental oversight and corporate disclosures;
- Revising strategic plans every five years to reflect evolving global climate conditions and technological advancements.

As such, the Nationally Determined Contribution (NDC) functions as a dynamic and responsive tool within Kazakhstan's climate policy framework. Its successful execution necessitates ongoing refinement of domestic legal frameworks, enhanced efficiency of market-based emission control measures, and expanded international collaboration in areas, such as green finance, technological innovation, and cross-border knowledge sharing.

Kazakhstan's Carbon Neutrality Strategy through 2060 represents a comprehensive, long-term policy initiative that aligns with international climate developments, the nation's global commitments, and the principles of sustainable development. The main purpose of the document is to transform the national economy towards decarbonization, reducing dependence on fossil energy sources and increasing its environmental sustainability [5].

Kazakhstan is guided by the following principles of Strategy implementation: purposefulness, unity and integrity; feasibility, fairness of transition; closed-loop economy; phasing; openness and interaction with society; rationality (balance). All actions should be based on a set of these principles and contribute to achieving carbon neutrality goals by 2060 [12].

A central focus of the Strategy's implementation is the diversification of the national economy, which entails a gradual reduction in reliance on the hydrocarbon sector and the promotion of innovative, resource-efficient, and competitive industries. The Strategy emphasizes the attraction of "green" investments, the expansion of renewable energy use, and the encouragement of energy-efficient technologies in both industrial

production and the construction sector. Collectively, these initiatives aim to establish Kazakhstan as a country committed to environmental responsibility and sustainable economic development.

According to the provisions of the Strategy, Kazakhstan has confirmed its unconditional commitment to reduce greenhouse gas emissions by 15 % by 2030 compared to 1990 levels, regardless of international support. At the same time, a conditional goal was set to reduce emissions by 25 % with external financing, technological assistance and access to innovative “green” technologies [5].

The increase in the concentration of greenhouse gases, such as CO₂, CH₄ and N₂O, are recognized as one of the main causes of global climate change. Kazakhstan, being a country with a high level of carbon intensity of the economy, is facing a number of structural challenges: a significant proportion of its industrial and energy complex still relies on fossil fuels, primarily coal. In response to these challenges, the state is forming a comprehensive emissions management system, including the development of a regulatory framework, the expansion of the quota trading system, and the introduction of economic incentives for the transition to a low-carbon development model [13].

An analysis of national reports shows that the structure of greenhouse gas emissions (GHG) in Kazakhstan is dominated by the following sectors:

- Energy (~80 %) — with the predominance of coal technologies in energy and industry;
- Industrial production (10–12 %) — primarily metallurgy, cement production and petrochemistry;
- Agriculture (5–7 %) — mainly methane emissions from livestock;
- Waste management (2–3 %) — emissions from municipal solid waste landfills and dumps [14].

In 1990, the total amount of greenhouse gas emissions in the country amounted to about 350 million tons of CO₂ equivalent, having decreased to about 280 million tons by 2015. However, in recent years, there has been a tendency to increase emissions, which is associated with the expansion of industrial production and increased energy consumption, especially in the context of industrialization and urbanization [15].

Thus, despite the adoption of a number of policy documents and measures, the problem of reducing GHG emissions remains acute. The need to further improve legislation, strengthen coordination between sectors and attract additional financial and technological resources remains an urgent task of the state climate policy.

A major milestone in shaping Kazakhstan’s climate policy was the adoption of the new Environmental Code in 2021. This legislation was formulated with regard to the recommendations of OECD member states and the regulatory approaches of the European Union. The Code has played a pivotal role in reforming the country’s environmental legal framework and promoting sustainable development amid the challenges posed by climate change.

One of the conceptual innovations was the regulatory consolidation of state regulation in the field of adaptation to climate change. In accordance with the Article 313 of the Environmental Code, water, agriculture and forestry, as well as civil protection, are identified as priority areas of adaptation policy. Thus, adaptation to climate change has received a clear legal expression as an independent direction of the state environmental policy [6].

An important element of the new Code is also the improvement of the emissions trading system aimed at achieving the goals outlined in the UDC. The updated regulations on the functioning of the national quota trading system consolidate market mechanisms for reducing emissions and allow for flexibility in implementing Kazakhstan’s climate commitments.

Along with these provisions, the Environmental Code includes a number of key legal instruments that contribute to the effective implementation of climate policy. These include:

1. Tightening of environmental requirements for industrial enterprises, including the mandatory introduction of the best available technologies to reduce pollutant emissions and encourage the transition to more environmentally friendly production processes.

2. Development of the national Emissions Trading System (ETS), which provides for clarifying the rules for trading quotas, strengthening the requirements for the monitoring, reporting and verification system (MRV), as well as expanding the list of regulated sectors of the economy.

3. The implementation of the “polluter pays” principle, which is expressed in an increase in the rates of environmental payments and penalties for enterprises with high emissions, while the proceeds is used to finance environmental and climate initiatives.

4. Integrated management of natural resources, including the development of legal strategies for the conservation of biodiversity, protection of ecosystems and improvement of regulation in the field of water use in the context of climate change.

5. Government support for “green” initiatives aimed at stimulating investments in renewable energy, sustainable transport and the development of “green” financing mechanisms [6].

The implementation of these mechanisms is aimed at bringing national legislation closer to international climate standards, reducing environmental risks and fulfilling obligations under the Paris Agreement.

In the context of climate adaptation policy, special attention is paid to water resources management, which reflects the current challenges associated with increasing water scarcity. Kazakhstan is one of the countries with low availability of fresh water, and climatic changes (including droughts, changes in precipitation and melting glaciers) only exacerbate existing problems.

In this regard, the adoption of the new Water Code of the Republic of Kazakhstan dated by April 9, 2025 No.178-VIII (but it has not been enacted yet), in which an entire chapter is devoted to the adaptation of the water sector of the economy to climate change, is of particular importance [16]. This regulatory act was developed on behalf of the President of the Republic of Kazakhstan, announced at an expanded government meeting on February 8, 2022, and adopted by the Mazhilis on March 5, 2025. The law is aimed at prioritizing the protection of water resources, introducing the principle of water conservation in all sectors of the economy, as well as developing an all-encompassing and integrated approach to water resources management. Among the key principles of the code are the recognition of water as the basis of vital activity, the economic value of water resources, the integrated use of groundwater and surface waters, rational water conservation and public engagement. A special emphasis is placed on adaptation measures to climate change: among other things, the code provides algorithms for government agencies to prevent the harmful effects of floods and droughts. This highlights the institutionalization of climate adaptation as an integral part of Kazakhstan's water policy [17].

The measures taken by Kazakhstan, including the adoption of a new Water Code, reflect the development of a comprehensive state policy on climate change adaptation. The integrated approach, which emphasizes sustainable water use, the prevention of natural risks, and public involvement, highlights the country's commitment not only to mitigate the impacts of climate change but also to embrace the principles of environmental sustainability. This approach signals Kazakhstan's active integration of climate considerations into its strategic planning and regulatory frameworks, which is particularly vital given the challenges posed by limited water resources and increasing climate risks.

The Strategy for Achieving Carbon Neutrality includes adaptation mechanisms in water resource management, such as the modernization of irrigation systems, reduction of water losses, and improvement of water use efficiency in the context of climate change.

In the broader context of the global energy transition, the development of renewable energy sources plays a crucial role as a key tool for reducing greenhouse gas emissions. As a signatory to the Paris Agreement, Kazakhstan has committed to increasing the share of renewable energy sources in its energy mix to 50 % by 2050 [18]. Legal and institutional frameworks are being developed to attract investment in green energy, strengthen the regulatory environment, and establish mechanisms to support and subsidize renewable energy projects to achieve this goal.

The sustainable development of renewable energy requires the modernization of the energy system, including the regulatory consolidation of the obligation of energy supply organizations to ensure priority energy intake from renewable energy sources, the development of storage systems, the introduction of smart grids, as well as the adaptation of dispatching mechanisms to seasonal and weather fluctuations [19].

A particularly intriguing example for comparative legal analysis in climate legislation is the Republic of Korea. In recent years, the country has been actively developing a legal framework for sustainable development, enacting laws focused on emission reduction, the promotion of green energy, and ensuring climate adaptation.

The Act on the Allocation and Trading of Greenhouse Gas Emission Permits, which was adopted in 2012 and came into force in 2015, was a significant structural move. The system covers the largest industrial and energy companies and is a mandatory form of quota trading with a gradual tightening of limits. The law establishes the legal obligation of companies, whose emissions exceed a certain threshold to acquire emission permits, thereby stimulating a reduction in the carbon intensity of production [20].

The next stage was the adoption of the Law on Achieving Carbon Neutrality and Green Growth in 2021 [21]. It has set a legally binding goal to achieve zero emissions by 2050, and also provides for a 40 % reduction in emissions by 2030 compared to 2018 levels. However, the law lacked interim targets for the period 2031–2049, which caused criticism from the public and the scientific community [22].

In 2020, a group of young citizens appealed to the Constitutional Court of the Republic of Korea, arguing that the lack of interim obligations violated their constitutional rights. In August 2024, the court ruled that this regulatory gap was contrary to fundamental rights, especially for future generations. The state was ordered to amend the law by February 2026 in order to include interim goals and specific mechanisms for achieving them [23].

South Korea actively uses climate finance and innovation support tools, including tax incentives, green bonds, public-private partnership mechanisms, and subsidies for renewable energy. There is a special Ministry of Environment and Climate Change in the country that coordinates the implementation of climate policy, as well as a system of mandatory climate reporting and assessment of projects on emissions [24].

The Republic of Korea plays a significant role in the international arena, acting as an organizer and mediator within the framework of the Global Green Climate Fund (GCF), based in Songdo. Korea also supports projects to reduce short-lived pollutants and actively participates in international scientific and environmental initiatives.

It is significant that both Kazakhstan and South Korea are striving to strengthen climate adaptation and decarbonization of the economy, which makes their legal experience mutually interesting and relevant to the global context.

A comparative analysis of the climate policy of the Republic of Kazakhstan and the Republic of Korea reveals significant differences in approaches to legal regulation in the field of climate protection and achieving carbon neutrality.

In the Republic of Kazakhstan, climate policy is mainly formed through the provisions of the Environmental Code (2021), strategic documents (including the Carbon Neutrality Strategy by 2060) and international commitments set out in a Nationally Determined Contribution (NDC). In contrast, the Republic of Korea has developed and adopted a special framework law on achieving carbon neutrality and green growth (2021), which is legally binding and sets specific targets for reducing emissions by 40 % by 2030 compared to 2018 levels, as well as achieving full carbon neutrality by 2050.

Emissions trading systems are present in both countries. In Kazakhstan, the national Emissions Trading System (ETS) has been implemented since 2013, while in South Korea the system began operating in 2015 and covers a wider range of subjects, including the largest industrial companies. At the same time, the Korean system relies on obligations supported by penalty mechanisms, while in Kazakhstan the system continues to evolve and requires additional regulatory consolidation.

Some particular interest is the different levels of institutional and judicial control. In Kazakhstan, issues of climate responsibility do not have direct constitutional protection, and are not fixed in the form of citizens' rights. In contrast, in South Korea, in 2024, the Constitutional Court recognized the absence of interim climate targets (for the period 2031–2049) as a violation of the constitutional rights of future generations. This decision obliges the country's legislative bodies to make appropriate amendments and ensure clearer legal regulation in the long term.

From the point of view of financial mechanisms, Kazakhstan is at the stage of forming a national climate finance fund and attracting international investments. The Republic of Korea, on the other hand, has established a comprehensive support system that includes tax incentives, government subsidies, green bonds, and coordination with the Global Green Climate Fund (GCF), which is headquartered in the country.

In this way, the Republic of Korea showcases a more advanced level of legal systematization and the detailed structuring of its climate policy, with active involvement from the judiciary in its development and extensive use of financial and economic tools. At the same time, Kazakhstan's experience reflects an important process of adapting international norms within the framework of national legislation and can be supplemented and strengthened by integrating provisions on liability, judicial protection and a long-term climate strategy into a separate framework law.

The key international event of 2024 was the 29th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP29), held in November in Baku (Azerbaijan). The central theme of the event was climate finance and support for developing countries in the decarbonization process. According to the results of COP29, an agreement was reached on a threefold increase in climate finance, including through the creation of a new financial mechanism for vulnerable states [25].

One of the most important decisions was to set a target of mobilizing at least 300 billion US dollars annually by 2035 to support climate initiatives in developing countries. Due to the focus on financial instruments, the conference was informally called "Finance COP". The decisions taken are aimed at facilitating the

transition to a low-carbon economy, increasing climate resilience and compensating for losses from climate disasters.

Adaptation, emission reduction, and compensation for losses and damages were also on the agenda of COP29. Special attention was paid to:

- strategies to protect infrastructure, the agricultural sector and natural ecosystems;
- ensuring a fair transition to renewable energy;
- a mechanism for compensation to the countries most affected by climate risks.

Scientific reports presented at the conference emphasized the urgency of taking coordinated measures aimed at preventing irreversible climate change. There was a warning that delay in the implementation of the Paris Agreement could lead to severe environmental, social and economic consequences [26].

Therefore, the conducted legal analysis of the Republic of Kazakhstan's participation in international climate agreements and the mechanisms of their national implementation allows us to identify the main directions of legislative transformation in the context of global climate challenges. Kazakhstan demonstrates consistent adaptation of international obligations to the national context by implementing comprehensive legal, institutional and financial mechanisms aimed at reducing emissions and increasing resilience to climate risks.

The results obtained provide a basis for further discussion of the pressing issues of implementing climate commitments and identifying areas for improving legal policy in the field of climate change.

Discussion

The accession of the Republic of Kazakhstan to the UN Framework Convention on Climate Change has become an important step towards integrating the international climate agenda into the national legal and strategic system. However, the results of the analysis show that fulfilling the obligations under the UNFCCC and the Paris Agreement requires an integrated, cross-sectoral approach, including economic modernization, institutional strengthening and sustainable international partnership.

The Strategy for Achieving Carbon Neutrality by 2060, adopted in 2023, covers key areas of decarbonization, including energy sector reform, the development of sustainable transport, the introduction of climate technologies, adaptation to climate change and the formation of a green financing system. These directions are consistent with global trends, which confirm the relevance of the model chosen by Kazakhstan. However, compared to similar strategies, such as South Korea, where the goals and milestones are more detailed in the national law, the Kazakhstani approach is still more based on policy and strategic documents rather than strict legal obligations.

One of the positive factors is the active implementation of climate projects with the support of international financial institutions. Between 2023 and 2025, Kazakhstan has received significant financial support for energy conservation, the development of "green" infrastructure, and sustainable economic growth, including 6 million euros from the Climate Action Enhancement Fund (UNDP), 600 million dollars from the World Bank, and 3 million dollars from the Asian Development Bank [27]. This allows us to conclude that there is a high degree of trust on the part of global partners and confirms Kazakhstan's commitment to the climate agenda.

However, the successful implementation of climate strategies requires a more systematic approach. As Nicholas Stern emphasized in his fundamental study "Stern Review on the Economics of Climate Change", delay in measures to reduce emissions will lead to economic losses many times higher than the costs of preventing climate change [28; 128]. In light of this, accelerating the pace of reforms in the energy sector and industry is becoming a priority for Kazakhstan.

Modern authors also highlight the importance of internal institutional stability. For example, in the work "Sustainability and the Measurement of Wealth: Further Reflections", it is noted that in emerging economies, policy documents are often not supported by sufficient legal enforcement mechanisms [29]. This conclusion is also applicable to Kazakhstan, where, despite the existence of strategies, challenges remain in terms of monitoring, coordination and responsibility.

A significant emphasis in modern climate science is placed on issues of climate rights and justice. In the work "Citizen Preferences for Climate Policy Implementation: The Role of Multistakeholder Partnerships", raised the issue of citizens' involvement in the implementation of climate policy and the recognition of their rights to climate security by their subjects [30]. In Kazakhstan, this concept can be applied within the framework of expanding public participation mechanisms and increasing transparency. Finally, the analysis of the climate legislation of the Republic of Korea confirms that clear legal consolidation of goals, judicial control

and institutional guarantees are necessary conditions for an effective climate policy. The decision of the Constitutional Court of Korea of 2024 in the case of violation of the climate rights of future generations can be considered as an example of the inclusion of climate justice in the mechanism of legal protection. This experience can be useful to Kazakhstan in the further development of environmental and constitutional norms.

One of the key structural problems of implementing Kazakhstan's climate policy is its high dependence on the hydrocarbon sector. As one of the largest oil and gas producers in the region, Kazakhstan faces a contradiction between the need to reduce emissions and the sustainability of a budget system heavily dependent on hydrocarbon exports. This contradiction is especially acute in the context of the global energy transition, where traditional energy models are losing economic stability. As Fatih Birol, the Executive Director of the International Energy Agency (IEA), notes, "Oil and gas-oriented countries must act proactively, otherwise they risk falling behind in global transformation" [31].

An additional challenge is the insufficient harmonization of Kazakhstan's climate legislation with the provisions of the UNFCCC and the Paris Agreement. Despite formal compliance, a number of regulations lack specific mechanisms for implementing obligations, which reduces the law enforcement potential of legislation. As noted in the work "Green Governance: Ecological Survival, Human Rights, and the Law of the Commons", it necessitates not just declarations but also practical enforcement mechanisms, which include a monitoring system, sanctions, and feedback processes [32].

The analysis allows us to identify a number of structural and regulatory barriers:

- significant reliance on coal-based power generation (over 70 % of electricity is produced through coal combustion);
- inadequate economic incentives for the private sector (absence of a flexible system of tax benefits and subsidies);
- limited integration of the national emissions trading system with global carbon markets;
- the necessity for international funding to support large-scale projects in carbon capture and storage (CCS) and renewable energy.

At the same time, it is worth noting that Kazakhstan has made significant progress in creating a regulatory framework for the development of renewable energy sources. As a part of the implementation of the obligations under the Paris Agreement, auction mechanisms for the distribution of projects were introduced, tariff models were developed, tax and investment incentives are in place. Nevertheless, achieving the strategic goal of 50 % of renewable energy sources in the energy mix by 2050 requires solving a number of systemic legal problems.

Firstly, there is a lack of institutional coordination. Currently, the functions in the field of renewable energy development are distributed between the Ministry of Energy of the Republic of Kazakhstan, the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan, as well as other bodies, which makes it difficult to develop a unified climate policy. Modern scientific literature emphasizes that institutional fragmentation leads to a decrease in the effectiveness of climate strategies and hinders rapid decision-making [33].

The solution may be to create a single coordination center on climate and renewable energy, ensuring interaction between ministries, the private sector and international organizations.

Secondly, the energy grid infrastructure remains a limiting factor. Insufficient network capacity and lack of energy storage make it difficult to integrate solar and wind farms. In this regard, it is necessary to improve legislation regarding the modernization of networks and the regulation of dispatching, as well as the introduction of intelligent energy systems (smart grids). These measures are justified in works that emphasize the role of decentralized and adaptive networks in the transition to 100 % renewable energy [34].

Thus, along with the achievements, Kazakhstan will have to solve a set of interrelated problems, which are regulatory, institutional, technological and financial, without which the fulfillment of climate commitments will be primarily declarative. The development of hydrogen energy, considered as a key component of the energy balance of the future, is a promising direction for the climate transformation of the economy of Kazakhstan. Although hydrogen holds significant potential as a source of "clean" energy, the current legislation of the Republic of Kazakhstan lacks specific regulations addressing the production, transportation, storage, and export of "green" hydrogen. This creates regulatory uncertainty, reduces the attractiveness of the industry to investors, and slows down integration into international hydrogen markets.

The introduction of the comprehensive law "On Hydrogen Energy", as well as the adaptation of the regulatory framework to the standards of the European Union, Japan and South Korea will allow Kazakhstan

to take a competitive position in the global market of low-carbon technologies. The lack of specialized regulation in countries with high renewable energy potential is a critical barrier to attracting investment and technology transfer.

Limited financial incentives remain a significant obstacle. Current tax incentives and subsidies do not provide adequate support for large-scale projects, especially in the early stages of their implementation. To overcome this barrier, new mechanisms are needed: the expansion of public-private partnerships, the launch of “green bonds”, as well as participation in international climate funds, including the Climate Investment Funds and the Green Climate Fund. These measures comply with the recommendations of the OECD and the World Bank Group outlined in the analytical report “Financing Clean Energy Transitions in Emerging and Developing Economies” [35].

Creating conditions for the sustainable development of renewable energy requires an integrated approach. First, institutional coordination needs to be strengthened: the functions of regulating renewable energy in Kazakhstan are distributed among several ministries, which makes it difficult to make unified strategic decisions. International experience (for example, Germany, South Korea) demonstrates that the creation of a specialized state agency on renewable energy issues makes it possible to increase policy effectiveness and improve dialogue with investors.

Second, the energy grid infrastructure requires modernization: the network capacity is limited, and the lack of energy storage makes it difficult to balance the unstable generation of solar and wind farms. The development of smart grids, the introduction of flexible tariffs and the creation of technical conditions for connecting new renewable energy facilities are priorities. These measures are confirmed by the conclusions of Mark Jacobson in the monograph “100 % Clean, Renewable Energy and Storage for Everything”, which emphasizes the need to integrate network solutions into the climate strategy [36; 89].

Finally, an additional challenge remains dependence on the import of renewable energy equipment. The lack of localization of production increases the cost of project implementation and reduces the potential for the development of the domestic “green” market. Supporting national production of renewable energy components will not only reduce costs, but also create additional jobs, increasing the social sustainability of the energy transition.

Therefore, despite the existence of universal international instruments of climate regulation, it is the level of development of national legislation and the effectiveness of legal mechanisms that determine Kazakhstan's readiness to fulfill its climate obligations. The analysis showed that in the context of the energy transition, issues of institutional coordination, the development of a regulatory framework for new technologies (including hydrogen energy), as well as the creation of sustainable financial incentives are of particular importance. The scientific concept underlying this research is based on the theory of sustainable development and the principle of climate justice, according to which long-term environmental safety can be achieved only with a balance between international obligations and national interests.

Conclusion

The analysis of the climate policy of the Republic of Kazakhstan testifies to the consistent efforts of the state to integrate international obligations into the sphere of national legal regulation and strategic planning. The Strategy for Achieving Carbon Neutrality by 2060, adopted in 2023, outlines key areas of decarbonization: energy transformation, the development of low-carbon transport, adaptation to climate change, and the formation of a “green” financing system. However, achieving these goals faces a number of serious barriers, including institutional inconsistencies, regulatory gaps, and limited financial resources.

The main problems of Kazakhstan's climate policy include the continued dependence of the economy on the hydrocarbon sector, a high share of coal generation in the energy mix, insufficient flexibility of the economic incentive system and weak legal regulation of promising areas such as hydrogen energy. In addition, the current model of institutional governance in the field of renewable energy is characterized by fragmentation of powers, the absence of a single coordinating body and limited integration into international carbon markets.

In order to successfully implement the commitments made under the Paris Agreement, Kazakhstan needs to adopt an integrated approach that includes the following priority measures:

1. Improving the institutional structure of climate policy management, including the creation of a specialized government body responsible for the development of renewable energy (RES) and the implementation of climate strategies.

2. Modernization of the regulatory framework regarding the regulation of hydrogen energy, the national emissions trading system and mechanisms for sustainable energy development.

3. Expansion of climate finance instruments through the development of “green” bonds, public-private partnership mechanisms, and participation in international climate funds.

4. Development of local production of renewable energy components to reduce dependence on imports and create additional jobs in the green economy sector.

Thus, despite the progress made, Kazakhstan has a lot of work to do to eliminate structural and legal obstacles to achieving carbon neutrality. The harmonization of national legislation with international climate standards, the intensification of investment policy and the strengthening of international cooperation are key conditions for ensuring the environmental and energy sustainability of the country.

In case of successful implementation of the tasks set, Kazakhstan will not only fulfill its international obligations but will also be able to demonstrate an example of effective climate transformation for other states focused on sustainable development and environmental protection.

References

- 1 Рамочная конвенция Организации Объединенных Наций об изменении климата, принятая 9 мая 1992 г. // <https://www.un.org/ru/documents/>.
- 2 Киотский протокол РКИК ООН принятый 11 декабря 1997 г. // <https://www.un.org/ru/documents/>.
- 3 Парижское соглашение об изменении климата РКИК ООН принятое 12 декабря 2015 г. // <https://www.un.org/ru/documents/>.
- 4 Об утверждении обновленного национального вклада Республики Казахстан в глобальное реагирование на изменение климата. Постановление Правительства Республики Казахстан от 19 апреля 2023 года № 313. // <https://adilet.zan.kz/rus/docs/P2300000313>.
- 5 Указ Президента Республики Казахстан от 2 февраля 2023 года № 121 «Об утверждении Стратегии достижения углеродной нейтральности Республики Казахстан до 2060 года». // Режим доступа: https://unfccc.int/sites/default/files/resource/Carbon_Neutrlaity_Strategy_Kazakhstan_Ru_Oct2024.pdf (Дата обращения: 15.12.2024).
- 6 Экологический кодекс Республики Казахстан от 2 января 2021 года № 400-VI ЗРК // <https://adilet.zan.kz/rus/docs/K2100000400>.
- 7 Приказ и.о. Министра экологии, геологии и природных ресурсов Республики Казахстан от 29 июня 2021 года № 221. Зарегистрирован в Министерстве юстиции Республики Казахстан 27 шілдеде 2021 года № 23719. «Об утверждении Правил торговли углеродными единицами» // <https://adilet.zan.kz/rus/docs/V2100023719>.
- 8 UNDP. Обязательства Казахстана по климату <https://www.undp.org/ru/kazakhstan/projects/obyazatelstva-kazakhstana-po-klimatu>.
- 9 UNDP. Интеграция вопросов адаптации к изменению климата в стратегическое планирование в Казахстане // <https://www.undp.org/ru/kazakhstan/nashi-proekty>.
- 10 Updated Nationally Determined Contribution of the Republic of Kazakhstan to the global response to climate change // https://unfccc.int/sites/default/files/NDC/2023-06/12updated%20NDC%20KAZ_Gov%20Decree313_19042023_en_cover%20page.pdf.
- 11 Вавьерина К. Казахстан принимает меры по борьбе с изменением климата для более устойчивого будущего // <https://www.undp.org/ru/kazakhstan/blog/kazakhstan-prinimaet-mery-po-borbe-s-izmeneniem-klimata-dlya-bolee-ustoychivogo-buduschego>
- 12 Abdizhami A. The legal regulation of climate policy in the field of greenhouse gas emissions: global challenges and ways of adaptation of Kazakhstan / A. Abdizhami, D. Rustembekova // Bulletin of the Karaganda University. «Law» Series. — 2025. — Vol. 30, Iss. 1(117). — P. 32-40.
- 13 Приказ Министра экологии, геологии и природных ресурсов Республики Казахстан от 28 марта 2022 года № 91. Зарегистрирован в Министерстве юстиции Республики Казахстан 30 марта 2022 года № 27301 «Об утверждении Правил государственного регулирования в сфере выбросов и поглощений парниковых газов» // <https://adilet.zan.kz/rus/docs/V2200027301>.
- 14 Система торговли выбросами и добровольный углеродный рынок: глобальный обзор и перспективы для Казахстана // <https://aifc.kz/wp-content/uploads/2025/02/cistemy-torgovli-vybrosami-i-dobrovolnyj-uglerodnyj-rynok-globalnyj-obzor-i-perspektivy-dlya-kazakhstana.pdf>.
- 15 Национальный доклад Республики Казахстан о кадастре антропогенных выбросов из источников и абсорбции поглотителями парниковых газов, не регулируемых Монреальским протоколом, за 1990–2022 г.г. // https://unfccc.int/sites/default/files/resource/%D0%9D%D0%94%D0%9A%202024%2027.12_3.pdf.
- 16 Кодекс Республики Казахстан от 9 апреля 2025 года № 178-VIII «Водный кодекс Республики Казахстан» (не введен в действие) // https://online.zakon.kz/Document/?doc_id=32546243&pos=6;-108#pos=6;-108

- 17 Мажилис принял новый Водный кодекс Казахстана // <https://www.zakon.kz/pravo/6469339-mazhilis-prinyal-novyy-vodnyy-kodeks-kazakhstana.html>.
- 18 Казахстан к 2030 году доведет долю ВИЭ в энергосистеме до 15 % — вице-министр // <https://bm.ge/ru/news/kazakhstan-k-2030-godu-dovedet-doliu-vic-v-energositse-do-15-vic-ministr>.
- 19 Сидорова Т.Ю. Реализация идеи дифференцированной ответственности от Киотского протокола до Парижского соглашения [Электронный ресурс]. / Т.Ю. Сидорова // Сибирский юридический вестник. — 2018. — № 1. — С. 138–142. — Режим доступа: <https://cyberleninka.ru/article/n/realizatsiya-idei-differentsirovannoy-otvetstvennosti-ot-kiotskogo-protokola-do-parizhskogo-soglasheniya> (дата обращения: 09.09.2024).
- 20 Парламент Южной Кореи принял закон о создании системы торговли квотами // <https://ria.ru/20120503/640233362.html>.
- 21 Юн Хи Ён. 25 марта вступит в силу «Основной закон об углеродной нейтральности и зеленого роста» / Хи Ён Юн, А. Ахметзянова. — Режим доступа: <https://russian.korea.net/NewsFocus/Policies/view?articleId=212232>.
- 22 Минаев А.П. Политика «углеродной нейтральности» Республики Корея / А.П. Минаев, Я.В. Агафонова // Восточный Альманах. — Выпуск 6. — 2022. — С. 20–34. — Режим доступа: <https://dipacademy.ru/documents/5963/pdf>.
- 23 Губайловский В. Дети и даже еще неродившийся младенец в Южной Корее подали в суд на правительство из-за его климатической политики [Электронный ресурс] / В. Губайловский. — 2024. — Режим доступа: <https://www.techinsider.ru/news/news-1644613-deti-i-daje-eshche-nerodivshiisya-mladenec-v-yujnoi-koree-podali-v-sud-na-pravitelstvo-iz-za-ego-klimaticheskoi-politiki/>.
- 24 Partnership on Transparency in the Paris Agreement. Good Practice: Korea's MRV/Compliance under the GHG and energy target management system (TMS). — Retrieved from: <https://transparency-partnership.net/publications-tools/good-practice-koreas-mrvcompliance-under-ghg-and-energy-target-managment-system>.
- 25 Казахстан представил на COP29 планы по достижению углеродной нейтральности https://azertag.az/ru/xeber/kazahstan_predstavil_na_cop29_plany_po_dostizheniyu_uglerodnoi_neitralnosti-3298340
- 26 Climate Action Network. COP29: пробелы, обещания и разочарования. — 2024. — Режим доступа: <https://canecca.org/cop29-itogi/>
- 27 Казахстан получил 6 миллионов евро на модернизацию эффективности электросетей и сокращение потерь электроэнергии [Электронный ресурс]. — 2024. — Режим доступа: <https://www.undp.org/ru/kazakhstan/press-releases/kazakhstan-poluchil-6-millionov-evro-na-modernizaciyu-effektivnosti-elektrosetey-i-sokraschenie-poter-elektroenergii>.
- 28 Stern N. The Economics of Climate Change: The Stern Review / N. Stern. — Cambridge University Press. — 2006.
- 29 Arrow K.J. Sustainability and the measurement of wealth: further reflections. Environment and Development Economics / K.J. Arrow, P. Dasgupta, L.H. Goulder, K.J. Mumford, K. Oleson. — 2013. — 18(4). — 504–516. DOI:10.1017/S1355770X1300019.
- 30 Koliev F. Citizen preferences for climate policy implementation: the role of multistakeholder partnerships / F. Koliev, K. Bäckstrand. — 2025. — Int Environ Agreements 25. — P. 41–59. <https://doi.org/10.1007/s10784-024-09658-6>.
- 31 Miklos Gaspar. Ядерная энергетика в более широком энергетическом контексте: исполнительный директор Международного энергетического агентства Фатих Бироль отвечает на вопросы (на англ. языке) [Электронный ресурс]. — 2022. — Режим доступа: <https://www.iaea.org/ru/newscenter/news/yadernaya-energetika-v-bolee-shirokom-energeticheskom-kontekste-ispolnitelnyy-direktor-mezhdunarodnogo-energeticheskogo-agentstva-fatih-birol-otvechaet-na-voprosy-na-angl-yazyke>.
- 32 Weston B. Green Governance: Ecological Survival, Human Rights and the Law of the Commons / B. Weston, D. Bollier. — Journal of Environmental Law. — Volume 27. — Issue 2. — 2015. — P. 373–376.
- 33 Fischer C. The legal and economic case for an auction reserve price in the EU emissions trading system / C. Fischer, L. Reins, D. Burtraw, D. Langlet, A. Löfgren, M. Mehling et al. — 2020. — Columbia Journal of European Law. — 26(2). — P. 1–35.
- 34 Jacobson M.Z. Energy, Health, and Climate Costs of Carbon-Capture and Direct-Air-Capture versus 100 %-Wind-Water-Solar Climate Policies in 149 Countries / M.Z. Jacobson, D. Fu, D.J. Sambor, A. Mühlbauer. — Environmental Science and Technology. — 2025. — 59(6). — P. 3034–3045. — Access mode: https://www.researchgate.net/publication/388845861_Energy_Health_and_Climate_Costs_of_Carbon-Capture_and_Direct-Air-Capture_versus_100-Wind-Water-Solar_Climate_Policies_in_149_Countries.
- 35 International Energy Agency (IEA). Financing Clean Energy Transitions in Emerging and Developing Economies [Electronic resource] / IEA. — 2021. — Access mode: https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf.
- 36 Jacobson M. Z. 100 % Clean, Renewable Energy and Storage for Everything / M.Z. Jacobson. — Cambridge: Cambridge University Press. — 2020.

Л.С. Шошаева, А.А. Нукушева

Қазақстанның климат туралы халықаралық келісімдерге қатысуы: құқықтық аспектілері және ұлттық жүзеге асырылуы

Қазақстан Республикасы басқа да көптеген мемлекеттер сияқты қарқынды дамып келе жатқан климаттық және экологиялық сын-тегеуріндерге жауап ретінде өздерінің экономикалық және құқықтық модельдерін трансформациялау қажеттілігіне тап болды. 2060 жылға қарай көміртегі бейтараптығына қол жеткізу стратегиясы және Париж келісімі шеңберінде жаңартылған ұлттық айқындалған үлес (ЖҰАҰ) сияқты негізгі стратегиялық құжаттарды қабылдау климаттық саясатты құқықтық талдаудың және жүзеге асырып жатқан механизмдердің тиімділігін бағалаудың маңыздылығын көрсетеді. Зерттеудің мақсаты климаттың өзгеруі саласындағы ұлттық және халықаралық заңнаманы кешенді талдау, сондай-ақ БҰҰ-ның климат жөніндегі конференциялары мен климаттық өршілдік жөніндегі саммитті қоса алғанда, жетекші халықаралық ұйымдардың ұстанымдары мен талдамалық материалдарын зерделеу. Зерттеудің әдіснамалық негізін жүйелік, салыстырмалы-құқықтық және формальды-құқықтық әдістер, сондай-ақ саяси-құқықтық талдау құрайды. Оларды қолдану климаттың өзгеруі саласындағы заңнамалық базаның ағымдағы жай-күйін жан-жақты бағалауға және неғұрлым өзекті құқықтық проблемаларды анықтауға мүмкіндік берді. Зерттеу барысында Климаттық күн тәртібін іске асыруға кедергі келтіретін негізгі институционалдық және нормативтік кедергілер анықталды: стратегияларды іске асырудың нақты тетіктерінің болмауы, құқықтық реттеудің бөлшектенуі, мемлекеттік органдар арасындағы әлсіз үйлестіру және климаттық саясат пен ағымдағы экономикалық басымдықтар арасындағы, атап айтқанда, көмірсутектер өндіру саласындағы қақтығыс. Ұлттық заңнаманы жетілдіру, климаттық басқарудың институционалдық негіздерін нығайту қажеттілігі туралы қорытынды жасалды.

Кілт сөздер: климаттың өзгеруі, тұрақты даму, климаттық заңнама, халықаралық міндеттеме, БҰҰ негізгі конвенциясы, Париж келісімі, жаңартылған ұлттық үлес, жаһандық әрекет ету, көміртегі бейтараптығы, парниктік газ.

Л.С. Шошаева, А.А. Нукушева

Участие Казахстана в международных соглашениях по климату: правовые аспекты и национальная реализация

Многие государства, включая Республику Казахстан, сталкиваются с необходимостью трансформации своих экономических и правовых моделей в ответ на нарастающие климатические и экологические вызовы. Принятие ключевых стратегических документов — таких как Стратегия достижения углеродной нейтральности к 2060 году и обновлённый Национально определяемый вклад (ОНУВ) в рамках Парижского соглашения — подчёркивает актуальность правового анализа климатической политики и необходимости оценки эффективности реализуемых механизмов. Целью настоящего исследования является комплексный анализ национального и международного законодательства в сфере изменения климата, а также изучение позиций и аналитических материалов ведущих международных организаций, включая Конференции сторон РКИК ООН и Саммит по климатической амбициозности. Методологическую базу исследования составляют системный, сравнительно-правовой, формально-юридический методы, а также политико-правовой анализ. Их применение позволило всесторонне оценить текущее состояние законодательной базы в сфере изменения климата и выявить наиболее актуальные правовые проблемы. В ходе исследования выявлены основные институциональные и нормативные барьеры, препятствующие реализации климатической повестки: отсутствие чётких механизмов реализации стратегий, фрагментарность правового регулирования, слабая координация между государственными органами и конфликт между климатической политикой и текущими экономическими приоритетами, в частности в сфере добычи углеводородов. Сделан вывод о необходимости совершенствования национального законодательства и укрепления институциональных основ климатического управления.

Ключевые слова: изменение климата, устойчивое развитие, климатическое законодательство, международное обязательство, Рамочная Конвенция ООН, Парижское соглашение, обновлённый национальный вклад, глобальное реагирование, углеродная нейтральность, парниковый газ.

References

- 1 Ramochnaia konventsiiia Organizatsii Obieedinennykh Natsii ob izmenenii klimata, priniataia 9 maia 1992 g. [The United Nations Framework Convention on Climate Change, adopted on May 9, 1992]. [www.un.org](https://www.un.org/ru/documents/). Retrieved from <https://www.un.org/ru/documents/> [in Russian].

- 2 Kiotskii protokol RKIK OON priniaty 11 dekabria 1997 g. [The UNFCCC Kyoto Protocol, adopted on December 11, 1997] www.un.org. Retrieved from <https://www.un.org/ru/documents/> [in Russian].
- 3 Parizhskoe soglasenie ob izmenenii klimata RKIK OON priniatoe 12 dekabria 2015 g. [The Paris Agreement on Climate Change, UNFCCC, adopted on December 12, 2015]. www.un.org. Retrieved from <https://www.un.org/ru/documents/> [in Russian].
- 4 Ob utverzhdenii obnovlennogo natsionalnogo vklada Respubliki Kazakhstan v globalnoe reagirovanie na izmenenie klimata. Postanovlenie Pravitelstva Respubliki Kazakhstan ot 19 apreliia 2023 goda № 313 [Approval of the updated national contribution of the Republic of Kazakhstan to the global response to climate change. Resolution of the Government of the Republic of Kazakhstan dated April 19, 2023 N 313]. adilet.zan.kz. Retrieved from <https://adilet.zan.kz/rus/docs/P2300000313> [in Russian].
- 5 Ukaz Prezidenta Respubliki Kazakhstan ot 2 fevralia 2023 goda № 121 «Ob utverzhdenii Strategii dostizheniia uglerodnoi neitralnosti Respubliki Kazakhstan do 2060 goda» [Decree of the President of the Republic of Kazakhstan dated February 2, 2023 No. 121 “On approval of the Strategy for Achieving Carbon Neutrality of the Republic of Kazakhstan until 2060”]. adilet.zan.kz. Retrieved from <https://adilet.zan.kz/rus/docs/U2300000121> [in Russian].
- 6 Ekologicheskii Kodeks Respubliki Kazakhstan ot 2 yanvaria 2021 goda № 400-VI ZRK [Environmental Code of the Republic of Kazakhstan dated January 2, 2021 N 400-VI LRK]. adilet.zan.kz. Retrieved from <https://adilet.zan.kz/rus/docs/K2100000400> [in Russian].
- 7 Prikaz i.o. Ministra ekologii, geologii i prirodnkh resursov Respubliki Kazakhstan ot 29 iyunia 2021 goda № 221. Zaregistrovan v Ministerstve yustitsii Respubliki Kazakhstan 27 shildede 2021 goda № 23719. «Ob utverzhdenii Pravil trgovli uglerodnymi edinitami» [Order of the Acting Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan dated June 29, 2021 N 221. Registered with the Ministry of Justice of the Republic of Kazakhstan on July 27, 2021 N 23719. “On approval of the Rules of Trade in carbon units”]. adilet.zan.kz. Retrieved from <https://adilet.zan.kz/rus/docs/V2100023719> [in Russian].
- 8 UNDP. Obiazatelstva Kazakhstana po klimatu [UNDP. Kazakhstan’s climate commitments]. www.undp.org. Retrieved from <https://www.undp.org/ru/kazakhstan/projects/obyazatelstva-kazakhstana-po-klimatu> [in Russian].
- 9 UNDP. Integratsiia voprosov adaptatsii k izmeneniiu klimata v strategicheskoe planirovanie v Kazakhstane [UNDP. Integration of climate change adaptation issues into strategic planning in Kazakhstan]. www.undp.org. Retrieved from <https://www.undp.org/ru/kazakhstan/nashi-proekty> [in Russian].
- 10 Updated Nationally Determined Contribution of the Republic of Kazakhstan to the global response to climate change. Retrieved from https://unfccc.int/sites/default/files/NDC/2023-06/12updated%20NDC%20KAZ_Gov%20Decree313_19042023_en_cover%20page.pdf.
- 11 Vaverina, K. Kazakhstan prinimaet mery po borbe s izmeneniem klimata dlia bolee ustoychivogo budushchego [Kazakhstan takes measures to combat climate change for a more sustainable future]. www.undp.org. Retrieved from <https://www.undp.org/ru/kazakhstan/blog/kazakhstan-prinimaet-mery-po-borbe-s-izmeneniem-klimata-dlya-bolee-ustoychivogo-budushchego> [in Russian].
- 12 Abdizhami, A., & Rustembekova, D. (2025). The legal regulation of climate policy in the field of greenhouse gas emissions: global challenges and ways of adaptation of Kazakhstan. *Bulletin of the Karaganda University. «Law» Series*. 30, 1(117), 32–40.
- 13 Prikaz Ministra ekologii, geologii i prirodnkh resursov Respubliki Kazakhstan ot 28 marta 2022 goda № 91. Zaregistrovan v Ministerstve yustitsii Respubliki Kazakhstan 30 marta 2022 goda № 27301 «Ob utverzhdenii Pravil gosudarstvennogo regulirovaniia v sfere vybrosov i pogloshchenii parnikovyykh gazov» [Order of the Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan dated March 28, 2022 N 91. Registered with the Ministry of Justice of the Republic of Kazakhstan on March 30, 2022 N 27301 “On Approval of the Rules of State regulation in the field of greenhouse gas emissions and Removals”]. adilet.zan.kz. Retrieved from <https://adilet.zan.kz/rus/docs/V2200027301> [in Russian].
- 14 Sistema trgovli vybrosami i dobrovolnyi uglerodnyi rynek: globalnyi obzor i perspektivy dlia Kazakhstana [Emissions trading system and voluntary carbon market: global overview and prospects for Kazakhstan]. Retrieved from <https://aifc.kz/wp-content/uploads/2025/02/cistemy-torgovli-vybrosami-i-dobrovolnyj-uglerodnyj-rynok-globalnyj-obzor-i-perspektivy-dlya-kazakhstana.pdf> [in Russian].
- 15 Natsionalnyi doklad Respubliki Kazakhstan o kadastre antropogennykh vybrosov iz istochnikov i absorbtzii poglotiteliami parnikovyykh gazov, ne reguliruemyykh Monrealskim protokolom za 1990–2022 gg. [National report of the Republic of Kazakhstan on the inventory of anthropogenic emissions from sources and removals by sinks of greenhouse gases not regulated by the Montreal Protocol for 1990–2022]. unfccc.int. Retrieved from <https://unfccc.int/sites/default/files/resource/3.pdf> [in Russian].
- 16 Kodeks Respubliki Kazakhstan ot 9 apreliia 2025 goda № 178-VIII «Vodnyi kodeks Respubliki Kazakhstan» (ne vveden v deistvie) [Code of the Republic of Kazakhstan dated April 9, 2025 N 178-VIII “Water Code of the Republic of Kazakhstan” (not put into effect)]. Retrieved from https://online.zakon.kz/Document/?doc_id=32546243&pos=6;-108#pos=6;-108 [in Russian].
- 17 Mazhilis prinial novyi Vodnyi kodeks Kazakhstana [The Mazhilis adopted the new Water Code of Kazakhstan]. Retrieved from <https://www.zakon.kz/pravo/6469339-mazhilis-prinial-novyy-vodnyy-kodeks-kazakhstana.html> [in Russian].
- 18 Kazakhstan k 2030 godu dovedet doliu VIE v energosisteme do 15 % — vitse-ministr [Kazakhstan will increase the share of renewable energy sources in the energy system to 15 % by 2030 — Vice Minister]. Retrieved from <https://bm.ge/ru/news/kazaxstan-k-2030-godu-dovedet-doliu-vie-v-energosisteme-do-15-vice-ministr> [in Russian].
- 19 Sidorova, T.Yu. (2018) Realizatsiia idei differentsirovannoi otvetstvennosti ot Kiotskogo protokola do Parizhskogo soglaseniia [Implementation of the idea of differentiated responsibilities from the Kyoto Protocol to the Paris Agreement]. *Sibirskii yuridicheskii vestnik — Siberian Law Bulletin*, 1, 138–142. Retrieved from <https://cyberleninka.ru/article/n/realizatsiya-idei-differentsirovannykh-otvetstvennosti-ot-kiotskogo-protokola-do-parizhskogo-soglaseniya> [in Russian].
- 20 Parlament Yuzhnoi Korei prinial zakon o sozdanii sistemy trgovli kvotami [The South Korean Parliament passed a law on the establishment of a quota trading system]. Retrieved from <https://ria.ru/20120503/640233362.html> [in Russian].

- 21 Yun Khi En, & Akhmetzianova, A. 25 marta vstupit v silu «Osnovnoi zakon ob uglerodnoi neitralnosti i zelenogo rosta» [On March 25, the Basic Law on Carbon Neutrality and Green Growth will come into force]. (n.d.). *russian.korea.net*. Retrieved from <https://russian.korea.net/NewsFocus/Policies/view?articleId=212232> [in Russian].
- 22 Minaev, A.P., & Agafonova, Ya.V. (2022). Politika «uglerodnoi neitralnosti» Respubliki Koreia [The carbon neutrality policy of the Republic of Korea]. *Eastern Almanac*, 6, 20–34. Retrieved from <https://dipacademy.ru/documents/5963/pdf> [in Russian].
- 23 Gubailovskii, V. (2024). Deti i dazhe eshche nerodivshiisia mladenets v Yuzhnoi Koree podali v sud na pravitelstvo iz-za ego klimaticheskoi politiki [Children and even an unborn baby in South Korea have sued the government over its climate policy]. *www.techinsider.ru*. Retrieved from <https://www.techinsider.ru/news/news-1644613-deti-i-daje-eshche-nerodivshiisia-mladenec-v-yujnoi-koree-podali-v-sud-na-pravitelstvo-iz-za-ego-klimaticheskoi-politiki/> [in Russian].
- 24 Partnership on Transparency in the Paris Agreement. Good Practice: Korea's MRV/Compliance under the GHG and energy target management system (TMS). (n.d.). *transparency-partnership.net*. Retrieved from <https://transparency-partnership.net/publications-tools/good-practice-koreas-mrvcompliance-under-ghg-and-energy-target-managment-system>.
- 25 Kazakhstan predstavil na COP29 plany po dostizheniiu uglerodnoi neitralnosti [Kazakhstan presented plans to achieve carbon neutrality at COP29]. (n.d.). *azertag.az*. Retrieved from https://azertag.az/ru/xeber/kazahstan_predstavil_na_cop29_plany_po_dostizheniyu_uglerodnoi_neitralnosti-3298340 [in Russian].
- 26 Climate Action Network (2024). COP29: probely, obeshchaniia i razocharovaniia [COP 29: Gaps, Promises, and Disappointments]. Retrieved from <https://canecca.org/cop29-itogi/> [in Russian].
- 27 (2024). Kazakhstan poluchil 6 millionov evro na modernizatsiiu effektivnosti elektrosetei i sokrashchenie poter elektroenergii [Kazakhstan received 6 million euro to modernize the efficiency of its power grids and reduce electricity losses]. Retrieved from <https://www.undp.org/ru/kazakhstan/press-releases/kazakhstan-poluchil-6-millionov-evro-na-modernizatsiiu-effektivnosti-elektrosetey-i-sokraschenie-poter-elektroenergii> [in Russian].
- 28 Stern, N. (2006). The Economics of Climate Change: The Stern Review. *Cambridge University Press*.
- 29 Arrow, K., Dasgupta, P., Goulder, L., Mumford, K., & Oleson, K. (2013). Sustainability and the measurement of wealth: further reflections. *Environment and Development Economics*, 18(4), 504–516. doi:10.1017/S1355770X1300019.
- 30 Koliev, F., & Bäckstrand, K. (2025). Citizen preferences for climate policy implementation: the role of multistakeholder partnerships. *Int Environ Agreements* 25. — 41–59. <https://doi.org/10.1007/s10784-024-09658-6>.
- 31 Miklos Gaspar. (2022). Yadernaia energetika v bolee shirokom energeticheskom kontekste: ispolnitelnyi direktor Mezhdunarodnogo energeticheskogo agentstva Fatikh Birol otvechaet na voprosy (na angliiskom yazyke) [Nuclear energy in a broader energy context: Fatih Birol, Executive Director of the International Energy Agency, answers questions (in English language)]. Retrieved from <https://www.iaea.org/ru/newscenter/news/yadernaya-energetika-v-bolee-shirokom-energeticheskom-kontekste-ispolnitelnyy-direktor-mezhdunarodnogo-energeticheskogo-agentstva-fatih-birol-otvechaet-na-voprosy-na-angl-yazyke> [in Russian].
- 32 Weston, B., & Bollier, D. (2015). Green Governance: Ecological Survival, Human Rights and the Law of the Commons. *Journal of Environmental Law*, 27, 2, 373–376.
- 33 Fischer, C., Reins, L., Burtraw, D., Langlet, D., Löfgren, A., Mehling, M., Weishaar, S., Zetterberg, L., van Asselt, H., & Ku-lovesi, K. (2020). The legal and economic case for an auction reserve price in the EU emissions trading system. *Columbia Journal of European Law*, 26(2), 1–35.
- 34 Jacobson, M.Z., Fu, D., Sambor, D.J., & Mühlbauer, A. (2025). Energy, Health, and Climate Costs of Carbon-Capture and Direct-Air-Capture versus 100 %-Wind-Water-Solar Climate Policies in 149 Countries. *Environmental Science and Technology*, 59(6), 3034–3045. Retrieved from https://www.researchgate.net/publication/388845861_Energy_Health_and_Climate_Costs_of_Carbon-Capture_and_Direct-Air-Capture_versus_100-Wind-Water-Solar_Climate_Policies_in_149_Countries.
- 35 (2021). International Energy Agency (IEA). Financing Clean Energy Transitions in Emerging and Developing Economies. Retrieved from https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf
- 36 Jacobson, M. Z. (2020). 100 % Clean, Renewable Energy and Storage for Everything. *Cambridge: Cambridge University Press*.

Information about the authors

Laura Sanabekovna Shoshayeva — Master of Law, Doctoral student of the Department of Civil and Labor Law, Karaganda Buketov University, Karaganda, Republic of Kazakhstan, e-mail: keukonf2012@mail.ru

Nukusheva Aigul Ashimovna — Candidate of Law, Professor, Professor of the Department of Civil and Labor Law, Karaganda Buketov University, Karaganda, Republic of Kazakhstan, e-mail: akuka007@mail.ru