

UDC 327.7

IRSTI: 11.25.91

<https://doi.org/10.48371/ISMO.2024.58.4.005>

STRATEGIC PLANS OF THE REPUBLIC OF KAZAKHSTAN IN THE FIELD OF ENERGY SECURITY: A SUSTAINABLE PERSPECTIVE

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Abstract. Contemporary research on international relations pays great attention to the study of state policies in ensuring energy security adopted by different countries. In these circumstances, the Republic of Kazakhstan is no exception, being one of the most interesting actors for this kind of analysis – a huge country in Central Asia, has sufficient reserves of natural energy resources – has embarked the path to the development of renewable energy sources. Therefore, the main objective of this research is to analyze the strategic plans of the Republic of Kazakhstan in the field of energy security with an emphasis on the prospects of sustainable development.

As a result, this scientific article describes the current state of the country's energy sector and provides the reasons to undertake an energy transition in the country. The author pays special attention to the implementation of state policy aimed at diversifying energy sources and developing renewable energy sources, referring to key strategic documents, for instance, adopted laws and concepts. The final outcome of this study, is that in the case of the research of the energy security dimensions of Kazakhstan, it is proposed that the country's energy security depends not so much on the issue of the physical availability of energy resources, but, on the problem of environmental sustainability.

Key words: The Republic of Kazakhstan, energy security, sustainability, renewables, energy transition, energy policy, Central Asia, Republic of Kazakhstan

Introduction

The oil crisis of 1973, when the members of the Organization of the Petroleum Exporting Countries (OPEC) imposed a drastic increment in the oil price, gave rise to in-depth research on the relationship between energy and security. Since then, the issue of energy security has been considered from different perspectives. According to Daniel Yergin, “the objective of energy security is to assure adequate, reliable supplies of energy at reasonable prices and in ways that do not jeopardize major national values and objectives” [1, p. 111]. Similarly, Eunju Jun, Wonjoon Kim and Soon Heung Chang defined energy security “as a reliable and uninterrupted supply of energy sufficient to meet the needs of the economy at the same time, coming at a reasonable price” [2, p. 1896]. Furthermore, a comprehensive analysis must address all four key dimensions of energy security: physical availability of energy goods and services; reliability/efficiency of energy sources and services; affordability or control over price volatility of energy; and environmental sustainability [3]. Indeed, energy security has many possible meanings, making finding a unique and common definition a challenging task.

One of the key factors that needs to be considered is the dynamism of energy security. For example, fossil fuels are still the dominant energy source worldwide today despite their non-renewability, heavy pollution and price volatility. These are

alarming factors and the international community has repeatedly stressed the need for a transition to renewable energy sources. Hence, many countries around the world are committing to launch a new sustainable energy security path centred on energy efficiency and diversification. Florian Kern and Jochen Markard described it as a purposive socio-technical transition, which would plausibly produce in-depth transformations “in organizational, institutional and technological structures” [4, p. 292-293]. This change has also been driven by the Sustainable Development Goals agenda that, *inter alia*, urged countries to “ensure universal access to affordable, reliable and modern energy services” [5].

Following such a trend, the Republic of Kazakhstan – a state with a huge capacity of fossil fuels and a significant oil and gas producer/exporter – faces the challenge of diversifying its energy resources, increasing the efficiency of energy supply and developing green technologies. As claimed by the President of the Republic of Kazakhstan Kassym-Jomart Tokayev at the World Climate Action Summit “There is extraordinary potential for wind and solar power in my country as well as for green hydrogen. We will continue to work closely with our partners to unlock it...” [6]. It is clear that this task is stated by the country’s leadership to the whole international community and potential foreign investors in country’s economy. As a result, this strategic approach can strengthen the country’s internal energy security and promote Kazakhstan’s integration into the international energy market.

In this context, the main objective of this scientific article is to analyze the current state of energy security of the Republic of Kazakhstan in the context of sustainable perspective. This work makes a significant contribution to the study of Kazakhstan’s policy in ensuring its energy security.

Literature review

Conceptually, this study is based on a critical assessment of various academic literature related to the study of energy security: Yergin (1990), Jun, Kim, and Chang (2009), Kern F. and Markard (2016). In support of the research idea, it is worth mentioning the main findings of the following experts: Pradhan (2021), Mouraviev and Kolouri (2019), Berg (2013), Gribkova and Milshina (2022).

Furthermore, contemporary research on energy security is a complex framework characterized by various critical matters. As a result, the author concludes this article with a comprehensive analysis of Kazakhstan’s state of energy security addressing some key dimensions of energy security. In this case one of the most valuable works is Sovacool and Brown (2010), with “four As” of energy security.

For this article, the main provisions of the strategic documents adopted by the Government of Kazakhstan in terms of ensuring sustainable development are used. The main documents referred are the following: “Kazakhstan 2050 Strategy” (2012), the “Concept for the Transition of the Republic of Kazakhstan to Green Economy” (2013), Kazakhstan Law No. 165-IV “On Support of the Use of Renewable Energy Sources” (2009), the Kazakhstan Law No. 541-IV “On Energy Saving and increased

of Energy Efficiency” (2012), the new “Environmental Code of the Republic of Kazakhstan” (ECRK 2021).

In addition, this research topic also refers to the available United Nations open sources on sustainable development, namely, Sustainable Development Goals (2016), Theme Report on Energy Transition. Towards the Achievement of SDG 7 and Net-Zero Emissions (2021), and United Nations [UN] Paris Agreement (2015).

Description of materials and methods

On the methodological side, this scientific article is based on the extensive critical assessment of the available academic literature that examines key findings on energy security from traditional to contemporary approaches. In addition, the study refers to the main adopted documentations and concepts in the context of the transition to renewable energy in Kazakhstan, supported by arguments of leading energy security researchers. The research method used in this article is a qualitative content study of theories and documents supported by a critical analysis of the various arguments proposed in the scientific literature in studying the energy security of Kazakhstan.

The main research question is “*what is the strategic plan of the Republic of Kazakhstan in the field of energy security in a sustainable perspective?*”. This is supported by the following issues: What are the reasons for the energy transition in Kazakhstan? In legal terms, what achievements has Kazakhstan made in developing renewable energy? What are the main features of Kazakhstan’s energy security dimensions? This article provides answers to these questions.

The main target audience of this research are those experts who are interested in studying energy security of the Republic of Kazakhstan, above all, energy transition, with a special interest of the perspective of the development of renewable energy in the country. Of particular interest is the review of adopted documents and concepts, which provide potential investors with a clear understanding of the country’s energy market. The main limitation of this study is the initially limited scope of the sources used, which refers the article exclusively to certain adopted documents in the context of Kazakhstan’s energy transition.

Results

As states by Ramakrushna Pradhan “In a world of rapid progress and fast-paced industrialization, energy occupies the top priority. Therefore, to ensure timely, adequate, reliable and cheap energy, its secure and easy availability is of the utmost importance” [7, p. 4]. In this regard, the Republic of Kazakhstan benefits from a favourable condition being a state rich in natural resources, especially, coal, oil, and gas. Besides, Kazakhstan is the largest oil producer in Central Asia and a major gas producer – this industry is one of the key sectors of the country’s economy, making the country one of the key energy exporters. According to the International Energy Agency Review on Kazakhstan, in 2020, oil accounted for more than 50% of Kazakhstan’s domestic energy production, coal for 28%, and natural gas was 17% [8]. In addition to this, Kazakhstan has begun to develop renewable energy and the

process of diversifying the energy sector. For this purpose, the government has adopted various documents and laws.

From a strategic policy perspective, the main political documents of reference related to energy security are the “Kazakhstan 2050 Strategy” (2012) [9] and the “Concept for the Transition of the Republic of Kazakhstan to Green Economy” (2013) [10]. In 2012, first President of Kazakhstan, Nursultan Nazarbayev, established a new course of economic, social and political development of the country with the goal to enter in the top 30 global economies by 2050. Such a new path is commonly referred as the “Kazakhstan 2050 Strategy”. In the strategy, Nazarbayev stressed the need for a sustainable path of development considering the new global challenges of the 21st. Among them, he explicitly mentions the global energy security challenge: “The era of the hydrocarbon economy is coming to an end. We face the beginning of a new era where human activities will be based not so much on oil and gas, but on renewable resources” [9]. Indeed, while keeping a central role in the hydrocarbon commodity market, Kazakhstan has to promptly act so that alternative and renewable sources will provide half of country’s total energy consumption by 2050.

Additional information is offered in the “Concept for the Transition of the Republic of Kazakhstan to Green Economy”. In the 2013 Concept, green economy is defined as “an economy with high living standards, careful and rational use of natural resources in the interests of present and future generations and in accordance with the international environmental obligations [10]. Indeed, the sustainability is at the core of the conception of a green economy in Kazakhstan. After briefly describing the expected outcomes from the green transition – namely, additional GDP increase of 3%, 500,000 new jobs and the possibility to enter in the top 30 developed countries of the world – the Concept explains the main reasons why such a transition is necessary for Kazakhstan. Among some identified reasons there are: an inefficient use of resources, with an emphasis on energy inefficiency; an inadequate system of tariffs and pricing for energy resources; the natural deterioration of natural environment and high levels of air pollution; the exposition to price fluctuation due to the dependency to exportations for GDP growth.

From a legal perspective, there are multiple laws that are, to a certain extent, related to the field of energy production and consumption. The main documents of reference related to energy security as a process of transition toward renewables are the following:

1. The Kazakhstan Law No. 165-IV “On Support of the Use of Renewable Energy Sources” (2009) [11];
2. The Kazakhstan Law No. 541-IV “On Energy Saving and increased of Energy Efficiency” (2012) [12];
3. The New “Environmental Code of the Republic of Kazakhstan” (ECRK 2021) [13].

The Kazakhstan Law No. 165-IV “On Support of the Use of Renewable Energy Sources” (2009) was introduced in 2009 and later amended in 2013. As stated by Nikolai Mouraviev and Anastasia Koulouri “it sets the foundation for the government’s regulation of the RES [renewable energy sources] sector and provides

support mechanisms for the increasing use of renewable sources” [14, p. 81]. The law defines renewable energy resources as those “energy sources that are continuously renewable due to naturally occurring natural processes, including the following types: solar radiation energy, wind energy, hydrodynamic energy; geothermal energy: heat of the soil, groundwater, rivers, reservoirs; as well as anthropogenic sources of primary energy resources: consumer waste, biomass, biogas and other fuel from consumer waste used for the production of electrical and (or) thermal energy” [11].

The Kazakhstan Law No. 541-IV on Energy Saving and increased of Energy Efficiency (2012) introduced important provisions both in the assessment and implementation of energy efficiency practices. The Law No. 541-IV defines the competencies of the central government, authorized authorities and other entities in areas such as technical regulation, tariff policy, procedures of control, systems of promotion and enforcement of energy saving and energy efficiency practices [12].

From a legislative perspective, the new Environmental Code of the Republic of Kazakhstan (ECRK), which has been adopted in 2021, is an important step forward in the development of an energy security grounded on green principles. As stated by article 1, the ECRK regulates those activities of interaction between human beings and nature that cause – or could potentially cause – negative effects on the environment in Kazakhstan [13]. The ECRK entails legal foundations, principles and mechanisms aimed at preserving the environment from pollution and other damages through both preventive and mitigating measures. By doing that, the ECRK intends to ensure the preservation of a favourable environment for human life, protect the ecological basis for a sustainable development of Kazakhstan, and provide a positive contribution to the global fight against climate change. At the same time, such process should foster correlated changes such as, for example, a green economic transition, an enhanced transparency and public participation in environmental issues, as well as the creation of favourable conditions to attract new investments [13].

Discussion

Notwithstanding the richness in fossil fuels, the Kazakh government has repeatedly claimed its intention to entail a process of energy efficiency and diversification to ensure its energy security. Such a strategic goal is, first of all, a response to both the pressure of the international community as a whole and the societal challenges of the 21st century. The United Nations has, for example, repeatedly claimed that “An energy revolution based on renewables and energy efficiency is urgently needed not just to accelerate economic progress and development, but also to slash emissions that are rapidly warming our planet” [15]. As general recommendations, the United Nations stresses the need to operate in diverse directions, such as rapidly scale-up the green transition process, increase energy efficiency, invest in and modernize physical infrastructure, drastically cutting the use of coal as energy resource, etc.

In addition, there is also an environmental security aspect at stake. All countries of the world – included Kazakhstan – committed themselves at the 2015

UN Climate Change Conference to prevent and mitigate the risk of climate change according to the measures established in the Paris Agreement [16]. As a result, Kazakhstan has the moral and legal responsibility to reduce its greenhouse gas emissions – specifically, by 15% by 2030 relative to the level of 1990 – through an effective transition toward renewable energy sources and energy efficiency.

Finally, considering sustainable development in the energy sector as an economic perspective – Kazakhstan is becoming one of the key centres of foreign investments in the country's economy. The country successfully holds bilateral meetings with those countries interested in investing in its energy sector. For example, several Italian-Kazakhstan business forums were held together with Italy where one of the main topics was cooperation in energy, especially, renewables.

Notwithstanding the claim of the United Nations to proceed with a “rapid upscaling and implementation of all available technologies to innovate the future” [15, p. 1], the green transition in Kazakhstan will plausibly proceed by incremental steps. After all, as claimed by Florian Kern, “there is no one “right” way of framing the problem, which leads to a variety of policy initiatives with different outputs” [17, p. 1130]. Moreover, as stated by Sanford V. Berg, “policymakers still need to balance urgent current local goals against longer-term global objectives” [18, p. 29]. Indeed, it is important to recognize that, on one side, energy transition “does not mean complete and irreversible refusal of older energy resources” and, on the other side, “each country needs to determine its own best energy policy pathway considering its national economic development and priorities” [19, p. 2]. In the specific case of Kazakhstan, for example, coal will still be plausibly used as the main source of electric energy at least till 2040 and oil will reasonably keep for many years to come its driving role for the economic growth of the country.

In addition, energy transition is a dynamic process that intertwines with diverse areas of development, including social, technological, economic, ecological and political aspects. As such, it entails a series of grand challenges that move beyond the technical, executive and legal aspects purely related to the energy sector alone such as, “increasing inequalities in access to energy resources, changes in the global energy balance, increased share of renewables, stricter environmental requirements, or international cooperation mechanisms inefficiency” [19, p. 3]. Therefore, it will take time to observe a complete energy system innovation change in Kazakhstan.

Conclusion

Concluding, the collected data reveal that energy security in Kazakhstan is not much a matter of physical availability. The country has significant amount of various energy resources – coal, oil, and natural gas – making the country the main producer of non-renewable energy in Central Asia. Moreover, Kazakhstan is developing green energy sources, taking part in energy transition and diversification. The country has an aim of increasing the share of renewable sources in its energy balance.

It is rather an issue of environmental sustainability, which is the capacity to exploit energy resources without damaging the surrounding environment and/or negatively affecting future generations. Kazakhstan participates in key international

climate initiatives and strives to reduce greenhouse gas emissions. The country actively works to fulfil its commitments to sustainable development by adopting various strategic documents, among which are “Kazakhstan 2050 Strategy” (2012) and the “Concept for the Transition of the Republic of Kazakhstan to Green Economy” (2013). Moreover, the aim of the Kazakh government in pursuing green energy transition is supported by developing legal documentation, such as the Kazakhstan Law No. 165-IV “On Support of the Use of Renewable Energy Sources” (2009), the Kazakhstan Law No. 541-IV “On Energy Saving and increased of Energy Efficiency” (2012), and the new “Environmental Code of the Republic of Kazakhstan” (ECRK 2021).

Indeed, for Kazakhstan keep moving in the transition toward renewables and energy efficiency is a fundamental step to support energy security within a sustainable framework. But to achieve such results, several *ad hoc* measures still need to be taken to minimize the negative risks associated with this transition. These considerations, however, do not undermine the importance to analyse in-depth the development of renewables and energy efficiency in Kazakhstan as core part of its energy security strategy. Many business opportunities are at stake and keep flowing into such a global transition process seems as a necessary condition to keep playing an active role in the future global order.

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СТРАТЕГИЧЕСКИЕ ПЛАНЫ РЕСПУБЛИКИ КАЗАХСТАН В ОБЛАСТИ ЭНЕРГЕТИЧЕСКОЙ БЕЗОПАСНОСТИ: К ВОПРОСУ ОБ УСТОЙЧИВОЙ ПЕРСПЕКТИВЕ

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Аннотация. Современная наука о международных отношениях уделяет огромное внимание изучению государственной политики в области обеспечения энергетической безопасности, принимаемой различными странами. В этих условиях Республика Казахстан не является исключением, являясь одним из интереснейших объектов для подобного рода анализа – огромная страна в Центральной Азии, обладающая достаточными запасами энергетических ресурсов, вставшая на путь развития возобновляемых источников энергии. Поэтому основной целью данного исследования является анализ стратегических планов Республики Казахстан в области энергетической безопасности с акцентом на перспективы устойчивого развития.

В данной научной статье описывается современное состояние энергетического сектора страны и приводятся основные причины для постепенной реализации энергетического перехода в стране. Особое внимание автор уделяет государственной политике, направленной на диверсификацию источников энергии и развитие возобновляемых источников энергии, ссылаясь на ключевые стратегические документы, например, принятые законы и концепции. Конечным результатом данной работы является то, что в контексте исследования измерений энергетической безопасности Казахстана предлагается, то, что энергетическая безопасность страны не столько зависит от вопроса доступности энергетических ресурсов, сколько от проблемы экологической устойчивости в целом.

Ключевые слова: Республика Казахстан, энергетическая безопасность, устойчивое развитие, возобновляемые источники энергии, энергетический переход, энергетическая политика, Центральная Азия, Республика Казахстан

ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ ЭНЕРГЕТИКАЛЫҚ ҚАУІПСІЗДІК САЛАСЫНДАҒЫ СТРАТЕГИЯЛЫҚ ЖОСПАРЛАРЫ: ТҰРАҚТЫ ПЕРСПЕКТИВА МӘСЕЛЕСІ

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Аңдатпа. Қазіргі халықаралық қатынастар ғылымы әртүрлі елдер қабылдаған энергетикалық қауіпсіздік саласындағы мемлекеттік саясатты зерттеуге үлкен көңіл бөледі. Бұл жағдайда Қазақстан Республикасы да қалыс қалмайды, энергия ресурстарының жеткілікті қоры бар Орталық Азиядағы ең алып мемлекет, жаңартылатын энергетиканы дамыту жолына түскендігі осы талдауларға негіз болып табылады. Сондықтан бұл зерттеудің негізгі мақсаты тұрақты даму перспективаларына баса назар аударып, Қазақстан Республикасының энергетикалық қауіпсіздік саласындағы стратегиялық жоспарларын талдау болып табылады.

Бұл ғылыми мақалада еліміздің энергетикалық секторының қазіргі жағдайы сипатталады және елдің энергетикалық салаға көшуін кезең-кезеңімен жүзеге асырудың негізгі себептері келтірілген. Автор негізгі стратегиялық құжаттарға, мысалы, қабылданған заңдар мен тұжырымдамаларға сілтеме жасай отырып, энергия көздерін түрлендіруге және жаңартылатын энергия көздерін дамытуға бағытталған мемлекеттік саясатқа ерекше назар аударады. Бұл жұмыстың түпкілікті нәтижесі Қазақстанның энергетикалық қауіпсіздігінің деңгейін зерттеу контекстінде елдің энергетикалық қауіпсіздігі энергия ресурстарының қолжетімділігі мәселесіне емес, жалпы экологиялық тұрақтылық мәселесіне тәуелді екендігіне аса назар аударылады.

Тірек сөздер: Қазақстан Республикасы, энергетикалық қауіпсіздік, тұрақты даму, жаңартылатын энергия көздері, энергетикалық ауысу, энергетикалық саясат, Орталық Азия, Қазақстан Республикасы

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Received: December 6, 2024