

# On the Issue of Ensuring Kazakhstan's Energy Security within the Framework of the EAEU

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**Abstract.** The features of integration processes taking place within the framework of the creation and functioning of the common electric power market of the Eurasian Economic Union discussed. Topical issues of ensuring the economic security of the national economy are solved through the activation of integration processes. The greatest importance in this issue is assigned to the problem of ensuring energy security. The purpose of the study is to form priority directions for the further development of the common electric power market within the Union. To this end, the experience of creating such foreign associations was studied; obstacles to further development of integration were identified; the peculiarities of the energy market of Kazakhstan as one of the leading member countries of the Union were studied; opportunities for the development of national economies were identified. The paper uses methods of comparative analysis, as well as methods of generalization and analogy, comparative and expert assessments, statistical data processing. Based on the compiled SWOT analysis, the paper offers recommendations on the implementation of opportunities for further development of the national economy within the framework of the Eurasian Economic Union.

**Keywords:** integration, Eurasian Economic Union, electric power market, economic development, competitive environment, strategic cooperation.

## Introduction

Integration processes are the subject of active attention of both domestic and foreign researchers [1,2]. A specific feature of the common market is the absence of quotas and tariffs for the import of goods, but non-tariff restrictions remain. This creates some difficulties and restrictions for free trade between the countries that have created this union. However, with the development of integration processes, these barriers are gradually decreasing.

The main goal of creating common markets is to create a competitive environment and improve the quality and reduce the price of consumed products. As a result of free trade between the countries of association, producers get the opportunity to use factors of production with greater productivity, increasing their competitiveness and making it difficult to monopolize the market. On the other hand, as a result of increased competition, manufacturers that previously received government support may not be able to cope with new requirements and, as a result, leave the market. Another negative manifestation of the creation of common markets may be an increase in migration processes. The absence of barriers to the movement of factors of production, including labor

resources, can lead to a massive movement of the working part of the population of poor countries to rich ones.

The purpose of the study was to study the consequences of cooperation within the framework of the common energy market of the Eurasian Economic Union (EEU) for the participating countries and for Kazakhstan, in particular.

When analyzing the level of energy security in Kazakhstan, it is planned to use possible methods of economic research: observation and collection of facts; historical and random; systematic analysis of legal documents and information from official sources. In addition, the method of SWOT analysis of the state of the electricity market in Kazakhstan makes it possible to determine the features and characteristics of the parties, as well as the opportunities and consequences for the development of the national economy as a whole.

When studying the features of integration associations of the energy markets of several countries, the world experience of such processes was studied.

For example, depending on the degree of integration, the level of sectoral regulation and

coordination between the activities of national and general (supranational) bodies, various models of market integration can be created.

In general terms, the whole variety of models for organizing common electricity markets can be reduced to two main groups.

The first group of models is based on the creation of a supranational market. The features of such associations are: the creation of a separate trading platform, the creation of separate electric grid infrastructure organizations and regulators, the organization of trade in surpluses.

The second group of models of common markets is characterized by the integration of regional markets. At the heart of such an association are: the same commodity composition and the mechanism of trade, the rules for pricing; division of companies by type of activity; management is carried out on the basis of the organization of interaction between national structures; trade is carried out through existing power lines.

An example of the first group of models is the The Regional Electricity Market of 6 countries of Central America (MER), where a high-voltage line was created connecting all countries of this union. An example of the second model is the EU market, the USA market [3].

In the work, a study was conducted of the common electricity market of the Eurasian Economic Union countries in order to identify the advantages and disadvantages of such cooperation [4].

There is a steady increase in the share of mutual exports of countries to the Eurasian Economic Union in total exports (Figure 1).

As you can see from the diagram above, the volume of mutual trade of the member countries of

the Union has been steadily increasing since 2016. However, a slight decline in 2020 was due to the difficulties caused by the COVID pandemic.

In the context of the growing influence of integration factors in the field of creating economic resources and especially energy resources, the need to ensure energy security becomes the most urgent. To this end, the member countries of the EEU, at the end of May 2014, concluded the Treaty and the EEU. The focus of this document is on energy issues, which determine the competitiveness of the national economies of the participating countries. For the effective provision of energy resources, the following priority areas of cooperation were identified, among other things:

- coordination of a unified energy policy;
- formation of strategic cooperation in the field of energy on mutually beneficial terms;
- development of common energy markets focused on improving energy security.

At the present stage of the economy, oil and natural gas remain the main energy resources. However, conditions and opportunities are being formed for the transition to providing the energy system with alternative energy sources. Such sources are distinguished by the environmental friendliness of the creation process and higher availability due to low costs [5]. This poses a serious threat to the competitiveness of the EEU member states in the foreign market.

According to the preliminary calculations of the EEU Energy Department, the creation and operation of the common energy market (CEM) will increase the trade turnover between the participating countries by more than two and a half times. Exports are expected to increase to 30 billion kWh. Moreover,

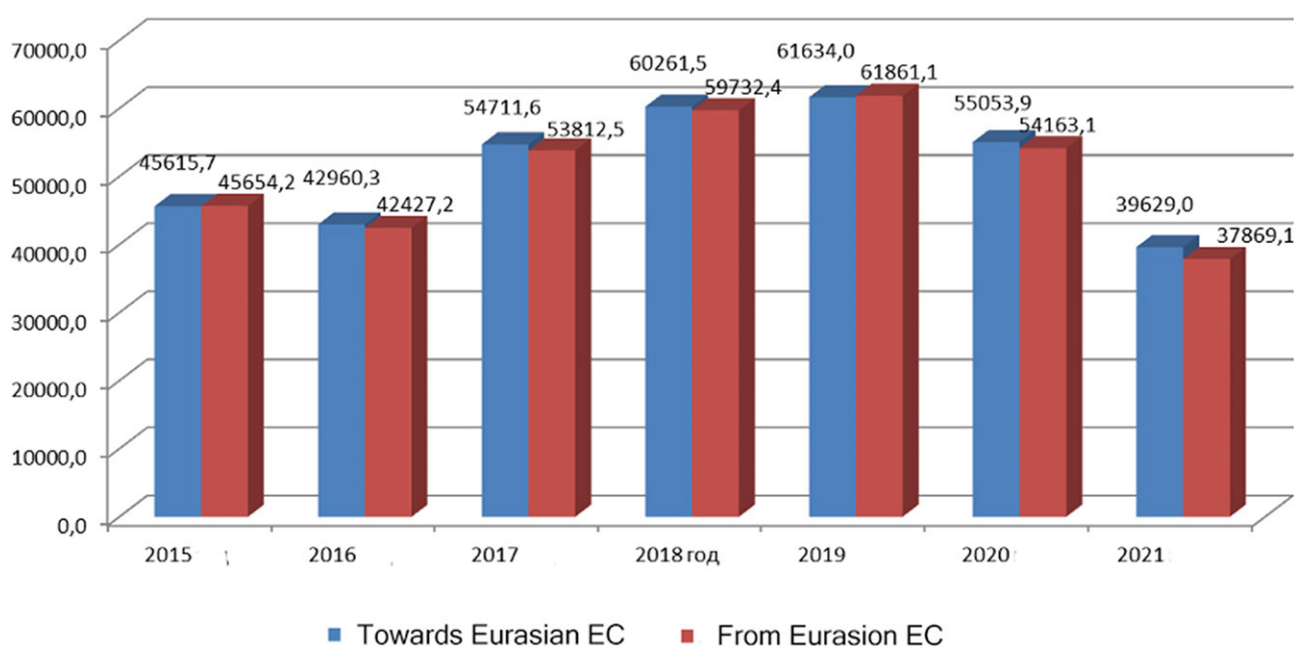


Figure 1 – Dynamics of foreign and domestic trade in goods of the Eurasian Economic Union (million USD). Compiled by the authors based on data based on the source [8]

the growth of mutual trade in electricity will become an incentive for further expansion of cooperation in the sectors related to the electricity complex [3, 6].

Thus, the creation of a CEM at the intercountry level means the creation and development of not only cross-border lines for the transmission of electricity, but the formation of a set of regulatory and institutional frameworks that regulate the functioning of a common market.

According to its characteristics, the model for creating the common electricity market of the EEU, according to its characteristics, reflected in the Treaty on the EEU, belongs to the second group of models for creating CEM, since it involves the formation of a common electric power market using the existing electric power systems of the Member States [7].

If we consider the volume of mutual investments of the member countries of the Union, we can note the following. In the second half of 2020, there is an increase in the net inflow of mutual direct investments by 400 million US dollars, against the background of a decrease in direct investments in the EEU member countries, by more than 5 times from all countries of the world.

During the period under review, the inflow of mutual direct investments in Belarus was in the region of 562 million US dollars, which corresponds to the highest value among the EEU member countries. The next largest mutual direct investment is Kazakhstan, where the inflow amounted to more than 367 million US dollars. The main investor for these states was the Russian Federation. The total volume of mutual direct investments in the EEU from Russia amounted to 872 million US dollars [7, 8].

Figure 2 shows the distribution of the flow of mutual direct investment among the EAEU member countries (Armenia, Belarus, Russia, Kazakhstan, Kyrgyzstan) for 2020, as well as the total flow for the

period under review.

Thus, despite the insignificant period of existence of the EAEU, positive shifts in the development of the Union countries can be noted. In terms of pricing, Kazakhstan is also a competitive country, as the average electricity tariff is one of the lowest (Figure 3).

This is also characteristic in comparison with world prices. According to the Internet portal GlobalPetrolPrices.com, in Kazakhstan, for 1 kWh, the price is set at \$0.042, which is one of the lowest rates (the highest tariff in Germany is \$0.364) [9].

From 2017 to 2019, the Russian Federation became the main direction of export-import of electricity in Kazakhstan. The import of electricity from Russia was carried out in order to balance the production and consumption of electricity in the Unified Electricity System of Kazakhstan. Since the beginning of 2019, 966.551 million kWh of electrical energy has been exported to the Republic of Uzbekistan from the Unified Electricity System of the Republic of Kazakhstan.

At the same time, electricity in the amount of 55.582 million kWh was exported to the Kyrgyz Republic in 2020.

However, against the backdrop of the advantages of the electricity market of Kazakhstan among the EAEU member countries, there are a number of difficulties associated with the economic problems of the country; not a developed infrastructure, namely the lack of a transport corridor for direct access to world markets; imperfect system of management of branch markets, etc. The solution of these problems will allow realizing a number of opportunities for the development of the entire economy of Kazakhstan [10]. The paper presents the result of a study of the electricity market in Kazakhstan in the form of a SWOT analysis matrix (Table).

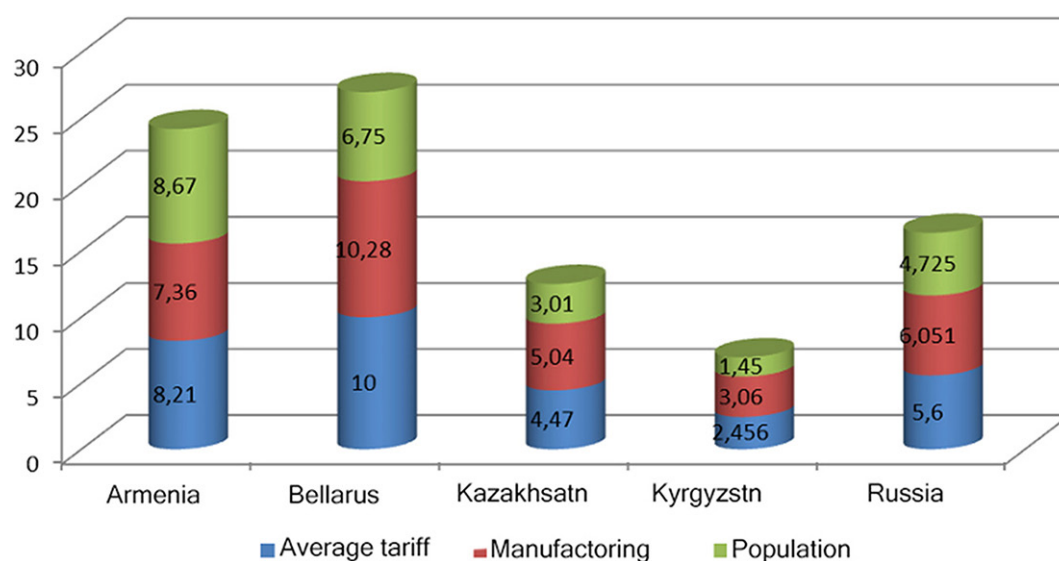


Figure 3 – Electricity tariffs in participating countries EER EAEU for 2021.  
Compiled by the authors based on data based on the source [8]

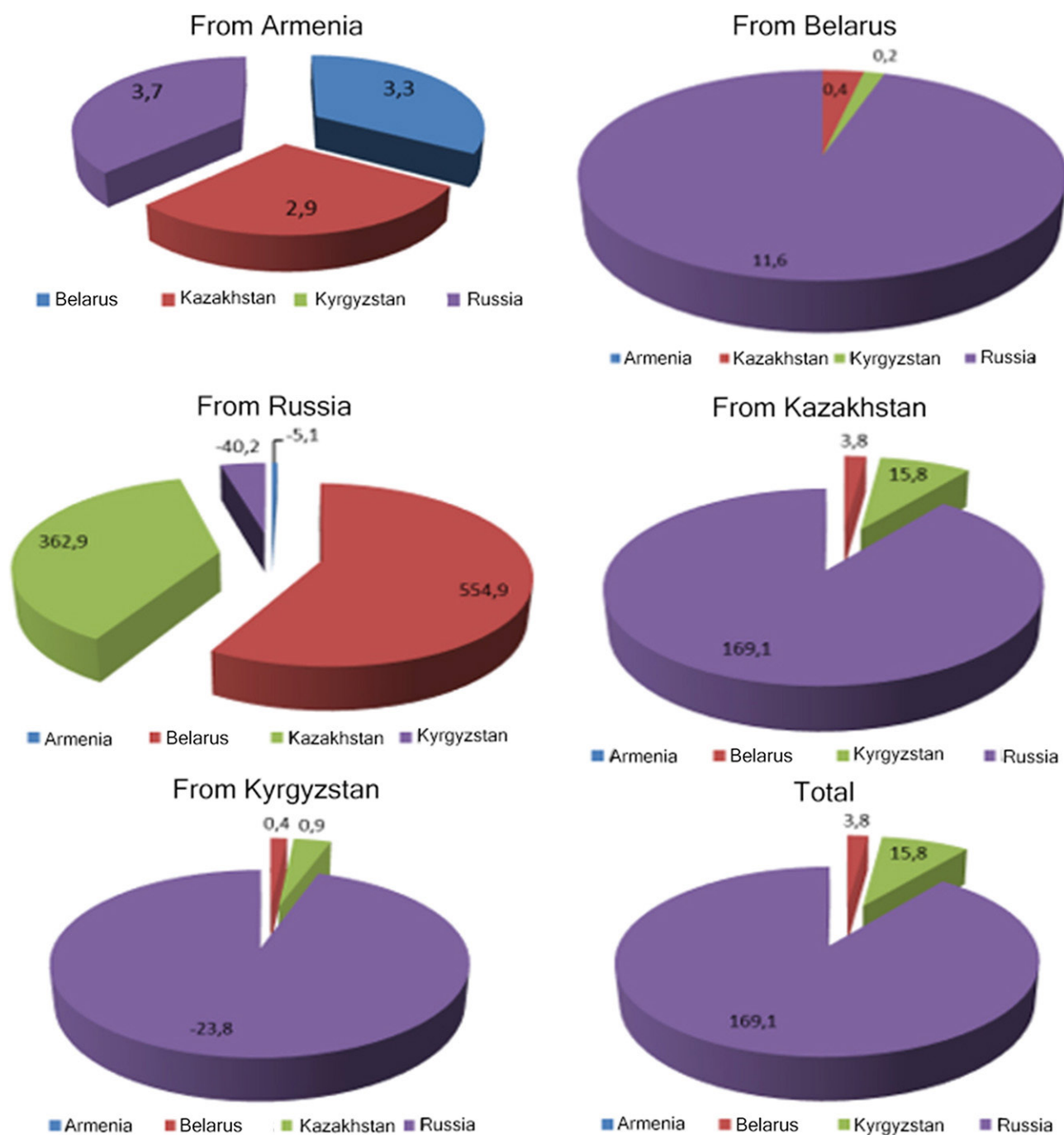


Figure 2 – The structure of distribution of mutual direct investments between the EAEU member countries (million USD). Compiled by the authors based on data based on the source [8]

Thus, the following can be noted as the strengths of the electric power market of Kazakhstan: internal needs for electricity are fully satisfied by their own production, thanks to the vast reserves of raw materials and a fairly developed power supply network of the fuel and energy complex.

However, the underdeveloped infrastructure of the electricity sector, which makes it difficult to directly access the world energy markets, as well as the lack of transparency in the system of revenue distribution management and the low level of business confidence, which reduces the attractiveness for foreign investors, weaken the electricity market in

Kazakhstan.

Further participation in the integration processes within the EAEU will allow Kazakhstan to start addressing issues related to improving the structure of the national economy, attracting foreign investment in infrastructure development, and expanding external relations.

### Conclusions (summarizing)

Entering the external electricity market for Kazakhstan means realizing such opportunities as: attracting foreign investment in the creation and development of renewable energy sources; entry



SWOT analysis. Analyzed situation: Electricity market of the Republic of Kazakhstan	
Strengths (S)	Weaknesses (W)
<ul style="list-style-type: none"> <li>• The electricity sector of Kazakhstan covers the demand for electricity in the domestic market.</li> <li>• The electricity sector of Kazakhstan is fully provided with its own natural resources.</li> <li>• Existing power transmission network provides electricity to most of the country.</li> </ul>	<ul style="list-style-type: none"> <li>• No own access to world electricity markets.</li> <li>• Decrease in the value of tenge against world currencies.</li> <li>• Inefficient formation and use of budget funds.</li> <li>• Underdeveloped infrastructure.</li> <li>• The domestic electric power industry is largely dependent on coal supplies.</li> </ul>
Opportunities (O)	Threats (T)
<ul style="list-style-type: none"> <li>• Participation in the formation and development of a transit power transmission channel connecting Europe and Asia.</li> <li>• Development of new, high-tech areas, industries in the structure of the economy.</li> <li>• Entering the global electricity market.</li> <li>• Attraction of foreign investments through integration projects.</li> <li>• Creation of alternative energy production facilities.</li> <li>• Participation in the formation of the supply chain at the global level.</li> <li>• Improvement of existing and introduction of new lines in the country's power transmission network.</li> </ul>	<ul style="list-style-type: none"> <li>• Low attractiveness for potential partners.</li> <li>• Underdeveloped structure of the economy.</li> <li>• Resource orientation of products in export.</li> <li>• Strengthening the influence of world leaders in the production of electricity.</li> </ul>

into the world market and participation in the international energy supply chain; participation in the commercialization of joint international innovative projects that contribute to the development of the domestic infrastructure for the production and distribution of electricity.

But opportunities will remain opportunities if, when forming a strategy for the further development of the electricity market in Kazakhstan, attention is not paid to the implementation of measures to reduce the impact of threats from the external environment. The main threat to Kazakhstan is increased competition in the world market. First of all, as a result of the strengthening of integration processes between the countries – the leading producers of electricity.

As a result of studying the features of the electric power complex of Kazakhstan, it was determined that

participation as a country of the common electricity market of the EEU allows strengthening the position of the state as a competitive participant in the world market.

Further development of integration processes within the EEU will allow Kazakhstan to ensure the implementation of various projects aimed at the economic growth of the state.

Thus, the creation of the EEU CEM pursues the goal of creating a healthy competitive environment for all its participants and ensuring reliable and affordable energy supply to national economies. The development of the electricity market will mean the emergence of new opportunities for expanding mutual trade, optimizing the price level for final consumption, as well as increasing the investment attractiveness of the electricity sector.

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#### **ЕАЭО шеңберінде Қазақстанның энергетикалық қауіпсіздігін қамтамасыз ету мәселесіне**

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**Аңдатпа.** Еуразиялық экономикалық одақтың ортақ электр энергетикалық нарығын құру және оның жұмыс істеуі шеңберінде болып жатқан интеграциялық процестердің ерекшеліктері қарастырылады. Ұлттық экономиканың экономикалық қауіпсіздігін қамтамасыз етудің өзекті мәселелері интеграциялық процестерді жандандыру арқылы шешіледі. Бұл мәселеде энергетикалық қауіпсіздікті қамтамасыз ету проблемасына үлкен мән беріледі. Зерттеудің мақсаты одақ шеңберінде ортақ электр энергетикалық нарықты одан әрі дамытудың басым бағыттарын қалыптастыру болып табылады. Осы мақсатта осындай шетелдік бірлестіктерді құру тәжірибесі зерделенді; интеграцияны одан әрі дамыту үшін кедергілер анықталды; одаққа қатысушы жетекші елдердің бірі ретінде Қазақстанның энергетикалық нарығының ерекшеліктері зерделенді; ұлттық экономикаларды дамыту үшін мүмкіндіктер айқындалды. Жұмыста салыстырмалы талдау әдістері, сонымен қатар жалпылау және ұқсастық әдістері, салыстырмалы және сараптамалық бағалау, деректерді статистикалық өңдеу әдістері қолданылады. Жасалған SWOT-талдау негізінде жұмыста Еуразиялық экономикалық одақ шеңберінде ұлттық экономиканы одан әрі дамыту мүмкіндіктерін іске асыру бойынша ұсынымдар ұсынылды.

**Кілт сөздер:** интеграция, Еуразиялық экономикалық одақ, электр энергетикалық нарық, экономиканы дамыту, бәсекелестік орта, стратегиялық ынтымақтастық.

#### **К вопросу обеспечения энергетической безопасности Казахстана в рамках ЕАЭС**

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**Аннотация.** Рассматриваются особенности интеграционных процессов, происходящих в рамках создания и функционирования общего электроэнергетического рынка Евразийского экономического союза. Актуальные вопросы обеспечения экономической безопасности национальной экономики решаются через активизацию интеграционных процессов. Наибольшую важность в этом вопросе отводят проблеме обеспечения энергетической безопасности. Целью исследования является формирование приоритетных направлений дальнейшего развития общего электроэнергетического рынка в рамках Союза. С этой целью был изучен опыт создания подобных зарубежных объединений; выявлены преграды для дальнейшего развития интеграции; изучены особенности энергетического рынка Казахстана как одной из ведущих стран-участниц Союза; определены возможности для развития национальных экономик. В работе использованы методы сравнительного анализа, а также методы обобщения и аналогии, сравнительных и экспертных оценок, статистической обработки данных. На основе составленного SWOT-анализа в работе предложены рекомендации по реализации возможностей дальнейшего развития национальной экономики в рамках Евразийского экономического союза.

**Ключевые слова:** интеграция, Евразийский экономический союз, электроэнергетический рынок, развитие экономики, конкурентная среда, стратегическое сотрудничество.

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