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PROSPECTS OF ORGANIZATIONAL AND LEGAL PROVISION OF ENERGY SECURITY OF UKRAINE IN THE CONDITIONS OF MODERN GEOPOLITICAL PROCESSES

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Kodaniov V.I. Prospects of organizational and legal provision of energy security of Ukraine in the conditions of modern geopolitical processes.

The scientific article is devoted to one of the important objects of national security – energy security. The organizational and legal approaches to the regulation of energy security are singled out and certain aspects of state regulation of energy efficiency are outlined, taking into account modern geopolitical processes. The definition of energy security is formulated, its global nature is indicated, which determines its provision through the joint efforts of all countries of the world, taking into account the internal characteristics and needs of the industry. It was emphasized that energy security as an object of state policy in the conditions of armed aggression against Ukraine requires proper legal regulation and continuous coordinated state management influence in order to ensure the energy independence of the country and the stable operation of energy infrastructure facilities. The analysis of the legal provision of energy security in Ukraine allowed us to come to the conclusion about the ramifications of the legislation in the specified area, the lack of optimization and systematization of energy legislation, its conflict and tolerance for the monopoly position of energy market participants. In the conditions of the war in Ukraine, the main direction of legislative regulation of the energy market is the introduction of tax benefits, temporary special taxation regimes. It was concluded that the introduction of the Institute of the Authorized President of Ukraine on Energy Safety, the development of the Institute of Public Control in the specified field is considered a promising direction for improving the national institutional mechanism for ensuring energy security. Arguments are also given that the institutional and legal mechanisms for ensuring energy security should provide for: permanent strategic planning of the development of the energy sector; coordination of energy policy with other areas of state policy; elimination of illegal administrative influence on energy market participants; taking measures to improve energy efficiency; creation of conditions for the development of technological innovations in the field of functioning of the energy infrastructure; increasing the effectiveness of preventing cyber threats; taking measures to reduce the level of corruption and the influence of the political will of elites on the energy market of Ukraine, state deregulation and demonopolization of the energy resources market.

Key words: energy security, national security, geopolitical processes, regulatory and legal regulation, risks, institutional mechanisms.

Коданьов В.І. Перспективи організаційно-правового забезпечення енергетичної безпеки України в умовах сучасних геополітичних процесів.

Наукову статтю присвячено одному з важливих об'єктів національної безпеки – енергетичній безпеці. Виокремлено організаційно-правові підходи щодо нормативізації енергетичної безпеки та окреслено окремі аспекти державного регулювання енергоефективності з урахуванням сучасних геополітичних процесів. Сформульовано визначення енергетичної безпеки, вказано на її глобальний характер, що обумовлює її забезпечення шляхом спільних зусиль усіх країн світу з урахуванням внутрішніх особливостей та потреб галузі. Наголошено, що енергетична безпека як

об'єкт державної політики в умовах збройної агресії проти України потребує належного правового регулювання та безперервного скоординованого державно управлінського впливу з метою забезпечення енергетичної незалежності країни та стабільної роботи об'єктів енергетичної інфраструктури. Аналіз правового забезпечення енергобезпеки в Україні дозволив дійти висновку про розгалуженість законодавства у зазначеній сфері, відсутність оптимізації та систематизації енергетичного законодавства, його колізійність і толерантність до монопольного становища учасників енергетичного ринку. В умовах війни в Україні головним напрямом законодавчого регулювання сфери енергетичного ринку визначено запровадження податкових пільг, тимчасових спеціальних режимів оподаткування. Зроблено висновок, що перспективним напрямком удосконалення національного інституційного механізму забезпечення енергетичної безпеки є запровадження інституту Уповноваженого Президента України з питань енергетичної безпеки, розвиток інституту громадського контролю у зазначеній сфері. Також наведено аргументи, що інституційно-правові механізми забезпечення енергетичної безпеки повинні передбачати: постійне стратегічне планування розвитку енергетичної сфери; узгодження енергетичної політики з іншими напрямами державної політики; усунення незаконного адміністративного впливу на учасників енергетичних ринків; вжиття заходів з підвищення енергоефективності; створення умов для розвитку технологічних новацій у сфері функціонування енергетичної інфраструктури; підвищення ефективності запобігання кіберзагрозам; вжиття заходів зі зниження рівня корупції та впливу політичної волі еліт на енергетичний ринок України, державну дерегуляцію та демонополізацію ринку енергетичних ресурсів.

Ключові слова: енергетична безпека, національна безпека, геополітичні процеси, нормативно-правове регулювання, ризики, інституційні механізми.

Introduction.

Energy security is an important factor in ensuring state sovereignty and independence of the country. Given that the russian threat, as well as global security uncertainty, are of a long-term nature, strengthening national stability as a strategic goal fully corresponds to the national interests of Ukraine [1, p. 299].

The powerful influence of the energy factor on the system of international relations, geopolitics and the global economic system in the context of modern globalization processes actualizes the question of an adequate assessment of the current state and prospects for ensuring global energy security, which is affected by the war in Ukraine. Indeed, the mentioned aspect has become especially relevant for Ukraine since 2014, when influencing the country's energy policy and hindering the operation of energy supply systems became one of the most important tools of the hybrid war. This dimension has become even more relevant and important for Ukraine since the beginning of 2022, when russia unleashed a large-scale war and resorted to targeted mass destruction of the energy infrastructure of our country [2, p. 12].

Currently, the task is to balance the objective variability of the required set of parameters for an adequate assessment of energy security in accordance with changes in the external environment with the formation of a sustainable methodological approach to their selection, taking into account the practical needs of the country. This is of great importance for forecasting and drawing up current development plans of both the national economies of the countries of the world and the world economic system in the conditions of globalization.

Theoretical framework or Literature Review.

A review of scientific research and publications shows active attention and scientific understanding of the problem of energy security among domestic and foreign researchers. Representatives of various branches of modern science studied such phenomena as energy security, energy law, and energy policy. These are, in particular, Ukrainian and foreign scientists: A. Bradbrook, Y. Vashchenko, J. Gardam, I. Honcharuk, Y. Dziadykevych, S. Zavhorodnia, A. Ilyenko, N. Kaminska, M. Kovalko, M. Cormier, B. Kormych, R. Kotsyuba, A. Prokip, O. Reznikova, O. Serdyuchenko, O. Suhodolya, O. Tregub, I. Yakoviyk and others.

Considering the crisis phenomena of recent years, russia's aggression against Ukraine, which has been ongoing since 2014, the full-scale invasion of the territory of Ukraine in 2022, the destruction of critical infrastructure facilities, there is an urgent need to study world trends, analyze the current state of the organizational and legal provision of Ukraine's energy security and its compliance with the obligations under the association agreement with the European Union (hereinafter referred to as the EU).

The purpose of this article is to clarify the prospects for organizational and legal support of Ukraine's energy security in the conditions of modern geopolitical processes.

Results and discussion.

Modern scientists rightly emphasize that energy security is the country's ability to ensure in a technically reliable and safe, economically efficient and ecologically acceptable way: satisfaction of society's needs for energy resources; sustainable functioning of the national economy in normal and crisis conditions; independence of the country in the formation and implementation of the policy of protection of national interests [3, p. 26]. Energy security is a set of security guarantees regarding energy supply, ensuring a balance between production and consumption volumes, as well as proper development of technologies and energy infrastructure, which is oriented towards sustainability and independence [4, p. 12-13].

Both internal and external factors affect energy security. The following can be attributed to the internal ones: the level of the country's supply of its own energy resources; monopolistic dependence on one supplier or route to supply energy carriers; fuel and energy balance of the country; technical condition of the fuel and energy complex and the level of energy efficiency of the farm; ecological situation; social threats; political, legislative, managerial activity.

External factors affecting the energy security of Ukraine include: geopolitical interests of countries; uneven distribution of deposits and concentration of main reserves in politically unstable regions, zones of military conflicts; the threat of terrorist acts at energy facilities, in particular on the territories of countries that carry out transit transportation of energy resources; economic threats; environmental (large-scale accidents at the facilities of the fuel and environmental complex, emissions of greenhouse gases, etc.); energy poverty (lack of access to sufficient energy in underdeveloped countries); speculation in mass media, which is a negative manifestation of the modern globalized world (artificial creation of panic leading to destabilization of energy markets).

Energy today has an extremely high level of globalization. Yes, there is a definition of global energy security, which is a complex concept and includes not only the reliable supply of the world economy with various types of energy at acceptable prices with minimal losses to the environment (minimum negative impact), but also the state of security of the world community and all its members from possible risks and threats to political stability in the world and sustainable socio-economic development, related to both the current and the future state of world energy [5, p. 19-20].

As of 2022, geopolitical factors have acquired the greatest criticality in the functioning of global and national energy systems. As a rule, models of geopolitical influence of countries with a significant potential of non-renewable sources of energy resources are the most aggressive and capable of determining the state and dynamics of energy markets (both national and global), causing or deepening energy crises and intensifying the impact of different types of risks in the energy sector. This is confirmed by examples of the emergence and resolution of "energy" conflicts between the United States of America (hereinafter - the USA) and the countries of the Middle East, Ukraine and Europe, etc.

In the context of russian aggression against Ukraine, EU institutions and member state governments are trying to find ways to undermine the power and finances of the aggressor country. However, as a result of the EU's energy dependence on russia, the global response to the aggression against Ukraine was complicated: for many months, russian oil flows were exempted from European sanctions. This made it possible to dramatically increase russia's revenues from oil and gas, which were used to finance the war and neutralize the consequences of sanctions, as well as the split of the EU and NATO [6, p. 176; 7, p. 628].

Energy resources have become a critical problem for the EU: buying them from russia is unacceptable, as the war is financed with the money received, on the other hand, refusing to buy them increases the cost of energy for citizens of most European countries, which has reached an unprecedented level in recent years. As most EU member states seek to reduce their dependence on russian natural gas, whose exports are used as leverage on Europe, they have begun importing more of it from the US, North Africa, the UK, Norway and Azerbaijan. Some European countries were forced to increase their coal consumption and imports. This transition inevitably caused supply disruptions.

It should be noted that countries such as Iran and Saudi Arabia, which have significant reserves of oil production, have not been able to increase production, and therefore slow down the rise in prices on world markets. Iran could not do this because of the international sanctions imposed on it, and Saudi Arabia because of its geopolitical and geoeconomic interests, as well as a certain deterioration of

relations with the United States. As a result, the USA was forced to use its own Strategic Oil Reserve, which during 2022 was significantly reduced.

This is not the first time that the EU raises the issue of the need for member states to abandon russian energy sources or at least reduce their dependence on them. In 2014, after the annexation of Crimea by russia, the European Council supported the efforts of national governments to reduce gas imports by increasing energy efficiency, as well as diversifying and developing domestic sources. A course was declared to abandon the carbon-based energy system based on fossil fuels. Unfortunately, in eight years, the member states have done little to diversify and modernize Europe's energy infrastructure. On the eve of russian aggression against the background of the energy crisis in Europe, the rapid growth of natural gas and oil prices, even the optimists of the new energy order realized that such a transition to green energy would be difficult at best. One of the results of the crisis was the revival of the term "energy security", which seemed an anachronism in the last two decades.

Energy security has historically been defined as the availability of sufficient reserves of energy resources at affordable prices. However, according to J. Bordoff and M. O'Sullivan, this definition no longer reflects reality; the risks the world now faces are more numerous and more complex than in previous eras. In order to cope with new threats and challenges, decision-making bodies at the national and supranational levels are forced to review the concept of energy security and develop new means of ensuring it. This process should be determined by four well-known principles: diversification, sustainability, integration and transparency, but at the same time, the traditional methods of their application will prove to be insufficient, and therefore it is inevitable to look for new tools [8].

Energy crises always lead to the emergence of new, usually innovative approaches and methods (for example, the development of wind and solar technologies, intergovernmental and supranational institutions for the development and coordination of energy policies, etc.), as soon as the government, business and scientific community become aware of the new realities that they face first economically developed countries.

The geopolitical situation that developed due to russian aggression affected the pace and scale of the transition to clean ("green") energy, primarily in European countries. Despite a slight increase in the use of coal in the short term, the EU has accelerated the implementation of its "green" plans.

The state of energy security will obviously be affected by the intensification of the confrontation between the USA and China, one of the consequences of which will most likely be an unprecedented restructuring of supply chains of energy resources and raw materials and the activation of industrial policy. It should be noted that there are fears in the expert environment that the accelerated energy transition will inevitably lead to the formation of a new dependence of states, this time on China, given its dominance in the supply chains of ecologically clean energy.

Guided by the principle of reciprocity, China has amended existing laws that restrict the export of solar technology, materials and know-how (Chinese manufacturers are prohibited from using their large silicon, black silicon and cast monosilicon technologies abroad) in response to restrictions imposed by the US in 2022 for the export of high-tech semiconductors and equipment to China. In addition, this country can resort to restricting exports from the country of laser radars, genome editing technologies and agricultural hybrids [9].

Able to influence global energy security and the security paradigm shift observed in Saudi Arabia. Thus, the strategic partnership between this country and the USA in terms of oil export volume is gradually receding into the past. It is busy normalizing relations with China and Iran, and avoiding cooling relations with russia, which it continues to see as an important economic partner and helper in managing the volatility of the oil market.

Thus, geopolitical risks in the 21st century. will act as a critical component that will contribute to the formation of energy policy and energy security policy. Geopolitical risks are an important predictor of stock returns in developed economies: their stock markets are vulnerable to geopolitical risks and especially suffer from more serious adverse consequences of threats (such as threats of war and terrorism) than their actual occurrence [10, p 891-892].

In general, we can state the absence of a unified vision regarding the mechanisms of effective implementation of the energy transition at the global level. At the level of individual countries, there remains a high degree of conflict between the existing mechanisms for ensuring the energy transition, which is connected with the need to revise national and regional energy strategies, different perceptions of business, the state, and individual citizens in the transformational changes of the energy sector, its

technological unreadiness for the implementation of innovative projects, and the limitation of available investment resources.

Therefore, in the conditions of modern geopolitical processes, it is important to clarify the prospects of organizational and legal provision of Ukraine's energy security at the national level.

First of all, we note that the regulatory and legal regulators of the energy security system of Ukraine are national laws and standards; international and domestic energy efficiency standards (ISO50001 and DSTU ISO50001:2014, EU Strategic Compass 2016, Green Pact for Europe 2019); resolutions of the Cabinet of Ministers of Ukraine, relevant Orders and Regulations of the State Energy Efficiency Agency of Ukraine regarding the prioritization of domestic energy security [2, p. 42].

The legislative regulation of the special "auxiliary" status of energy management in relation to the energy security market takes place in accordance with Cabinet of Ministers Resolution No. 1460 "On the Implementation of Energy Management Systems" dated December 23, 2021, which forms the order of energy management-system configuration. The document, in particular, determines the phasing (graduality) of the implementation of energy management reforms as a component of the domestic energy security policy; the specifics of energy planning, aspects of the hypothetical improvement of security and energy transparency are outlined; stylistics of modification of Ukrainian energy management-monitoring of transformations in the field of energy security, etc. [11].

At the same time, aspects of energy cooperation with the EU are insufficiently adjusted at the level of regulatory and legal support in Ukraine. In addition to the provisions of the Association Agreement on transportation (transit) and trade of energy carriers at the bilateral level (Chapter 11, Articles 268, 280 of the Agreement), Ukrainian legislation does not contain relevant norms.

One of the key objects of Ukraine's national security is the sphere of energy security. The Law of Ukraine "On the National Security of Ukraine" defines the foundations and principles of national security and defense, the goals and basic principles of state policy, which will guarantee society and every citizen protection from threats [12]. However, energy security did not receive a separate legislative regulation, which indicates the need for the legislator to create additional legal mechanisms to determine the procedure for implementing state policy in the energy sector and ensuring its stable functioning.

There are discussions regarding the substantive effectiveness of Ukraine's implementation of the legislative and ideological-institutional provisions of the Association Agreement with the EU. According to A. Ilyenko, the permissible areas of incorporation of EU legislation in Ukraine are the standardization of aspects of bilateral energy supply, the separation of institutional-legal and financial-economic aspects of energy-investment trade between Ukraine and the EU, the legislative provision of energy saving by methods and means other than the declarative provisions of the Law of Ukraine "On energy efficiency", the creation of a profile normative legal act on the management of energy infrastructure [13, p. 62].

It is worth noting that in Ukraine at the legislative level there are also problems of defining the subject-specific field of regulatory regulation of energy security. In particular, the Ukrainian legislation does not define the criteria of energy supply models, stylistics and the subject field of protection of national energy interests and the option of the autonomy of domestic energy resources. Profile normative legal acts, in particular the Law of Ukraine "On Alternative Energy Sources" and the Law of Ukraine "On Heat Supply" do not define the algorithms of state management direction and coordination of the specified sectors by specialized bodies in the specified field.

The goals of regulatory and legal regulation of energy security should include: ensuring transparent functioning of energy markets; introduction of preferential tax regimes for the supply of technologies for the needs of the energy industry; regulation of tasks and powers of state authorities in this area; increased criminal liability for physical attacks, sabotage aimed at disabling or damaging the operation of operating systems or systems for ensuring the physical security of a critical infrastructure facility in the energy sector; approximation of Ukrainian legislation to EU law [14, p. 64-65].

Analysis of the legal provision of energy security of Ukraine and the EU indicates its gradual development and identification of priority directions, namely: diversification of energy resource supplies, strengthening of the role of energy-saving technologies and the spread of the use of alternative energy sources. In addition to the indicated areas, the development of legal policy support in the field of energy security of Ukraine should also include: reducing the level of corruption and the influence of the political will of the ruling elites on the energy market of Ukraine, deregulation of the market by the state, demonopolization of the energy resources market.

In modern conditions of globalization, there are a number of problems that inhibit the achievement of energy security goals and the integration of Ukrainian energy systems into the single European space. This is, in particular, the lack of a deregulation policy of the energy sector, the lack of optimization and systematization of energy legislation, its conflicting nature and tolerance for the monopoly position of energy market participants. The energy systems of Ukraine should be integrated into the energy systems of the EU, and the creation of appropriate international public-law institutions should be initiated.

In our opinion, the institutional and legal mechanisms for ensuring energy security should provide for: constant strategic planning of the development of the energy sector; coordination of energy policy with other areas of state policy; elimination of illegal administrative influence on energy market participants; taking measures to improve energy efficiency; creation of conditions for the development of technological innovations in the field of functioning of the energy infrastructure; overcoming the personnel shortage of energy market entities; introduction of educational programs for professional development or retraining of personnel; strengthening coordination interaction between subjects of the energy sector management system; increasing the effectiveness of preventing cyber threats; development of public-private partnership in the field of ensuring energy security.

Conclusions.

The country's energy security is defined as the state of protection of the country, its citizens, society, and above all its economy from the threat of a shortage in providing energy needs with economically available fuel and energy resources of appropriate quality under normal conditions and in emergency situations, as well as from the threat of disruption of the stability of the supply of fuel and energy resources and with minimal negative impact on the environment. Energy security has a global, geopolitical character, its provision must be achieved by the joint efforts of all countries of the world, taking into account the internal characteristics and needs of the industry. Energy security as an object of state policy in the conditions of armed aggression against Ukraine requires proper legal regulation and continuous coordinated state management influence in order to ensure energy independence of Ukraine, stable operation of energy infrastructure facilities.

The analysis of the legal provision of energy security in Ukraine made it possible to reach a conclusion about the branching of the legislation in the specified area: the Energy Security Strategy-2025, the Law of Ukraine "On the Electric Energy Market", the Law of Ukraine "On Oil and Gas", the Law of Ukraine "On Alternative Energy Sources", the Law of Ukraine "On Natural Monopolies", the Law of Ukraine "On Heat Supply", etc. Also, Chapter 11 of the Association Agreement with the EU defines key aspects of Ukraine's energy cooperation with EU member states. In the conditions of war in Ukraine, the main direction of legislative regulation of the energy market is the introduction of tax benefits, temporary special taxation regimes. At the same time, it should be pointed out the lack of optimization and systematization of energy legislation, its conflicting nature and tolerance for the monopoly position of energy market participants.

We consider the introduction of the Institute of the Authorized President of Ukraine on Energy Safety, the development of the Institute of Public Control in the specified field as a promising direction for improving the national institutional mechanism for ensuring energy security. In addition, the institutional and legal mechanisms for ensuring energy security should provide for: permanent strategic planning of the development of the energy sector; coordination of energy policy with other areas of state policy; elimination of illegal administrative influence on energy market participants; taking measures to improve energy efficiency; creation of conditions for the development of technological innovations in the field of functioning of the energy infrastructure; increasing the effectiveness of preventing cyber threats; taking measures to reduce the level of corruption and the influence of the political will of elites on the energy market of Ukraine, state deregulation and demonopolization of the energy resources market.

REFERENCES:

1. Reznikova, O. (2022). *Natsionalna stiikist v umovakh minlyvoho bezpekovoho seredovyshcha* [*National stability in the conditions of a changing security environment]:* monohrafiia. Kyiv: NISD [in Ukrainian].
2. *Enerhetychna bezpeka Ukrainy: perspektyvna model upravlinnia ryzykamy [Energy security of Ukraine: perspective model of risk management]:* monohrafiia / [O.M. Sukhodolia, Yu.M. Kharazishvili, H.L. Riabtsev]; za red. O.M. Sukhodoli. (2023). Kyiv. NISD [in Ukrainian].

3. Sukhodolia, O., Kharazishvili, Yu., Bobro, D. (2020). Metodolohichni zasady identyfikatsii ta stratehuvannia rivnia enerhetychnoi bezpeky Ukrainy [Methodological principles of identification and strategizing the level of energy security of Ukraine]. *Ekonomika Ukrainy*. 6 (703), 20–42. DOI: https://doi.org/10.15407/economyukr.2020.06.020 [in Ukrainian].
4. Lippert, E. (2020). Energy security concepts and policies. *Handbook of energy secutity*. Springer. 1-22 [in English].
5. Kovalko, M., Kovalko, O. (2009). *Rozvynuta enerhetyka – osnova natsionalnoi bezpeky Ukrainy. Analiz tendentsii i mozhlyvostei [Developed energy is the basis of Ukraine's national security. Analysis of trends and opportunities]*. K.: TOV Drukarnia «Biznespolihraf» [in Ukrainian].
6. Yakoviyk, I., Tsvelikh, M. (2023). Enerhetychna bezpeka Yevropeiskoho Soiuzu v umovakh rosiiskoi ahresii proty Ukrainy [Energy security of the European Union in the conditions of russian aggression against Ukraine]. *Problemy zakonnosti.* 160, 170-191. URL: https://doi.org/10.21564/2414-990X.160.274518 [in Ukrainian].
7. Yakoviyk, I., Tsypyshchuk, K. (2021) Enerhetychna bezpeka Yevropeiskoho Soiuzu ta yii znachennia dlia Ukrainy [Energy security of the European Union and its significance for Ukraine]. *Yurydychnyi naukovyi elektronnyi zhurnal.* 10, 627-629. DOI: 10.32782/2524-0374/2021-10/163 [in Ukrainian].
8. Bordoff, J., O'Sullivan, M. (2023). *The Age of Energy Insecurity. How the Fight for Resources Is Upending Geopolitics.* URL: https://www.foreignaffairs.com/world/energy-insecurity-climate-change-geopolitics-resources?utm_medium=promo_email&utm_source=promo_1&utm_campaign=PROM_apr23-camp1-promall-panel-a&utm_content=20230419&utm_term=EPRAZ003A1 [in English].
9. China bans export of core solar panel technologies. February 1, 2023. URL: https://asiatimes.com/2023/02/china-bans-export-of-core-solar-panel-technologies/ [in Ukrainian].
10. Salisu, A., Lasisi, L., Tchankam, J. (2022). Historical geopolitical risk and the behaviour of stock returns in advanced economies. *The European Journal of Finance*, 28: 9, 889-906, DOI: 10.1080/1351847X.2021.1968467 [in Ukrainian].
11. Pro vprovadzhennia system enerhetychnoho menedzhmentu. Postanova Kabinetu Ministriv Ukrainy № 1460 vid 23.12.2021 r. Vidomosti Verkhovnoi Rady. URL: https://zakon.rada.gov.ua/laws/show/1460-2021-%D0%BF#Text [in Ukrainian].
12. Pro natsionalnu bezpeku Ukrainy: Zakon Ukrainy [On national security of Ukraine: Law of Ukraine]. 21.06.2018. URL: https://zakon.rada.gov.ua/laws/show/2469-19#Text [in Ukrainian].
13. Ilienko, A. (2019). Enerhetychna bezpeka Ukrainy: sutnist, zahrozy ta mekhanizmy rehuliuvannia [Energy security of Ukraine: essence, threats and mechanisms of regulation]: *Vcheni zapysky TNU im. V. I. Vernadskoho :* Derzhavne upravlinnia, 4, 61-66 [in Ukrainian].
14. Muza, O. Orhanizatsiino-pravovi zasady zabezpechennia enerhetychnoi bezpeky Ukrainy v umovakh voiennoho stanu [Organizational and legal principles of ensuring energy security of Ukraine under martial law]. *Naukovyi visnyk Dnipropetrovskoho derzhavnoho universytetu vnutrishnikh sprav*. 1, 60-66 [in Ukrainian].