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A CONCEPTUAL APPROACH TO ENSURING INTERNATIONAL ENERGY SECURITY IN THE CONTEXT OF SUPPORTING GLOBAL SECURITY

КОНЦЕПТУАЛЬНИЙ ПІДХІД ДО ЗАБЕЗПЕННЯ МІЖНАРОДНОЇ ЕНЕРГЕТИЧНОЇ БЕЗПЕКИ В КОНТЕКСТІ ПІДТРИМКИ ГЛОБАЛЬНОЇ БЕЗПЕКИ

Problems related to the functioning of the energy sector in various countries of the world (Ukraine, Germany, Poland, Bulgaria, Romania, etc.) were analyzed. The energy threats present in the field of international energy security have been identified, including of a corrupt nature. A conceptual model was developed and a conceptual vision of ways to ensure energy security and energy stability in Ukraine and abroad was formulated.

Key words: *public administration, system of public administration, state regulation, global security, military security, international energy policy, energy security, social security, ecological security, national economy, energy warfare, energy stability, critical infrastructure, high-risk facilities, energy threats, cyber attacks, concept, corruption, United Nations, European Union.*

Проаналізовано проблеми, пов'язані з функціонуванням енергетичної сфери в різних країнах світу (України, Німеччини, Польщі, Болгарії, Румунії та ін.). Виявлено енергетичні загрози, наявні у сфері міжнародної енергетичної безпеки, у т.ч. корупційного характеру. Розроблено концептуальну модель і сформульовано концептуальне бачення шляхів забезпечення енергетичної безпеки та енергетичної стабільності в Україні та за кордоном.

Ключові слова*: публічне управління, система публічного управління, державне регулювання, глобальна безпека, воєнна безпека, міжнародна енергетична політика, енергетична безпека, соціальна безпека, екологічна безпека, національна економіка, енергетична війна, енергетична стабільність, критична інфраструктура, об'єкти підвищеної небезпеки, енергетичні загрози, кібератаки, концепція, корупція, ООН, ЄС.*

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Problem setting. Today, the realization of Ukraine's national interests is complicated, in particular, in the field of solving energy security problems. It is one of the basic elements of national security. It is clear that by achieving a high level of energy security and energy stability, any state can ensure its national interests and its sustainable development, which covers the economic, social and environmental spheres. Therefore, the tasks of Ukraine in the near future are to support the security system, protect territorial integrity and, most importantly, create the proper conditions for ensuring social security from within the country. This can be achieved, including provided effective implementation of state policy in the energy sector. All this determines the relevance of the selected research issues.

Analysis of recent research and publications. Features of the formation and implementation of public management mechanisms in the field of energy security are the subject of research by foreign and domestic scientists, in particular, L. Antonova, A. Gogoreliani, I. Dragan, V. Yevdokimov, O. Kryukov, S. Lingaas, D. Nussbaum, J. Slowik, O. Stoyan, E. Shulga, A. Higgins and others [7; 8; 9; 12; 15]. At the same time, the impact of various external factors in recent years gives reason to insist on the importance of researching trends in the development of the energy sector both in peacetime and in conditions of uncertainty.

Paper objective. The purpose of the article is to study trends in the development of the energy sector as an imperative for energy security and the national economy.

Paper main body. The development of the world proceeds through the globalization of all spheres of international life, including the energy sphere. At the same time, the contradictions between the states will intensify due to the unevenness of their development as a result of globalization processes in general and the strengthening of the Russian Federation's full-scale aggression against Ukraine. The "butterfly" principle assumes that one phenomenon or process can lead to the appearance of other phenomena and processes, including on the opposite side of the globe. This is what happens with the undeclared war of the Russian Federation, which negatively affects not only the state of functioning of Ukraine, but also affects other countries. In some, the Russian Federation provokes the emergence of socio-political, military and other conflicts, such as Georgia, Armenia, Azerbaijan, Iran, etc., and in others it destabilizes socio-economic development, which affects the level of well-being of citizens, their social perception of external and internal factors [1]. According to the opinion of international experts of the research organization International Crisis Group (hereinafter - ICG), a full-scale war in Ukraine should be put in the first place among armed military conflicts. Actually, this ranking was made by ICG experts in 2023. Experts note that Russia's undeclared war against Ukraine also affected the global situation in the world. To some extent, this strengthened the determination of EU and NATO institutions, shifting the balance of power in favor of Ukraine in Northern and Central-Eastern Europe. According to ICG experts, the number of

dead as a result of hostilities on the territory of Ukraine already exceeds 200,000 people [6].

The war in Ukraine had a particularly acute impact on the crisis in the South Caucasus. Therefore, the ICG put the conflict between Armenians and Azerbaijanis in Nagorno-Karabakh in second place. The conflict has been going on for more than 6 years, and its new phase has been going on for a year. To date, the losses of the parties to the specified conflict exceed 32,000 people [ibid.].

Due to the undeclared war of the Russian Federation against Ukraine, other countries, in particular, Germany, Hungary, etc., feel the impact on their own energy sphere. It is worth emphasizing that these and other European countries have felt the negative influence of the Russian Federation on the system of energy security until now. The energy sector is one of the important goals of the functioning of any state and international associations. They are forced to quickly adapt to the conditions of growing hybrid warfare. Actually, during the last 10 years, hybrid threats have increased dramatically all over the world: from cyber attacks to disinformation campaigns and covert military operations [1; 13]. Threats arise more and more frequently, becoming more complex, destructive and forceful in nature. The implications of hybrid warfare are important for both economics and public policy, especially in relation to the energy sector.

The aggressor state has created a number of hybrid threats against energy facilities, which are components of critical infrastructure in Ukraine, as well as in other countries of the world. In fact, the Russian Federation used political and economic levers in combination with disinformation campaigns against Bulgaria and Romania to undermine efforts to reduce the dependence of these countries on Russian energy sources [9]. Supply disruption has been used before, in particular against the Baltic states and Ukraine in 2009, and more recently against Bulgaria. The aggressor state has also used its economic power combined with political influence to advance its energy agenda in Hungary, where work is currently underway to expand the Paks nuclear power plant using Russian energy technology [11]. Russia is also using its commercial and political connections in Germany to promote the controversial €12 billion Nord Stream 2 oil pipeline, which has almost been completed. In addition, the Russian Berserk Bear APT group is suspected of carrying out cyber attacks in 2020 against German energy companies and was involved in previous cyber attacks against German utilities in 2018 [12].

In a number of other NATO countries, in particular Great Britain, Poland, Turkey and the USA, cyber attacks on energy facilities committed with the support of the Russian Federation were detected. In some cases, these cyber campaigns have been conducted in parallel with other hybrid threats to energy facilities (such as disrupting and curtailing natural gas supplies). If you put all this together, it becomes obvious that in the last ten years the Russian Federation has been conducting a regular hybrid campaign aimed at undermining the energy security of various countries of the world, and with increasing force.

Outside the Euro-Atlantic region, Iran and suspected other states are currently waging a comprehensive hybrid campaign against Saudi Arabia's energy facilities. On the example of this campaign, one can probably form an idea about the future of hybrid struggle, in particular in the field of energy security. With the help of latent and open military operations, and using proxy forces, Iran repeatedly disrupted the functioning of the Saudi energy infrastructure and struck it.

The possible collusion of hostile forces in Iran's ongoing campaign against Saudi Arabia is of particular concern and could have implications for NATO countries. In particular, as a result of a cyber attack on the Petro Rabigh complex in 2017, it was necessary to stop the facility and carry out a thorough cleaning, which was associated with large material costs, moreover, an uncontrolled gas leak and an explosion almost happened. Despite initial speculation that responsibility for the dangerous Triton malware used in the attack lies solely with Iran. The US concluded that this software was developed by the Russian Federation and imposed sanctions on a research institution associated with its development. This malware has also been used in attacks on energy companies in the US [16].

Other measures taken against the Russian Federation, suspected of being part of the Iranian campaign, include two drone strikes by Iran-allied Houthis on Saudi oil refineries, attacks in the Persian Gulf on two oil tankers registered in Saudi Arabia, and carried out recently attacks on two foreign tankers in Saudi ports in the Red Sea. In particular, the late 2019 UAV strike on the Saudi Aramco oil refinery in Abqaiq, which was claimed by the Houthi forces, gave Iran the opportunity to deny involvement, while also exposing the weakness of Saudi Arabia's air defenses.

Leaders of NATO countries emphasize the importance of energy security, in their opinion, stable and reliable energy supply, diversification of import routes, suppliers and energy resources, as well as interconnection of energy networks are of key importance and increase resistance to political and economic pressure. Although the state authorities are primarily responsible for these issues, events in the energy sector can have significant political and security consequences for NATO countries, as well as affect Alliance partners [7].

Thus, we can note that critically important objects of the energy infrastructure are potential targets that can provide the enemy with attractive advantages, namely:

1) power supply failure;

2) disruption of the civilian infrastructure on which the armed forces depend, which can also undermine social cohesion;

3) demonstration of destructive capabilities for the purpose of intimidation, etc.

It is these vectors that the aggressor state is paying attention to, which not only destroys the energy infrastructure of Ukraine, but also seeks to destabilize the socio-economic situation on its territory, intensifying negative attitudes among

the population, its apathy, discontent, chaos, crisis, etc. In view of this, we believe that Ukraine and its state bodies should take a comprehensive approach to the formation and implementation of state policy, taking into account the above-mentioned latent attitudes of the Russian Federation.

Values and models of energy sector development are directly related to security issues, becoming the subject of global competition. The problems of energy supply and the struggle for energy resources are intensifying. For Ukraine, this means a balance between confrontation and provision of proper conditions for socio-economic development, and for other countries, it means that they have to face relapses of containment and adaptation policies more and more often.

In the conditions of strengthening of new centers of economic growth and their political influence in the world, a qualitatively new geopolitical situation is emerging. A tendency is being formed to find solutions to existing problems and to resolve crisis situations both at the global and regional levels. At the same time, the failure of the global and regional architecture, focused, especially in the Euro-Atlantic region, on the North Atlantic Treaty Organization (NATO), as well as the imperfection of legal instruments and mechanisms, can create a threat to ensuring international security, including energy security as its component.

Currently, the world community is entering the "space" of energy conflicts, which is characterized by a lack of energy resources. Note that at the beginning of the 19th century. the English economist Thomas Malthus made a sad prediction that there will not be enough resources for everyone. The division into rich and poor in countries at the beginning of the XXI century. becomes even more striking. The concept of the "golden billion" appeared, according to which the resources on the planet are enough for the comfortable existence of one billion people. The reality is that later the resource "hunger" will become more acute. Therefore, the most economically developed states will seek a way out of the situation by ensuring guaranteed access to resources concentrated on the territory of other countries. As a result, ensuring energy security has firmly entered the priority tasks of national security.

Attention to countries and regions with promising reserves of oil and especially gas is growing sharply. This is primarily Ukraine, as well as the countries of the Persian Gulf, Africa and Central Asia. Based on this, the role of Ukraine in the energy sector, as a country on the territory of which there are significant reserves of hydrocarbons, is growing sharply. In addition, Ukraine has a convenient geographical location (transit), which it actively used before the full-scale aggression of the Russian Federation.

The famous French political scientist J. Thiriard noted that it is possible to unite 800 million people (at least to balance the 1,200 million Chinese) and find in the bowels of the Earth everything necessary to meet needs. Scientist Z. Brzezinski, former assistant to the US president for national security, also expressed an interesting position in his book "Geostrategy for Europe" that the his-

torical task of states should be to modernize, and not to make futile efforts to ensure the status of a world power.

The struggle for energy resources can cause an energy conflict, which increases the risk of armed confrontation between states. Today, the world community is coming to understand the need to ensure energy stability, which is the basis of international security.

The increase in the number of energy-dependent countries, the depletion of existing natural energy resources, the inaccessibility of certain countries to energy resources, their use for political purposes, etc., all this is already causing a number of negative consequences today, which in the current conditions of a rather conflicting international situation can pose a serious danger to sustainable development. The world community faced a difficult task: finding new ways to ensure energy security and energy stability in the conditions of globalization and the conduct of hybrid wars, as well as the rapidly changing geopolitical situation and the formation of a multipolar world. This path should lie primarily in the political plane of solving this task and ensure the consolidation of the efforts of various countries to build a stable energy world. At the beginning of the XXI century. a discrepancy arose between the existing system of energy security of the world community and the realities of the modern situation (characterized by the emergence of a multipolar world and the violation of strategic stability due to the intensification of the struggle for energy resources).

Thus, the relevance of the research topic is determined as follows:

1. The change in the geopolitical and international situation at the beginning of the XXI century, the emergence of threats to energy security and energy stability.

2. The dependence of energy security and energy stability on energy relations between states, the aggravation of the struggle for non-renewable energy resources (oil, gas).

3. High probability of energy conflicts in which armed violence is possible.

4. The need to create a global energy system that ensures fair access of all countries to energy resources.

5. The need to develop new directions for the development of the energy sector, to create effective mechanisms for ensuring international energy security, and to create and develop international energy law.

6. Energy security is the most important factor in ensuring national security, which includes not only guarantees of sovereignty, integrity, protection of the population, but also provision of a favorable natural environment, availability of resources, protection from natural disasters and maintenance of material well-being.

It should be emphasized that the struggle for energy resources leads to the emergence of the concept of "energy war". The consequences of such a "war" can be as large as the consequences of a conventional war. The complexity of the sit-

uation for Ukraine is compounded by the fact that it is also forced to confront the armed aggression of the Russian Federation. It, in turn, seeks both the occupation of the territory of Ukraine and the capture of its markets and assets without armed invasion. As a result of an energy and hybrid war, the economic potential of Ukraine as a victim may be significantly damaged and cause systemic crisis phenomena capable of slowing down or rejecting our country in economic development, as well as sharply reducing the defense capabilities in the face of armed aggression. Therefore, our state faces the task of waging war in several directions at once, namely: control and preventing competitors from accessing hydrocarbon deposits; conducting an informational struggle against the Russian Federation in order to achieve the goals of domestic energy policy; possible use of military force to resolve energy conflicts, etc.

The world community needs to pay attention to the energy terrorism of the Russian Federation, which can lead to an explosion of global energy security, as well as to major environmental disasters. The main features of energy terrorism are the following: use of violence and intimidation against subjects of energy relations; focus on solving energy problems and achieving goals in the struggle for energy resources; public danger associated with the violation of energy stability and the creation of a direct threat to people's lives due to the possibility of environmental disasters; "advertising" in mass media of the destructive consequences of terrorist acts related to energy facilities and energy processes; an indirect way of achieving the planned final political result through influence on energy objects and energy processes.

Modern energy threats cannot be neutralized by the efforts of one state or group of states. There is a need to consolidate the efforts of the countries of the world community to solve the common task of ensuring energy security and energy stability. This task should be solved in three main directions.

The first direction is related to the development of concepts (strategies) for ensuring international energy security.

The second direction involves the search for mechanisms for the implementation of conceptual provisions in international practice.

The third direction includes the development of socio-political initiatives in the energy sector.

Today, the formation of an international energy policy is necessary. The main function of international energy policy is to coordinate the activities of states to ensure energy security and energy stability. We believe that in the future international energy policy may include three main sections: declarative international energy policy; contractual international energy policy; political activity of the world community regarding the implementation of the results of the declarative and contractual energy policy.

In our opinion, a conceptual approach to ensuring international energy security includes the following:

1) the formation of an international conceptual framework in the energy sphere and a general categorical apparatus, which is the first step on the way to ensuring the security of the energy world;

2) creation at the international level of a uniform evaluation methodical apparatus for all countries in the energy sector;

3) the following concepts of ensuring energy stability are possible: the concept of ensuring energy stability based on energy law; the concept of ensuring energy stability on the basis of energy availability and justice, which is a perspective program of Ukraine's foreign policy; the concept of non-provocative actions in the energy sector. The latter concept, together with other concepts, can contribute to a significant reduction in the danger of energy conflicts. Therefore, it is in the national interests of Ukraine to conduct foreign policy activities to implement this concept;

4) the concept of control over energy processes: the concept of periodic, selective inspections and the creation of permanent (if necessary) commissions on the ground is an effective mechanism of control over energy processes in one or another country (in the region), as well as the concept of creating an international system for monitoring energy hazards and threats;

5) the concept of increasing transparency in the energy sector;

6) the concept of states' refusal to use "energy weapons" (energy resources) for socio-political purposes.

Conclusions. Based on the analysis of theoretical and practical aspects regarding the specifics of the development of the energy sector as an imperative of energy and national security, we can draw the following conclusions:

1. National energy security of Ukraine is one of the main components of national security, on which all other elements of the security system depend to one degree or another (for example, political, economic, and military security). In general, the sustainable development of Ukraine in the 21st century requires correspondingly ensuring the national interests of our country in conditions of uncertainty.

2. At the beginning of the XXI century. a new socio-political phenomenon was finally formed - the energy world, which largely began to determine the nature of world processes covering energy security and energy stability. In the modern world, all states are surrounded by energy dependencies (relationships), so the escalation of the energy confrontation usually takes on a multilateral character. An example of this is the situation with energy security in various countries of the world, which is largely affected by the undeclared war of the Russian Federation against Ukraine.

3. Today, ensuring Ukraine's energy security is impossible without ensuring international energy security. Energy relations between states have become the most important part of modern international relations. A new field of international cooperation has appeared - cooperation in the field of ensuring international ener-

gy security, which affects the political, economic, ecological and social interests of each state and the entire international community. Currently, there is a transition from trade and financial energy relations of states to cooperation aimed at ensuring international energy security. Such cooperation requires a new international legal framework, as well as new targeted international institutes that would carry out all coordination of work and control to ensure international security and energy stability.

4. The achievement of energy security is facilitated by an active foreign energy policy, the efforts of which are focused on seeking agreement and energy interests that coincide with other states based on a system of bilateral and multilateral mutually beneficial partnership relations. Ukraine should promote the involvement of other states interested in joint actions to ensure international security in the process of ensuring their own energy stability. All countries in their relations with the international community must take into account the principles of maintaining energy stability and predictability in the field of energy security.

5. Ukraine should act from the position of unchanged course to participate together with other states in the development and strengthening of international mechanisms for ensuring global energy security, preventing the use of unjustified military force in violation of the UN Charter in the event of an energy conflict. Maintaining energy stability and a high level of energy security can be facilitated by compliance with the norms of international law in order to solve the tasks of combating terrorism and preventing the resolution of energy conflicts with the help of military force.

6. In order to preserve energy stability and an equal strategic partnership, it is expedient for Ukraine to implement existing contracts and agreements in the energy sector, to participate in the development and conclusion of new agreements that correspond to its national interests; to ensure the search and development of new oil and gas fields, which allow to ensure energy stability; contribute to the strengthening of regional energy stability by participating in the provision of regional energy processes; participate in measures to eliminate emergency situations, as well as in the provision of humanitarian aid to victims. The energy policy of Ukraine should provide for a special energy diplomacy aimed at increasing the integration of energy and economic relations, primarily with EU and NATO member states, as well as at supporting Ukraine's participation in the world energy market and in the world energy and environmental security system with priority support for domestic business entities.

7. We believe that it is appropriate to use conceptual modeling approaches in the field of energy security as a methodological basis for solving energy problems. The advantage of conceptual models is that they provide a holistic view of the object of research. Based on the developed conceptual model, a conceptual vision of ways to ensure energy security and energy stability in Ukraine was formulated.

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