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LEGAL MECHANISM TO ENSURE NATIONAL SECURITY IN THE FIELD OF USE OF NATURAL RESOURCES

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Abstract. The legal basis for the national security of Ukraine is the Constitution of Ukraine, according to which laws, doctrines, concepts, strategies, and programs are developed, which determine the targets and guidelines for the national security policy of the Ukrainian state in order to timely identify, prevent, and neutralize real and potential threats to the national interests of Ukraine. Ukraine is one of the countries with a deficit of its own natural hydrocarbon resources. Lack of necessary reserves, dependence on energy imports pose a threat to the country's energy security. The transformation of the oil and gas sector of Ukraine and the creation of an effective organizational model should provide sufficient control over the areas of activity to ensure effective resource consumption in the oil and gas sector of the economy, grouped into appropriate blocks. Blocks should include directions of action to achieve the effect and further development of the industry, as well as to ensure effective control. Conclusions on the development of the oil and gas sector in Ukraine are made, ways to improve using the SWOT analysis technique are suggested. That is, the author has analyzed the oil and gas sector from the point of view of existing and potential opportunities, threats, advantages, and disadvantages. At the same time, the requirements of the Third Energy Package for the separation of the transport function from the gas production and supply business are provided, and it is also taken into account that the operator is removed from the structure of a vertically integrated company and is not associated with it by legal, financial, and managerial ties. The success of modernization should become an important driver of reform of the entire state oil and gas sector of the Ukrainian economy and have a long-term impact on the entire society, the lives of citizens, and business.

Keywords: natural resources; national security; energy security; legal regulation; potential threat

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1. Introduction

The emergence and establishment of Ukraine as a democratic, independent, and sovereign state is primarily related to ensuring its national security. Modern challenges and threats have led to a radical transformation of the world economic and social order, which are accompanied by a change in political configurations. The global financial and economic crisis has become another challenge to world civilization, caused uncertainty in the prospects of global and national economies, and intensified the search for ways to modernize social systems.

Against the background of increasing modern threats and growing instability in the world, there are new challenges to international security in the raw materials, energy, financial, information, environmental and food spheres.

Threats such as the proliferation of mass destruction weapons, international terrorism, transnational organized crime, illegal migration, piracy, and the escalation of interstate and civil conflicts are becoming more intense, encompassing new geopolitical regions and states.

The availability of natural resources is one of the factors in ensuring the national security of each country. Therefore, it is essential to explore the features of the legal mechanism for national security in the use of natural resources. This applies to Ukraine, a country on the path to European integration. Since the proclamation of Ukraine's independence, the issue of ensuring its security has always played an important role in the activities of all state bodies. The focus on the protection and preservation of Ukrainian statehood was defined by the Declaration of State Sovereignty of July 16, 1990. Subsequently, these provisions were developed in the Constitution of Ukraine. In particular, it concerns the attribution of the protection of the sovereignty and territorial integrity of Ukraine, ensuring national security to the most important functions of the state. The concept of national security, which was initially considered a political doctrine in Ukraine, was later implemented as a result of determining the relevant area of state activity.

Further development of special legislation in this area took place mainly through the legal and organizational regulation of the relevant state bodies. The system of national security was formed with the adoption of the Law of Ukraine "On Fundamentals of National Security of Ukraine" of June 19, 2003.

Subsequently, Ukraine has undergone quite frequent changes in foreign policy guidelines in the context of integration into European and Euro-Atlantic structures. In general, this negatively affected the organization of Ukraine's national security system and its ability to effectively counter threats. Numerous shortcomings in the legislation led to the extraordinary nature of the response, which caused complex legislative constructions, some of which, for a number of reasons, immediately revealed their own unsustainability, while others significantly complicated the legal regulation of public relations.

The proclamation and constitutional consolidation in 2019 of the country's strategic course towards European and Euro-Atlantic integration necessitated the adaptation of Ukrainian legislation to legal systems and standards in the field of security and defense of EU and NATO member states.

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2. Literature Survey

Analysis of the legal framework shows its specificity. This is a property of legislative acts, which in essence sometimes establish a new legal order. One example is "sanctions legislation" - that is, the introduction of restrictive measures outside the legal responsibility in the interests of national security, which has recently been embodied in Ukrainian law.

In addition, it is about a certain circle for legal regulation, which includes public relations in a particular area.

These public relations relate to the following areas of activity:

- 1) state strategic planning in the field of national security, which is perceived in practice through the prism of the needs and features of public administration for unresolved organizational and legal issues (general subjectivity of planning, grounds and relevant procedures, competence of state bodies and officials, boundaries and control procedure) (Akimova, L.N. (2018));
- 2) defense of the state and economic support of defense measures (features of conducting and implementing state policy in the field of defense, competence and procedures of subjects, standardization of special subjects that have competence only in cases of application of certain administrative and legal regimes, state regulation economic sphere for the needs of defense, the volume of public administration and public-civil partnership) (Bondar, O. (2018));
- 3) obtaining particularly important information in the interests of the state, conducting external measures of influence, counteracting subversive activities of foreign states and organizations using non-military or "hybrid" methods of achieving goals (which will be carried out in the form of legal regulation in Ukraine of intelligence, counterintelligence, and other state activities carried out by specially authorized state bodies), forms and methods of these activities (Romaniuk, M., & Smutchak, Z. (2016));
- 4) carrying out measures of influence on the state policy of other states concerning Ukraine during carrying out of measures of strategic communication, and also other similar activity (information influence, propaganda and counterpropaganda, state diplomacy and non-state cooperation in the interests of Ukraine, cultural influence, maintenance of contacts with compatriots abroad, etc) (Kovalova, O.V., Korniienko, M.V., & Pavliutin, Y.V. (2020));
- 5) carrying out temporary (special, emergency) restrictive measures in situations that threaten the security of the state (Kulish, A., Petrushenko, M., Reznik, O., & Kiselyova, E. (2018));
- 6) countering terrorism, separatism and political extremism (Bogutska, O. (2018));
- 7) state policy of protection of the state border of Ukraine (Blakyta, G., & Ganushchak, T. (2018));
- 8) certain components of the legal regime of military security (Kizian, R. (2019));
- 9) legal problems of temporary occupation of the territory of Ukraine, maintaining ties with citizens of Ukraine in the occupied territory, deoccupation and integration of territories (Serafimov, V. (2017), Serbyn, R. et. al. (2020)).

This list only outlines the range of problematic areas of relevant social relations that already exist, and therefore it can be clarified in further research. Under such conditions, a thorough study of the issue of national security and defense law on the basis of Ukrainian legislation is an important task of legal science in general.

3. Methods

The theoretical and methodological basis of the work were the provisions of economic theory, which are set out in the works of leading economists. General and special methods of scientific cognition are used: historical-logical method; method of systematization and classification of economic processes and phenomena; institutional analysis; system approach and system analysis; analysis and synthesis; statistical and graphical methods - for processing and generalization of statistical data and their display in Tables.

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The information base of the study was the laws of Ukraine, decrees of the President of Ukraine, resolutions of the Cabinet of Ministers of Ukraine, information of the State Statistics Service of Ukraine and the Ministry of Finance of Ukraine, Ukrainian and international regulations, materials published in scientific journals, information bulletins, statistical collections, monographic studies of economists, and information from the Internet.

4. Results

For Ukraine, the problem of protecting vital national interests remains extremely complex and relevant. Unfortunately, for more than a quarter of a century, the Ukrainian government has failed to make significant progress in formulating and implementing an effective national security policy. Crisis phenomena, which are inherent in almost all spheres of public life of the country and foreign relations, objectively demonstrate the lack of a clear, long-term strategy for further development and protection of the most important achievements of Ukraine.

Thus, despite the obvious importance of ensuring the state's defense capabilities, the current state of the Armed Forces of Ukraine against the background of the current Russian-Ukrainian military conflict is very critical. The actual failure of the main programs of reforming and rearming the Ukrainian army, the systematic underfunding of the needs for the maintenance and training of the Armed Forces threatens the ability of them to fulfill the main tasks of protecting the territorial integrity and inviolability of the Ukrainian state.

Currently, the processes of development of the Ukrainian state and the formation of civil society are taking place in the context of ongoing global transformations in the world, active "reformatting" of leading world players, formation of a new architecture of global and regional security, intensive search by the world community for ways out of the financial and economic crisis, and the formation of a new world economic order. It is in such periods of world history that the foundations of new world order, the place and the role of the country in international schedules are laid for the long term.

Further development and protection of Ukraine's most important achievements require a clear definition of the state in strategic priorities that must meet the challenges and threats of the XXI century, its interaction with modern systems of international and regional security.

It is the choice and success of Ukraine's foreign policy implementation that depends not only on the state of its national security but also to a large extent on the state of security and stability in the European region. Further factual uncertainty of Ukraine in the global and regional security system threatens to turn our country into a buffer zone between powerful international players who will try to use its territory to reduce their own risks and threats.

The legal basis of national security is the Constitution and other regulations that enshrine and guarantee the protection of fundamental human and civil rights, the organization of state power, and the establishment of universal values on which any society is based.

Examining the regulations in the field of national security, it should be noted that they form a complex both in structure and content dynamic system, which is a set of laws and regulations that create legal support for the functioning of the national security system of the Ukrainian state.

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Considering the current regulations in the field of Ukrainian legislation on national security, it is necessary to note the following. According to the criterion of the nature of the expression of will, regulations in the field of national security, on the one hand, can act as a direct expression of the will of the entire Ukrainian people, and on the other - be created and adopted by the state or authorized state authorities.

In the first case, they are primary because they express the will of the Ukrainian people as the bearer of sovereignty and the only source of power. Such primary regulations in the field of national security include the Declaration of State Sovereignty of Ukraine, adopted by the Verkhovna Rada on July 16, 1990, the Resolution of the Verkhovna Rada "On the Declaration of Independence of Ukraine" dated August 24, 1991, the Act of Independence of Ukraine, adopted on August 24, 1991, which received support in the All-Ukrainian referendum on December 1, 1991. These regulations became the first legal basis, the legal basis for regulating public relations of the independent, sovereign Ukrainian state and its national security.

In particular, it should be noted that the Declaration of State Sovereignty of Ukraine in Chapter IX "External and Internal Security" laid down the basic principles of external and internal security of the Ukrainian state: Ukraine has the right to its own Armed Forces; has its own internal troops and state security bodies subordinate to the Verkhovna Rada. Ukraine determines the procedure for military service by its citizens. Citizens perform active military service, as a rule, on its territory and may not be used for military purposes outside it without the consent of the Verkhovna Rada of the Ukrainian SSR; the Ukrainian SSR solemnly declares its intention to become a permanently neutral state in the future, which does not participate in military blocs and adheres to the three non-nuclear principles (not to accept, produce or acquire nuclear weapons).

In the second case, a number of normative acts in the field of national security legislation are derivatives of constitutional law, as they express the political will of the Ukrainian state. These are the regulations in the field of national security that are created, adopted or sanctioned by the state and authorized public authorities.

The legal basis for the national security of the Ukrainian state is the Constitution of Ukraine, where its supremacy in the system of other normative legal acts of Ukraine is defined as follows:

- a) The Constitution of Ukraine, consolidating the authority of the people, regulates the core of social relations that arise directly in the process of protecting national interests and guaranteeing in Ukraine the security of the individual, society, and state from external and internal threats in all spheres of life. Protection of the sovereignty and territorial integrity of Ukraine, ensuring its economic and information security, are referred by the Constitution to the most important functions of the state, moreover, it is a matter of the entire Ukrainian people;
- b) The Constitution of Ukraine defines and enshrines the basic guidelines, principles, and norms of national security, fills in the content of current laws and regulations, by which the security of the individual, society, and the state is ensured in a systematic way. In particular, fundamental concepts such as environmental security (Article 16), economic and information, state security (Article 17), interests of national security (Articles 32, 34, 36, 39), ensuring national security (Article 44), basics of national security (Article 92), national security, spheres of national security, danger (Article 106), personal security (Article 126), public security (Article 138), and human security (Article 3) have been enshrined in the Constitution of Ukraine.
- c) The Constitution of Ukraine defines the most important national interests and establishes the basic legal guidelines for the activities of national security actors. The Constitution of Ukraine takes a differentiated approach to the problems of legislative consolidation, and then the organization and activities of national security actors. The general issues of legislative consolidation, organization and activity of the subjects of national security are reflected both in the general principles (Articles 3, 16, 17, 18) and in separate sections of the Constitution

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(paragraph 1 of Article 32; Article 37; 2 Article 39, paragraph 2 of Article 44, paragraph 2 of Article 64, paragraph 9 of Article 85, Articles 22, 23, 31, paragraph 17 of Article 92, paragraphs 1, 17, 18, 19, 20 of Article 106; Article 107; paragraph 7 of Article 116).

Article 13 of the Constitution of Ukraine stipulates that the land, its subsoil, atmospheric air, water and other natural resources located within the territory of Ukraine, the natural resources of its continental shelf, and the exclusive (sea) economic zone are the objects of property rights of the Ukrainian people, and at the same time in the Code of Ukraine on Subsoil, in Article 13 it is determined that natural persons, citizens of Ukraine, as well as foreigners and stateless persons, when it is necessary to register it in the manner prescribed by law, in order to carry out such economic activity, can be users of subsoil. In addition, owners of land plots can obtain a permit for the extraction of minerals, and, in the conditions of a geological study of a subsoil plot for their own funds, obtain a permit without an auction.

In the same vein, the Resolution of the Cabinet of Ministers of Ukraine provides for the procedure for granting special permits for the use of subsoil by issuing a permit without holding an auction.

Only how is it possible to combine equal rights of citizens to the subsoil when distributing land plots where there is no subsoil?

Then for whom and why were these corruption norms prescribed. Probably, so that the persons in power would receive plots of mineral resources, and the state would redeem in them, so that such landowners would oppose the development of oil and gas and other minerals.

Thus, the availability of natural gas and oil (natural resources) is a component of the country's energy security.

One component and a guarantee of energy security and independence of Ukraine is an efficiently operating gas industry, on the state of which the development of the economy as a whole, industry, agriculture, services, utilities, and the like depends. The structural rebuilding of the industry and the attraction of investments are the basis of the activity, which is entrusted with an important role to meet the needs of residential and industrial consumers in fuel and energy resources.

The subjects of the gas market in Ukraine are the operator of the gas transportation system (GTS), the operator of the gas distribution system (GDS), the operator of the gas storage facilities, the operator of the LNG plant, the customer, the wholesaler, the wholesale buyer, the supplier, and the consumer. The transportation of natural gas through the territory of Ukraine is carried out by the GTS operator, and the storage of natural gas in underground gas storage is carried out by the gas storage operator. The dynamics of the gas sector development are shown (Table 1).

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Table 1. Dynamics of development of the gas sector in Ukraine

Indicators	Years				
	2015	2016	2017	2018	2019
Natural gas production (billion cubic meters)	18,89	19,12	19,42	19,28	19,75
Imports (billion cubic meters)	16,45	11,08	14,05	10,59	11,55
Change in gas storage reserves (billion cubic meters)/the difference between the volume of extracted and injected gas from/to gas storage facilities	-2,53	2,01	-2,71	0,82	-5,16
Gross consumption (billion cubic meters)	32,81	32,28	30,77	30,68	28,84
Technical capacity of interstate connections at the entrance to the GTS (million cubic meters/day)	915,22	902,18	902,18	902,18	904,6
Technical capacity of interstate connections at the exit of the GTS (million cubic meters/day)	443,23	443,60	473,60	473,60	473,60
Active capacity of gas storage facilities (billion cubic meters)	30,95	30,95	30,95	30,95	30,95
Length of gas transportation networks (thousand km)	35	35	35	35	35
Length of gas distribution networks (thousand km)	295	309	292	285	290
Final consumption of natural gas (billion cubic meters)	29,81	29,30	27,47	27,49	25,04
Household consumers	11,28	11,88	11,23	10,63	8,33
Number of consumers (thousand people):	12394	12271	12397	12436	12570
household	12294	12169	12288	12322	12459
non-domestic	100	102	109	114	111

Source: built on Energy. State Statistics Committee of Ukraine

There are 12 underground gas storages in the natural gas market of Ukraine, two of which are created on the basis of aquifers, and the rest - on the basis of depleted gas fields, the total active capacity of which in 2019 was 31 billion cubic meters. The largest gas storage facility is Bilche-Volytsia UGS - 17.05 billion cubic meters (55.09% of the total maximum storage volume (design capacity)). The maximum (design) capacity of gas injection into gas storage facilities is 252 million cubic meters/day, and the maximum (design) capacity of natural gas extraction from gas storage facilities is 260 million cubic meters/day, Annual Report of the National Commission for State Regulation of Energy and Utilities for 2019 (2020) (Table 2).

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Table 2. Technical characteristics of gas storage facilities in Ukraine

Name of gas storage facility	Active gas volume/amount	Buffer gas volume/amount	Design pumping capacity	Design selection capacity
	million cubic meters	million cubic meters	million cubic meters/day	million cubic meters/day
Uherske	1900	782	17	17
Bilche-Volytsko-Uherske	17050	6780	120	102
Dashavske	2150	1803	26	26
Oparske	1920	2228	14	14
Bohorodchanske	2300	0	26	50
Olyshivske	310	260	2	2
Chervonopartizanske	1500	1474	11	14
Solokhivske	1300	746	8	10
Proletarske	1000	653	10	10
Kegychivske	700	380	7	9
Krasnopopivske	420	190	5	4
Vergunsk	400	303	6	3
Total	30950	15599	252	260

Source: built on Annual Report of the National Commission for State Regulation of Energy and Utilities for 2019 (2020)

The total reserves of natural gas as of January 1, 2019 are 882,600,000,000 cubic meters, which will provide Ukraine for 42 years, given the current rate of natural gas use. Ukraine produces only 2.4% of its natural gas annually from its total reserves, while more developed countries produce about 6% (Annual Report of Naftogaz of Ukraine for 2018 (2019)).

In 2019, for the first time in Ukraine's historic existence, the government initiated a transparent process to attract investors to search for and explore new oil and gas fields through the use of international best practices. The State Service of Geology and Subsoil has prepared more than 30 oil and gas licensed spots with a total area of 4.63 thousand sq.km for their phased submission for electronic online auctions (ProZorro) scheduled for 2019. The government approved the tender conditions for 12 spots for the conclusion of production sharing agreements (PSAs) with an area of almost 20 thousand sq. km. (Annual Report of Naftogaz of Ukraine for 2018 (2019)). It can be concluded that the Naftogaz Group is working hard to reform and improve its enterprise, strengthening all technological divisions.

All data of tables and figures, which will be given in the study, do not contain information about the temporarily occupied territories of the Autonomous Republic of Crimea and the city of Sevastopol and parts of the temporarily occupied territories in Donetsk and Luhansk regions.

Ukraine's energy balance is shown (Table 3).

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Table 3. Energy balance of Ukraine in the natural gas sector

Types of fuels/sectors	2014	2015	2016	2017	2018
The share of natural gas in the total supply of primary energy, %					
Natural gas	31,6	28,9	27,1	27,4	27,5
Internal supply of natural gas, TJ					
Natural gas	1554778	1212422	1191064	1142240	1193373
Meeting the needs of natural gas of own production, %					
Natural gas	45,0	56,9	59,3	63,0	64,3
Net imports of natural gas, thousand tons of oil equivalent					
Natural gas	15720	13288	8809	11262	8459
Natural gas consumption by sectors, thousand tons of oil equivalent					
Own consumption by the energy sector	961	957	897	959	947
Industry	3324	2762	2482	2627	2927
Transport	2273	1572	1399	1612	1455
Others	12708	9406	10009	9564	9677
Non-energy use	2650	2281	1784	1168	884

Source: built on Energy State Statistics Committee of Ukraine

Table 3 shows that the main share of natural gas in the structure of fuel consumption for conversion compared to 2017 has not changed - 23%. In 2018, compared to the previous year, the volume of natural gas use increased by 0.4%. The main consumers of natural gas were enterprises and organizations of 11 regions, the volume of use of which (taking into account the volume of sales to the population) accounted for almost 73% of the total volume in Ukraine. Consumers of Dnipropetrovsk region accounted for 10.6% of natural gas use, city of Kyiv - 10.4%, Kharkiv region - 8.5%, Poltava region - 7.2%, Cherkasy region - 6.7%, Donetsk region - 6.2% , Kyiv region - 5.8%, Odessa region - 5.4%, Lviv region - 5.3%, Zaporozhye region - 3.7% and Nikolaev region - 3.3%. The enterprises of 18 regions reduced their natural gas consumption, including Ivano-Frankivsk (by 14.3%), Lviv and Zakarpattia (by 12.4%, respectively), Rivne (by 10.1%) and Volyn (by 9.3%) regions (Energy. State Statistics Committee of Ukraine).

Ukraine's gas sector, operating in the context of the democratic transformation of Ukrainian society, needs to be improved in many respects. “Ukraine is a world leader in the level of liquefied gas consumption in the transport sector. Today, the share of autogas in the total basket of consumed motor fuels in Ukraine is about 25%, which is 2 times or more than the level of, for example, Turkey (12%) and South Korea (less than 10%). The Ukrainian market has long surpassed the use of autogas not only in any of the European countries but is the absolute world leader in the use of the product in transport by a share in the basket of used fuels with a double gap from the second country (Energy. State Statistics Committee of Ukraine).

This is due to the population and the number of vehicles in each country that use petroleum products and liquefied natural gas. Ukraine ranks fifth in the consumption of liquefied natural gas in transport in the world with a figure of 1,800,000 tons. First place - in Turkey, followed by South Korea, Russia, and Poland. The first three countries are significantly superior to Ukraine in terms of population, and Poland is significantly ahead of the number of cars (Ukraine ranks first in the world in terms of autogas consumption (2019)).

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The capacity of cross-border gas pipelines is used for transportation (transit) of natural gas through the territory of Ukraine to neighboring countries. During 2019, natural gas was not exported from Ukraine, but the volume of natural gas transit through the territory of Ukraine in 2019 increased by 3.3% compared to 2018 (Ministry of Energy of Ukraine). The volumes of natural gas imports, transit, and transportation in recent years are given (Table 4).

Table 4. Volumes of import, transit and transportation of natural gas for 2014 - 2019, billion cubic meters

Indicators	Years					
	2014	2015	2016	2017	2018	2019
Volume of transit	62,20	67,08	82,18	93,46	86,78	89,61
Volume of transported natural gas to direct consumers and to GDS	38,12	30,40	29,31	27,49	27,61	25,63
Imports	19,47	16,45	11,08	14,05	10,59	11,55

Source: built on Energy State Statistics Committee of Ukraine

Due to the fact that most of Ukraine's large gas fields are depleted, Ukraine's "blue fuel" production will not increase in the coming years and will remain at a stable level. The general reason for this situation is that all smaller deposits are already depleted. Most of them are developed from 1960-1970, and equipment and technology are used for another 40-50 years. Therefore, new large deposits are needed to increase production.

Indeed, the development of renewable energy sources is one of the most important areas of energy development in Ukraine. Non-traditional energy sources are components of Ukraine's energy potential. The country's energy balance is dominated by Natural gas, coal, and nuclear energy. The attraction of non-traditional types of energy in Ukraine is still slow. The dynamics of the introduction of renewable energy sources are given (Table 5).

Table 5. Dynamics of introduction of renewable energy sources in Ukraine

Types of fuels/sectors	1990	2000	2010	2015	2016	2017	2018
The share of renewable energy sources in the total supply of primary energy, %							
Hydroelectricity	0,4	0,7	0,9	0,5	0,7	0,9	1,0
Wind, solar energy, etc.	0,0	0,0	0,0	0,1	0,1	0,2	0,2
Biofuels and waste	0,1	0,2	1,1	2,3	3,0	3,3	3,4
The structure of renewable energy sources in the total supply of primary energy, %							
Hydroelectricity	71,5	78,7	43,3	17,2	18,3	19,7	20,9
Wind, solar energy, etc.	0,0	0,0	0,2	5,0	3,4	3,8	4,6
Biofuels and waste	28,5	21,2	56,5	77,9	78,3	76,5	74,5
Structure of biofuel and waste in the total supply of primary energy,%							
Solid biofuel	100,0	100,0	100,0	99,2	98,8	98,6	98,5
Liquid biofuel	0,0	0,0	0,0	0,1	0,0	0,1	0,0
Biogas	0,0	0,0	0,0	0,7	1,2	1,3	1,5
Waste/other	0,0	0,0	0,0	0,0	m	0,1	0,0

Source: built on Energy State Statistics Committee of Ukraine

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The growth in the supply and consumption of energy from renewable sources indicates that the implementation of state policy in the areas of efficient use of fuel and energy resources, energy conservation, renewable energy sources and alternative fuels is gradually being ensured, albeit at a very slow pace. Due to the availability of land resources that can be allotted for the production of biofuels in Ukraine without much harm to food production and the provision of livestock feed, Ukraine can potentially be an important player in the European biofuel market.

From the foregoing, the following conclusions can be drawn: the gas sector of the Ukrainian energy sector is the most problematic for the economy due to the high gas intensity of GDP, which, in turn, gives rise to even greater gas import dependence and contributes to the spread of corruption. The main problems of the sector include the monopoly position of the National joint stock company Naftogaz of Ukraine, the need for a large-scale modernization of the GTS in the absence of funds in the National joint stock company Naftogaz of Ukraine, absence of the “liberalized” and organizationally formalized natural gas market, the lack of membership of the system operator of supplies in ENTSO-G, lack of economically justified tariffs, economically justified rates of payment for the use of subsoil, unsatisfactory pace of reorganization of enterprises, separation of enterprises for the distribution and supply of gas, and unsatisfactory conditions for attracting investors.

Also, the main problems of the oil and gas sector are imperfect legislation, corruption, shadow business, overregulation of the licensing system, unstable rental, and tax rules. To ensure economic security and overcome security threats in the energy sector, the state should develop effective mechanisms and tools to develop and improve the efficiency of the industry. The priority tasks should include optimization of production, diversification of supplies and production, modernization of existing facilities, formation of a unified legal framework, taking into account international standards, implementation of an effective system of state regulation and control, activation and stimulation of innovation and investment activities, implementation of Euro environmental norms and international standards, etc. A special attention has to be paid to security of critical infrastructure (Plėta, T., Tvaronavičienė, M., & Della Casa, S. 2020; Plėta, T., Tvaronavičienė, M., Della Casa, S., & Agafonov, K. 2020; Tvaronavičienė, M., Plėta, T., Della Casa, S., & Latvys, J. 2020).

It is possible to draw conclusions on the development of the oil and gas sector in Ukraine in more detail and in a qualified manner and propose ways to improve it using the SWOT analysis technique. That is, we will analyze this sector in terms of existing and potential opportunities, threats, advantages, and disadvantages. At the same time, we assume the requirements of the Third Energy Package to separate the transport function from the gas production and supply business and also assume that the operator is removed from the structure of a vertically integrated company and is not associated with it by legal, financial and managerial ties, in accordance with the Directive (Table 6).

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Table 6. SWOT-analysis of the oil and gas sector in Ukraine

Strengths	Weaknesses
<p>Compliance with requirements based on property relations «ownership unbundling».</p> <p>Greater independence in setting quality standards and virtue in the operations of the GTS operator.</p> <p>Separating the operator and increasing transparency and economic attractiveness.</p> <p>Opportunity for Ukrgasvydobuvannya to better prepare for the end of the special duties regime and possible privatization.</p> <p>Reducing the risk of political influence.</p>	<p>Vertical integration of Naftogaz.</p> <p>Preservation of Naftogaz Ukrainy's great influence on the gas market.</p> <p>The State Property Fund of Ukraine does not solve the problem of complete independence from the government vertical.</p> <p>Significant time to estimate the cost of GTS separately, as well as to create a new GTS operator.</p>
Capabilities	Threats
<p>Great commercial attractiveness of GTS as a purely business assets.</p> <p>No need for significant legal transactions with GTS assets.</p> <p>No tax implications.</p> <p>The emergence of a competitive market for natural gas storage services.</p> <p>Increase in the volume of activities in the field of gas exploration and production.</p> <p>Creation of a reliable and flexible organizational structure for faster decision making.</p> <p>Development of the retail business group Naftogaz.</p> <p>Creation of additional gas reserves in case of possible zero transit and import failures.</p> <p>Receiving compensation for performing special duties (PSO).</p>	<p>Decrease/termination of transit through the territory of Ukraine.</p> <p>Continuation of the Regulation on the imposition of special duties (PSO) on conditions unfavorable for the company and the continuation of gas sales through regional gas salers.</p> <p>Insufficient liquidity.</p> <p>Failure to obtain new licenses and expropriation (loss) of gas production licenses.</p> <p>Emergency situations due to the presence of outdated equipment and a high level of human factors.</p> <p>Loss of access to cushion gas stored in underground storage.</p> <p>Lack of regulation of legislation.</p> <p>Political instability.</p> <p>Great vulnerability to external influences, including from Russia.</p> <p>The use of GTS distribution in information warfare as evidence of transit unreliability (“Nord Stream Factor 2).</p> <p>Potential need to assign the transit agreement with the Russian Federation and other existing agreements to the new operator of GTS.</p>

Source: built by the author

The table shows that Ukraine has both strengths and weaknesses. But the implementation and development of the country's strategic oil and gas sector make it necessary to anticipate all threats (risks) that stand in the way of development. Threats (risks) can be divided into: strategic (reduction/termination of transit through the territory of Ukraine) through the launch of the Turkish Stream and Nord Stream-2; financial (insufficient liquidity). It is necessary to take measures to postpone the payment of credit obligations to banks, to allow the payment of dividends in installments, etc; regulatory (failure to obtain new licenses, expropriation (loss) of gas production licenses). Additional online auctions for the sale of special subsoil use permits should be introduced, which in turn will ensure environmental openness, transparency, occupational safety and health. It is necessary to conduct staff training and advanced training in compliance with national and international standards and practices on occupational safety, modernize existing facilities and implement the world's best practices of operation and diagnostics in this area.

Operational threats (loss of access to the buffer gas in underground gas storage facilities due to incorrect removal from the structure). It is necessary to finalize and agree on a new restructuring plan, according to which activities related to natural gas storage will remain in the structure of the Naftogaz Group.

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Therefore, the transformation of the oil and gas sector of Ukraine and the creation of an effective organizational model should provide sufficient control over the areas of activity grouped into appropriate blocks, with appropriate tasks and objectives. Blocks should also include areas for action to achieve effect (individual responsibility for results, identification of key positions and strengthening of responsibilities, ensuring national interests, proper consideration of operating costs, etc) and further development of the industry, as well as to ensure effective control.

5. Discussion

In general, Ukraine has sufficient natural, scientific, technical, technological, and human resources to provide natural gas for its own production. The increase in gas production in Ukraine is possible due to two main directions, firstly - the use of modern technologies, and secondly - the expansion of the resource base by finding new deposits and drilling a large number of wells. It is necessary to conduct an inventory, re-certification, and illustration of the operational fund of wells and deposits. It is also essential to provide for effective and efficient mechanisms for regulating the exploration and production of hydrocarbons, namely: transparent competitive licensing procedures; to settle the issue of a single fee for subsoil use; to determine clear and comprehensive grounds for granting a license outside the auction and revoking the license, etc. That is, it is necessary to mobilize the available scientific, technical, financial, and administrative resources in the country, to improve the legislation on subsoil use.

The main problems of resource security of the gas sector of Ukraine include imperfect legislation, corruption, shadow business, over-regulation of the permitting system, unstable rent and tax rules.

To ensure economic security and overcome security threats in the energy sector, the state must develop effective mechanisms and tools to develop and improve the efficiency of the industry.

Regarding the market of oil and oil products, the filling of the domestic oil market, in recent years, was carried out both at the expense of domestic production resources and through oil imports. For the first time in 12 years, the negative trend of oil and condensate production was reversed. At the same time, despite the improvement of Ukrnafta's indicators, the general trend of oil production remains negative due to the problem of accumulated tax debt, which, in turn, makes it impossible to invest in the development of the company's reserves.

Conclusions

The study of the constitutional and legal foundations of national security of Ukraine provided an opportunity to make a number of conclusions, generalizations and develop appropriate proposals that, hopefully, will not only significantly improve the field of conceptual analysis of theoretical and methodological problems of national security but also a unified methodological approach to its components, as well as analysis, evaluation and forecasting, making management decisions to ensure the national security of our state. The obtained results can be the basis for the creation of a holistic theory of national security and will provide scientific support for the realization of national interests of Ukraine in the modern geopolitical dimension.

Summarizing the above, we can conclude that it is necessary to create minimum reserves of oil and oil products in Ukraine, which is due to: insufficient production of its own hydrocarbons, dependence on imports, limited opportunities for increasing volumes, the existing threat of crisis in the oil and oil products market, and the like.

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The authors have analyzed and concluded that the oil and gas complex of Ukraine occupies a leading place among the basic industries of the fuel and energy complex (FEC), and the lack of its own energy resources, their supply from outside destabilizes the political and economic situation. One component and a guarantee of energy security and independence of Ukraine is an efficiently operating gas industry.

One of the key events of recent years is the very low volumes of Russian gas supplies to Europe. Unlike the Ukrainian transit route, other routes for the transit of Russian gas to European countries were operating at maximum rates. However, since the only transport corridor that has sufficient capacity and flexibility is the Ukrainian transit corridor, the transportation volumes of the Ukrainian GTS began to gradually grow and at the end of March 2018 amounted to 155 million cubic meters/day at the Uzhgorod/Velke Kapushany point, which in turn was almost three times higher than at the beginning of February. In addition, there were also difficulties with resource provision. That is, Naftogaz, pursuant to the decision of the Stockholm Arbitration, made an advance payment in favor of Gazprom for the volumes of gas stipulated in the contract but Gazprom did not supply the prepaid gas to Naftogaz, for which there was a critical situation with the supply of gas to consumers in Ukraine and Naftogaz. This problem was eliminated only due to the urgent purchase of gas in Europe, an increase in gas withdrawal from UGS facilities and due to the "flexibility" of the pipeline system in Ukraine.

The total reserves of natural gas as of January 1, 2019 are 882.6 billion cubic meters, which will provide Ukraine for 42 years under the current rate of natural gas use. Ukraine annually produces only 2.4% of the total natural gas reserves, while more developed countries produce about 6%. In general, the gas sector of Ukraine, which functions in the conditions of democratic transformation of Ukrainian society, requires improvement in many aspects.

To ensure economic security and overcome security threats in the energy sector, the state should develop effective mechanisms and tools to improve the efficiency of the industry in the context of globalization, taking into account world development trends. The priority tasks should be: optimization of own production and development and production of oil from new fields both in Ukraine and abroad, reducing the level of dependence on imports through diversifying sources of external oil supplies, modernizing and increasing the competitiveness of the oil refining industry, consolidating a positive image of Ukraine in the international system, the formation of a single legal framework, taking into account international standards, the introduction of an effective system of state regulation and control to ensure fair competition, the activation of the scientific potential of the industry and the implementation of state policy to stimulate innovation and investment in the oil industry, the modernization of existing capacities of oil refineries and construction of new facilities to increase the production of high-quality petroleum products, review and improvement of the technical specifications for compliance with EU standards, implementation of Euro environmental standards in Ukraine, creation of the strategic reserve of oil and oil products, viewing and setting competitive tariffs for transportation and oil transshipment services, attracting analysts and scientists to the coverage of topical and problematic issues of the industry, and the like.

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