SOLOVIOVA A. M.
Doctor of Law, Associate Professor,
Jean Monnet Scholar
(Robert Schuman Centre, European University Institute, Florence, Italy)

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EUROPEAN UNION ENERGY SECURITY AMID RUSSIAN AGGRESSION IN UKRAINE

This article examines the challenges facing the EU in ensuring energy security in the context of an energy crisis triggered by Russian aggression. Over the past decades, Russia has used its control over energy resources to expand its political influence both in the post-Soviet region and among the European Union (EU) member states. The author examines the implications of this aggression for EU energy security, assesses the status of the Energy Union in 2022, and assesses both short- and long-term strategies for shaping supranational and national energy policies from a European perspective. The study also reveals contemporary European energy and climate policies, which emphasize the transition from coal, oil, gas, and nuclear energy to renewable energy sources, increased energy efficiency, and expanded energy storage capabilities. An analysis of Ukrainian and European Union legislation, statistical data and official communications from Ukrainian government agencies has shown that the EU's energy security has faced unprecedented threats since Russia's full-scale invasion of Ukraine.

The Russian invasion forced the EU to prioritize energy independence, accelerate the deployment of renewable energy sources and reduce Russia's influence as a dominant energy supplier. Since then, the search for alternative solutions has become a central element of the EU's energy policy, requiring significant investments in LNG infrastructure, renewable energy sources and nuclear power. However, increasing global competition for resources makes it difficult to find long-term energy suppliers, highlighting the complexity of the energy transition in the face of geopolitical and economic pressures. It is concluded that the challenges to ensuring energy security in the EU stem from several key factors, including the dependence of the European energy market at a certain stage of the EU's development on Russian gas, oil and coal; political challenges in transitioning to alternative sources, socio-economic pressure, geopolitical instability, etc.

Key words: *energy security, Energy Union, renewable energy, European energy policy, climate strategy, energy transition.*

Соловйова А. М. Енергетична безпека Європейського Союзу в умовах російської агресії в Україні

У цій статті розглядаються виклики, з якими стикається ЄС у забезпеченні енергетичної безпеки в умовах енергетичної кризи, спровокованої російською агресією. Протягом останніх десятиліть Росія використовувала свій контроль над енергетичними ресурсами для розширення свого політичного впливу як у пострадянському регіоні, так і серед держав-членів Європейського Союзу (ЄС). Автор досліджує наслідки цієї агресії для енергетичної безпеки ЄС, оцінює статус Енергетичного союзу у 2022 році та оцінює як короткострокові, так і довгострокові стратегії формування наднаціональної та національної

енергетичної політики з європейської точки зору. Дослідження також розкриває сучасну європейську енергетичну та кліматичну політику, яка наголошує на переході від вугілля, нафти, газу та ядерної енергії до відновлюваних джерел енергії, підвищення енергоефективності та розширених можливостей зберігання енергії. Аналіз законодавства України та Європейського Союзу, статистичних даних та офіційних повідомлень українських державних органів показав, що енергетична безпека ЄС зіткнулася з безпрецедентними загрозами після повномасштабного вторгнення Росії в Україну.

Вторгнення Росії змусило ЄС віддати пріоритет енергетичній незалежності, прискорити впровадження відновлюваних джерел енергії та зменшити вплив Росії як домінуючого постачальника енергії. З тих пір пошук альтернативних рішень став центральним елементом енергетичної політики ЄС, що вимагає значних інвестицій в інфраструктуру СПГ, відновлювані джерела енергії та атомну енергетику. Однак зростаюча глобальна конкуренція за ресурси ускладнює пошук довгострокових постачальників енергії, що підкреслює складність енергетичного переходу в умовах геополітичного та економічного тиску. Зроблено висновок про те, що проблеми щодо забезпечення енергетичної безпеки в ЄС випливають з декількох ключових факторів, серед яких залежність європейського енергетичного ринку на певному етапі розвитку ЄС, від російського газу, нафти та вугілля; політичні виклики при переході на альтернативні джерела, соціально-економічний тиск, геополітична нестабільність тощо.

Ключові слова: *енергетична безпека, Енергетичний Союз, відновлювана енергетика, Європейська енергетична політика, кліматична стратегія, енергетичний перехід.*

Introduction. Russia's full-scale invasion of Ukraine in February 2022 was a negative example of a violation of international law, universal human rights and freedoms, and the principles of territorial integrity and sovereignty. Justice Minister Olga Stefanishyna said that on December 19th, 2024, Ukraine's state registers were hit by the largest Russian cyberattack. “Today, the largest external cyber attack on the state registers of Ukraine took place in recent times. As a result of the targeted attack, the work of the Unified and State Registers, which are under the jurisdiction of the Ministry of Justice of Ukraine, was temporarily suspended. Now, together with the team and specialists of other services, we are coordinating work to counter cyberattacks and restore systems. It is already clear that the attack was carried out by the Russians with the aim of disrupting the operation of the state's critically important infrastructure” [1] . Russia bombards civilian facilities and critical infrastructure facilities almost every day, while justifying its actions in every possible way through the media, denying the criminal nature of its activities.

The attack on Ukraine’s state registers highlights the vulnerability of critical infrastructure to targeted external threats. So 2024 has become particularly difficult for the entire population of Ukraine, as it has become clear that Russian attacks are specifically aimed at energy infrastructure facilities and are particularly concentrated in the autumn-winter period, revealing the aggressor’s criminal intent to cause particular suffering to the population of Ukraine. The energy security is one of the most important policy areas of the European Union. A secure supply of electricity is of vital importance for the development of European society, the implementation of a sustainable climate change policy, and the fostering of competitiveness within the internal market (5) Directive 2009/72/EC) [2]. However, the prolonged ignoring by European political leaders of the threats associated with dependence on Russian energy resources has revealed certain shortcomings in the European strategy.

Statement of the task. The purpose of the article is to consider the features and problems of ensuring the energy security of the European Union in the conditions of Russian aggression in Ukraine.

Research results. According to the UN Human Rights Monitoring Mission in Ukraine (UMHRU), only from 22 February to 31 September 2024, in the period from 22 February to 31 September 2024, the Armed Forces of the Russian Federation created nine branches far-reaching and well-coordinated attacks on the energy infrastructure of Ukraine, damaging or destroying numerous generation, transmission and distribution facilities.These impacts caused serious damage, affecting the civilian population and key systems: electricity, water supply, sewerage, fire, health protection, lighting and the economy of the country [3]. Crucially, the focus lies on the number of regions affected, the coordinated nature of the attacks, their high precision, and the extensive harm inflicted on civilians and critical systems essential for life-support services.

The UMHRU has characterized these attacks as both widespread and systematic. Furthermore, the scale of this military campaign, aimed at damaging or exhausting Ukraine's civil infrastructure for electricity and heat generation and transmission, highlights a deliberate disregard for the fundamental principles of international humanitarian law.

Of course, Europe faced particular challenges in February 2022, although it already had certain problems in the energy sector. For instance, according to experts from the International Monetary Fund, the energy problems in the EU began in late summer 2021, which was associated with the revival of the global economy after the Covid lockdowns, which led to an increase in global energy consumption. In the second half of 2021, there was an activation of the oil, natural gas and coal markets, which led to an increase in prices due to insufficient supply and demand. It was in November 2021, three months before the invasion, that the US government announced the first release from its strategic oil reserve [4, p. 40]. Thus, some initial problems in the energy sector in Europe can be seen from late 2021, as the post-COVID surge in global demand led to higher prices for oil, gas and coal. Russia's invasion of Ukraine in 2022 highlighted Europe's dependence on Russian energy as a key geopolitical risk, underlining the urgent need for collective EU action to ensure energy security.

Unfortunately, even after the invasion of Ukraine in 2022, Russia's energy supply was identified as the main geopolitical risk for Europe. It is clear that Europe has learned that the lack of cheap energy resources and the conservatism of food and energy security contribute to the financing of Putin's neo-imperialism. The EU had the opportunity to recognize and solve this problem collectively and as a matter of priority [5, p. 22].

On the eve of the full-scale Russian-Ukrainian war (and to a large extent still), almost all nuclear energy in Central and Eastern Europe (Hungary, Bulgaria, the Czech Republic, Slovakia) and Finland was dependent on Russian nuclear fuel, as the listed European countries still use Soviet nuclear power units (Petkova, 2022). Germany, with its long-standing anti-nuclear traditions in energy, imported 50% of its coal and 65% of its gas from Russia in 2020. There was also significant dependence on Russian coal, with Poland and Germany in particular using over 70% of all coal consumption in the EU, against the backdrop of a general decrease in coal use and domestic production since 2000. A significant part of the states depended on Russian gas imports on the eve of the Russian-Ukrainian war. Before the start of the full-scale war, Poland supplied 20% of its domestic coal needs with Russian coal, and also imported about 50% of its gas and over 60% of its oil from Russia [4, p. 37].

In this context, special attention should be paid to paragraph 16 of the National Security Strategy of Ukraine, which states the following: "Russia uses the Black Sea-Caspian region and occupied Crimea as a "bridge" to the Balkans, the Mediterranean, the Middle East and North Africa. To strengthen its position in Europe, the Russian Federation uses energy and information "weapons", tries to influence the domestic political situation in European states, incites protracted conflicts and increases its military presence in Eastern Europe" [6]. Energy security is inextricably linked to the success of European integration, the synchronization of energy systems and markets with European ones and the sustainable development of the sector [7].

At the same time, the current state of the fuel and energy complex, challenges and threats emerging in the energy markets may hinder the provision of energy security. The fuel and energy complex is in a critical state. The Unified Energy System of Ukraine operates in synchronous mode

with the energy systems of countries that cannot be considered reliable partners of Ukraine in the short and long term in order to achieve energy security. The aggressor state in relation to Ukraine – the Russian Federation, continues the construction of Nord Stream 2, which threatens the energy security of Ukraine. The Republic of Belarus, which, due to a political crisis, has found itself under EU and US sanctions due to its close political and economic ties with the Russian Federation, cannot be considered a reliable strategic partner for ensuring Ukraine's energy security [7]. In our opinion, one of the key sources of energy security in Europe is the stabilization and guarantee of energy security in Ukraine. Therefore, we focus on the nutrition of legal regulation of energy security under Ukrainian legislation.

Energy security issues in Ukraine are regulated by the Constitution of Ukraine, the Law of Ukraine "On National Security of Ukraine", the Law of Ukraine "On Energy Efficiency", the Law of Ukraine "On the Basic Principles of Ensuring Cybersecurity in Ukraine" [8], the Decree of the President of Ukraine dated September 14, 2020 № 392/2020 On the Decision of the National Security and Defense Council of Ukraine dated September 14, 2020 "On the National Security Strategy of Ukraine", the Resolution of the Cabinet of Ministers of Ukraine dated August 4, 2021 № 907-r Energy Security Strategy, approved by the Resolution of the Cabinet of Ministers of Ukraine dated August 4, 2021 № 907-r, etc.

According to Part One of Article 17 of the Constitution of Ukraine, protecting the sovereignty and territorial integrity of Ukraine, ensuring its economic and information security are the most important functions of the state, the business of the entire Ukrainian people. In accordance with paragraph 17 of part one of Article 92 of the Constitution of Ukraine, the following are determined exclusively by the laws of Ukraine: the foundations of national security, the organization of the Armed Forces of Ukraine, and the maintenance of public order [9].

The Law of Ukraine "On National Security of Ukraine": establishes the basic principles and directions of ensuring national security, in particular, according to paragraph 9 of part one of Article 1 of this Law, national security of Ukraine is the protection of state sovereignty, territorial integrity, democratic constitutional order and other national interests of Ukraine from real and potential threats.

By the Decree of the President of Ukraine of September 14, 2020 № 392/2020 On the Decision of the National Security and Defense Council of Ukraine of September 14, 2020 "On the National Security Strategy of Ukraine" the National Security Strategy of Ukraine was approved "Human security is the security of the country".

The National Security Strategy of Ukraine does not directly incorporate the phrase "energy security". But according to the paragraph 54 "economic development and security are impossible without sustainable energy development" [6]. To do this, we must: contribute to the expansion of Ukraine's energy potential and the efficiency of its use; integrate Ukraine's energy markets into the EU energy market, in particular, integrate the Unified Energy System of Ukraine into the European Union of Transmission System Operators for Electricity (ENTSO-E) and the Gas Transmission System of Ukraine into the European Network of Gas Transmission System Operators (ENTSO-G), preserve and expand Ukraine's transit potential, counteract the implementation of projects that negatively affect the state's energy security; diversify sources and routes of energy supply; increase energy efficiency, introduce continuous accounting of the production, transmission and use of energy resources, introduce a national energy balance, ensure further development of the fuel and energy sector under conditions of sustainable development and environmental safety, taking into account the latest technologies for energy production from renewable sources and its storage [6].

Energy security of Ukraine is an integral part of national and economic security and a necessary condition for the existence and development of the state. Energy security is the timely, full and uninterrupted provision of high-quality fuel and energy to material production, the non-production sector, the population, municipal and household and other consumers, prevention of the harmful impact on the environment of transportation, transformation and consumption of fuel and energy resources in the conditions of modern market relations, trends and indicators of the world energy market [10]. In accordance with paragraph one of part one of Article 2 of the Law of Ukraine

"On Energy Efficiency" dated October 21, 2021 [11], this Law regulates relations arising in the field of ensuring energy efficiency and is aimed at strengthening energy security, reducing energy poverty, sustainable economic development, preserving primary energy and reducing greenhouse gas emissions. Therefore, under Ukrainian legislation, there is a whole system of regulatory legal acts aimed at regulating Ukraine's energy security as the most important component of the state's national and economic security, the guarantee and provision of which also depends on the integration of Ukraine's energy markets with the EU, diversification of supply sources, increasing energy efficiency, and promoting renewable energy sources.

In turn, the European Union has implemented several directives aimed at strengthening energy security in Europe and creating a reliable legal framework for the implementation of measures aimed at stabilizing the energy sector and finding new energy resources. Thus, the Energy Efficiency Directive (Directive (EU) 2023/1791) [12], which entered into force in October 2023, sets binding energy efficiency targets to achieve an additional reduction in energy consumption of 11.7% by 2030 compared to the EU baseline scenario forecasts for 2020. It establishes that the principle of "energy efficiency first" is fundamental to EU energy policy.

Separate consideration of the Renewable Energy Directive [13], which is the main legislative framework for stimulating the introduction of renewable energy sources in the EU. The Renewable Energy Directive is the legal framework for the development of clean energy across all sectors of the EU economy, supporting cooperation between EU countries towards this goal.

In addition, Regulation (EU) 2017/1938 [14] defines measures to ensure the security of gas supply by establishing preventive and emergency measures.

The EU is thus developing regulatory acts that are the cornerstone of the EU strategy to strengthen energy security, promote resilience and ensure a sustainable energy system in the Member States.

However, the Russian invasion of Ukraine in 2022 has led to a growing awareness among Member State politicians that the EU can no longer rely on Russia as its main energy supplier and must immediately take concrete measures to curb energy imports. The Commission has proposed a joint European initiative called REPowerEU (8 March 2022) [5, p. 23], with the aim of reducing fossil fuel imports from Russia by 2/3 by 2022 and thus achieving Europe's independence from Russian energy resources well before 2030. The European Council meeting of 10–11 March 2022 adopted the Versailles Declaration, which confirmed the desire for progress in reducing the EU's energy dependence, in particular on Russia.

By abandoning Russian hydrocarbons, the EU is forced to seek alternative supplies and create conditions for their implementation. By increasing its own coal production, supply agreements with the USA, Australia, and Colombia will be in effect, as these countries already export this resource and have sufficient capabilities to block Russian exports (Otkydach & Bohdiazh, 2022). Indonesia, which has been recognized as one of the world's leading coal exporters for more than five years, may also join this list (Holz et.al, 2018) [4, p. 42].

Thus, the war has introduced new challenges for the EU's energy diplomacy, particularly in negotiations with LNG suppliers such as the United States, Qatar, and Australia, as well as with oil-producing nations within OPEC. These challenges underscore the urgent need to strengthen cooperation within the EU to diversify energy sources and integrate energy markets more effectively.

Foreign energy policy, including energy diplomacy as its tool, is an important link in the implementation of the national interests of the state [15, p. 6]. In the current context, ensuring the uninterrupted and efficient functioning of the energy system has transcended domestic political concerns. Russian armed aggression, along with global and regional energy dynamics, has heightened the importance of bilateral intergovernmental cooperation in the energy sector.

This evolving landscape requires not only the expertise of energy specialists and energy sector managers but also the active involvement of diplomats who possess a deep understanding of energy issues. Their role is increasingly essential for achieving national interests and navigating the complexities of modern energy challenges. By combining technical expertise with diplomatic strategies, states can better address the multifaceted energy crises of today while securing their long-term energy security and stability.

In this context, the Ministry of Energy of Ukraine (Minenergo) plays a pivotal role. According to paragraph one of the Regulation on the Ministry of Energy of Ukraine, the Ministry of Energy of Ukraine (Minenergo) is a central executive body, the activities of which are directed and coordinated by the Cabinet of Ministers of Ukraine. The Ministry of Energy is the main body in the system of central executive bodies, which ensures:

1) the formation and implementation of state policy in the electric power, nuclear industry, coal industry, peat mining, oil and gas and oil and gas processing complex (hereinafter referred to as the fuel and energy complex);

2) the formation and implementation of state policy in the field of renewable energy sources and alternative types of gas fuels and in the field of supervision (control) in the electric power and heat supply sectors, as well as in the natural gas market [16].

Integration of the Ukrainian Unified Power System into the pan-European ENTSO-E energy system is one of the key strategic goals of Ukrenergo, an important component of Ukraine's energy security. Synchronous operation of the Ukrainian power system with ENTSO-E will increase the reliability and stability of the Ukrainian Unified Power System, expand the possibilities of electricity exchange between neighboring countries, strengthen competition in the domestic market and create opportunities for operation in the European energy market [17].

Integration of the Ukrainian Unified Power System into ENTSO-E is provided for by the Association Agreement between Ukraine and the EU.

National Power Company Ukrenergo is a private joint stock company with 100% state-owned shares, managed by the Ministry of Energy of Ukraine. Ukrenergo is a full member of the European energy association ENTSO-E (since 01.01.2024), an ISO-certified transmission system operator of Ukraine with the functions of operational and technological management of the Integrated Power System of Ukraine (IPS) and electricity transmission via trunk power grids from generation to distribution networks. Ukrenergo is one of the key participants in the electricity market and performs the functions of the commercial metering administrator, and settlements administrator, fulfils public service obligations (PSO) in the market functioning, and manages the operation of the electricity balancing market. Ukrenergo ensures: – real-time balance of production and consumption of electricity and capacity in the power system; – operation and development of trunk and interstate power grids; – parallel operation of the power system of – Ukraine with the power systems of neighbouring countries; – technical possibility of electricity exports and imports [18]. Ukraine’s integration into the ENTSO-E energy system is a key goal for Ukrenergo to boost energy security, reliability, and electricity trade with Europe. As a state-owned transmission operator and ENTSO-E member since 2024, Ukrenergo manages power grids, ensures electricity balance, and facilitates imports, exports, and market operations.

Conclusion. The analysis of Ukrainian and European Union legislation, statistical data, and official communications from Ukrainian government bodies reveals that the EU’s energy security faced unprecedented threats following Russia’s full-scale invasion of Ukraine. These challenges stemmed from several key factors: 1) *dependence on Russian energy resources*: The European energy market’s reliance on Russian gas, oil, and coal became a critical vulnerability; 2) *energy crisis*: disruptions to the Nord Stream 1 and 2 gas pipelines sharply reduced gas supplies to Europe, exacerbating the crisis; 3) *economic impact*: Record-high gas and electricity prices fueled inflation and triggered socio-economic challenges across European countries; 4) *political challenges in transitioning to alternative source*s: The EU struggled with inadequate import infrastructure, particularly for liquefied natural gas (LNG), due to its reliance on pipeline gas. Energy market imbalances also emerged, with the slow transition to renewables necessitating a temporary return to coal during the crisis; 5) *socio-economic pressures*: elevated energy prices placed a significant financial burden on households and businesses, sparking protests in countries like France and Germany; 6) *geopolitical instability*: the war introduced new challenges for EU energy diplomacy, forcing a re-evaluation of energy policy.

Russia’s invasion compelled the EU to prioritize energy independence, accelerate the adoption of renewable energy, and diminish Russia’s influence as a dominant energy supplier.

The search for alternative solutions has since become central to EU energy policy, requiring substantial investments in LNG infrastructure, renewable energy sources, and nuclear power. However, growing global competition for resources has made securing long-term energy suppliers increasingly difficult, underscoring the complexity of the energy transition in the face of geopolitical and economic pressures.

References:

1. Full restoration of state registries expected within weeks, Justice Ministry says after major cyberattack. URL: https://kyivindependent.com/full-restoration-of-state-registries-expected-within-weeks-justice-ministry-says-after-major-russian-cyberattack/ (дата звернення: 21.12.2024).

2. Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC. URL: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:211:0055:0093:en:PDF (дата звернення: 21.12.2024).

3. Атаки на енергетичну інфраструктуру України: Шкода цивільному населенню. URL: https://ukraine.ohchr.org/sites/default/files/2024-09/UKR%20Attacks%20on%20Ukraine's%20Energy%20Infrastructure-%20%20Harm%20to%20the%20Civilian%20Population.pdf (дата звернення: 21.12.2024).

4. Атаманенко А., Піддубний В. Вплив російсько-української війни на енергетичну безпеку ЄС. URL: https://www.researchgate.net/publication/375574910_Vpliv_rosijsko-ukrainskoi_vijni_na_energeticnu_bezpeku_ES (дата звернення: 21.12.2024).

5. Перевозова І. В., Гринів П. М., Дубовицький І. С., Храбатин А. В., Ластовець О. І. Вплив російського вторгнення в Україну на енергетичну безпеку ЄС. URL: https://zenodo.org/records/705746912 (дата звернення: 21.12.2024).

6. Стратегія національної безпеки України. URL: https://zakon.rada.gov.ua/laws/show/392/2020?find=1&text=енергетична+безпека#w1_3 (дата звернення: 21.12.2024).

7. Стратегія енергетичної безпеки України. URL: https://zakon.rada.gov.ua/laws/show/907-2021-р#Text (дата звернення: 21.12.2024).

8. Закон України «Про основні засади забезпечення кібербезпеки» України. URL: https://zakon.rada.gov.ua/laws/show/2163-19#Text (дата звернення: 21.12.2024).

9. Конституція України. URL: https://zakon.rada.gov.ua/laws/show/254к/96-вр#Text (дата звернення: 21.12.2024).

10. Концепція діяльності органів виконавчої влади у забезпеченні енергетичної безпеки України. URL: https://zakon.rada.gov.ua/laws/show/48-98-п#Text (дата звернення: 21.12.2024).

11. Закон України «Про енергетичну ефективність». URL: https://zakon.rada.gov.ua/laws/show/1818-20#Text (дата звернення: 21.12.2024).

12. Directive (EU) 2023/1791. URL: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32023L1791(дата звернення: 30.12.2024).

13. The Renewable Energy Directive. URL: https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-directive_en (дата звернення: 30.12.2024).

14. Regulation (EU) 2017/1938 URL: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R0001 (дата звернення: 30.12.2024).

15. Енергетична дипломатія України: аналіз статус-кво та практичні рекомендації. URL: URL:https://dixigroup.org/wp-content/uploads/2021/12/energetychna-dyplomatiya-ukrayiny.-doslidzhennya-1.pdf (дата звернення: 20.12.2024).

16. Положення про Міністерство енергетики України. URL: https://zakon.rada.gov.ua/laws/show/507-2020-п?lang=en#Text (дата звернення: 21.12.2024).

17. Інформація про євроінтеграцію. URL: https://ua.energy/yevrointegratsiya/ (дата звернення: 21.12.2024).

18. Ukrenergo. URL: https://ua.energy/about_us/ (дата звернення: 21.12.2024).