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Economic impact of military conflicts on energy markets and global energy security

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Abstract. In modern conditions, military conflicts are becoming more common, which makes it relevant to examine their impact on the country's economy in all possible ways. The purpose of this study was to investigate the situation in the energy industry in Ukraine and other countries of the world in connection with the beginning of a full-scale Russian invasion of Ukraine. The main methods used in the study were analysis, systematisation, and comparison. The paper showed the role of the energy sector in ensuring national and global stability. It was concluded that military conflicts have a significant impact on the stability of this sphere, both in the warring country and in other states that may not be directly involved in the conflict. At the moment, there is a limited amount of statistical data available that can be used to assess the impact of Russia's military actions on the energy sector of Ukraine. However, based on the available data, it was concluded that their impact is significant and can lead to major problems in the future if there is no decisive action at the moment. During the first attacks of 2022, this has already caused a shortage of energy and blackouts. As part of the study, quite a few approaches were proposed on how to overcome the consequences of military conflict in the global and national energy markets. In particular, the need to develop diversified energy supply routes, increase the use of renewable sources, ensure international cooperation and attract international investment in the industry was noted. The conclusions drawn in the framework of the study allow increasing the effectiveness of the national energy policy in Ukraine, given the military situation in which the country finds itself

Keywords: welfare; infrastructure; international cooperation; crisis phenomena; geopolitical tensions

Introduction

The importance of the energy sector is becoming clearer in the context of global crises or military conflicts. In the current context of Russia's full-scale invasion of Ukraine and the global energy crisis it has caused, it has become crucial to reform the energy systems in the world. In Ukraine, this problem also remains very urgent, especially due to the constant attacks on the energy system. Thus, conducting additional research on this topic is relevant.

Numerous researchers assessed the situation related to energy security in Ukraine and the world. Thus, global challenges related to the oil market and their impact on national security was considered by D.M. Donets *et al.* (2024). The researchers noted that the global oil market is currently experiencing a significant number of problems, primarily due to fluctuations in oil prices associated with geopolitical instability. They considered in sufficient detail the difficulties that arise in the oil products market, but paid little attention to the situation in Ukraine. N. Kravchuk & K. Badiuk (2023), in turn, also drew attention to the analysis of the geopolitical and geo-economic consequences of the armed forces and increased trade tensions due to the pandemic and conflicts, including in the energy and food markets. It was noted that the lack of agreed positions on the end of the war between Ukraine and Russia, as well as in the Gaza Strip, may lead to further deterioration of the current situation.

The role of Ukraine's energy security was emphasised by Yu. Kovalenko *et al.* (2024). They noted that this component is now extremely important for ensuring the country's security in general, and in particular, in the current military situation. The researchers recommended switching more actively to renewable energy sources to eliminate dependence on carbohydrates, which leads to significant negative economic and environmental consequences. However, their recommendations were rather superficial, and not detailed, which makes it difficult to imagine what this strategy should look like. The role of energy security was also discussed by V.P. Gorbatenko & O.V. Kukuruz (2023). They also noted that in modern conditions, despite all the crises that exist due to COVID-19 and Russia's full-scale invasion of Ukraine, there is still no single approach to ensuring energy security in the country. This component needs constant monitoring and reliable protection: this component should be considered from different angles, in particular, from the side of ecology, geopolitics, economics. I. Shchurov (2022) also drew attention to how the beginning of Russia's full-scale invasion of Ukraine affected the country's energy security. The researcher noted that solving such problems as reducing the effectiveness of global energy management, increasing uncertainty in the mechanisms of energy transition around the world, strengthening energy interdependence, can optimise the functioning of the energy system and support mechanisms. The author also called for different countries to join forces to form a more effective response to existing energy security problems, but did not form clear recommendations in this direction.

Thus, the above-mentioned papers have outlined the consequences of military conflicts and their impact on the energy sector in Ukraine, and have made some recommendations in this area. However, no work has been carried out to compare the impact of conflicts on the energy sector in different countries. Considering the above review and assessment of the importance of the energy sector, the purpose of the study was formulated, namely, to assess the consequences for the energy sector of Ukraine and other countries of the world associated with the beginning of a full-scale invasion of Russia. This would allow making recommendations for achieving better results in counteracting energy crises.

Materials and Methods

As part of the study, information from individual regulatory documents was used. One of them was the European Green Deal (2019). The European Green Deal is a European Union strategy aimed at moving towards sustainable

and environmentally friendly development. It is an extensive action plan aimed at combating climate change, improving the quality of the environment, and ensuring the sustainability of the economy and society. Another document was Clean energy for All Europeans package (European Commission, 2019). The analysis of these documents was used to assess the prospects for the development of the energy sector of Ukraine in the conditions after the war, in the framework of post-war reconstruction.

Some sources of information that would characterise statistical data in the context of the state in the energy market were also used. The main source of statistical information was the reports of the Kyiv School of Economics (Report on Direct Infrastructure…, 2023), which characterised the losses received in Ukraine during a full-scale invasion both in general and in particular for infrastructure facilities. Thus, statistical information for the study of this topic in Ukraine was very limited, which affected the format of writing the paper and the results obtained. The study also assessed the dynamics of prices for WTI crude oil, and trading volumes for them. For this purpose, data were used from the statistical website Investing (Crude Oil WTI…, 2024), which provided access to a fairly extensive amount of information describing the situation in various international markets.

Separate scientific methods were also applied in the study. Thus, systematisation was used to formulate common principles for assessing the impact of military conflicts on the development of the economy of individual countries. The descriptive method was also used to characterise the main phenomena that were most actively considered in the framework of the study. The comparison was used to assess the impact of various conflicts on the global energy market, and the situation in different countries due to changes in it. The study also actively used a review of the literature of some Ukrainian and foreign researchers, with the help of which it was possible to better understand the situation in the country in the context of the state of the energy market. A detailed analysis of the news background related to military conflicts was also carried out to better understand its impact on the country. Normalisation, in turn, was used to simplify the analysis by avoiding the analysis of large amounts of small data. The graphical method was used to reflect the dynamics of the oil price and trade volumes, and further describe the trends shown. All the calculations were performed in the Microsoft Excel software suite.

Results

Energy security in general is a state where available energy resources ensure the efficient functioning of society and the economy without interruptions in the supply, use, and access to energy. This means that society has a reliable and stable supply of energy for its needs, including electricity, oil, natural gas, coal, and other energy sources (Isiksal, 2021; Gong, 2022). Its key aspects include a fairly significant number of components, among which it is worth considering (Nerlinger & Utz, 2022; LaBelle, 2023):

- availability of resources (availability of sufficient energy resources to meet the needs of the population and industry);
- stability of resource supply;
- security of energy infrastructure (impossibility of terrorist acts or any damage);
- development of alternative energy sources.

Military conflicts have a significant complex impact on the energy sector of the economy (San-Akca *et al.*, 2020). Thus, military actions lead to a decrease or cessation of energy production as a result of damage to energy infrastructure facilities, such as power plants, main gas and oil pipelines, energy networks. This can lead to a lack of energy and lead to a crisis in the energy markets. Oil, gas, coal, and other energy resources can become the target of military operations or be blocked due to lack of deliveries, which often happens, and therefore, this can lead to an increase in prices for these energy resources. In general, damage to energy infrastructure as a result of military or terrorist actions causes significant losses and requires significant recovery efforts. In general, the country then needs new investments and a gradual restoration of the energy infrastructure, including the repair of damaged facilities, and the creation of new technologies and safety methods. Thus, often the occurrence of a military conflict in one territory can lead to changes in energy security throughout the Earth.

The global oil products market is currently facing significant challenges and transformations due to economic and geopolitical factors (Motlagh *et al.*, 2020; Sulich & Sołoducho-Pelc, 2022). These include fluctuations in oil prices, changes in demand, and sustainability issues. Producers of all sizes are trying to adapt to this new energy landscape with geopolitical tensions, particularly Russia's aggression against Ukraine, causing chaos and uncertainty in the oil market. This situation increases risks to energy security and regional stability (Bogdanov *et al.*, 2021). Various participants participate in the market, including producing/exporting countries such as Saudi Arabia and the United States, importing countries such as China and Japan, international oil companies such as ExxonMobil and Shell, logistics/transportation companies, financial institutions, and end-users, including automotive and energy companies. The main characteristics of the global oil products market include high interdependence between countries, sensitivity to geopolitical events, cyclicity associated with economic activity and technological progress, a significant concentration of production among several countries, dependence on the geography of transportation and the impact of technological innovations on production and processing. Together, these factors shape the dynamics of the global oil products market, affecting the global economy and energy security.

The dynamics and challenges of the global oil market are shaped by various features, which make their analysis crucial for managing this strategic sector. Before Russia's full-scale invasion of Ukraine, the country supplied just under half of its oil products to the EU, but due to the

existing ban on sea imports of Russian oil products, with the exception of some EU countries that face difficulties in finding an alternative, its fate has declined. Other countries can still buy Russian products, but under-price restrictions set by the EU, limiting their use of EU tankers, financial support, and transaction insurance. Nevertheless, in practice, this has led to the formation of "grey schemes" through which Russian oil, or part of it, still reaches consumers at the right prices. In 2022, there was a change in export directions: India became the largest market for Russian oil by sea, followed by China. Energy security is now a critical aspect of national security, driving strategies such as supply diversification, promoting renewable energy, improving efficiency, and promoting international partnerships (Papadis & Tsatsaronis, 2020). Currently, there are various impacts of challenges in the global oil products market on national security in several dimensions. Countries that are heavily dependent on oil production and exports face economic vulnerability due to market fluctuations, geopolitical conflicts, and environmental risks. Geopolitical tensions can lead to export freezes or economic losses, while environmental accidents pose a threat to public health and safety. In addition, infrastructure risks, such as terrorist attacks or cyber threats, can disrupt energy security.

In the pre-war period, the energy sector of Ukraine experienced a stable and gradual development of all types of energy production, with nuclear power plants taking the lead in electricity production. However, despite the overall increase in production, electricity exports to European countries declined from 2016 to 2021. The industry was positively affected by the implementation of renewable energy projects, which significantly reduced CO_2 emissions. Since the beginning of the war in February 2022, electricity production and exports have declined due to damage to energy infrastructure. The energy system is currently facing a significant capacity shortage, requiring military, economic, and consumer-oriented recovery and conservation strategies. Restructuring the energy market in accordance with European standards is crucial for competitiveness and transparency. The introduction of international experience in regulating these problems provides for the adaptation of socio-legal components and regulatory tools, taking into account internal priorities. This includes variable market dynamics related to the production, supply, distribution, and consumption of electricity. Effective energy development requires coordination between the state and market participants.

During the entire period of Russia's full-scale invasion of Ukraine, a significant number of attacks on critical infrastructure facilities have taken place. Significant attacks were carried out in the period from September 2022 to March 2023, and the largest attacks were observed in the autumn period. The total calculated number of targeted facilities for this period was 912, that is, an average of 53 facilities for each attack. Such a large number of missiles and other flying objects is really difficult to repel for air defence (air defence objects), so it is not surprising that such attacks caused significant damage to energy infrastructure facilities. The Ukrainian infrastructure is still being monitored regularly. So, this trend continues in 2024: in particular, on April 11, an attack occurred on energy infrastructure facilities in four regions of Ukraine, namely in Kharkiv, Zaporizhzhia, Lviv and Kyiv oblasts. In particular, these strikes led to a power outage in Kharkiv (Russian troops attack…, 2024). A massive attack also took place on March 22: it was noted that the target of this attack was to de-energise the power lines feeding the Zaporizhzhia Nuclear Power Plant (ZNPP) (Energy Ministry on the…, 2024). Thus, strikes on the energy infrastructure in Ukraine are still ongoing, despite the fact that sometimes there is a certain break between them.

Currently, there are no clear statistics that would allow assessing the country's losses due to the destruction caused by Russia's military aggression against Ukraine. This is conditioned by many reasons, including the fact that such statistics are quite difficult to collect and standardise. Almost the only institution that conducted such assessments was the Kyiv School of Economics (KSE). However, the Report on Direct Infrastructure Damage and Indirect Economic Losses from the Destruction Caused by Russia's Military Aggression against Ukraine (2023) and individual estimates in September 2023 (Total damage to Ukraine's…, 2023). Thus, as of June 2023, the country's losses reached the level of USD 150.5 billion, while infrastructure losses accounted for USD 36.6 billion. As of September 2023, the estimated losses were at USD 151.2 billion, while those related to infrastructure did not change, and remained at USD 36.6 billion. According to some other estimates, losses in the energy sector of Ukraine for the period from the beginning of the war to January 2024 reached the level of USD 12 billion (Vatman & Hart, 2024).

One possible approach to assessing the country's losses due to rocket attacks is based on lost productive time. In September 2022, 0.5% of productive time was lost, in October – 2.3%, and in November – 12%, and on some days of this month up to 55% of the working day was lost (Blinov & Diakov, 2023). It is worth noting, however, that this does not directly indicate that 12% of the gross domestic product (GDP) produced was lost in November, but it still indicates significant losses for the Ukrainian economy during this period. Some economists estimated losses from energy strikes at 6% of GDP in 2022 (Purig, 2022), although in fact the decline was not so significant due to the demonstrated stability of the energy system. In this regard, certain trends in the development of this area, in particular, renewable energy, including through the encouragement of foreign developers, have spread. The biomethane and clean hydrogen sectors have also been developed, with biomethane projects launched and plans to produce clean hydrogen using Ukraine's wind power potential. Much more emphasis has begun to form on decentralising the energy grid for protection and modernisation with regulatory support for energy storage and micro-grid projects; technologies for energy storage and further use have begun to develop more actively.

The energy market in Ukraine faces many problems, including due to the processes of globalisation, digitalisation, developing industrialisation, and problems with the environment, which leads to a decrease in capacity and problems of market regulation. Post-war reconstruction should prioritise innovation and environmental sustainability, focusing on renewable energy sources, carbon neutrality, and smart energy systems. Creating a regulatory framework that supports these areas is crucial to attract investment and align with European standards, in particular, the EU Clean Energy for All Europeans package (European Commission, 2019). The reforms are aimed at building an autonomous, decentralised and stable energy system, increasing market transparency and competitiveness, and fulfilling obligations under the European Green Deal (2019). The reforms to be implemented in the future should cover not only capacity recovery, but also solving problems with losses in the temporarily occupied territories for the single energy market. However, representatives of the state authorities must do a lot of work to ensure that such reforms or reconstructions can be carried out to ensure a more decent standard of living in the country.

The impact of large-scale conflicts on the energy market can be partially assessed by evaluating some data, namely energy prices and trade volumes. This is how the changes in the oil price that occurred in a certain period of time before and after the start of Russia's full-scale invasion of Ukraine should be assessed (Fig. 1).

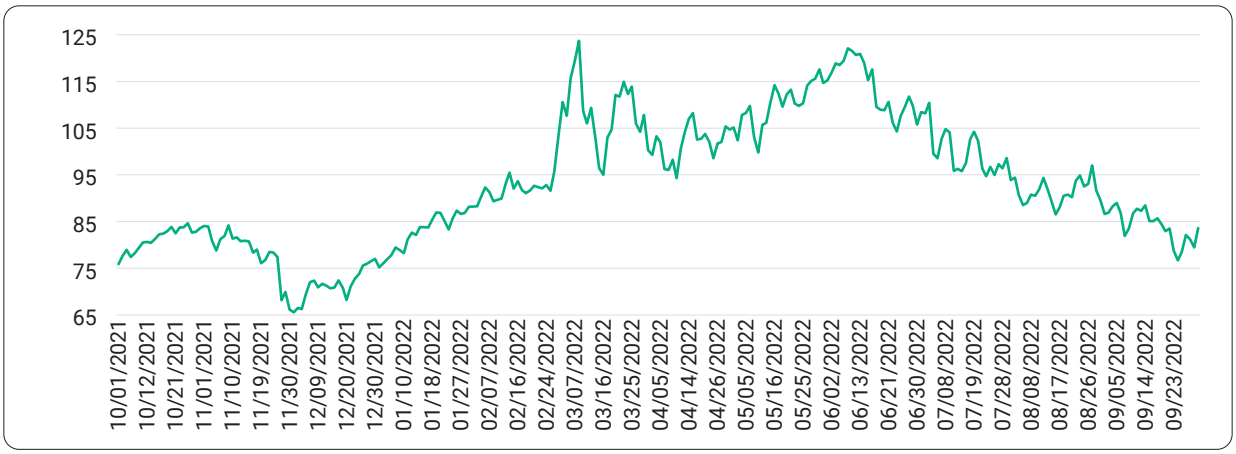

Figure 1. Price of WTI crude oil in the period from October 10, 2021 to October 10, 2022, USD
Source: compiled by the author based on Crude Oil WTI Futures – Jul 24 (CLN4) (2024)

Figure 1 shows that the price of WTI crude oil gradually increased with the beginning of the escalation (October-November 2021) and began to grow rapidly with the beginning of the invasion (from February 24, 2022) and began to decline only after achieving some stability in the summer of 2022. Next, the price of oil began to decline, in particular, due to the intention to set a price ceiling for this resource of Russian origin at USD 60 per barrel. The changes in average monthly trading volumes can also be estimated, as shown in Figure 2.

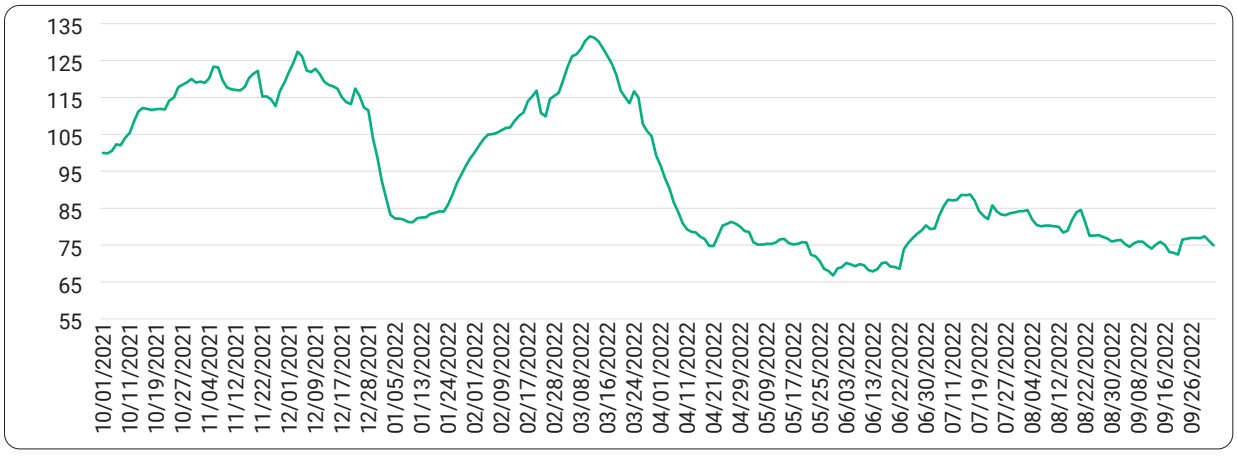

Figure 2. Change in the average monthly trading volume of WTI crude oil futures in the period from October 10, 2021 to October 10, 2022
Note: the value of 100 is equal to the average monthly trading volume of WTI futures as of October 1, 2021; future values are compared to this indicator
Source: compiled by the author based on Crude Oil WTI Futures – Jul 24 (CLN4) (2024)

According to Figure 2, the highest trading volumes occurred during the highest level of escalation, i.e., at the beginning of the invasion and before it. In the future, the market "adjusted" to such conditions and trading volumes fell to a lower level than in October 2021. Thus, it can be concluded that the escalation and the beginning of a full-scale invasion of the oil market had an impact on both prices and trading volumes. A similar assessment should be made for the conflict between Israel and Hamas. The dynamics of oil prices is shown in Figure 3.As can be seen from Figure 3, the price of oil increased significantly before the conflict began on October 7, 2023, but after the development of events, the price began to decline until the beginning of 2024. Changes in trading volumes should also be considered, as shown in Figure 4.

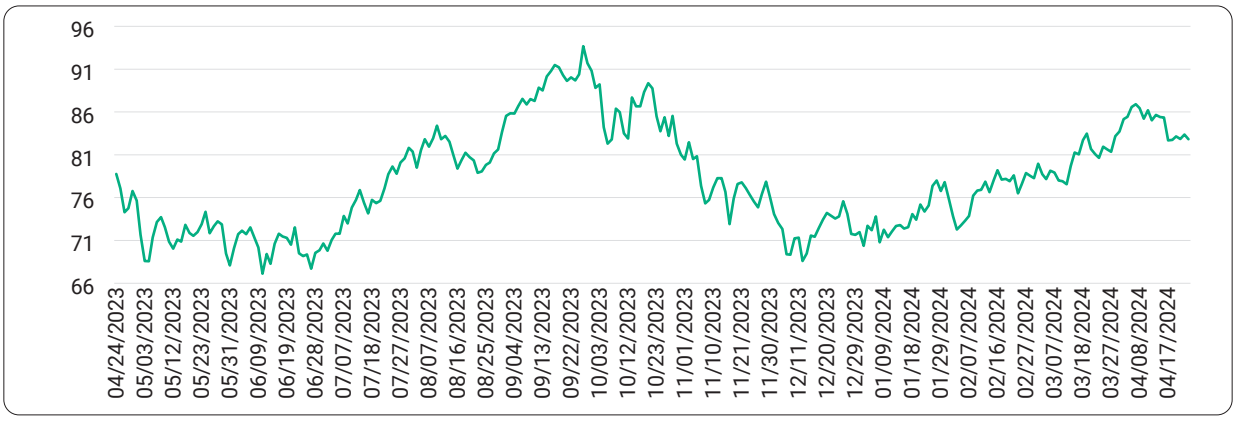

Figure 3. Price of WTI crude oil in the period from April 24, 2023 to April 24, 2024, USD
Source: compiled by the author based on Crude Oil WTI Futures – Jul 24 (CLN4) (2024)

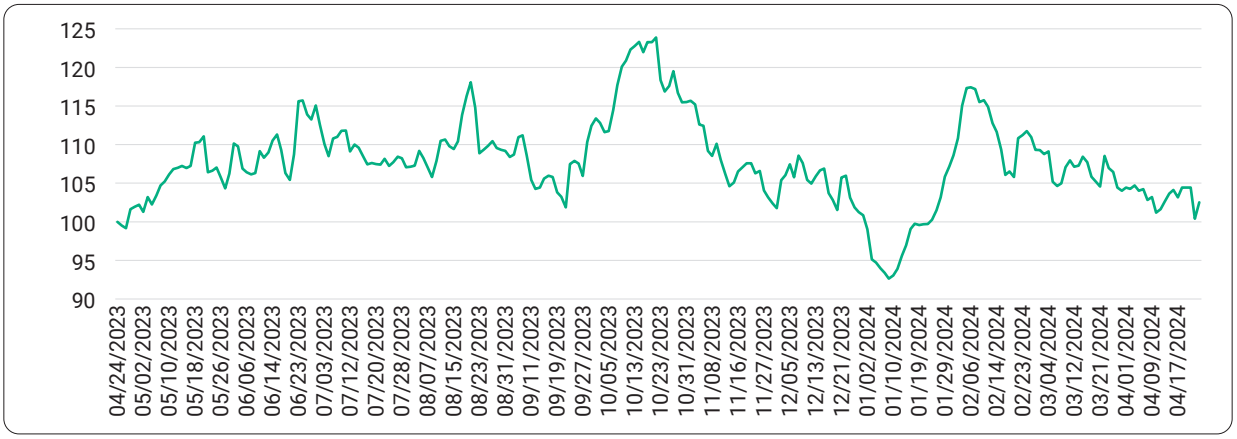

Figure 4. Change in the average monthly trading volume
of WTI crude oil futures in the period from April 24, 2023 to April 24, 2024
Note: the value of 100 is equal to the average monthly trading volume of WTI futures as of April 24, 2023; future values are compared with this indicator
Source: compiled by the author based on Crude Oil WTI Futures – Jul 24 (CLN4) (2024)

As can be seen from Figure 4, it was in October 2023 that the largest volumes of oil futures trading were observed, which indicates the impact of the conflict on the global energy market, namely, an increase in instability on it, and an increase in demand for both the underlying asset and its derivatives.

In the international arena, the war also had a significant impact. This is how the flows of Russian oil and natural gas imports to Europe have changed significantly: they accounted for only about 25% of the pre-war period in 2023; at the same time, there has been a reorientation of Russian oil product exports to Asian markets, namely, to India and China, which are obliged to buy it at a price not exceeding USD 60 per barrel (Report on Direct Infrastructure…, 2023). Nevertheless, the Russian authorities manage to sell oil at a better price using various grey schemes, which makes the effectiveness of these approaches to restricting trade in Russian oil very limited. According to some estimates, the war in Ukraine in general and problems related to the energy sector in particular cost the European Union about 1% of GDP growth, and about half as much for the United States of America and China (Rojas-Romagosa, 2024).

One of the recent conflicts that has had a significant impact on the energy market is that between Israel and Palestine. The Middle East has significant oil and gas reserves,

and any instability in the region can affect global markets. After the attack on Israel, oil prices rose due to concerns about potential supply disruptions, although there was no direct impact on oil flows at the time. The conflict also affected gas supplies: prices for LNG (liquefied natural gas) also increased, which is why some countries suspended agreements on its purchase (including due to the fact that Israel suspended gas production at the Tamar field). During the same period, trade disruptions began, and the freight rate increased by 600% (Mier, 2024). There were concerns that all this could lead to higher energy costs for many businesses around the world, which could lead to unintended consequences; the negative impact would extend to investment flows, and tourism (Shaarawy, 2023).

Further intensification of the conflict could lead to the destruction of important energy infrastructure, including pipelines, refineries, and export terminals, which would lead to even more serious problems in energy supply. The impact of the war in Syria, after which the price of oil increased significantly, was also indicative: in particular, this happened after the strikes of the United States, Great Britain, and France on Syria. There were protests by workers demanding higher wages in Libya, which also negatively affected the market price. There was a decline in gasoline stocks in the United States, which could also lead to negative consequences later. However, over time, oil prices began to decline (Crude Oil WTI…, 2024), which is why there were no serious negative consequences for the global economic system, although such a possibility existed.

Discussion

Based on the above information, various strategies can be implemented to increase energy security and reduce risks for countries. Thus, the development of alternative energy sources reduces dependence on oil, ensuring a sustainable energy balance and limiting vulnerability to market changes. In addition, the implementation of strategies related to economic diversification and energy resource revenues allows countries to overcome crises and maintain energy security. In addition, technological advances in oil production increase the efficiency of the industry, reducing the impact on the environment and improving the quality of products produced. Global cooperation in the energy segment between countries also helps to achieve these goals. In times of war, it is also important to develop alternative routes for the delivery of energy resources and diversify sources of supply to reduce dependence on specific regions or suppliers (Ostudimov & Kaminska, 2023). In addition, increasing the use of renewable energy sources, such as solar and wind, also helps to reduce dependence on conventional types of energy and reduce the impact of military conflicts on supplies (Sotiroski, 2023). This also includes the development of programmes and technologies aimed at reducing energy consumption and improving energy efficiency, and the development and maintenance of backup energy capacities and infrastructure to ensure the reliability of energy supply even in the event of conflicts or temporary obstacles. All these methods can be used by Ukraine to achieve better results in overcoming problems in the country's energy market. However, there are questions about how possible it is to implement such actions in war conditions, especially for Ukraine, which is very much dependent on the supply of money and weapons from the West. However, the state must find ways to achieve such goals, even in conditions of limited capacity to function.

The relationship between geopolitical risk and energy security from 2004 to 2022, revealing a bidirectional causal relationship between these indicators, was investigated by K. Khan *et al.* (2023). They noted that the interaction between the situation in geopolitics and energy security really exists, and geopolitical problems affect energy stability. The researchers noted the importance of considering these interdependencies for optimising energy systems and mitigating risks; they also noted the importance of considering the international impact of economic and other types of global crises. The current study provides a clear example of the impact of geopolitics on the energy sector, namely, the impact of a full-scale Russian invasion both on the Ukrainian economy as a whole and on the energy sector in particular. Other examples of the impact of international conflicts on this area were also described, in particular, through the Israeli – Palestinian conflict and the war in Syria. However, this link also exists between other countries, and in particular – EU members and Russia. This confirms the conclusions obtained by the researchers in the framework of the study regarding the relationship with geopolitics and energy.

Advice on the development of energy security in the country was provided by H. Banna *et al.* (2023). They noted that a country's energy security is strongly correlated with its inflation rate; such states also have higher production growth rates and economic stability. In this regard, the researchers concluded that governments should prioritise energy security, since it affects national and international security issues. Strategic energy issues should be addressed by various government agencies, including defence, to address macroeconomic challenges such as unemployment, hyperinflation, and economic stability. The role of ensuring international cooperation and ensuring effective actions of state leaders was noted. Indeed, problems in the economy are closely intertwined with problems in the energy sector, and therefore, it is not surprising that ensuring energy security is becoming one of the main ones for improving the country's economic condition (Stoiian, 2024). This is one of the important reasons why all countries should pay increased attention to this sector.

The international energy market and the spread of geopolitical risks were studied by X.L. Gong *et al.* (2023). The researchers noted that there is a significant effect of spreading risk in traditional energy markets compared to clean energy markets. In this context, Russia is the main one in terms of the spread of risk in the international crude oil market. Geopolitical conflicts are exacerbating the spread of risks in energy markets. The study also identifies

systemically important economies such as the United States, Russia, and China in the energy market, emphasising the importance of energy security in national strategies and the need to investigate the overflow of risks and geopolitical risks against the backdrop of emergencies. As part of an up-to-date study, it was described in sufficient detail what dangers Russia can pose to the world, given its activities both in the international arena and in the framework of a full-scale invasion of Ukraine. Thus, the international community should form a policy that would isolate Russia's influence in the energy market, and in particular, on countries that depend on energy supplies from the country, namely European countries (Cui, 2022).

New hazards in the context of energy security were considered by L. Gitelman *et al.* (2023). They noted that the global energy market is experiencing intense competition and geopolitical tension between major players, which is associated with difficulties in the supply of fossil energy resources and rising costs, and in the transition to renewable energy sources. In this regard, researchers recommend harmonising energy and eco-climate security (to focus on this in the long term), while in the short term, more attention should be paid to energy security. Thus, despite the difficult conditions that have arisen due to the unfavourable situation in the world, countries must work to solve them and achieve a stable energy situation within their countries. It is worth noting that similar recommendations were given in the context of current research, namely, the wider use of renewable energy sources, and the harmonisation of energy and environmental policies. In Ukraine, the spread of such technologies is already taking place due to constant problems with energy supply caused by shelling from the aggressor country (Dunayev *et al*., 2024). It is expected that the wider use of these technologies in the future will allow for more effective response to such crises.

Dependence on Russian energy as an issue in socio-technical ideas of energy security in Finland, and general global trends in the context of maintaining energy stability, was considered by S. Höysniemi (2022). The researcher noted that modern approaches to ensuring energy sustainability are not deep enough, and therefore cannot provide a sufficiently effective approach to ensuring Finland's energy security. In particular, the researcher emphasised that the energy discourse rarely paid attention to the problems associated with Russia. With this in mind, current energy strategies require urgent review and additional consideration. Indeed, in modern conditions, national policy should change, considering new challenges that arise for countries: this also applies to those states that are not directly involved in the conflict (Baula & Urban, 2023). The current study described changes that should be used in the conditions of Ukraine, as a warring country, to achieve a better level of energy efficiency, but it is worth noting that they can also be applied to Finland.

Trends in the evolution of global energy security between 1995 and 2019 were investigated by G. Hu *et al.* (2022). They noted that during the selected period, the situation in the context of energy security improved. Attention was also drawn to the dynamic nature of global energy security, highlighting the need for sustainable energy policies, international cooperation, and addressing socio-economic challenges to ensure a sustainable and efficient energy system around the world. This is especially true now, in connection with Russia's full-scale invasion of Ukraine. The current study also highlighted that Ukraine should shape its energy saving policy in such a way as to ensure a high-quality standard of living of the population, social and economic well-being. However, difficulties arise due to the fact that the country as such is at war, and therefore does not have sufficient resources to achieve such goals. However, the state authorities should do everything possible to achieve success in this area, among other things.

Conclusions

Thus, the study has shown that energy security is a critical aspect of national and global stability that ensures the effective functioning of societies and economies. The impact of military conflicts on the energy sector is profound and multifaceted, as it leads to various disruptions in energy production, damage to infrastructure, supply shortages, and price fluctuations in energy markets. Russia's recent invasion of Ukraine has further highlighted the vulnerability of the energy industry during the war. It has caused considerable uncertainty, affecting energy security and regional stability. However, similar upheavals have occurred before, in particular, during the war in Syria, and more recently, as part of the outbreak of war between Israel and the Gaza Strip. Therefore, the study concluded that it is important for countries to interact with each other (international cooperation) in order to solve all such existing problems, and to change their policies to one that would allow them to more effectively resist such conflicts. The study also showed what changes have taken place in the international market of energy products in connection with the war in Ukraine and between Israel and the Gaza Strip. It was shown how the price of oil in the world changed, including the volume of trading in it within the framework of these conflicts.

Ukraine's energy sector has also experienced a significant number of problems due to the beginning of a full-scale Russian invasion. Damage to critical infrastructure as a result of massive missile strikes has led to power shortages and power outages. The emergence of such difficulties indicates the significant negative consequences that war has on the energy sector in a country at war. Nevertheless, Ukraine must overcome the negative consequences of conflicts. The paper proposed a significant number of approaches that can be used for this purpose: diversification of energy sources, promotion of the development of renewable sources, increasing the efficiency of energy use, developing more active links in the international arena, attracting investment in the industry. Although these approaches are indeed aimed at reducing dependence on traditional energy sources, they are quite difficult to implement in Ukraine, given the martial law. The country primarily cares about its own

capabilities on the battlefield and in ensuring a decent level of social and economic prosperity: and although energy also remains an important component of the country's development, for which much attention needs to be paid, it is physically very difficult to achieve this. However, the state authorities should devote all available efforts and opportunities to this. Additional analysis of the situation in Ukraine, which concerns the consequences of the military conflict in Ukraine, but in other areas, is relevant for future research. In particular, it is important to consider the standard of living of Ukrainians, their level of psychological health.

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Conflict of Interest

None.

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Економічний вплив військових конфліктів на енергетичні ринки та глобальну енергетичну безпеку

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Анотація. У сучасних умовах військові конфлікти стають все більш поширеним явищем, що робить актуальним дослідження їх впливу на економіку країни всіма можливими способами. Метою даного дослідження було вивчення ситуації в енергетичній галузі України та інших країн світу у зв'язку з початком повномасштабного російського вторгнення в Україну. Основними методами дослідження були аналіз, систематизація та порівняння. У статті показано роль енергетичного сектору в забезпеченні національної та глобальної стабільності. Зроблено висновок, що військові конфлікти мають значний вплив на стабільність цієї сфери як у воюючій країні, так і в інших державах, які можуть бути безпосередньо не залучені до конфлікту. Наразі існує обмежена кількість статистичних даних, які можуть бути використані для оцінки впливу військових дій Росії на енергетичний сектор України. Однак на основі наявних даних було зроблено висновок, що їхній вплив є значним і може призвести до серйозних проблем у майбутньому, якщо не вжити рішучих заходів зараз. Під час перших атак 2022 року це вже спричинило дефіцит енергії та відключення електроенергії. В рамках дослідження було запропоновано чимало підходів щодо подолання наслідків військового конфлікту на світовому та національних енергетичних ринках. Зокрема, наголошувалося на необхідності розвитку диверсифікованих маршрутів енергопостачання, збільшення використання відновлюваних джерел, забезпечення міжнародної кооперації та залучення міжнародних інвестицій у галузь. Висновки, зроблені в рамках дослідження, дозволяють підвищити ефективність національної енергетичної політики в Україні, враховуючи військову ситуацію, в якій перебуває країна

Ключові слова: добробут; інфраструктура; міжнародне співробітництво; кризові явища; геополітична напруженість