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Geopolitics Tension, Wars and Its Impact on Energy/Oil Crisis: Russia – Ukraine War Case Study

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ABSTRACT
The intensifying geopolitical competition amid the current multipolar global order has elevated the risk of interstate armed conflicts, exemplified by the Russia-Ukraine war in 2022. This conflict has triggered significant food and energy inflation worldwide, resulting in approximately 70 million people losing access to electricity. Understanding the interplay between geopolitical events and the energy crisis is essential for nations to develop effective anticipation, coping, and adaptation strategies aimed at preserving national energy security, particularly concerning petroleum commodities. This study explores critical energy security strategies focusing on supply-side measures such as energy diversification, energy transition, diversification of import sources, and the enhancement of strategic reserves. Additionally, the research examines the role of targeted subsidies as a fiscal tool to stabilize consumer purchasing power and maintain demand within the constraints of national fiscal capacity. Employing a qualitative approach through literature review and policy analysis, this study synthesizes existing frameworks and practices to propose comprehensive strategies for energy resilience in the face of geopolitical risks. The findings highlight the necessity of a multifaceted approach that integrates supply diversification with fiscal policies to ensure energy security. The implications underscore the importance for policymakers to strengthen energy systems' adaptability and fiscal mechanisms to mitigate the impacts of global geopolitical disruptions.

Keywords: geopolitics; war; energy crisis; oil; energy security

INTRODUCTION

The world has experienced at least 3 (three) changes in global geopolitical polarity, namely: duopolar, unipolar, and multipolar, since the end of the second world war until now. The duopolar accompanied by the cold war between *The United State of America* (USA) *and The Union of Soviet Socialist Republics* (USSR) was a geopolitical condition for more than 4 (four) decades until 1990. The ideological battle (communism vs liberalism), the military technology race, and various intelligence actions are the basis of the competition and conflict between the two blocs that affect the world globally. This situation ended with the collapse of the USSR in 1990 and became the first milestone of *the phase of US supremacy* in a state of unipolarity.

USA enjoy role as the world's policeman without any "common enemy" during this unipolar period. Samuel Huntington's thesis in the book "*Clash of Civilization"* mentioned that the USA is a country that needs a common enemy to remain *survive* and subsequent enemies Was Islam (Fanani, 2011) reflected a decade later through the war on terrorism. This war began in 2001 by targeting Islamic organizations that were labeled radical (Islamophobia) and carried out around the world (Bakali & Hafez, 2022). Since 2010 the intensity of the war on terror

(read Islam) has shifted to war against China and Russia. This shift marks the end of USA's unipolarity towards the process of finding a new balance, a multipolar world.

Multipolar geopolitics confrontation continue to look for increasingly destructive forms of conflict. The battle for world hegemony that begins in the realm of *geoeconomic confrontation* (Skerritt, 2019) Starting in the USA and China in the form of a trade war (Y. Zhang, 2018), exchange rate war (Lo, 2021), and technology wars (Bradford, 2023). The covid-19 pandemic has also become a moment of feud between China and the USA. China accuses the US of deliberately sending the virus to Wuhan through US military personnel (biological weapons), while the US alleges that the virus is a failed Chinese biological weapons program that was leaked to the public (Knight, 2021).

China-USA relations are heating up and the process *recovery* The post-Covid-19 economy, which has not been completely completed, was shocked by the outbreak of war between Ukraine and Russia since February 2022 which prompted the migration of around 6 (six) million Ukrainians (Compass, 2023) to the European region. This conflict also marked an increase in *interstate conflict*, even in a relatively safe region, Europe. The disruption of global supply chains, especially related to food and energy due to this conflict, poses new risks to the world resulting in increasing protective policies carried out by each country. This has an impact on increasing food and energy inflation (Zhou et al., 2023).

The war between Russia and Ukraine is in line with Ukraine's plans to join NATO membership (Wang et al., 2023) has driven up the cost of energy commodities, especially petroleum (Q. Zhang et al., 2023) and electricity costs (Luschini et al., 2024) which causes 70 million of the world's population to lose access to electricity (Sanyal, 2023). *International Energy Agency* (IEA) even stated that the energy crisis that arose as a result of the Russia-Ukraine war as the first global energy crisis whose impact will be Felt in the next few years (Thomson, 2022).

Conflicts and hegemonic wars between countries have become considerations and predictions of the Indonesian National Resilience Institute (Lemhannas) as stated in the publication "Indonesia X Geo V" in mid-2023 (Widjajanto et al, 2023). Southeast Asia, especially around the South China Sea as well as Taiwan, Senkaku/Diaoyu, and the Korean peninsula in the East Asian region, are points of hegemonic tension that have the potential for open war. China and North Korea are the 2 (two) main forces challenging *the status quo* that have not been actively involved in armed conflict against the USA and its allies (figure 1).

Figure 1. Hegemonic Tension Points That Have Been and Are Projected to Occur
Source: Indonesia X Geo V, Lemhannas (2023)

The increasing threat of armed conflict between countries, especially in the fight for hegemony, is also a major concern for business and economic leaders. The results of the survey published in *World Economic Forum*:*The Global Risks Report* by involving tens of thousands

of business leaders and hundreds of economists (*The Global Risk Perception Survey*, GPRS) in the last 2 (two) years shows an increase in the risk of armed conflict between countries from the 8th risk position in 2024 (Wishart et al., 2024) to be ranked first in 2025 (Elsner et al., 2025). A list of 10 material crises that are believed to have the potential to occur globally in 2024 and 2025 can be seen in figures 1 and 2 below.

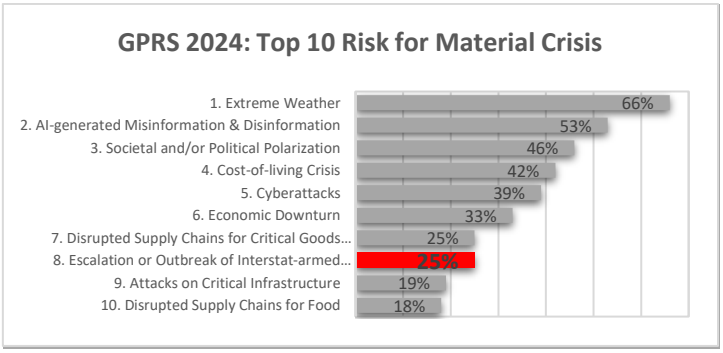

Figure 2. List of 10 Risks in 2024 that Have the Potential to Become a Material Crisis in the Near Future

Source: The Global Risks Report (2024), processed

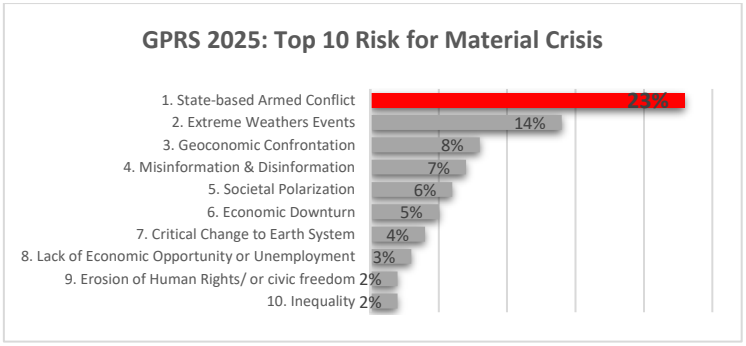

Figure 3. List of 10 Risks in 2025 that Have the Potential to Become a Material Crisis in the Near Future

Source: The Global Risks Report (2025), processed

This study aims to identify the correlation between geopolitical events and the energy crisis that occurs and map the resilience strategies of various countries in maintaining energy security in the face of the impact of the crisis due to the Russia-Ukraine war, where the results of this research are expected to be inputs for energy regulators, especially in Indonesia, to increase national energy security in the face of the potential threat of energy crisis triggered by geopolitical dynamics in the hegemony between countries in the future.

METHOD

The analysis and discussion in this article uses a mixed method research method that tries to get a holistic view of a phenomenon through several data sets that are analyzed using a series of methodologies, both qualitative and/or quantitative (Raich et al., 2014). All data sources used in the study were obtained through literature studies that explored and compared various articles, journals, and books that had been published before. The relationship between geopolitical events and the energy crisis uses a qualitative approach from various existing journals. Lessons learned from the benchmark countries, as further explained in the table below, will use a descriptive quantitative approach to see the relative position of each country

to the dimensions of energy security measurement followed by a qualitative analysis of the strategies implemented by each benchmark country.

Table 1. List of Benchmark Countries

Yes	Analysis Object Cluster	Country	Reason
1.	in the main radius of the conflict (Europe)	Germany	a major economic power in continental Europe and also a member of the European Union
		English	a major economic power outside continental Europe and also not a member of the European Union
2.	countries with large populations and energy needs	India	a) The world's most populous country b) The world's 3rd largest oil importer c) The world's 3rd largest importer of coal
		China	a) The 2nd largest population in the world b) The world's 1st largest oil importer c) The world's 1st largest gas importer d) The world's 2nd largest importer of Coal
3.	Close to Indonesia and have similar characteristics	Philippines	Southeast Asian country with archipelago contours
		Malaysia	Southeast Asian countries near the Strait of Malacca and the South China Sea

RESULTS AND DISCUSSION

A. Foundations of Theory & Literature Review

The uncertainty of global geopolitical dynamics and the emergence of various major countries in the region as challengers to superpowers are the concerns of Lemhannas as the content of the book "*Indonesia X Geo V*" in 2023 (Widjajanto et al, 2023). The book not only shows potential points of tension and countries that may be involved (figure 1), but also shifts and expansions in the meaning of the power and interconnectedness of resources, supply chains, and infrastructure in connectivity conflicts that focus on securing global supply chains, energy markets, and capital flows movements (Widjajanto et al, 2023). This polarizing shift has also been conveyed by Alexander Dugin, the Kremlin's adviser on geopolitical affairs and is even often considered by the west as "*Putin Brain*" (Jargin, 2024), in the book "*The Theory of Multipolar World*". Dugin considered that the system of nation-state sovereignty according to the Westphalia system was long ago and no longer functioning, and that a continental system would be built in the form of "great spaces" (in the Schmittian sense), where individuals would be integrated into the whole of society based on inseparable bonds of kinship and common traditions (Dugin, 2012). Dugin also offers a concept *Russia Exceptionalism* with Russian civilization and its unique place in the world so that it is free from other foreign influences including the west (Skladanowski, 2019). Dugin's extreme thinking is increasingly evident in the book"*The Great Awakening vs The Great Reset*" which contains an open declaration of war against the ideas of Western liberalism and modernism as well as the global elite (Dugin, 2021).

The challenge to the western system with the USA as a hegemon as well as the push for the concept of multipolarity are also of concern to the Chinese elite as conveyed by Michael Pillsbury in the book "*The hundred-year marathon: China's secret strategy to replace America as the global superpower*". This book illustrates the opinion of the majority of the Chinese elite and the Chinese nation of the humiliation of the colonizers, especially the west, for 100 years and the long stride since 1949 to regain the mandate of the heavens as the center of the world as a position believed for thousands of years in various dynasties (*The Hundred-Year Marathon*, 2016). Henry Kissinger, US secretary of state dan national

security advisor, dalam bukunya:"*On China*" also illustrates how the nation's historical experience over thousands of years has greatly influenced the People's Republic of China's diplomacy strategy and view of the world (Kissinger, 2012). Books "*World Order:Reflections on The Character of Nations and The Course of History*Kisisnger wrote in 2015 describes how consensus on the world in the future needs to be built by understanding the different perspectives of the world from historical trajectories such as the concept of an equal sovereign state (Westphalian), the community (ummah) of the Islamic system, China with culture with the emperor as the center of the universe, and *American order* which was initially triggered by *Woodrow Wilson* (Kissinger, 2015).

The relationship between geopolitical events and energy crises with petroleum commodities as a proxy is carried out by identifying geopolitical events that may occur followed by the impact pattern between geopolitical events and energy crises. Geopolitical risks at risk were identified using the results of Caldara and Iacoviello's research which has compiled a geopolitical risk index (GPR) based on the analysis of texts from newspapers on 8 aspects: risk of war, threat of peace, military buildup, nuclear threat, threat of terrorism, the beginning of war, the escalation of war, and acts of terror (Caldara & Iacoviello, 2022). All aspects of the GPR can be grouped into *geopolitical threats* (GPT) or *geopolitical acts* (GPA) in the preparation stage for war until the war took place.

Geopolitical events such as wars in the territory of oil-producing countries as one of the *geopolitical act* in GPR can cause disruption in oil production (Li et al., 2024; Salimi & Amidpour, 2022) which usually has an impact on oil prices (Noguera-Santaella, 2016), declining demand due to geopolitical risks being experienced by oil-importing countries (Cunado et al., 2020; Z. Zhang et al., 2022), as well as oil price volatility due to geopolitical events that affect *supply* and *demand* (Li et al., 2024). This condition is in accordance with the theory of Dr. Mamdouh G. Salameh, *International Oil Economist & Global Oil Expert* who is also a consultant at the World Bank and *Visiting professor of Energy Economics di ESCP Europe Business School- London*, which states that a geopolitical event or risk is one of the *driver* which could affect the increase in oil prices such as disruptions to production and access from one of the major oil-producing countries, as well as the closure of one of the *global oil chokepoints* (Hope, 2019). The pattern of relationships between geopolitical events, supply, demand, and price can be seen in the figure below

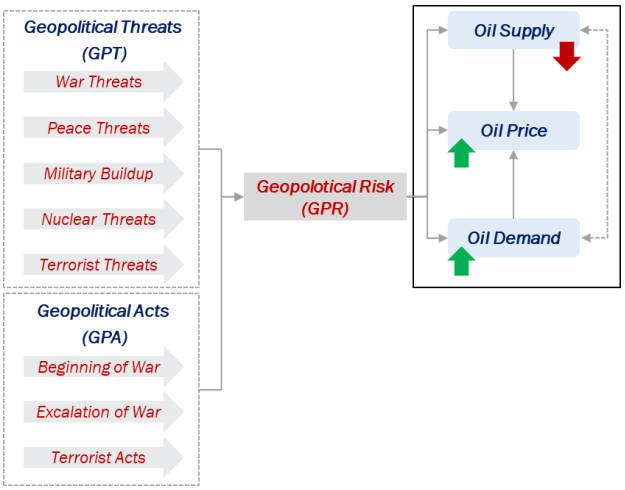

Figure 4. The Concept of Geopolitical Risk Relations and Energy Crises with Petroleum as a Proxy

Lessons learned from benchmark country strategies in maintaining and improving energy security are carried out with an organizational resilience framework prepared by Duchek which divides the organizational resilience process into 3 stages, namely: anticipation, coping, and adaptation (Duchek, 2020). This resilience framework (figure 5) also shows that there are offensive and defensive responses that can be used by organizations at each stage of the shocks faced, which in this study is the shock in the energy sector due to the Russia-Ukraine war. The factors that are the focus of the comparison are obtained from the dimensions and variables of the energy index issued by the World Energy Council (WEC) Trilemma Index and consist of 3 dimensions, namely energy security, energy equity, and environmental sustainability (WEC, 2024).

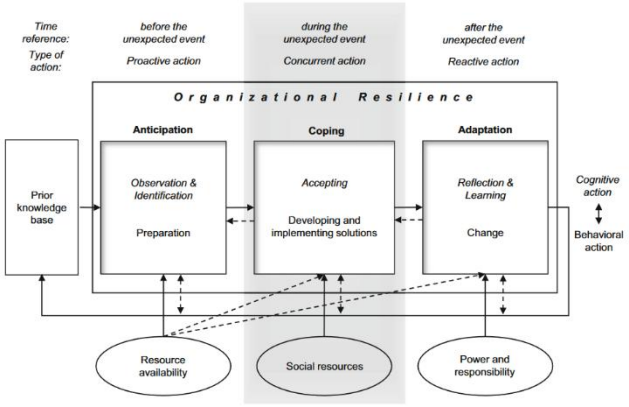

Figure 5. ***The Concept of Organizational Resilience in the Face of Shocks***
Sumber: "*Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. Business Research, 13(1), 215–246."*

The energy security index focuses on the aspect of energy availability and has 3 variables, namely dependence on imports, diversity of power plants (energy mix), and energy storage (WEC, 2024). The energy equity index includes aspects of energy access (accessibility) and affordability (affordability) and consists of 3 variables, namely: access to electricity, electricity prices, and fuel prices (gasoline and diesel) (WEC, 2024). The third index, environmental sustainability, looks at the sustainability aspect of 3 variables, namely: *final energy intensity*, *low carbon electricity generation*, *CO2 emissions per capita* (WEC, 2024).

B. Problem Analysis

1. Relationship of Geopolitical Events, War and Energy/Oil Crisis

War as one of the geopolitical events can have a negative impact on various parties in various dimensions of damage. Pierre Bocquillon and colleagues' research on the impact of the Russia-Ukraine wars showed damage to at least 6 (six) aspects called the ripple effect (*ripple effect*) (Figure 5). Six ripple effects in the order of the closest impacts: material damage, human capabilities, economics, values and behavior, policy and governance, and power distribution and relations between countries (Bocquillon et al., 2024). Economically, war has a knockdown impact on production and consumption, inflation and economic growth as well as disruptions to global trade (Bocquillon et al., 2024).

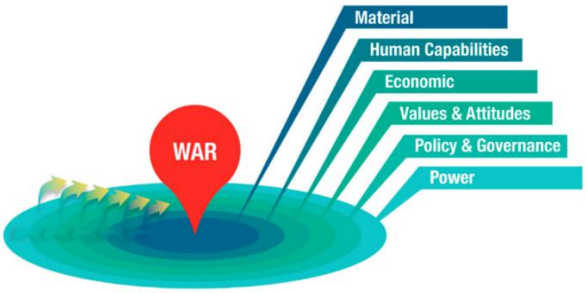

Figure 6. Ripple Effect Framework and War Setbacks
Sumber: "Bocquillon, P., Doyle, S., S. James, T., Mason, R., Park, S., & Rosina, M. (2024). The effects of wars: Lessons from the war in Ukraine. Policy Studies, 45(3–4), 261–281"

Commodity price inflation as an implication of disruption *supply–demand* The consequences of war are the biggest impact of war on the global trade side. Report »*Commodity Market Outlook: The Impact of the war in Ukraine on Commodity Market"s* issued by *World Bank* in April 2022 shows the 3 (three) main commodities in global trade that are most affected by the war, namely, metals, agriculture (food and fertilizer) and energy (Nagle et al., 2022). Metal and mineral prices rose 13% QoQ in Q1 2022 and are already 24% higher YoY (Nagle et al., 2022). Fertilizer prices rose 220% and food prices rose 84% between April 2020 and March 2022, the highest since the 2008 economic crisis (Nagle et al., 2022). Energy prices rose by more than 400% between April 2020 and March 2022, the highest since the 1973 energy crisis (Nagle et al., 2022). Energy is a global trade commodity that has experienced the highest price fluctuations due to the Russia-Ukraine war compared to other commodities.

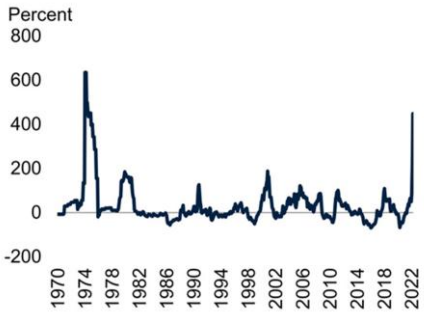

Figure 7. Graph of Pprice changes in energy from 1970 - 2022
Source: "Commodity Market Outlook: The Impact of the war in Ukraine on Commodity Market"s released by the World Bank in April 2022"

Petroleum is an energy commodity that is most vulnerable to geopolitical dynamics compared to natural gas and coal based on export and import relations. The results of the "*73rd Statistical Review of World Energy* " report from *the Energy Institute* in collaboration with consultants *Kearney* and KPMG show that petroleum trade, which reached 2.1 billion tons in 2023, is dominated by exports from the Middle East at 41%, followed by Russia at 11%, and the USA in 4th place with a portion of 9% (Figure 7). China is the country with the largest portion of imports (27%) followed by the European Union (21%), and the USA in third place with 15% (Figure 7). Natural gas (LNG) commodities show a more *fragmented portion,* with no *dominant players* in terms of

exports and imports (Figure 8). Coal commodity exports are dominated by Indonesia and Australia (~60%), countries that are far from a potential point of tension, with China remaining the world's largest importer (Figure 9).

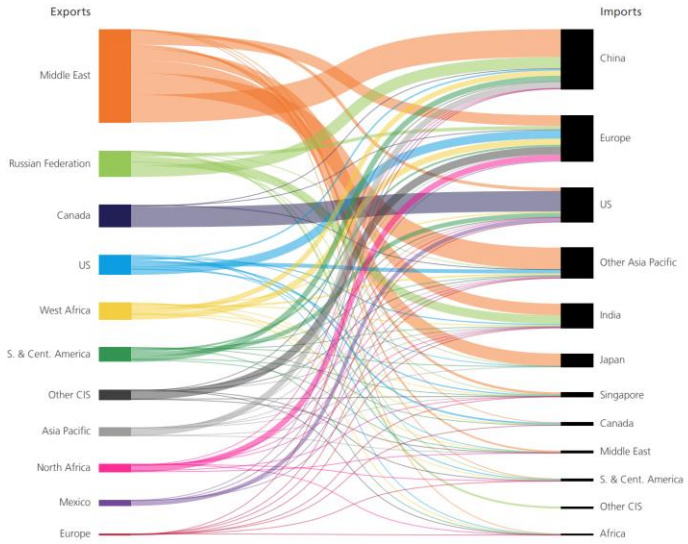

Figure 8. Export-Import Movement of Petroleum Inter-area in 2023
Sumber: "Statistical Review of World Energy- Energy Institute" 73rd Edition 2024

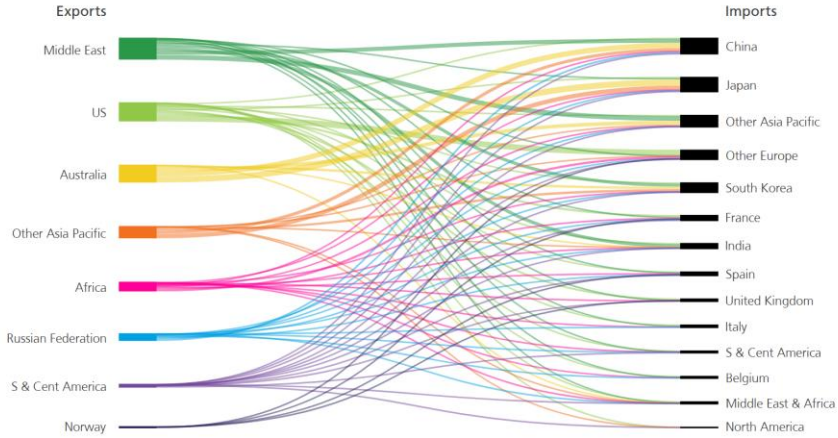

Figure 9 Export-Import Movement of Inter-area Natural Gas in 2023
Sumber: "Statistical Review of World Energy- Energy Institute" 73rd Edition 2024

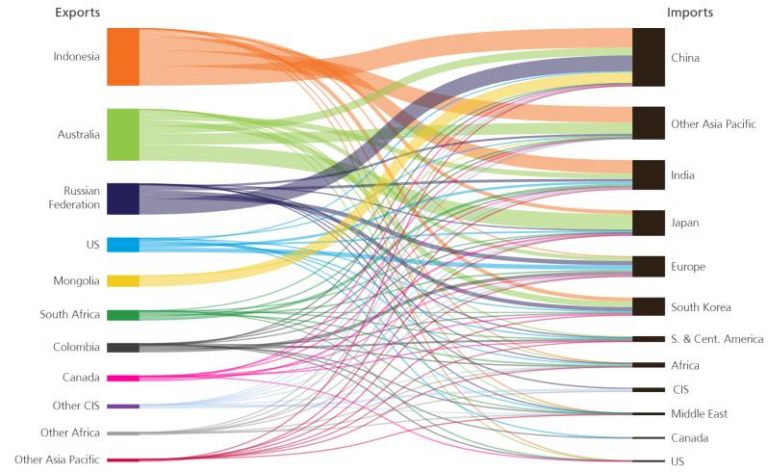

Figure 10. Inter-area Coal Export-Import Movements in 2023
Sumber: "Statistical Review of World Energy- Energy Institute" 73rd Edition 2024

Geopolitical tensions and tensions between countries can disrupt oil production and trade routes, disrupting demand, which can ultimately lead to volatility and uncertainty in oil prices (X. Zhang et al., 2009; Omar et al., 2017; Brandt & Gao, 2019; Bouoiyour et al., 2019). Closure of one of the *chokepoint* such as the Strait of Hormuz by Iran (Li et al., 2024) will disrupt the oil trade route causing oil prices to rise dramatically in the next few days (Kube et al., 2019) It could even become an oil crisis over a longer period of time (Qin et al., 2020; Su et al., 2019). Russia's military offensive against Ukraine in February 2022 in response to Ukraine's plans to join NATO (Wang et al., 2023) has caused a sharp surge in energy commodities, especially oil (Q. Zhang et al., 2023) to exceed USD 100/barrel when the attack began and peaked in March 2022 at USD 127/barrel (Li et al., 2024). The Russia-Ukraine war is an example of the correlation between geopolitical events and the current oil crisis.

Research by Hamilton, Baumeister & Killian and Zhang also points to war as the most dominant geopolitical event (7 out of 9 *Events*) which led to a drastic increase in oil prices from the 1970s to the present (Figure 11) namely: 1). The 1973 Arab-Israeli War and the Arab oil embargo (Wang et al., 2023), 2). Iranian Revolution 1978/1979, 3). Iran–Iraq War 1980 (Hendrix, 2017; Wang et al., 2023), 4). Gulf War 1990/91 (Al-Mebayedh et al., 2023) (Wang et al., 2023), 5) the USA & its allies invaded Iraq in 2003, 6). Libyan Civil War 2011, and 7). Russia–Ukraine War 2022 (Hamilton, 2013; Baumeister & Kilian, 2016; Q. Zhang et al., 2023). The collapse of OPEC in 1986 and the Venezuelan oil attack in 2002 are 2 (two) non-war geopolitical events that drove the oil crisis. According to Hamilton, the results of research on oil price shocks due to geopolitical events are more caused by disruptions in oil supply (*Supply*), while Kilian concludes a change in demand (*Demand*) due to future oil supply uncertainty following geopolitical events (Nygaard & Sørensen, 2024) as the dominant factor.

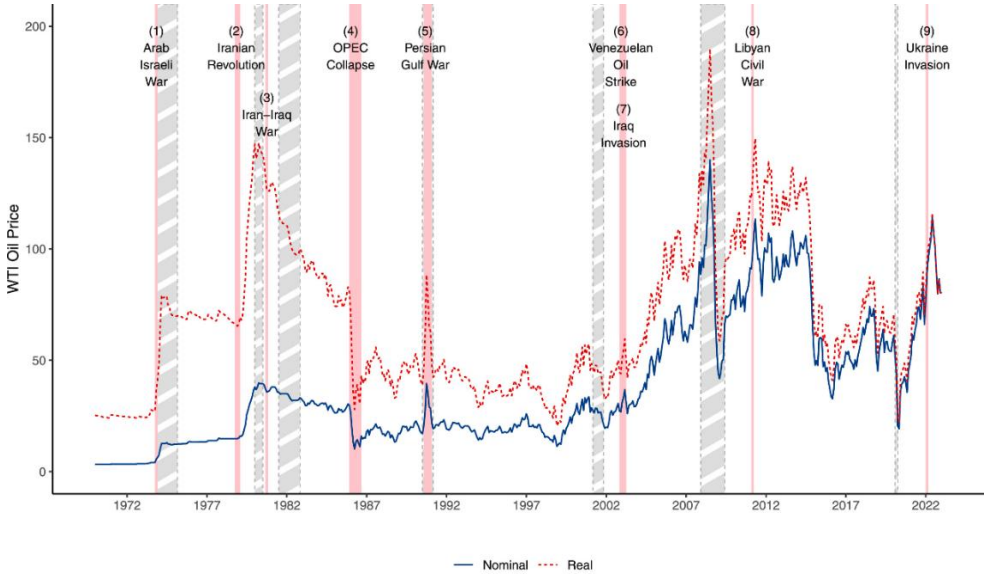

Figure 11. Extreme Geopolitical Events and Petroleum Prices.
Sumber: "Nygaard, K., & Sørensen, L. Q. (2024). Betting on war? Oil prices, stock returns, and extreme geopolitical events. Energy Economics, 136, 107659."

The chart shows nominal and real oil prices on an annual basis from 1969 – 2022. The dotted line represents the price of oil in dollars in 2022, the solid line indicates the nominal price. The pink bar indicates extreme events while the broken ash box indicates NBER recession dates.

2. Energy Security Lessons Learned from the Russia & Ukraine War

The war between Russia and Ukraine that has occurred since February 2022 has caused a sharp surge in energy commodities, especially oil (Q. Zhang et al., 2023), natural gas and coal ((CNBC Indonesia, 2023) and Electricity costs (Luschini et al., 2024). This turbulent condition is called by the International Energy Agency (IEA) as the first global energy crisis whose impact will be felt in the next few years (Thomson, 2022). The increase in fossil energy prices contributes 90% to the increase in the average price of electricity globally which causes 70 million people in the world to lose access to electricity (Sanyal, 2023).

The results of the WEC Trilemma mapping in 2023 place the United Kingdom and Germany in the top 10 in the world out of 99 countries with a balance grade of AAAa. Malaysia and the Philippines have a ranking that is not too far away and is in the quartile position of 50-75%. China is in the second best group (25 – 50%) with an A grade for the energy security index. India is the country with the lowest position (#74) and is in the bottom 25%.

Table 2. Performance *of 6 Benchmark Countries for each aspect and in total in the 2021 – 2023 period*

Country	Security (Grade)	Equity (Grade)	Environmental Sustainability (Grade)	Total Energy Performance		
				Rank (2023)	Balance Grade	Group
United Kingdom	A	A	A	8	AAAa	Top 25%
Germany	A	A	A	7	AAAa	Top 25%

Country	Security (Grade)	Equity (Grade)	Environmental Sustainability (Grade)	Total Energy Performance Rank (2023)	Balance Grade	Group
China	A	B	D	47	ABDb	25 - 50%
India	B	D	D	74	BDDc	Bottom 25%
Malaysia	A	D	C	60	ADC	50 – 75%
Philippines	B	D	C	72	BDCc	50 – 75%

Source: *https://trilemma.worldenergy.org/ (2024)*

Mapping the conditions of 6 (six) *benchmark countries* to energy security variables shows that the security aspect of all benchmark countries has increased in the index from 2021 to 2022, except for the Philippines which experienced a decrease of 151 bps. The country with the highest increase in security aspects was the United Kingdom (120 bps), followed by Malaysia (113bps) and India (70 bps) as seen in the following chart 1. The security aspect of all benchmark countries experienced an increase in the index from 2021 to 2022, except for the Philippines which experienced a decrease of 151 bps. Two countries that are close to conflict areas were able to post an increase in the index of 120 bps (United Kingdom) and 58 bps (Germany).

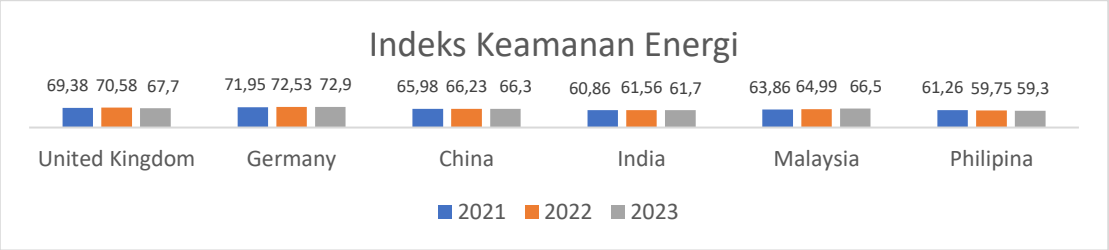

Figure 12. ***Energy Security Index 6 Benchmark Countries for the 2021 – 2023 Period***
Source: *https://trilemma.worldenergy.org/ (2024)*

Transfer of Russian gas and oil imports to the USA (United Kingdom) as well as Norway, USA, and UK for Germany (Luschini et al., 2024) as well as increasing the contribution of renewable energy, solar (Germany) and wind (UK) are the main coping strategies taken. The UK has also managed to keep its contribution of nuclear energy in the range of ~15% of the mix (Luschini et al., 2024) as well as increasing offshore wind power plants, and hydrogen in the strategic security plan (Sanyal, 2023) as a long-term adaptive measure to maintain national energy security.

Keberadaan strategic petroleum reserve (SPR) (Cui et al., 2023) is also one of the solutions for Germany and the UK in overcoming fluctuations in energy commodity prices. This step is a form of anticipatory strategy that has been implemented by the two countries in line with the policy of the International Energy Agency (IEA) and the European Union (EU Oil Stocks Directive 2009/119/EC) which requires its members to have a reserve of 90 days of import needs (iea.org, 2024) or 61 days of consumption (Energy EC, 2024).

China and India also have SPR policies with a capacity of 511 million barrels or equivalent to 50 days of import requirements for China (Chopra, 2024) and 5.3 million barrels spread across 3 locations (Visakhapatnam, Mangalore, and Padur in Karnataka) for India (Mohanty, 2024). India has even drawn up a plan to increase SPR capacity to 3x with the first phase increasing capacity by 6.5 million barrels through a public-private partnership scheme (Mohanty, 2024). The existence of this SPR allows

these two countries to benefit from buying 80% of Russian oil that was previously for EU consumption (Thomson, 2022) at a low price in the early days of the war. China even uses currency exchange rates for trade agreements with Russia and provides equipment supplies for Russian LNG projects in the Arctic Sea (Downs et al., 2024) for the purchase of Russian oil. China's policy choice could reduce total energy costs by 7.7% in 2023 (He, 2024).

Accelerating the transition to renewable energy is a key strategy used by China, India, Malaysia and the Philippines to maintain energy security by reducing dependence on fossil energy, especially petroleum. China is trying to shift the focus of energy policy forward without abandoning traditional energy security concerns to green energy by using technological dominance (Prontera, 2024). India also aspires in 2010 to achieve Net Zero emissions (NZE) as per global targets through investment and development of green technologists in collaboration with the international community as a long-term strategy related to energy (Downs et al., 2024). Malaysia as a net energy exporter with oil reserves of around 4.43 billion barrels or the equivalent of 14 years of current consumption (worldometers, 2022) and 27 years of gas reserve equivalent (Enerdata, 2023) also taking steps to transition energy as a long-term strategy (BakerMcKenzie, 2022). The Philippines is not too affected in terms of supply by the energy crisis due to the Russia-Ukraine war because 60% of power generation needs are obtained from coal through imports (Prétat et al., 2024) also trying to take long-term anticipatory steps through the energy transition and SPR Development (doe.gov.ph, 2022).

In aggregate, the strategies carried out by 6 countries to maintain energy security can be seen in table 3 below

Table 3. ***Summary of Policies/Strategies of 6 Benchmark Countries to maintain and/or improve energy security in an anticipatory, coping, and adaptive manner.***

Yes	Country	Strategy/Policy		
		Anticipatory	**Coping with**	**Adaptasi**
1	**United Kingdom**	a) Energy diversification b) Strategic Petroleum Reserve (SPR) c) Nuclear Power Plants	Re-orientation of importers	a) increase in RE especially wind, and hydrogen b) Nuclear Enhancement
2	**Germany**	a) Energy diversification b) Strategic Petroleum Reserve (SPR)	a) Re-orientation of importers b) Re-activation of coal-fired power plants	a) RE (solar) increase b) Re-activation of nuclear plants
3	**China**	a) Energy diversification b) Strategic Petroleum Reserve (SPR)	Increased purchases of Russian energy commodities (petroleum and gas)	a) Increased SPR capacity b) RE Enhancement
4	**India**	a) Energy diversification b) Strategic Petroleum Reserve (SPR)	Increased purchases of Russian energy commodities (petroleum and gas)	a) Increased SPR capacity b) RE Enhancement
5	**Malaysia**	a) Energy divesification b) Increased fossil reserves	N/A	RE Enhancement

Yes	Country	Strategy/Policy		
		Anticipatory	Coping with	Adaptasi
6	**Philipina**	a) Energy diversification b) Diversification of importers	N/A	a) RE Enhancement b) Construction of the EC

Mapping of 6 (six) countries *benchmark* The energy equity variable in Chart 2 shows that the equity aspect of all benchmark countries has increased the index from 2021 to 2022, except for the United Kingdom which fell by 10 bps. The countries with the highest increase in equity aspects were the Philippines (85 bps), followed by Malaysia (56 bps) and China (48 bps). The UK and Germany, as the countries closest to the war zone, have experienced the impact of a very significant price increase, this is tried to be addressed by each government through policies *price caps* for Gas and Electricity in Germany (CleanEnergyWire, 2022) as well as subsidies to households accompanied by temporary levies on oil and gas companies that enjoy a surge in profits due to the energy crisis implemented by the UK (gov.uk, 2022). The amount of subsidies provided by the government is the cause of the decline in the UK energy equity index by 10 bps and the sloping growth of Germany's energy equity index which grew by only 29 bps.

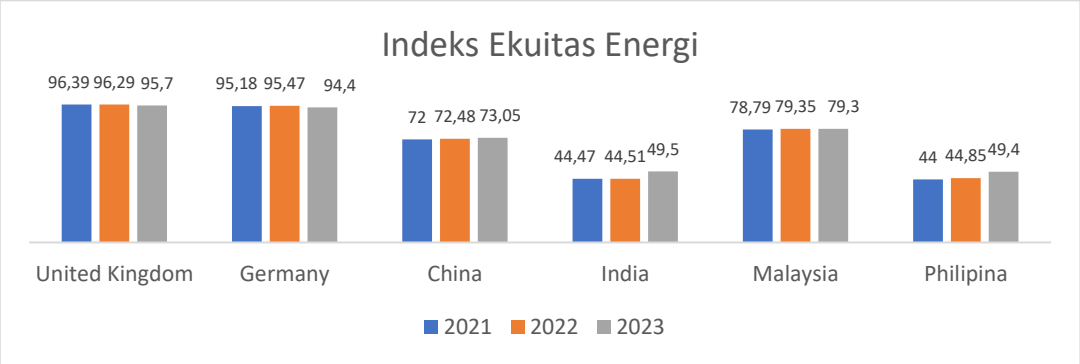

Figure 13. ***Energy Equity Index 6 Benchmark Countries for the 2021 – 2023 Period***
Source: *https://trilemma.worldenergy.org/ (2024)*

Other countries have implemented various energy subsidies long before the crisis due to the Russia-Ukraine war. China has implemented subsidies on the purchase of energy-efficient household appliances since 2012 (Yu, 2013). The subsidy is in addition to the subsidy policy for diesel gasoline and natural gas which reached USD 2.2 trillion in 2020 (Wiedenbach, 2023). India also implements the same anticipatory policy by imposing a 70% subsidy between aiming to keep energy commodity prices low for consumers or to provide household consumers with modern energy (Electricity) (Garg & Laan, 2018). This policy was maintained during the period of the Russia-Ukraine war to maintain the stability of energy commodity prices in India.

Malaysia also implements the same antidipative policy through energy commodity subsidies which are worth 25% of the total annual budget (Sato, 2024). During the crisis period, Malaysia maintained the subsidy policy and even increased the nominal amount to RM 22 million. In the future, the Malaysian government plans to reduce the portion of energy subsidies so that it can make improvements in the public health sector and other sectors (Sato, 2024). The Philippines has ended various energy

subsidy programs since 1990 but implemented a temporary suspension of the program as a coping measure due to the Russia-Ukraine war, including: gasoline discount programs for farmers and fishermen (doe.gov.ph, 2022)

Table 4. ***Summary of Policies/Strategies of 6 Benchmark Countries to maintain and/or increase energy equity in an anticipatory, coping, and adaptive manner.***

Yes	Country	Strategy/Policy		
		Anticipatory	**Coping with**	**Adaptasi**
1	**United Kingdom**	N/A	a) Direct subsidies b) Temporary levy for O&G companies	N/A
2	**Germany**	N/A	Price cap for gas and electricity	N/A
3	**China**	a) Gasoline, diesel, and natural gas subsidies b) Subsidy for the purchase of energy-efficient household appliances	Increase in the amount of subsidies	N/A
4	**India**	Gasoline, diesel, and natural gas subsidies	Increase in the amount of subsidies	N/A
5	**Malaysia**	Gasoline, diesel, and natural gas subsidies	Increase in the amount of subsidies	Reduction in energy subsidies
6	**Philipina**	N/A	Temporary subsidy programme: petrol discount for farmers and fishermen	N/A

The mapping of the conditions of 6 (six) *benchmark countries* to the energy equity variable in chart 3 shows that the environmental sustainability aspect of all benchmark countries experienced an increase in the index from 2021 to 2022, except for China which fell 50 bps and India which fell 20 bps. This is understandable because at the same time, China and India are increasing oil and gas imports from Russia to improve energy security. The highest index increase was shown by the United Kingdom (77 bps), followed by Malaysia (51 bps), Philippines (46 bps) and Germany (38 bps). The increase in the index in the UK and Germany was due to the increasing implementation of RE as a coping strategy in overcoming the energy crisis after the Russia and Ukraine wars. Malaysia and the Philippines also increased their environmental sustainability index in line with their plans to implement clean energy in their respective long-term energy plans.

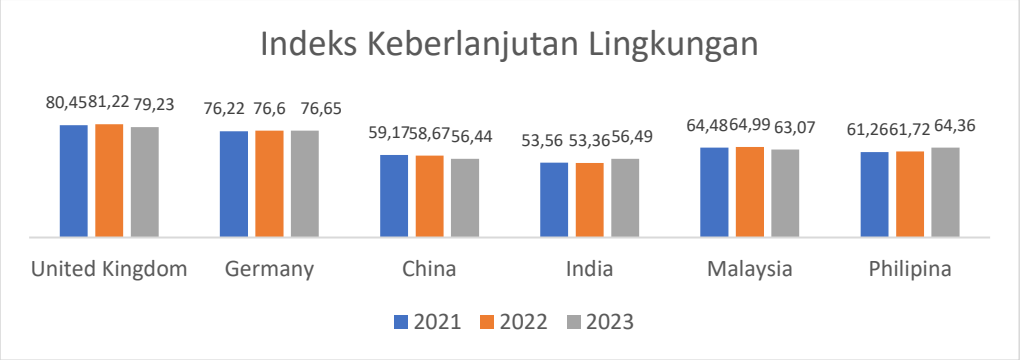

Figure 14. ***Environmental Sustainability Index 6 Benchmark Countries 2021 – 2023***
Source: *https://trilemma.worldenergy.org/ (2024)*

CONCLUSION

Geopolitical events, especially wars involving super power countries and/or in large oil producing countries, can cause a world energy crisis due to a combination of disruptions in supply, distribution, and demand that cause a drastic increase in prices in a short period of time. Diversification of energy and petroleum import sources accompanied by an increase in strategic reserves is the most common and effective step in terms of availability to maintain energy security. The implementation of targeted subsidies is an anticipatory, coping and adaptive step that can be applied by adjusting to the challenges and availability of fiscal space in each country to maintain easy access and affordability of energy commodities. The transition towards renewable energy is an affordable step that has been compiled by all benchmark countries and has proven effective in helping to reduce energy availability pressures in the UK and Germany during the Russia-Ukraine war. Suggestion: This research can be improved in the aspects of comparative analysis and evaluation with energy policies and strategies in Indonesia. At this stage, an interview process can be carried out with various stakeholders in the energy sector in Indonesia, both from the side of regulators, energy companies, corporate and retail consumers of energy, and NGOs.

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